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"The contribution of the New Institutional Economics for the analysis of strategies and its theoretical and practical implications for the motor insurance in Germany in the light of socio-demographic and technical changes by the example of carsharing"

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AUTHORIZATION OF THE DIRECTORS OF THE THESIS FOR SUBMISSION

Prof. Dr. Gonzalo Wandosell Fernández de Bobadilla (UCAM, Murcia) and Prof. Dr. Dr. habil. Eric Frère (FOM, Essen) as Directors of the Doctoral Thesis "The contribution of the New Institutional Economics for the analysis of strategies and its theoretical and practical implications for the motor insurance in Germany in the light of socio-demographic and technical changes by the example of carsharing" by Mr. Hendrik Saeger in the Department of Social Sciences, Business and Law (Departamento de Ciencias Sociales, Jurídicas y de la Empresa), **authorize for submission since it has the conditions for its defence**.

Sign, to comply with the Royal Decrees 99/2011, 1393/2007, 56/2005 and 778/98, in Murcia (14.06.2017).

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Abstract

Purpose – The purpose of this thesis is to thoroughly analyze the impact and effects of socio-demographic changes onto the motor insurance in Germany by the example of carsharing under the consideration and application of selected theories of the New Institutional Economics.

Design/Methodology – The research design for this thesis combines the process of an accurate review of existing literature and conference papers, as well as a matching against selected theories of the New Institutional Economics and the findings of expert interviews. The expert interviews were conducted in the form of a guided interview, thus allowing more leeway for the experts to add contributions that are important from their point of view. For that process n=15 experts were selected with a focus on elites on the basis of their reputation in the insurance industry and association committees, secured by snowball sampling.

Findings – The findings of this research offer an insight into new aspects of the motor insurance from a theoretical point of view through the New Institutional Economics as well as a practical point of view with even unpublished knowledge through expert interviews. These findings represent the basis for the conclusions drawn and recommendations given in this study. It is directed to senior managers in the motor insurance to provide recommendations for an alignment of their strategy in regard to carsharing and mobility. For the first time a holistic view upon new trends in mobility is taken under the consideration of socio-demographic and technical changes with reference to the New Institutional Economics.

Practical Implications – In a very competitive market, as the motor insurance market in Germany, motor insurers need to keep up with the ever faster turning cycle of changing framework conditions. The New Institutional Economics provide a strong mechanism to analyze the given issues. The derived recommendations are formulated to provide the senior management in the German motor insurance knowledge to successfully review their strategy.

Keywords – Carsharing, New Institutional Economics, computer aided data analysis, expert interviews, qualitative analysis, motor insurance market in Germany, strategy

Acknowledgements

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List of Acronyms and Abbreviations

3-D	Three dimensional
ADAC	Allgemeiner Deutscher Automobil-Club
ADL	Arthur D. Little
AEB	Autonomous Emergency Brake
AEBpc	Autonomous Emergency Brake personal contact
Al.	Alteri
App	Application
BCG	Boston Consulting Group
BGB	Bürgerliches Gesetzbuch (German Civil Code)
BMW	Bayerische Motorenwerke
CEO	Chief Executive Officer
CMB	Code Matrix Browser
CO2	Carbondioxide
DB	Deutsche Bahn
e.g.	Example Given
E-Call	Emergency Call
ESP	Electronic Stability Program
Etc.	Et cetera
EUR	Euro
GDV	Gesamtverband der Deutschen Versicherungswirtschaft
GE	General Electrics
GmbH	Gesellschaft mit begrenzter Haftung (= limited)
HUK	Haftpflicht-Unterstützungs-Kasse
i.e.	Id Est; That Is
IT	Information Technology
KG	Kilogram
KM	Kilometers
KM/H	Kilometers per hour
KVB	Kölner Verkehrs Betriebe
LCA/BLIS	Lane Change Assistant, Blind Spot De
LCAG	Learned, Christensen, Andrews, Guth

LDW/LK	Lane Departure Warning / Lane Keeping
LTD.	Limited
mbH	mit begrenzter Haftung (=ltd.)
Min.	Minutes
MIVB	Maatschappij voor het Intercommunaal Vervoer te Brussel
n	Number of characteristic value of a statistical population
NIE	New Institutional Economics
No.	Number
OECD	Organisation for Economic Co-operation and Development
p.	Page
P.A.	Per annum
PA	Principal Agent Theory
PAYD	Pay As You Drive
PC	Personal Computer
PHYD	Pay How You Drive
PMA	Parking Maneuver Assistant
PP.	Perge Perge = Pages
PR	Property Rights Theory
PwC	Pricewaterhouse Coopers
QDA	Quantitative Descriptive Analysis
RQ	Research Question
RTF	Rich Text Format
Schufa	Schutzgemeinschaft für Allgemeine Kreditsicherung
Seqq.	Sequentia = The following ones
SFR	Schadenfreiheitsrabatt = No claims bonus system
SRQ	Subresearch Question
STIB	Société des Transports Intercommunaux de Bruxelles
SWOT	Strengths, Weaknesses, Opportunities and Threats
TAC	Transaction Cost Theory
UN	United Nations
US	United States of America
VDA	Verband der deutschen Automobilindustrie
VIS	Verbandsinformationssystem

The introductory chapter gives a methodological and scientific orientation on how the study is set up and explains the development of the research problem in regard to the context. The design of the subresearch and the research questions, as well as the deduction of the hypotheses will be outlined. The qualitative approach for this study will be explained and the chosen methodology presented to elaborate on why this specific research design was chosen for this study. The systematic of the coding and the process of the analysis will be displayed to make the overall process transparent and understandable of how the findings and conclusions were reached. Furthermore in this introductory chapter, the limitations of the study will be presented, followed by an overview of the structure of the study.

1. INTRODUCTION

The German motor insurance market is subject to a vigorous and ever faster turning cycle of competition. The dimension that the degree of this competition has taken is even referred to by experts as a predatory competition. The situation can therefore be described as serious and the need for insurance companies to react fast to changes, not to be left behind, is high. The exogenous factors change at an equally fast rate. A prominent example for such a change is a new form of mobility, which has started to exist since the 1980s in Germany, the carsharing. Carsharing shows a significant rise in acceptance among the German population, especially in the last years, making it impossible for motor insurers to ignore the effect of this development in their strategic considerations. The fast changing framework conditions in regard to socio-demographic and technical changes represent thereby the biggest challenge for motor insurers on the German market (Ehrsam, 2013, pp. 2-23). According to Ehrsam these biggest challenges are currently:

(1) Cities intend to limit the individual traffic in order to: Reduce the CO2 emission; have fewer spaces for parking so that the space can be used otherwise; move the volume of traffic more efficiently with less vehicles and thus reduce the inner city traffic to increase the attractiveness of cities. This intention becomes

obvious if one regards the still times of motor vehicles. In the private sector the still time is on average 23 hours per day, while in the commercial sector it is different, as here the average still time of a vehicle is in the segment of freight transport for example about 14 hours. In the service segment, such as taxis or other chauffeur services, the still time is only two hours per day, as drivers take different shifts on the same vehicle.

(2) Young people have changed their priority from having a car as a status symbol to other more technical goods. Especially the young urban inhabitants prefer having the latest edition of a smartphone or electronic-pad over having an automobile. Not to own but to use seems to be the credo in the young urban generation.

(3) People have found other possibilities to get around, so mainly the transport function of a motor vehicle remains as primarily irreplaceable. Car producers such as Daimler, BMW, Peugeot or Ford have recognized this trend and given themselves a new mission not only to produce cars, but to offer mobility. With these mobility offers the borders between individual traffic and public transportation become more intertwined. Car producers even start cooperations with public transport and integrate carsharing models.

(4) With the development of the internet, entry barriers for other means of transportation such as carsharing models were reduced.

(5) In financially difficult situations for the public sector and the due to this fact resulting need to transfer more tax burden onto every individual, a slow or negative economic growth and rising costs for carburant, the desire for owning a second car declines.

(6) The current climate policy favours mobility concepts like carsharing. That is why carsharing can be considered a growing alternative to a private automobile.

(7) When it comes to selling a motor insurance, it is primarily the price of the insurance which is decisive in the sales process and not so much the extent of the coverage.

(8) Price sensitivity of customers remains high.

(9) Aggregators (price comparison portals) create an increased transparency of price and product details. This intensifies the pressure for a competitive pricing for motor insurers.

(10) Due to more technology and assistant systems in cars some accidents are avoided, but the average claims costs rise due to more expensive parts containing technology.

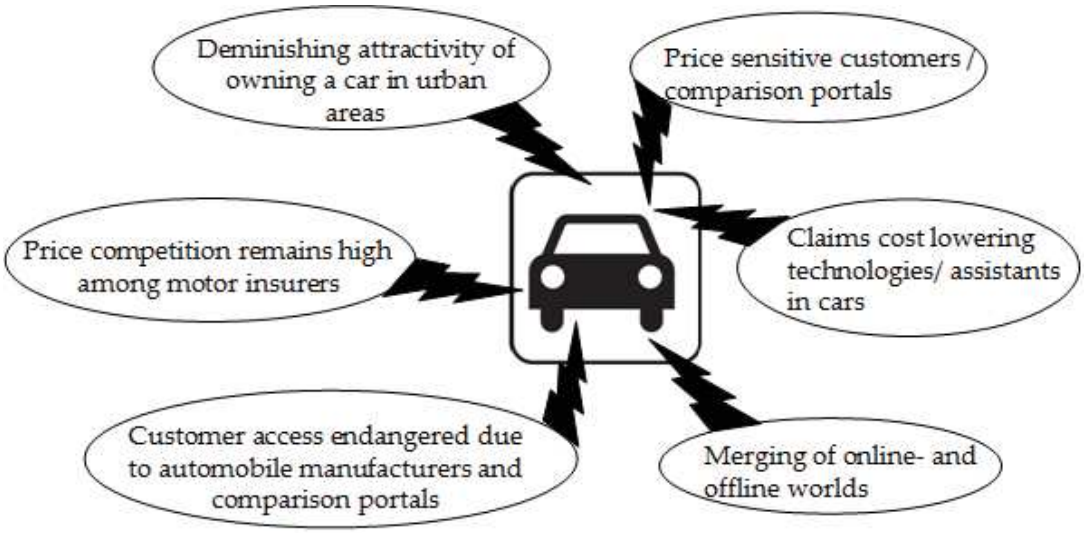


Figure 1: Current challenges for the motor insurance in Germany, author`s graph

The existing literature or conference papers deliver only a fragmental approach of examining the new trend of carsharing in the context with the current challenges for the motor insurers. This study aims to give a detailed insight into this context and draw the big picture of a new trend, which is expected to have a fundamental impact on the motor insurance industry. As the trend for carsharing stands for a general change in mobility concepts, deriving from digitalization and socio-demographic changes, this thesis describes the consequences and the impact that these changes have on the motor insurance. For the first time a fully comprehensive view is provided on this research field, which serves to give the motor insurers a profound understanding of how to align their strategies in the future, as the trend for carsharing can also be transferred onto other mobility

aspects. This opens the opportunity for motor insurers to even take a multimodality approach in their strategy, instead of merely focussing onto cars. The main reason for this can be found in the drastic change in the mobility behaviour of individuals. This change is most visibly reflected in carsharing as here the effects of technical and socio-demographic changes, acting as a catalyst, (Heyen et al., 2015, p. 12) can be observed. Multimodality concepts are expected to replace the traditional concept of using only one means of transportation to travel (Busch, 2013, pp. 6-9). In other words multimodality means that people use a combination of walking, bike, car, public transport, trains or planes consecutively during a trip, instead of using only one form to move around (Brühl, 2015, p. 85). Carsharing is an important element in this concept as the average person makes 3.4 ways per day (55% of that by car) with an overall length of 39 kilometers (Bundesministerium für Verkehr, Bau und Stadtentwicklung, 2010).

In order to assess the chances and risks properly, motor insurers need to gather as much reliable information as possible to evaluate the risks. That is why the aspect of information itself as well as signalling and screening mechanisms are important to make this business model work. The key point is that insurers have to manage the avoidance of opportunistic behaviour by their customers. The motor insurers need to find a reliable flow of information and a suited contractual design in order to keep the costs of the concept as low as possible. Recent literature suggests for a thorough investigation the consultation of the New Institutional Economics (NIE), which regards the effects of institutional arrangements and provides approaches for the solutions of such a given problem. This thesis therefore focuses on the application of these theoretical considerations. Economic agents, or simply agents in this context, are represented by the carsharing customers, whose actions and behaviour have an impact on the motor insurer. The motor insurer is regarded as the principal; the person or rather enterprise, that has the carsharing customers act in his behalf. As mentioned, the aim is to keep the costs for the transactions and therefore a potential residual loss as low as possible for the principal. That is why next to the principal agent theory also the property rights and transaction costs theory has been chosen for this examination.

The findings in literature are completed with the conduct of expert interviews as part of the research design, in order to include the current status of

information and opinions on this scarcely researched topic. The overall objective of this thesis is to examine closely the behaviour and provide knowledge about it of agents and principals in the market of motor insurance, which is being subject to a substantial change. In a further step, the solutions found for the given problems in regard to the NIE-theories are reflected and examined for its validity. The thesis closes with conclusions derived from the findings, followed by recommendations for a future strategical alignment for motor insurers in regard to carsharing.

1.1 SIGNIFICANCE OF THE STUDY

In classic literature or conference papers, only partial information and considerations of the socio-demographic and technical changes in regard to carsharing can be found. There has until now never been a holistic research on this topic connecting all the available information and enriching the data with results from expert interviews. The research carried out in this study took for the first time a comprehensive approach to bring together knowledge found in worldwide literature, as well as practical experiences, to match this with a theoretical view resulting from selected theories of the New Institutional Economics (NIE). The theories of the NIE are considered to have with their assumptions a more realistic approach towards the real behavioural patterns of economic agents than the neoclassical theories. The careful selection of reliable sources for data provides the grounds for a profound research and analysis. The analysis itself was carried out in a qualitative research design and enabled the researcher to derive, by triangulation, reliable conclusions and recommendations. As these findings provide new and expanded knowledge, it represents a contribution for the research of new trends in mobility and the important question of how a whole and substantial business line within the insurance industry in Germany, the motor insurance, should recalibrate its strategic setup. When the term substantial business line is mentioned, it alludes to the fact that the motor insurance in Germany had in 2016 a 2.9% increase in turnover compared to the year before, resulting in a total of 25.9 billion EUR. This represents a share of 7.5% of the overall turnover of 194.2 billion EUR in the German insurance industry, which grew overall by only 0.2% in 2016 compared to the year before (GDV, 2017).

This research provides important and new findings and recommendations for senior managers in the motor insurance in order to reconsider and adapt, where found necessary, their strategy. It is important that such knowledge gets into the hands of the management and not only to the founder of an insurance company or the CEO, in order for the motor insurance company to remain successful in business (Wandosell et al., 2016, p. 454). The knowledge transmitted in this study can also be seen as a blueprint for new forms of mobility and not exclusively restricted to carsharing. Carsharing simply represents the latest developments in mobility behaviour and therefore serves as a well suited example to transfer the discoveries onto mobility aspects in general.

1.2 RESEARCH AIM AND OBJECTIVES

The ongoing socio-demographic and technical changes are of such magnitude that they are expected to induce a break in the demand structure to own a car and thus the need for motor insurance. This represents the key problem for motor insurers on the German market; an expected declining demand for motor insurance. For decades the motor insurance was first a key premium generator for the German motor insurance and second a profit generator, as due to high interest rates not only the technical result was important but also the capital result from the investment of the in advance received premium. Depending on the speed of socio-demographic and technical changes, a slump of up to 45% in the premium income for motor insurers is expected in the near future, representing a drop to 11 billion Euro p.a. (Fromme et al., 2015).

The research aim is to provide with this study for the first time a comprehensive theoretical as well as practical analysis of the driving forces for new mobility concepts and the delivery of recommendations for a motor insurer of how to align his strategy and survive successfully in this difficult and ever faster changing market. Therefore the following research objectives are pursued:

(1) Explanation and categorisation of the theoretical framework of the New Institutional Economics in the context of the research question.

(2) Referencing the New Institutional Economics onto the specific issues of the motor insurance in regard to carsharing.

(3) Selection of a suited methodological approach to analyze the, by the socio-demographic changes induced, issues for motor insurers in Germany.

(4) Enrichment of the data gathering by the element of expert interviews.

(5) Deduction of valid conclusions and provision of recommendations for a future strategic alignment for motor insurers.

1.3 RESEARCH THEORIES, QUESTIONS AND SUBRESEARCH QUESTIONS

The main target of this thesis is to gain new knowledge with the help of three hypotheses, the corresponding research and subresearch questions and with reference to selected theories of the NIE, the principal agent, the transaction cost and the property rights theory. For the testing of these hypotheses the mentioned research questions were formed and for each research question two subresearch questions were designed in order to have a detailed and consistent process to generate findings for this study. The detailed setup of the framework of subresearch, research questions and hypotheses are displayed in the figures 2 and 3 of this subsection. The hypotheses were formed out of an extraction of the essentials of literature, conference papers as the core questions or statements for a motor insurer in order to decide whether or not to engage in the field of carsharing. The content of these hypotheses was validated as indeed being the crucial elements for a motor insurer with the expert interviews.

The derivation of the research questions was conducted from the three formed hypotheses which are:

Hypothesis 1: The information acquired about carsharing customers ex ante and ex post is sufficient to dissolve the fundamental problems of asymmetric information and counteract opportunistic behaviour.

Hypothesis 2: The introduction of trust as a new element will lower the transaction costs in carsharing.

Hypothesis 3: The contractual agreement between the carsharing companies and customers must be detailed to achieve a better risk distribution and encourage safe driving.

The logic of the abbreviations in brackets in the text below is as follows: The first letters specify at which specific theory of the NIE the research question aims (PA = principal agent theory, TAC = transaction cost theory, PR = property rights theory), while RQ stands for research question and the digit behind it identifies the specific research question:

Therefore the out of the above stated hypotheses deriving research questions are:

(PA RQ1) Is there a way that the motor insurers can draw reliable conclusions about the behaviour and driving performance of a carsharing customer?

(PA RQ2) Is there an efficient system to avoid an opportunistic intent of a carsharing customer towards the provider and thus motor insurer mainly ex post of the contractual phase?

(PA RQ3) How can it be assured that the right customers for carsharing companies are selected, as only the customer has full knowledge of his driving performance?

(TAC RQ4) Does the introduction of trust effectively counteract opportunistic behaviour, lead to a more responsible way of driving and to what extent should it be used ex ante and ex post?

(PR RQ5) To what level should contractual agreements be detailed and is an element of ownership a suited self-regulating means to counteract opportunistic behaviour?

The following subresearch questions were formed to find in a more detailed way rationale to the above stated guiding research questions. The logic of the abbreviations in the brackets is congruent with the one of the research questions: SRQ stands for subresearch question; the first digit refers to the relevant research question and the second digit identifies the number of the subresearch question. Therefore as an example, SRQ 2.2 means subresearch question 2 with reference to research question 2:

(SRQ 1.1) Is the carsharing customer willing to have his driving data monitored and how deeply?

(SRQ 1.2) Should there be an exchange of data between carsharing companies and motor insurers?

(SRQ 2.1) Is an individualized or group reward system better suited to enhance driving performance versus a punishment system?

(SRQ 2.2) Is a system of competition helpful to counteract egoistic and risky behaviour?

(SRQ 3.1) Is a brief questionnaire sufficient in the selection phase of carsharing customers, or should it be more detailed?

(SRQ 3.2) Should carsharing companies demand an extra driving test?

(SRQ 4.1) Is trust ex ante in carsharing an appropriate means to lower transaction costs?

(SRQ 4.2) Is trust ex post in carsharing an appropriate means to lower transaction costs?

(SRQ 5.1) How complex should the contract between carsharing companies and their customers be?

(SRQ 5.2) Does a concept of common property help to overcome a double prisoner`s dilemma in carsharing?

The logic of the methodological setup and context of hypotheses, research and subreserach questions are depicted in the following figures 2 and 3. Figure 4 represents an outlook onto the process of data analysis, which is described in detail in subsection 7.3, for the part of the data analysis of the expert interviews. For the analysis of the expert interviews, the specific subresearch questions were examined for their relevance for the codes that were formed and marked accordingly, where relevance was found. Therefore figure 4 displays the key matching table for subresearch questions and codes and serves as a basis for the analysis that was used in this study.

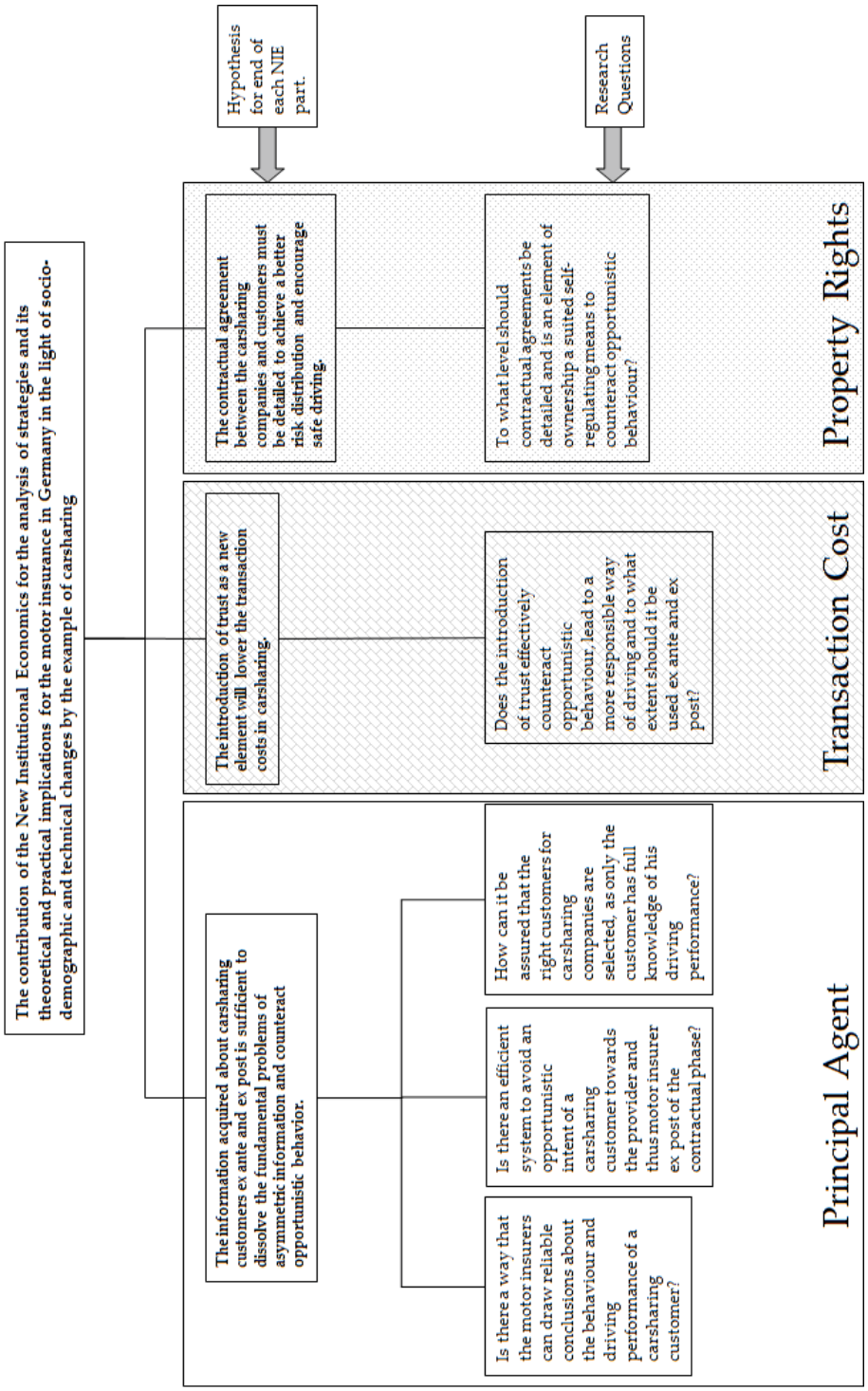


Figure 2: Methodological setup for the research, author`s graph

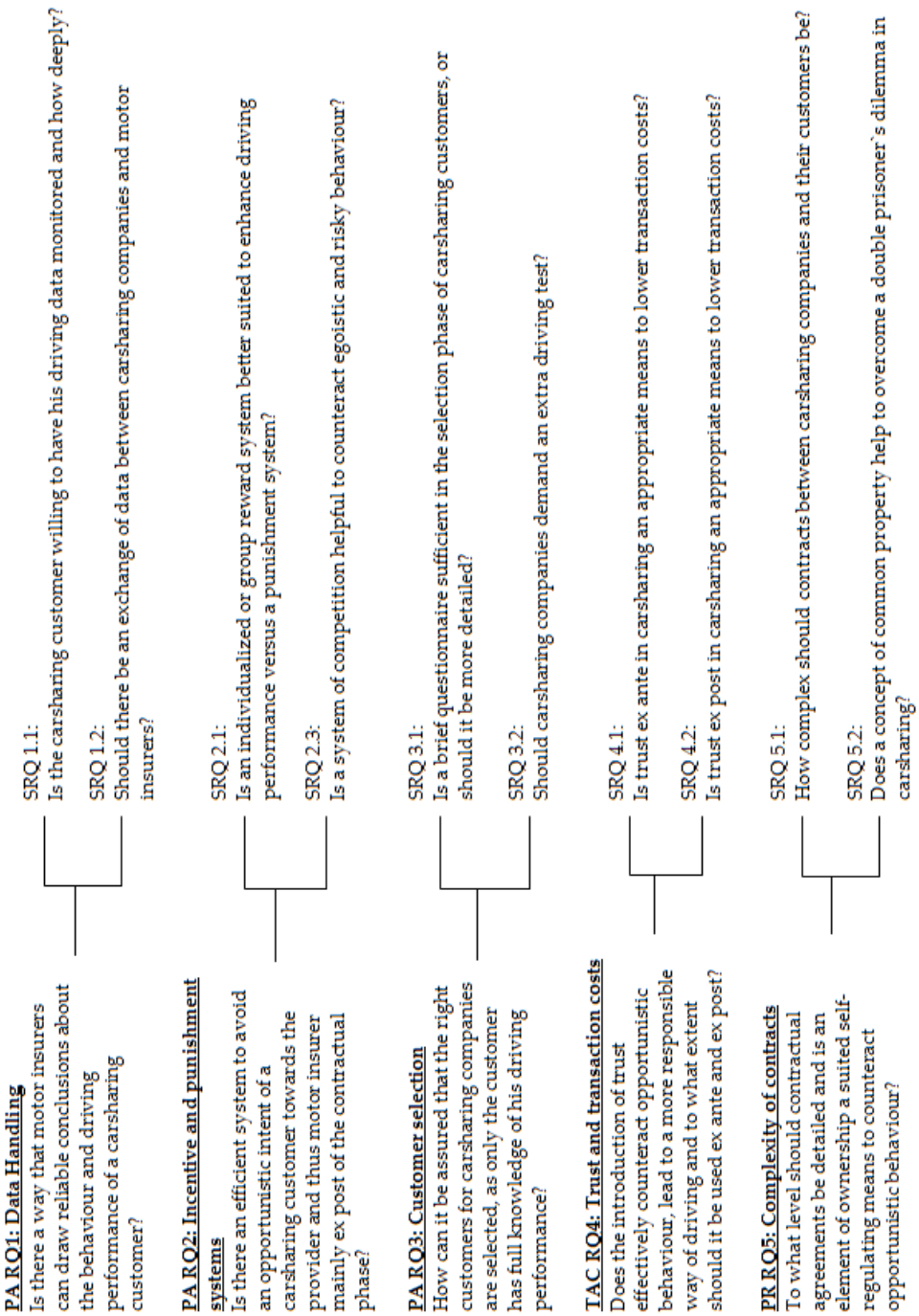
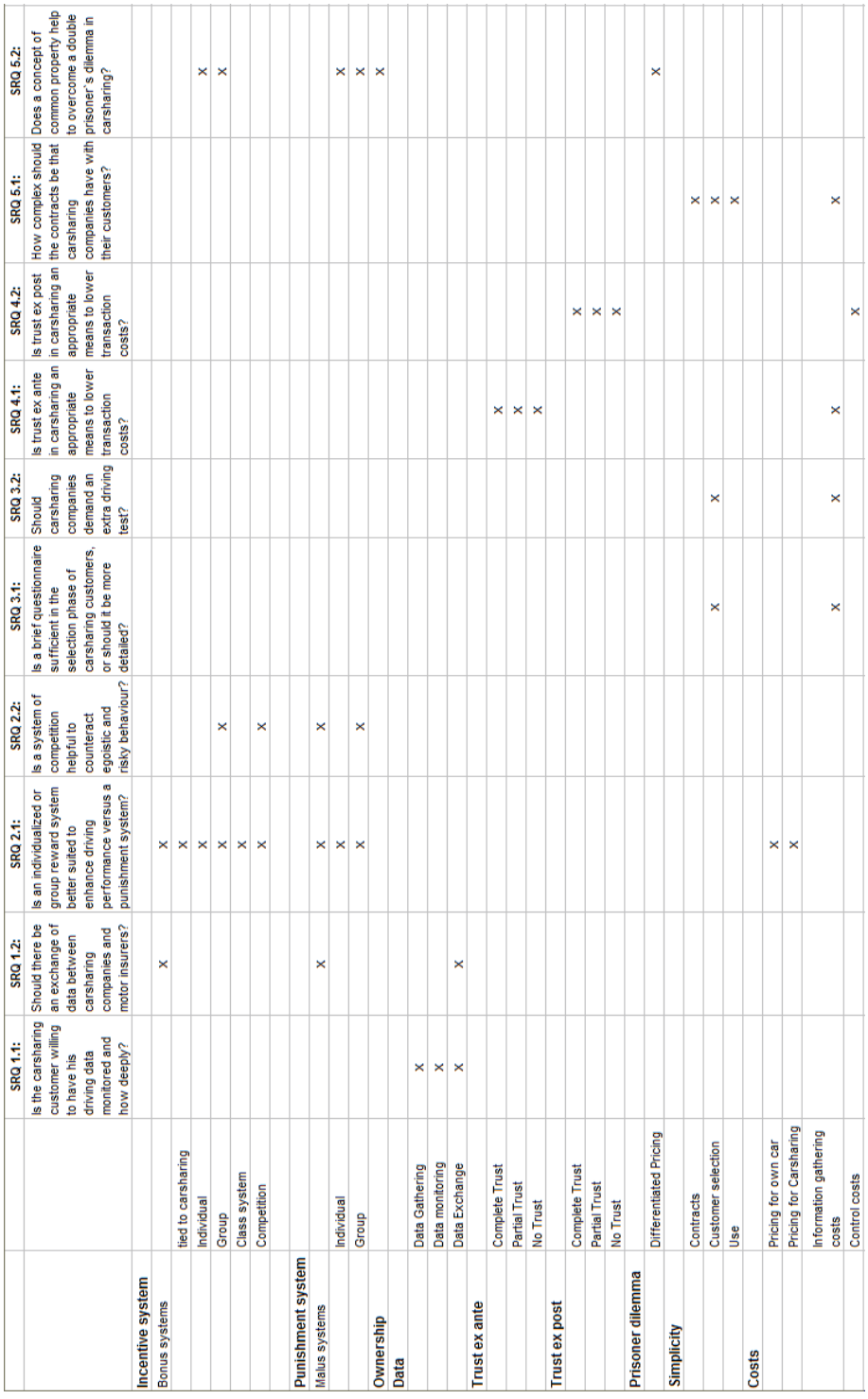


Figure 3: Research and subresearch questions, author`s graph



		SRQ 1.1: Is the carsharing customer willing to have his driving data monitored and how deeply?	SRQ 1.2: Should there be an exchange of data between carsharing companies and motor insurers?	SRQ 2.1: Is an individualized or group reward system better suited to enhance driving performance versus a punishment system?	SRQ 2.2: Is a system of competition helpful to counteract egoistic and risky behaviour?	SRQ 3.1: Is a brief questionnaire sufficient in the selection phase of carsharing customers, or should it be more detailed?	SRQ 3.2: Should carsharing companies demand an extra driving test?	SRQ 4.1: Is trust ex ante in carsharing an appropriate means to lower transaction costs?	SRQ 4.2: Is trust ex post in carsharing an appropriate means to lower transaction costs?	SRQ 5.1: How complex should the contracts be that carsharing companies have with their customers?	SRQ 5.2: Does a concept of common property help to overcome a double prisoner`s dilemma in carsharing?
Incentive system											
Bonus systems			x	x							
	tied to carsharing			x							
	Individual			x							x
	Group			x	x						x
	Class system			x							
	Competition			x	x						
Punishment system											
Malus systems			x	x	x						
	Individual			x							x
	Group			x	x						x
Ownership											x
Data											
	Data Gathering	x									
	Data monitoring	x									
	Data Exchange	x	x								
Trust ex ante								x			
	Complete Trust							x			
	Partial Trust							x			
	No Trust							x			
Trust ex post									x		
	Complete Trust								x		
	Partial Trust								x		
	No Trust								x		
Prisoner dilemma											
	Differentiated Pricing										x
Simplicity											
	Contracts									x	
	Customer selection					x	x			x	
	Use									x	
Costs											
	Pricing for own car			x							
	Pricing for Carsharing			x							
	Information gathering costs					x	x	x		x	
	Control costs								x		

Figure 4: Code and subresearch question matching matrix, author`s graph

1.4 LIMITATIONS OF THE STUDY

Even though a holistic approach was made in the process of the research with the attempt to cover as much literature and conference papers as possible and to also integrate the latest state of informal knowledge of experts to generate a study as complete as possible, it must be pointed out that this study has limitations. The limitations lie in (1) the fact that the attempt was made to cover all available literature, but there is also more secondary literature available which touches issues which are subject to this research, but that were not found by title or key word screening in the library catalogues or internet research. An additional reason for this is that the topic of carsharing is relatively new and that is why the source of literature is limited. Another limitation consists in (2) the choice of n=15 experts who mainly have an insurance background. A greater number of experts with a more heterogeneous background in the professional fields, such as the motor industry or trend research, may have brought differing results. Besides the limitation in the selection process a residual level of bias on the side of the researcher and the experts cannot be fully excluded, irregardless of the fact that all precaution was taken during the research to prevent this. It can also be considered a limitation that (3) the research only focuses on the example of carsharing and does not consider further elements of multimodality.

1.5 STRUCTURE OF THE THESIS

The thesis is subdivided into seven chapters. The construction and order of these chapters follows the proceeding of the research carried out in this study. It spans from the explanation of the basic settings and methodological approach over the investigation of selected theories, the examination of the German motor insurance and carsharing market to the conduction of expert interviews, the analysis of the findings and reaching of conclusions and recommendations.

Chapter I: Introduction and Research Methodology. In the first chapter the current challenges for motor insurers are explained and consequently the relevance and need for this study. This is followed by a detailed description of the methodology chosen for this study and the research design that was applied.

During the course of this description the fundamental arguments of why the decision was taken by the researcher to carry out a qualitative rather than a quantitative approach are covered, as well as an elaboration on the data gathering process by literature as well as expert interviews and how a high degree of validity of the data gathered could be ensured. The first chapter spans from subsection 1.0 to 2.5.

Chapter II: Strategic motor insurance market issues. The second chapter takes a deep dive into establishing a common understanding of strategy and strategic models. The mere theory is then applied onto the research problem and referred to the current challenges of the motor insurance market in Germany. The chapter goes from subsection 3.0 to 3.3.

Chapter III: New Institutional Economics as theoretical framework for the analysis. In the third chapter the theoretical foundation is laid for the study by a classification of the NIE into the current status of research. It is then explained why the NIE, as current literature recommends, is especially suited for this analysis by explaining the background and the assumptions made in the NIE. Furthermore it is presented why the principal agent, transaction cost and property rights theory were chosen for the further analysis. The theories are then examined and explained in detail in this chapter. Before this is done though, the researcher inserted a scientific discourse on the process of literature review and institutions in general to provide a well prepared ground for understanding the following steps. Chapter III spans from subsection 4.0 to 4.5.

Chapter IV: The motor insurance market in Germany in the light of socio-demographic and technical changes; carsharing and implications for motor insurers. The chapter IV gives a detailed overview over the historical development of the motor insurance in Germany, its current situation and the ever faster changing framework conditions in regard to socio-demographic changes and current trends in digitalization or rather technical changes. These factors taken together have a strong impact on the need for motor insurers to adapt their strategies. The illustration of the current situation, its changes and consequently

resulting challenges are followed by an analysis of the carsharing market. The carsharing market acts as a well suited example for the need of reconsidering the existing strategic line-up for motor insurers as it comprises and reflects in compressed form all the current socio-demographic and technical changes and resulting options in mobility patterns. The results can serve as a draft for very similar strategic issues in regard to multimodality and offer the chance to consider a holistic consideration for motor insurers to become mobility insurers, instead of only motor insurers. Chapter IV ranges from subsection 5.0 to 6.4.

Chapter V: Systematics of expert interviews for the theoretical and practical implications and their assumptions and expectations. This chapter explains the methodological concept of expert interviews and their importance in qualitative research. It leads the reader from the definition of the term expert over the method of expert selection to data gathering and the process of coding and categorizing, as well as analyzing the data by computer aided software of MAXQDA. This explanation is completed by a presentation of the selected experts and the formulation of the assumptions and the expectations of the researcher. The latter is done in order to be able to compare the statements found in other sources, which were collected before the data analysis, with the findings after the data analysis of the expert interviews in order to demonstrate and exclude as much as possible the assumption that the researcher could be biased. This step increases the reliability of the findings and conclusions. Chapter V spans from subsection 7.0 to 7.6.

Chapter VI: Main findings of expert interviews with reference to selected New Institutional Economics theories. The chapter in which the main findings are presented is comprised of a critical display of the results of the data analyzed in the expert interviews and compares these findings with the findings in the literature, matching it in a final step with the assumptions and expectations made by the researcher before the process of analysis. Chapter VI is set from subsection 8.0 to 8.7.

Chapter VII: Conclusion and recommendations for the motor insurers in regard to carsharing. Finally in chapter VII the findings of the research are

evaluated and transferred into conclusions that can be reached. Consequently with these conclusions the hypotheses that were formulated in regard to the research questions are tested. These conclusions and the result of the hypotheses testings are the basis for the formulation of recommendations for senior executives of the motor insurance in regard to how to align their strategy with the given framework of changes in the socio-demographic and technical environment in regard to carsharing. These recommendations serve likewise as a paragon to be transferred onto multimodality questions for motor insurers, thus offering a much broader bandwidth for their implication: The entire field of mobility. The chapter VII spans from subsection 9.0 to 9.2.2.

2. RESEARCH METHODOLOGY

Depending on the object or question being subject to the specific research, various methods or techniques of the empirical social research come into consideration for the conduct of the research. The purpose is to test the hypotheses with the research and subresearch questions formulated under the theoretical appraisals in an appropriate manner in order to generate a scientific proof of whether these hypotheses are of profound implication or have to be discarded. The expert interviews serve to countercheck and validate the theoretical information gathered from literature, various conference papers and presentations (Bogner et al., 2002, p. 7).

2.1 QUALITATIVE VERSUS QUANTITATIVE APPROACH

The methodology chosen is of high importance for the level of scientific knowledge which can be concluded from the findings. In other words, the key question is how to proceed in the best way to win knowledge. Is a qualitative or quantitative approach better suited?

According to Wolf and Priebe (Wolf et al., 2003, p. 57) with the comparison of a quantitative or qualitative approach, the fundamental question is addressed in which way social science research in its core principals should precede. These two methodological directions vary in some dimensions, but they do not necessarily exclude each other as they can be combined. In the course of this dissertation a combination of these two methodological directions will not be made as a quantitative analysis would go beyond the scope of this research and can be subject to another dissertation or research paper, as it will be suggested in subsection 9.2.2.

Basically it can be said that the quantitative research is rather object oriented. It strives to identify explanations and cause and effect relations, while the qualitative approach proceeds in a rather interpretative way and focuses on the subject related understanding or paradigm (Lamnek, 2005, p. 194). Other typical

characteristics can be found in regard to the fields of examination (laboratory versus natural environment), or the data format (statistical versus interpretative).

Irregardless of the specific research method, it is of essential importance to apply a methodology, which ensures an approach of systematic data gathering and interpretation in regard to the research object (Atteslander, 2000, p. 5). Systematic gathering of data implies a proceeding guided by fixed rules.

In contrast to a quantitative ticking off of items of a very detailed and fixed plan, in which all necessary work steps have been defined from the very beginning of the empirical study, the qualitative research chooses a circular, explorative strategy (Lamnek, 2005, p. 194). This already hints at which research design may be favourable in this case. Circular implies that a certain number of consecutive research steps are carried out and the respectively next step always depends on the results prior to the step carried out before (Kleining et al., 2001, pp. 13-15). According to Witt (2001) certain research steps are carried out in a determined order several times after each other in a rerun, so that it is a method using a loop system to sharpen and make the results more precise. The proceeding can be characterized as:

(1) Selection of the research method

(2) Selection of the research units

(3) Data collection

(4) Data evaluation

The steps displayed above are interdependent.

In a situation of scarce or lacking scientific information or literature for a topic, as it is the case here, the research has an explorative character. Yet the field of the motor insurance, or especially carsharing, is not a field which is completely unexamined. In the first case, if no information was available, unstructured interview instruments or methods would have to be used, while in the latter case of existing few scientific information, a qualitative approach to analyze the existing data is possible and advisable (Wolf, 1995, pp. 309-329).

2.1.1 Qualitative methods

Krippendorff (1969, p. 103) states that *"Content analysis may therefore be redefined as the use of replicable and valid methods for making specific inferences from text to other states or properties of its source."*

There is no standard definition in literature for qualitative analysis. As a common attribute it can be captured, that the qualitative analysis is the analysis of data material in text form gathered by communication, which needs to be interpreted by a systematic and intersubjectively verifiable method (Mayring, 2010, p. 11). It is therefore an empiric approach of interpretation controlled by set methodical rules of small or larger text corpora, where its content is analyzed by equally set rules without lapsing over hastily into quantification (Mayring, 2000). In contrast to a quantitative analysis the aim is not to identify numeric interdependencies, nor to stand in a representational way for a main unit or test pool, but to explain and understand by its own interpretational method human behaviour (George, 1959, p. 7). It is based on the objective hermeneutic approaches and grounded theory, taken up and developed further in the 1980s by Philipp Mayring. These developments of Mayring will form the basis of the methodological approach of the interpretation of data in this research paper.

Qualitative interpretative methods are not a homogeneous group, as they can be carried out in very different forms, e.g. interviews, qualitative observation methods, single case analysis, or qualitative content analysis, depending on the individual goal of the specific research. As mentioned above a normative character that all qualitative methods have in common in comparison to quantitative methods is that they have a more result open approach to the object of research. This can change though during the research process. The reason for this is that this research method offers the possibility to approach the research object as openly as possible. Through this openness and flexibility new and until then undiscovered phenomena or circumstances can be revealed (Flick et al., 2011, p. 28).

In the center of qualitative research methods lies the desire to let the target group of the research speak for itself in order to record their intrinsic motivation for a specific action. The primary presupposition is that every individual is a self-reflexive subject, who can act as an expert for him or herself (Lamnek, 2005, p. 120 et seqq.).

The central aim of qualitative analysis is to develop through an explorational approach new theories or models. Exploration means the comprehensive and in depth examination of the research field (Kromrey, 2009, p. 67). As a result of this, qualitative research methods show strong tendencies of an inductive proceeding. As an entirely free exploration is not possible unless at least certain presumptions are made at the beginning of the research, one speaks today of a so called "analytical induction" (Bühler-Niederberger, 1985, p. 475). It represents an amalgamation of inductional and deductional steps. This means data gathering on the basis of before the research phase set and theoretically founded steps. Such methods like Philipp Mayring developed, enable a qualitative analysis, which allow the connection of qualitative and quantitative research steps and offer important ways to bridge the traditional gap between both methodological approaches.

2.1.2 Quantitative methods

An important prerequisite for the use of quantitative methods is the disposition of extensive scientific information regarding the object of research. Therefore it is advisable to use this method in a field where already a lot of research has been carried out, so that the approach has more a validating than an explorative character (Backhaus et al., 1994, p. XIII).

Similar to the qualitative methods, the quantitative methods must also satisfy the postulate of being objective and systematic, but they are in contrast to qualitative methods measurable (therefore quantitative) and fixed (Lamnek, 2005, p. 494). This allows comparing and analyzing context by the use of numbers and mathematical operations. Specific methods for this can be found in the field of data analysis (Stegmüller, 1970, p. 19). That is why for such an approach already at the beginning of the research process set theories or models about the object of the research must have been created. Subsequent to that hypotheses are deduced and tested in the following research steps. To be able to test them, the hypotheses are operationalized and measurable indicators are formed (Streitferd, 1983, p. 171). Alongside a specific research design, the methods of data gathering, the dependent and independent variables, as well as the measuring operations are defined.

In the context of these preparations the data gathering is carried out with the peer group in order to record the values of the ex ante defined indicators (Friedrichs, 1973, p. 97). The analysis of this data is carried out by statistical operations and reference to control groups in order to extract possible factors that would produce false results. The quality level in the sense of precision and validation is secured by a significance test and the results are in an aftermath referenced and compared back to the theoretical model and adequately interpreted.

2.2 SELECTED RESEARCH METHOD AND RESEARCH DESIGN

The crucial choice the researcher has to make in order to design his or her research work is the choice for the adequate research method or paradigm (theory). It is the way that will bring the light of understanding (epistemology) onto what is (ontology) or in other words what is being researched (Maasen et al., 2012, p. 72). The paradigm comprises a distinct methodological strategy which is connected with the hypotheses formulated in the research. The paradigm which is subject to this study gives room for interpretation. As pointed out above, there is first of all the need to discover what coherences exist between the identified economic individuals in order to understand what strategy options a motor insurer has on the German market in regard to carsharing. According to Ponterotto (2005, pp. 130-131) the state of what can be observed, what is, the ontology, is a product of social interactions, therefore the paradigm is subject to interpretation which concludes that in such a situation an explorative method, a qualitative approach, is best to be chosen.

As the researcher needs to select the appropriate method for the given problem, it is necessary to assess the respective advantages and disadvantages of the research methods (Eisend et al., 2017, p. 103). The following compilation gives an overview over the advantages and disadvantages that qualitative and quantitative approaches have:

	Qualitative Methods	Quantitative Methods
Advantages	- Flexible application of the method. - The openness of this approach enables the researcher to discover so far unknown matters. - By personal interaction it is possible to investigate background information or clarify uncertainties. - High degree of the validity of content by a not predetermined approach. - More in depth information by an open interview.	- Results that can be quantified exactly. - Determination of statistical correlations are possible. - Possibility to examine a large sample and to get therewith representative results. - Low costs, small amount of time necessary. - High validity of results due to the possibility of a large sample group. - Higher objectivity and better comparability of results.
Disadvantages	- Time and cost intensive. - The requirements towards the interviewer or observer are relatively high. - The analysis of the data is, especially in comparison to the quantitative method, relatively complex.	- No flexibility during the course of the research due to the standardization of the research situation. - One does not determine the cause for a finding. - One does not receive any suggestions for improvement.

Table 1: Comparison of qualitative and quantitative research methods, source: Wolf, 1995, pp. 309-329 and Glaser et al., 2010

A comparison and evaluation of the above displayed research methods in regard to an analysis of the strategies of the German motor insurers by using the example of carsharing leads to the conclusion that a qualitative research method is the most suited method. It is a qualitative paradigm with which this study is faced, as it will give a deep understanding and rely on findings, which derive from empirical research, as well as the situation as it presents itself through the market and in the eyes of the most important participants in this market. The prerequisite for a quantitative approach is not fulfilled, as no fixed theories or models exist in regard to the research question, which could be empirically tested. It is the qualitative research method which provides a better way of understanding within an interpretative paradigm (Christie et al., 2008, p. 25).

To sum up from the discussion above, the main reasons for the use of a qualitative research method for this research are:

(1) Not a lot of scientific information or literature is available as this is a fairly new research object.

(2) The work has an explorative character, therefore behavioural patterns are involved, to be discovered and explained.

(3) Experts have a deep knowledge, which is most likely suited to bring the most cognitive awareness to the research questions.

The research design itself can be described as the framework in the quest to find answers to the research question. Therefore the choice of the research design is important, as the choice of the particular instrument of investigation directly influences the quality of the result (Robson, 1993, p. 39). The research design includes all steps that are taken during the investigation process and covers the string of action from a review of the literature, the methodology, as well as the gathering of empirical data and the analysis of this data (Eriksson et al., 2008, p. 35). The research question itself forms the nucleus of the research design (Maxwell, 2013, p. 76).

Resulting from the scarce or sometimes even lacking classic literature on the subject of carsharing, this study has the explained explorative character. This means that the instrument of interview (expert interview) will be used in combination with a triangulation towards the existing literature or conference

papers. With this research design, the researcher is best suited to find out about the real motives of the decision takers or customers of carsharing in this case. Expert interviews are more appropriate, as the use of questionnaires instead would require a high level of previous knowledge, which does not exist here. This backs the decision for a qualitative approach, as the requirement is that at the beginning of every scientific procedure always stands a qualitative step (Lewin, 1981, p. 97). It is the suited process of gathering the necessary information to test the research questions. Kromrey (2009, p. 67) expresses it as follows: *"Exploration marks the extensive and in depth investigation of the research field […]"*. By the means of expert interviews the necessary information to test the research questions is gathered (Diekmann, 2001, p. 30). The method of collecting data through interviews is considered to be a very precise method in qualitative research (Lamnek, 2005, p. 329).

As qualitative research often relies on small numbers of samples, it bears the danger of having too few or the wrong samples, thus reaching the wrong conclusion (Daymon et al., 2010, p. 211). Therefore the research design chosen relies on purposive selection, secured by snowball sampling, instead of strictly applying random sampling. Purposive selection means that the candidates were not chosen by chance for the interviews, but instead with a clear focus on a possible maximal contribution to this research. This can be criticized as being judgmental, but the purposive selection fulfils the criteria which are postulated by Maxwell for a successful and more specific form of interview. Maxwell`s five postulations are (Maxwell, 2013, pp. 98-99):

(1) Reception of more reliable data.

(2) Receiving the data from the right people, meaning the ones who are of most relevance in the representation of the group examined.

(3) Examining the results with the theories that were developed during the research.

(4) Comparison of the statements made by the members chosen for the interview, to improve the quality as unforeseen phenomena can be discovered.

(5) Development of explanations for the causes of the statements.

As mentioned, in order to secure the reliability of results of the interviews, the purposive selection is completed by an application of snowball sampling. According to Bailey (1994, p. 96) snowball sampling means that an expert who has been interviewed names one or more other experts who could also be interviewed. An additional step is added to increase the validity of the results from the expert interviews even more. It is the step of member checking. Lincoln and Guba (Lincoln et al., 1985, p. 314) pointed out that member checking is an important part to ensure the validity and reliability of the collected data. Member checking means that the researcher presents the data collected to the member, either during the interview process, or at the end of the research to get the feedback reaction of the member and to derive thereof an assessment about the accuracy of the collected data (LeCompte et al., 2010, p. 62).

To give an overview, in this study, the research design comprises, besides the step of literature review, the following steps:

(1) Development of an interview guide.

(2) Selection of the members for the interviews.

(3) Execution of the expert interviews with recording during the interview.

(4) Transcription of the interviews.

(5) Member checking in order to get a feedback on the validity of the collected data.

(6) Analysis and assessment of the data with triangulation and testing of the formulated theoretical hypotheses.

2.3 DEVELOPMENT OF SCIENTIFIC HYPOTHESES

Scientific hypotheses are cause and effect relations and as such a central element for theories, an integral part of the research design and function as a structuring aid for a research project. Hypotheses therefore serve as essential components for the conceptualization and operationalization of a research topic with its core theoretical constructs.

The word hypothesis derives from Greek and can be translated as imputation. It contains assumptions about the validity of certain cause and effect relations for the explanation or prognosis of real issues (Krüger et al., 2014, p. 400).

According to Popper (1994, p. 3) the work of a researcher consits in the setting up of sentences or systems and their need to be checked against experience, observation or experiments. Stegmüller (1980, p. 284) expands this definition by stating that hypotheses are statements that are not recognized with certainty as true, but are assumed for certain purposes, such as scientific explanations or predictions.

The formulation of the hypotheses in this study, which are examined and tested in subsection 9, have each undergone the necessary pre-stages of a scientifically clean formulation of a hypothesis. This means that first the development of a thesis is done, followed by the formulation of a working hypothesis until finally the hypothesis can be built. The steps of the pre-stages are not further explained in this research paper.

In differentiation to general statements and general assumptions, literature (Opp, 1999; Spies, 2004; Borg et al., 1989; Hussy et al., 1994) defines a research hypothesis as a scientifically formulated statement about an assumed cause and effect relation. It relates to a singular occurrence as effect, that happened due to the existence of certain boundary conditions in the form of causes, which are partly influenceable areas of action (if-component 1) and to some extent situative circumstances (if-component 2) with a high degree of specificity. At the same time they have a high level of general validity on the basis of regularity (if-then relations). Statements and assumptions can therefore be called a hypothesis if they fulfil all four of the following characteristics (Opp, 1999; Spies, 2004; Borg et al., 1989; Hussy et al., 1994):

(1) A hypothesis relates to a real fact which can be empirically examined.

(2) A scientific hypothesis is generally valid, and not only in regard to an individual case or a singular occurrence, claim or statement.

(3) A scientific hypothesis must have, at least in an implicit way, the formal structure of a sensible conditional clause (if-then sentence or rather the-the sentence).

(4) The conditional clause must potentially be falsifiable, which means that occurrences must be possible that contradict the conditional clause.

In this research, hypotheses serve to be reflected and tested against the findings of research- and subresearch questions in order to test if a falsification is possible and to transfer the result of the testing to draw a conclusion of the main research question.

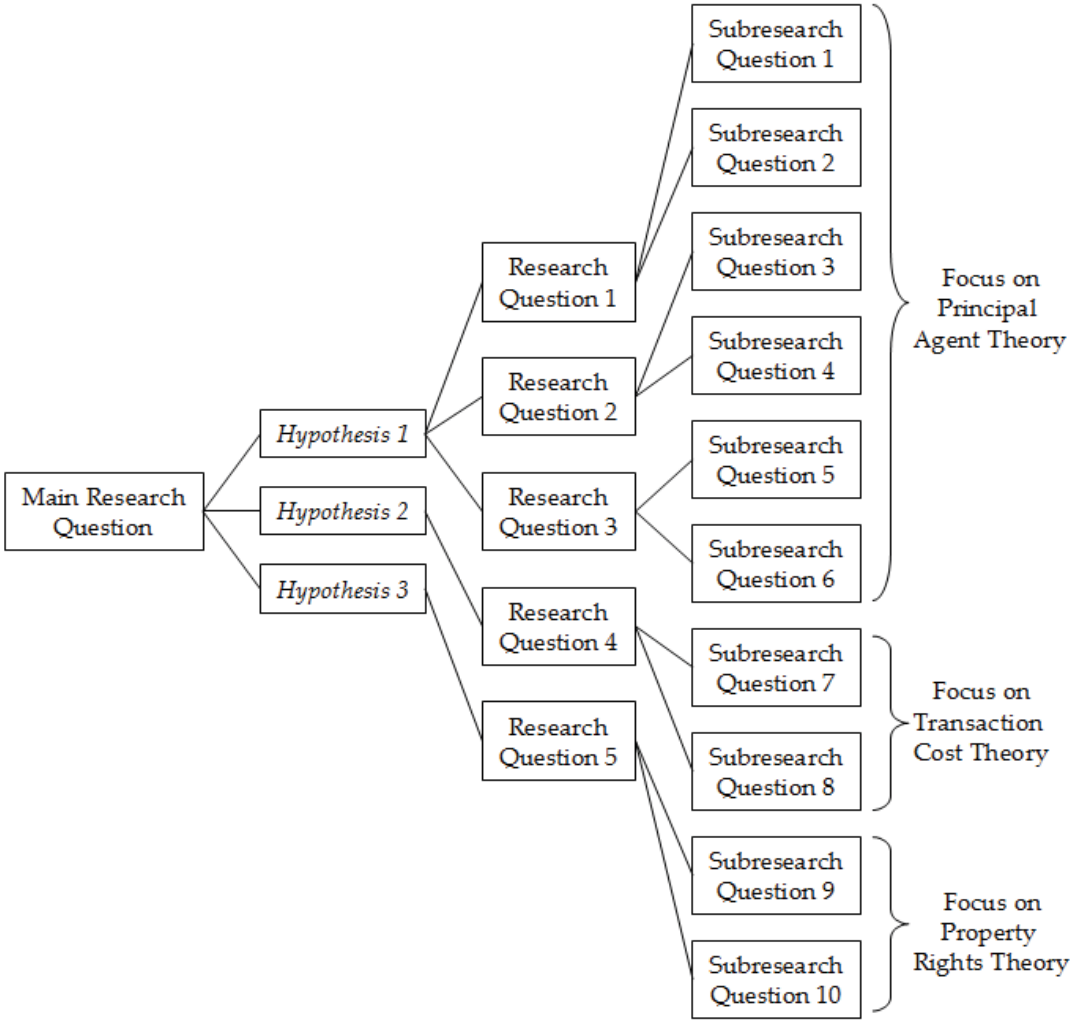


Figure 5: Structure of hypotheses testing for this research, author`s graph

Hypotheses:

For this study the following hypotheses were formulated as a derivation of the research question:

- Hypothesis 1: The information acquired about carsharing customers ex ante and ex post is sufficient to dissolve the fundamental problems of asymmetric information and counteract opportunistic behaviour.
- Hypothesis 2: The introduction of trust as a new element will lower the transaction costs in carsharing.
- Hypothesis 3: The contractual agreement between the carsharing companies and customers must be detailed to achieve a better risk distribution and encourage safe driving.

Conditional clauses:

- Hypothesis 1: If the information acquired about carsharing customers ex ante and ex post is sufficient, then the fundamental problems of asymmetric information and opportunistic behaviour can be dissolved.
- Hypothesis 2: If trust is introduced as a new element, the transaction costs in carsharing can be lowered.
- Hypothesis 3: If the contractual agreements between carsharing companies and customers are detailed, a better risk distribution and safe driving is encouraged.

Falsifiablity:

- Hypothesis 1: The information acquired about carsharing customers ex ante and ex post is not sufficient to dissolve the fundamental problems of asymmetric information and counteract opportunistic behaviour.
- Hypothesis 2: The introduction of trust as a new element does not lower transaction costs in carsharing.
- Hypothesis 3: The contractual agreement between the carsharing companies and customers does not have to be detailed to achieve a better risk distribution and encourage safe driving.

The hypotheses in this study are tested with an abductive approach. The concept of abduction was entered into the scientific debate by Charles Sanders Peirce and describes the process of a formation of an explanatory hypothesis (Ejsing, 2007, p. 115). According to Reichertz (2013, p. 131) this concept follows a three-level finding rationale and expands the findings. Three-level rationale means that the starting point is the result as step one. The second step is the step of developing new rules in order to explain the results that are unexpected or cannot be explained. A third step is then taken to verify the new rules in order to ensure that the observation is part of the new rule and that the new rule is consistent and convincing. In the recent scientific discussion, this process is mentioned in context with the term conclusion or finding of the best explanation. Abduction can therefore be considered to be synthetic as it concludes from a result onto a rule and then onto the specific case (Schubert, 2009, p. 350). As the result is a singular occurrence, it can be criticized that the concept of abduction has a high risk of fallibility and that it is sheer presumption without proof (Psillos, 1996, pp. 31-47). Peirce considered the abduction as the starting point of the knowledge process. He, just as Popper, also assumes general fallibility, but in contrast to Popper saw the knowledge on the basis of an abductive perception not as static, a state or a fact, but as a process. While Popper examined the logic of research, Peirce focused on the logic of discovery (Burks, 1997, p. 497).

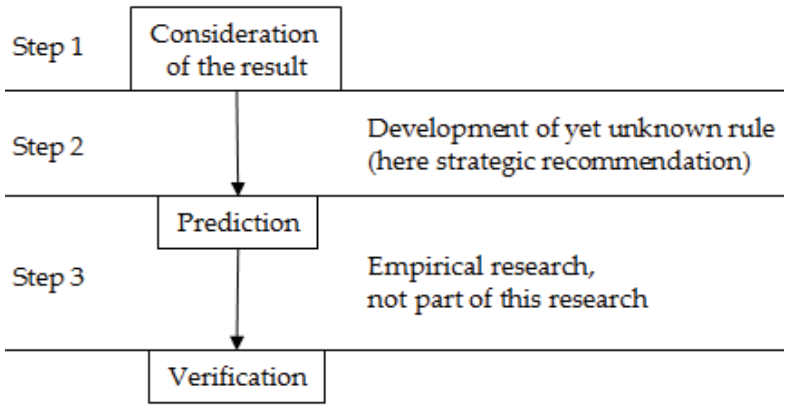


Figure 6: Concept of abduction, author`s graph, based on Fann, 1970

Following the concept of abduction for the testing of the hypotheses in this research, it means that the starting point is the result, which is shown in subsection 8 in the main findings and concluded in subsection 9. The second step in the three-layer approach was said to be the development of new rules. In this case the development of new rules represent the recommendations for the strategy of motor insurers in regard to carsharing on the basis of the NIE-theories. The third step consisting in a verification of the new rules, or rather the recommendations given is an empirical one. It has to be executed without contradictory findings to verify the rules or recommendations. This step is addressed in subsection 9.2.2 under implications for further research, as the empirical part of quantitative testing of the hypotheses is not subject of this research. This opens the possibility for a further research to take this specific quantitative approach in order to verify the given recommendations.

2.4 SYSTEMATICS OF DATA GATHERING AND RECORDING

In this study the empirical process of data gathering consists on the one hand in a thorough literature review. On the other hand, as this research field is yet to a large extent unexplored, the data gathering process was expanded and enriched with the element of expert interviews to gather and record new data. The results of these expert interviews are in the following subject to triangulation with the literature reviewed later on, when analyzing the findings in chapter VI.

In order to get the best results from the interviews, the researcher does not use a fixed questionnaire with static questions, but instead the interviews are carried out with designed guidelines (guided interview) for the participants to be asked by the interviewer (Schnell et al., 1995, p. 352). There are no in advance formulated questions and there is no order in which questions are asked. In the introductory part of the interview the researcher explains again (in a preliminary talk or mail this was already addressed to the expert in order to get his or her consent to participate in the interview) why this interview is held, that all data will be treated confidentially and anonymised, and that the interview will be recorded. To keep the flow of the interview, the interviewer (the researcher) motivated the interviewee during the course of it by listening attentively, nodding to signal

understanding, repetition of the last sentence said or paraphrasing (Lamnek, 2005, p. 340).

The guidelines for the interview were not distributed in advance to the participants in order not to influence the course and the result of the interview. During the interview, the interviewer referred to the interview guideline, not to forget relevant aspects (they are always the same in every interview) in the course of the interview. The interviewee was asked to speak as freely as possible about the subject and state his or her opinion. If during the interview relevant aspects were not touched or only touched slightly by the interviewee, the interviewer asked further questions, following the demand of Kromrey (2009, p. 364).

The form of the interview can therefore be characterized as a partly standardized open interview. Partly standardized refers to how the interviewer proceeds during the interview (Mayring, 2010, p. 66). Open means that this form gives the interviewee the chance to state his point view and opinion willingly and to let him or her emphasize what he or she considers important concerning the questions asked.

By using this methodology it is ensured that all relevant issues are addressed, without disturbing the flow of the interview by fixed pre-formulated questions.

2.4.1 Ethical considerations for member interviews

In order to get the best quality in answers apart from the process of the sheer gathering of information, ethical concerns also need to be considered (Goddard et al., 2005, p. 49).

Confidentiality is an important issue in connection with the data analysis of the expert interviews (Padgett, 2008, p. 105). This is why the experts were always informed and made aware of how the data is gathered, what happens with it during the research process and that a member check for validation is carried out with them, which gives them the chance to intervene if a part of the statement may have been acoustically misunderstood by the researcher. To keep the confidentiality the interviewees were made aware that all of their remarks are made anonymous in the process of data analysis and in the publication of this study.

2.4.2 Transcription as basis for the analysis

The researcher followed the recommendation to record and transcribe the interviews afterwards instead of summarizing the interviews in the form of minutes from notes taken during the interview. It is estimated that a lot of information is lost otherwise if notes are taken while the researcher is busy writing and cannot listen attentively all the time (Bogner et al., 2014, p. 40). To avoid this loss of information the interviews were recorded and then converted into a written text form by transcription (Ehlich et al., 1976, pp. 78-105). Transcription is the conversion of the complete and literal collected oral data in audio form into a written form in order to be able to subsequently code and analyze it (Poland, 2001, p. 629).

Following the suggestion of Mayring (2010, p. 55), the following rules were applied for the transcriptional process:

(1) The text is to be thoroughly and literally transcribed. Incompleteness and repetitions are kept.

(2) The focus is on the content; expletive words such as "ah" are left out, while real dialect expressions are written as heard.

(3) If something was not understood it is marked by three points in brackets (…).

(4) Pauses or stagnations in the interview were marked with a dash in brackets (-). Longer pauses have more dashes.

(5) Peculiarities such as laughing, extensive throat cleaning noises without physical necessity, etc. are commented in bracket (laughing).

(6) Also nonverbal peculiarities are marked in the same way in brackets.

(7) By using abbreviations at the beginning of each oral contribution, it is marked who is talking.

2.4.3 Triangulation

Triangulation describes a research strategy in which various sources are used in the examination process of the research question in order to create the highest validity possible (Bryan, 2006, pp. 97-113). It means that the researcher tries to find

for the same research question different ways for solving the problem and compares the results. As described by Bryan, the aim of triangulation is to reach a higher level of validity in the research results in order to reduce systematic errors (Blaikie, 1991, p. 115). As of today the method of triangulation is besides the sequencing, in which the qualitative and quantitative research strategies are applied after one another (sequentially) and the hybridization, in which the methods can hardly be separated from one another analytically, a central field of the combination of methods in social science (Fielding et al., 2001, p. 11).

Jick (1979, pp. 602-611) summarized in an essay five main advantages of triangulation

(1) The researcher is more able to trust his results. This is the general advantage of a multi-method research design.

(2) It can have a positive effect on the encouragement to go new ways in regard to the methods applied in order to apprehend a problem and harmonize it with traditional data collection methods.

(3) Differing viewpoints of a phenomenon can be discovered. This enables the researcher to overcome the problem, that these viewpoints do not fit a certain theory or a certain model.

(4) The use of multi-methods offers the opportunity to merge theories or integrate one theory into another.

(5) It enables the researcher to decide between rivalling theories by testing their comprehensiveness.

Triangulation provides a more detailed understanding of the phenomena (Cooper et al., 2008, p. 185) restricts and softens biases that can exist, offering a larger perspective to the researcher (Willis et al., 2007, p. 219) and ameliorates the validity of the conclusions drawn (Lee et al., 2008, p. 239) as different sources are regarded parallel. Triangulation is applied in this study by the comparison of results of the literature research in regard to the theoretical approach of the new institutional economics, literature in regard to motor insurance and carsharing, as well as the statements made by the experts in the interviews.

2.5 CONCLUSION

As the research field of motor insurance in regard to carsharing is a rather unexplored one, there is only scarce literature available. The researcher cannot rely on a wide range of data, which is a prerequisite for a quantitative approach. Therefore an explorative approach is advisable, for which a qualitative method is best suited in order to discover the mechanisms of action. As qualitative and quantitative approaches do not exclude each other, but can be combined in order to secure a high degree of validity in the findings, the researcher chooses the explorative qualitative approach and gather empirical data in order to prepare the grounds for a quantitative approach to this topic for another research. Yet to provide as much validity as possible in the findings of the qualitative approach, the method of triangulation is applied in order to match the findings in the existing literature and conference papers with the findings of the expert interviews and derive out of this process the conclusions and recommendations. The research design of the examination of the research question in this study is built up as a gradual procedure that takes subresearch questions, referring to selected NIE theories, as a basis to examine the superordinated research questions, which are designed to test the hypotheses for every one of the selected NIE theories in order to find answers for the research question. The expert interview is carried out in the form of a guided interview and not with a fixed questionnaire to give more room to the interviewees to bring in or stress statements which are important from their point of view and that should be included. The validity of the interview results is increased by the method of snowball sampling in the selection process and member checking after the conduct of the expert interviews. Confidentiality of each expert is ensured as all results are anonymized to comply with ethical considerations in research. The content of the expert interview is first recorded with an electronic recorder not to lose any statement, then literally transcribed and afterwards analyzed. By the use of triangulation a further step is taken towards a higher validity of the findings and thus conclusions and recommendations, as a match is made between the results of the literature review and the expert.

3. STRATEGIC GERMAN MOTOR INSURANCE MARKET ISSUES

Until the era of a regulated insurance market in Germany ended on July 29th 1994, the motor insurers were conducting their business in a rather protected environment, without the possibility to deviate in a considerable way with their products or conditions from the competition. The regulated insurance market also protected the German insurers from the intrusion of non-German insurances onto the national market. This date, July 29th 1994 was the beginning of an ever faster growing need to find answers for a new and superior strategic alignment in order to stay ahead of other motor insurers. Even though the pressure of profitability in terms of pricing has always been very intense in the business line of motor insurance, but the pressure increased even more from that date on (Morawetz, 2014, p. 11). Especially the development in later times showed, that the socio-demographic and technical changes (digitalization) have taken a notable impact on the behavioural and buying patterns of people, adding to the complex challenge for motor insurers to reinvent their strategic orientation. It has become not only a virtue, but an incremental necessity for motor insurers to adapt to these profound changes and find new strategies for dealing with these challenges (Naujoks et al., 2012, p. 4).

3.1 PRINCIPLES OF STRATEGY

To describe strategy in a nutshell is extremely difficult, but the following quotes give a very good impression of what will be defined and discussed in the course of this research. Chandler focuses in his definition of strategy by emphasizing the necessary consideration of the allocation of resources. He (Chandler, 1962, p. 13) states: *"Strategy is the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out those goals."*

Hill and Jones (2010, pp. 19-20) take an even more differentiated approach, as they subdivide strategy into four different categories:

(1) Functional-level strategies

(2) Business-level strategies

(3) Global strategies

(4) Corporate-level strategies

In the following research the focus lies on the corporate-level strategies, as it is the key question that motor insurers have to deal with to take a decision if and to what extent they want to be involved in the German carsharing market.

The organizations in the world of today find themselves operating in an environment which is changing, especially due to digitalization, faster than ever before. It is therefore their task to analyze the implications of these changes and modify the way that the organization reacts to them. That is to develop, implement and constantly challenge their strategy. The key purpose is therefore to develop characteristics in product or price that create a competitive edge over the competition, a unique selling proposition, which is based on clear criteria of differentiation (Nilsson et al., 2005, p. 19).

3.1.1 Definition of the term strategy

The term strategy is used manifold in the literature. There is no standard definition one can refer to. One can find a large variety of semantic, content or procedural differences with very different meanings and implications, which require further investigation. The common denominator of all the different variations in use of that term strategy is the fact that it describes a form of master plan to tackle future challenges.

In some sources strategy for enterprises is set almost as a synonym for the term marketing (Meffert, 2000, p. 8). Consequently it is remarkable that there is still a large inconsistency and diversity of opinion in the discipline of strategic management. Even after a 50 year development phase there is no tendency of harmonization or convergence for that term. In these 50 years there has been a diversified scientific discourse about strategic management and its controversial

interpretation. The common understanding that could be reached is the perception that the strategy of a company reflects its planned actions in order to reach a mid- and long-term goal. For the definition of mid- and long-term goals, literature refers to mid-term as 2-4 years and long-term as 4-8 years (Söbbing, 2015, p. 351).

3.1.2 Historic background of the term strategy

Historically the term strategy derives from ancient Greek political philosophy (Welge et al., 2000, p. 18) *"στρατηγία" – stratēgia"* which was used to describe generalship or leading an army (literal translation: office of general, command, generalship) and later to describe the general governance of a state. The term strategy reappeared in military history in the 19th century in connection with a Prussian general and military theoretic, Carl Philipp Gottlieb von Clausewitz. His theories were taught in military academies and later found their way into corporate management and marketing. Von Clausewitz (1832, p. 115) stated: *"The strategy must give the whole act of warfare an aim why it is carried out, i.e. it designs the battle plan. It must move along into the field to order the single acting unit on the spot right there and to make the necessary modifications for the entity as a whole."*

Before elaborating on strategy in more detail one must make a clear separation between the terms:

(1) Strategy

and

(2) The strategic positioning for a company and operational effectiveness.

While strategy describes the overall approach of choosing between action alternatives, operational effectiveness is defined according to Porter as performing similar activities in a better way than competitors perform them. Strategic positioning is defined as performing different activities of rivals or performing similar activities in different ways (Porter, 2011, p. 2). This distinction shows that in the latter case the focal point is on the amelioration of processes, whilst the strategy itself determines the fundamental alignment and its actions of a corporation. It means that it requires a deliberate choice for a set of activities to deliver a unique and desired mix of values.

3.2 STRATEGY MODELS

After the Second World War primarily in the United States elements of strategic planning appeared for the first time in companies. The concept of strategic thought was initiated with the LCAG model (named after its developers Learned, Christensen, Andrews and Guth) in the nineteen sixties (Learned et al., 1965, p. 21). The key characteristic of this model is essentially an element of dichotomy: Strengths/weaknesses on the one side versus opportunities/threats on the other side. This conceptual approach was not fundamentally changed with the introduction of the BCG-matrix in the 1970s.

(1) BCG matrix: The BCG matrix was developed by the Boston Consulting Group (BCG) and reduces the strengths and weaknesses to only one variable: The market share. The opportunities and threats are also reduced to only one variable: The rate of growth in the market. This approach is based on the product life cycle theory which examines the product portfolio of a business unit in regard to what priority should be given to each product (Hutzschenreuter, 2009, p. 368).

Other developments such as the ADL approach or McKinsey matrix made this rigid system more complex.

(2) ADL: The ADL portfolio management approach was developed by Arthur D. Little from whom it has its name and is also based on product life cycle thinking. It uses the elements of business strength assessment and environmental assessment (Paley, 1999, p. 155).

(3) McKinsey matrix: The McKinsey or GE matrix performs a business portfolio analysis on the strategic business units of a corporation using the dimensions of market attractiveness and business unit strength with the specifications of high, medium and low (Grant et al., 2005, p. 258).

Porter took up the paradigm of an exclusive approach by the market that derived from the idea that alone the circulation of monetary liquidity between businesses of unequal maturity conforms to the longstanding practice of industrial holdings, and represents a real theoretical contribution. From this paradigm, the competitive edge derives through the ability of a company to position itself better compared to its competitors. It provides itself with market power by introducing standalone factors, such as the determination of supply. Its individuality results in the explanation that competition comes from factors other than the direct

competitors. This concept identifies the value chain, which means the examination of those methods, as specifically contributing to the competitive advantage. The school of strategic thoughts, which is based on resources and capabilities, sees the competitive advantage in a combination of tangible (physical assets, e.g. vehicles, equipment, inventory, etc.) and intangible (nonphysical assets, e.g. patents, trademarks, franchises, goodwill, etc.) assets. The question that arises in strategy can be divided into the task of how to make things better and how to make things different.

It is this characteristic that forms part of the whole strategic process (Mintzberg et al., 1985; Fink, 2009). It also justifies the notion that one can regard the evolution of a business company as being a punctuated equilibrium. The evolution would be characterized by an alternation between phases when the business maintains the same orientation as before, and other periods when crises call into question the previous heading or path (Tushman et. al., 1985, pp. 171-222). A punctuated equilibrium assumes that the company is driven by a self-supporting process (von Krogh et al., 1994, pp. 33-71). Indeed, the cognitive current has shown that it is the perception of the environment, self-produced by the members of the company that acts as a reference for them (Bougon, 1992, pp. 369-389). The organization is seen as a complex and interconnected action circuit. Following these thoughts, organizations can be described as living entities, which are capable to reproduce and develop by their own means of strategy. One essential element of this process was identified in organizational learning.

Another model is the (4) SWOT-model (Homburg, 20003, p. 134): Ansoff in contrast to Porter (see point (5)) took an abbreviated approach and developed the SWOT-analysis, which concentrates on internal **S**trengths and **W**eaknesses as well as the external **O**pportunities and **T**hreats. Further developments were made and the terms long range planning or business policy were subsumed under the general term strategic management. Yet it shows that even this development was not distinct and linear as some authors see business policy and strategy as two strictly separated subject areas, while in other models these terms were used synonymously.

Throughout the decades in literature an almost common understanding developed though regarding the term corporate strategy, which shows especially the long-term orientation of an action (Hill, 2010, p. 20).

This emerging consensus only developed in regard to the highest level or the longest lasting actions measured in the span of time. That is why the definition of the term strategy is often referred to as corporate strategy.

(5) The Porter model of generic strategies (Thompson et al., 2005, p. 198): Also in the 1980s Porter developed a different model in contrast to Ansoff to describe strategy. Porter`s model states that a company pursues the goal to get a competitive advantage over others by its chosen market scope. Three possible strategies are identified in this model (Papp, 2001, p. 266):

- Lower Costs: Cost leadership, therefore lower prices than the competitors.
- Differentiation: To differentiate oneself along criteria which are valued by customers in order to be able to charge higher prices.
- Focus: Offering products only to selected segments of the market versus an availability of products for all segments of the market.

In terms of application Porter differentiates in a cascading way the different levels of strategy. At the top level he sees the overall corporate strategy, where the big picture of the strategy is defined. On the business level of strategy decisions are made about what markets should be served with which product portfolio. The functional strategy level sets the strategy for every single corporate entity in reference to the business strategy. To finally make it operational, the level of operations defines how exactly the overall corporate strategy, business and functional strategy are put into practice and how it is implemented in the organisation.

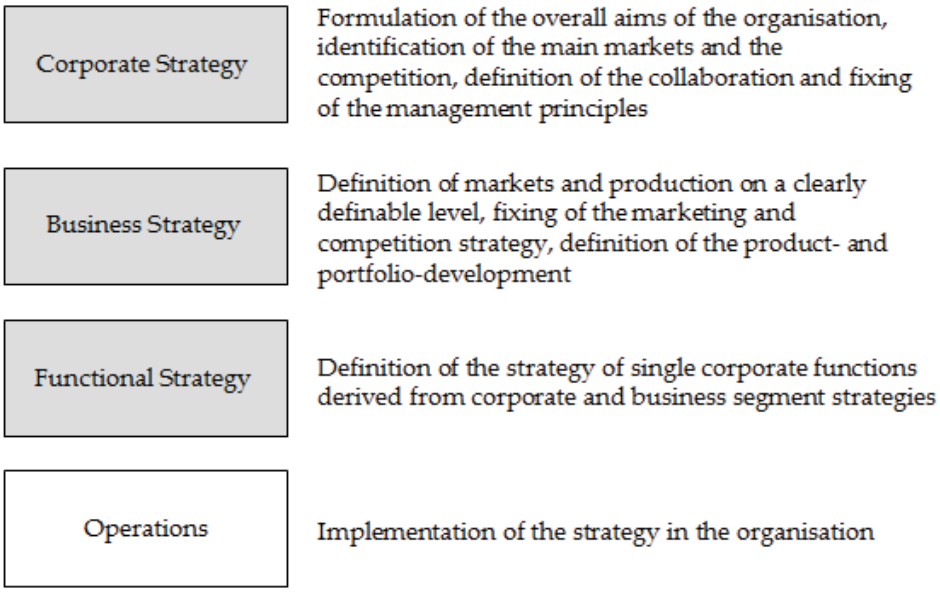


Figure 7: Strategy levels according to Porter, source: Porter, 1998

The situation proves to be more complex when it comes to the illustration and the content of all aspects covered by the term strategy within an organization. The definitions vary significantly. Furthermore there are large differences in the type and intensity of the impact of a strategy onto operational aspects of a company.

One of the most common points of criticism in regard to strategic management is the lack of a successful implementation within a company (Mintzberg, 1987, pp. 11-24). The main reason for that is the fact that in many cases once developed strategies can never be resolved completely from the description of the target state and contribute directly to the creation of a reality. This is why many attempts to find the right strategy have been confronted with the criticism of being escapist, i.e. far from reality. The reasons for that lies on the one hand in an insufficient consideration of the circumstances of the organisation in the definition of strategy and on the other hand in the lack of aspects of operationalization.

A substantially enlarged definition was developed by Johnson and Scholes by integrating aspects of the corporate reality and the existence of different stakeholders. They (Johnson et al., 1993, p.10) stated: *"Strategy is the direction and scope*

of an organization over the long-term, which achieves advantage in a changing environment through its configuration of resources and competences with the aim of fulfilling stakeholder expectations."

This expanded definition reflects in a compressed way the current status of discussion in literature when trying to define strategy. Therefore this will be the underlying term for the further investigation carried out in this thesis. The previously addressed question of feasibility has changed the strategy theory in the past years in a substantial way and has contributed a lot to its development with the result that operational elements have become more and more elements of strategy concepts. With this approach the question was completed from a mere "where do we want to go?" to a "how do we get there?".

3.2.1 Strategy models with reference to forms of strategy

Considering the above elaborated reflection on the current status of discussion in regard to strategy, one can see that it is not enough for a company to execute a phase of diagnosis, but to implement thereafter a phase of therapy. The achievement of a high degree of findings is therefore just the beginning for an enterprise, but this step must be followed by a step of action to shape the market. It is an essential competitive edge to find quickly the appropriate therapy, meaning the appropriate strategy and thus actively influencing the market to be successful in the business on an operational level. Currently, in alignment with Porter, the following strategic alternatives of an outpacing or a preference strategy are under discussion (Schmalen, 1993, pp. 384-385):

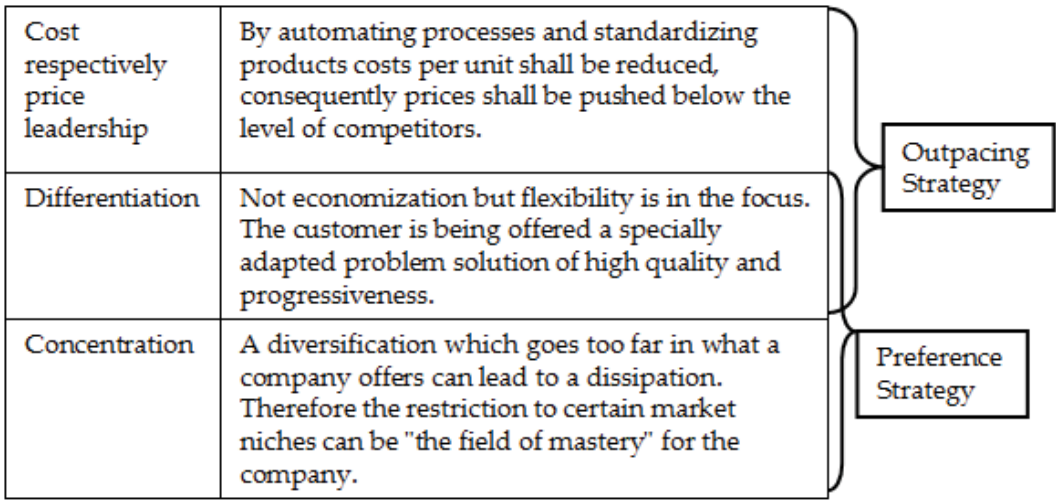


Figure 8: Outpacing and preference strategy, author`s graph, source: Schmalen 1993, pp. 384-385

(1) The outpacing strategy (Kraus, 2005, p. 65):

The cost-/price-leadership and differentiation strategy can be regarded in combination as an outpacing or market leader strategy. It describes the fact that a company chooses not only to act as a problem solver, but also as a cost leader. Through product innovations the benefit of the product is increased, while through process improvements the costs are reduced.

(2) The preference strategy (Herrmann, 2009, p. 112):

The preference strategy describes in contrast to the outpacing strategy that the focus lies on the products offered to the target group. The company intends to equip the products in the preference strategy with high added values for the customer, so that the customer perceives them as superior.

The requirements for a strategy is that it is selected in such a way that it fits with the best possible results the need of the customer in regard to the product, the price, the sales channel or place where it is sold and the communication strategy, i.e. the promotion of the product. In other words, the strategy needs to meet the requirements of the marketing mix, which consists of the four previously named components of price, product, place and promotion, regarding the strategy (Czinkota et al., 2007, p. 19).

These components of the marketing mix must be seen in a conjoint context as their effects do not occur independently from each other but are interdependent.

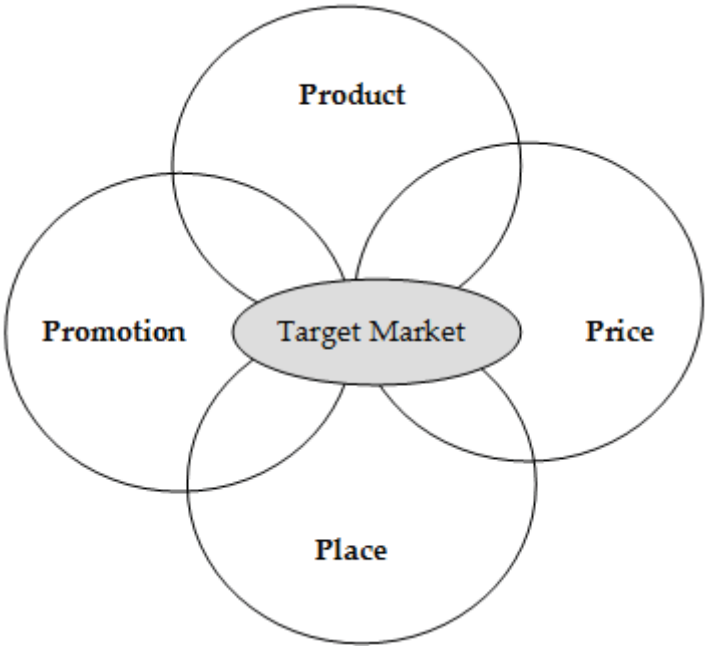


Figure 9: Interdependency of the marketing mix, source: Czinkota et al., 2007, p. 19

An alternative approach to focussing on changes considered necessary for the product is the so called system selling approach, which targets the information and service expectations of the customer. The core thought is that the consumer does not only acquire a product, but also a solution of his problem (Melheritz, 1998, p. 22). This can mean that besides the mere product advisory service or special warranties are offered. In regard to the motor insurance this can mean to offer a bundle of insurances which are necessary for the customer. The customer does not have to consider which insurance he needs for every specific situation, but he is offered a bundle product which provides him the added value of reducing the selection process that he feels to be a barrier for buying, as it is problematic for the customer and time consuming to choose. Besides that in the best case bundling the insurances can even offer a price or coverage advantage compared to putting the single insurances together by the customer himself.

In order to be able to fully evaluate which strategy to choose a complementing approach is added which equally reflects the current discussions. A new approximation is the trend to enlarge the mere theoretical approaches (non-behavioural) with behavioural elements of the stakeholders involved (Sutton, 1980, p. 10). According to Levis (1990, p. 29) the non-behavioural approach is based exclusively on different economic theories, i.e. excluding deliberately the consideration of how the involved stakeholders act or may act in certain given situations. In contrast to that the behavioural approach (DuBrin, 2012, pp. 22-23) considers behaviouristic elements and is a new approach in the management theory. In the behavioural approach inclusions can be found deriving not only from economic theories, but from fields such as psychology, sociology or political science.

Today many areas of research concerning the strategic management are characterized by an indentation of economical and behavioural arguments. This conjoint approach is called in the literature behavioural economics. This development could lead to the situation that the above mentioned conflict between the two different approaches in the research of strategic management will be dissolved by itself.

3.2.2 Strategy models with reference to the motor insurance in Germany

The subject of driving assistance systems, telematic approaches, up to self-driving vehicles becomes more and more present in press articles, publications and is more and more topic on conferences. These publications envisage a much stronger involvement of these technical systems and predict a substantial change for motorized mobility. Simultaneously, urban development, the attitude of people towards environmental aspects and the structure of the whole population, their desires and needs change dramatically (Dönitz, 2009, p. 11 et seqq.).

That is a wakeup call for motor insurers to analyze these changes and draw necessary strategic conclusions in order to be well prepared in mid- or long term aspects. It shows the need for scientific research of this matter to provide answers to a lead question, which is, if the socio-demographic and technical changes will lead to a fundamental change in the German motor insurance market, and if the motor insurers are adequately prepared for it?

The choice of the right strategy is decisive for a motor insurer, especially when moving in a business field which is highly competitive. In the research carried out in this study, this key question is taken up and examined thoroughly. The variety of strategy models is extensive. There will not be a recommendation for a specific strategy model in chapter VII though, as this would be too abstract and could not be simply implemented by senior executives. It is rather the approach to have a clear view on what strategy models exist and which options are at the hands of the executives in the motor insurance business, in order to combine these abstract strategy models with the concrete findings from literature and the expert interviews and develop from this ground their own individual strategy. The knowledge of the strategy models serves the purpose to enable the management to connect the detailed elements of the findings that are displayed in chapter VI with a fitting strategic model and integrate them. This bridges the requirement to put the conclusions and recommendations into a value-adding context of strategy that is not simply conceptional, but practicable.

3.2.3 Strategic challenges of the shared economy for motor insurers

The socio-demographic and technical changes in regard to the motor insurance have been explained, yet one strong aspect from the field of social changes needs to be examined even closer, as it has a substantial part in the changes. It is a new trend within the population and has to do with their values, as it lets the need to own things appear in a new light. It is the trend of a sharing economy which is strongly affecting the motor insurers as not only common goods, but also mobility can be shared (Boch, 2001, p. 261). Such examples for a sharing economy are that different people are using the same electronic device as they borrow it to each other, own living space is provided to other persons for temporary use, or in a mobility aspect a common use of vehicles is practiced (Botsman et al., 2010, p. 71). This trend is spreading more and more as a current study carried out by PricewaterhouseCoopers confirms (PwC, 2015).

Literature reveals though, that this trend is not really as new as it is propagated currently. The idea of a sharing economy was already referred to by Felson and Spaeth in 1978 (Felson et al., 1978, p. 614), by defining common consumption or use as: *"Events in which one or more persons consume economic goods or*

services in the process of engaging in joint activities with one or more others." Most of all the technical developments and its potentials, as well as the increasing expansion of the internet and its use, lead to a development that the idea of sharing grows in importance of everyday life and thus provides access to a broader number of people (Shaheen et al., 2012, pp. 71-81). Joint use or consumption can have different characteristics. For the in this research relevant aspect of mobility in regard to automobiles, the ownership substituting characteristic is of central interest. One speaks in this case using instead of owning of goods or services (Scholl et al., 2013, p. 142). The fundamental idea of joint use is, as pointed out, that specific products are not purchased directly by the consumer and pass over into his possession, but that in the normal case he only acquires a temporary right to use this product paying a certain fee for this right. Therefore the possession of a good is not mandatory for the use of this product or good (Leismann et al., 2012, p. 17). The central objective of this concept is to intensify the phases of use for that good or product in order to optimize it and save valuable resources. This is expected to result in an effect to create more wealth with fewer resources or to achieve the same level of wealth with a reduced amount of resources (Hirschl et al., 2001, p. 15). The concept of sharing instead of owning therefore offers a far-reaching impact potential in regard to a solution of existing environmental problems and the demand to save on resources.

The criticism of this approach is though, that the intensification in the use of a certain product or good could lead to a higher abrasion of it, or additionally (transport) ways could be generated which were not necessary if the good or product was owned by one specific person. Also the so produced shifts in the demand could result in an effect that the saved capital would be invested into other fields, thus creating there a higher demand so that in total the aspired reduction in the use of resources would not be achieved (Scholl, 2009, p. 72). The basic rule is that the more a product or good is used by an individual in the everyday life, the smaller are the effects of sharing. Vice versa, goods or services which are used rather seldom in the everyday life, which applies especially for automobiles, are very well suited for the sharing concept (Ministerium für Umwelt und Verkehr Baden-Württemberg, 1996, p. 279). Based on these considerations the automobile appears predestined for common use. The main reason for this lies in the large amount of time in which an automobile is not being used, as an

automobile is used less than 10% of the capacity as it could be used (Canzler et al., 2006, p. 9). Furthermore, the acquisition as well as the maintenance costs as for gas, taxes, insurance or repairs for an automobile are high (Ministerium für Umwelt und Verkehr Baden-Württemberg, 1996, p. 214). By the joint use an intensification of the use of the automobile can be achieved, as well as reduction of the individual costs. One speaks specifically in this form of joint use in regard to an automobile of "carsharing", which will be the central topic of this research and discussed in detail in subsection 6.

The fact that ⅔ of the German population is expected to want to trade or lend goods or services shows the vast potential for which insurance answers will have to be found, especially in regard to mobility. To share an automobile or transport system ranks third with 28% in the popularity of sharing behind media and entertainment products with 33% and consumer goods such as clothing and toys with 31% (AXA Konzern AG, 2015, p. 10). These changes in behaviour highlight the impact that the sharing economy has on consumers, especially young consumers. This trend has also been realized by other players in the market that is why for example car producers have converted into competitors for the motor insurers, as they strive to cover the whole value chain of owning or sharing a car. This value chain consists of the steps of buying and possibly financing a car, servicing it and now also insuring it.

3.3 CONCLUSION

The choice for the right strategy model is crucial for every motor insurer in order to stay ahead of the competition and find the answers for a right allocation of its financial and workforce resources. Especially after the deregulation in 1994 the choice for the right strategy has become even more important as not only the market environment changes at an increasing speed, but also the market itself in terms of variations of products and market players. The variations of strategic models are manifold, but it is the connection of the right strategic model and the details of the findings and conclusions that form the successful strategy. A new challenge that has come up in recent time and which needs to seriously be considered in the strategy of motor insurers is the trend of the sharing economy. This means that in more and more fields of everyday life people do not own the

products anymore, but instead borrow them for a limited time. Consequently this has a substantial impact for motor insurers as this reduces on the one hand the number of private vehicles to be insured and on the other hand strengthens the tendency of people to use carsharing vehicles. Therefore it is important for motor insurers to take a decision whether or not to enter the market of insuring carsharing vehicles and if so to what extent. In other words the motor insurers must form their strategy in this regard in order to be ahead of the market and not behind.

4. NEW INSTITUTIONAL ECONOMICS AS A THEORETICAL FRAMEWORK FOR THE ANALYSIS

The new institutional economics is a part in the research of economics, which focuses on the examination of the effects of institutions onto economic units from the perspective of private households and enterprises, as well as from the public sector (Schauer, 2015, p. 21). The new institutional economics analyzes the activities and the effect of these economic units with the aim to generate mutual advantages by cooperation and coordination of economic activities (Bouncken, 2002, p. 86). According to Albert (1977, p. 203), the NIE has gained such a high level of significance in research, that its development can be called an institutional revolution. The NIE is very close in its beliefs to the neoclassical paradigm, yet it strives to modify the key assumptions to draw a more realistic picture. In contrast to the neoclassical approach of self-regulating perfect markets it assumes imperfect markets with asymmetric information and costs in order to compensate these imperfections (Arentzen et al., 1996, p. 9). In more detail, this new style of thinking within the new institutional economics criticizes the classical assumptions of the microeconomics as the latter lacks any plausible reference to reality as these assumptions are considered to be restrictive. The assumptions of the neoclassical paradigm are according to Daniel (2007, p. 53):

(1) Perfect information of all participants in the market (perfect rationalism)

(2) Free information

(3) Complete contracts

(4) No habitual buyer preference influenced by previous experiences

(5) The market is the perfect mechanism for coordination and allocation

(6) No transaction costs occur when using the institutional infrastructure

(7) Indefinitely fast market reactions

(8) Perfect information function of the market prices

Institutions are defined as a system of formal and informal rules including mechanisms of enforcement, which limit the conduct of individuals in regard to transactions (von Schmoller, 1900, p. 61). They serve to reduce uncertainty and thus support the possibilities of transactions between individuals. Homann and Suchanek (Homann et al., 2005, p. 24) consider another aspect in their definition as they see institutions as regulatory systems in which certain codes of conduct are defined and are considered to be binding. Legal regulations are therefore subsumed under the term of institutions, but only as far as they can be enforced. Within the theory of the new institutional economics, the access to law is not carried out by the simple reference to the books, but to actual functioning law, the law in action (Mertens et al., 1982, p. 124).

The NIE overcomes the restrictive and unrealistic perception of reality in classical microeconomics by the inclusion of the human limited rationality, asymmetrically dispersed information and incomplete information between the economic agents as well as contractual relationships and opportunistic aspects of behaviour, which reflect the existing world in a more realistic way (Kaas, 1992, p. 3). Hence the lack of consideration of institutions is overcome and the existence of institutions is being brought out within this paradigmatic point of view (Kaas, 1995, p. 2). The economic objective of the new institutional economics is to analyze the efficiency of alternative institutional mechanisms in regard to the socio-economic trade-offs and to find efficient solutions which are minimal in their costs (Krüsselberg, 1992, p. 26). The key questions that are subject to the examination by the NIE can be summarized as (Picot et al., 1997): (1) Which institutions lead to the lowest costs or highest efficiency during a transaction? and (2) In how far affect coordination problems the costs and the efficiency of transactions, the design and the change of institutions?

4.1 DEVELOPMENT OF THE NEW INSTITUTIONAL ECONOMICS

The starting point of the emergence of the research field of the new institutional economics is an article written by Ronald Coase in 1937, entitled *"The nature of the firm" (*Kolb, 2015, p. 63). Even though researchers such as Adam Smith have discovered that restrictions in the options of acting for an individual exist in the form of informal institutions (Smith, 1933, p. 248) and John Stuart Mill

discovered the relevance of routines for the finding of a market price (Külp et al., 1973, p. 82). Tis influence of institutions is neglected in Keynesianism as well as in the neoclassical theory.

According to the thoughts of Coase it is mainly the saving of transaction costs that lead to an aggregation of single transactions and thus to the permanent form of an enterprise (Ziegler, 2008, p. 137). Coase (1938, p. 36) stated: *"The distinguishing mark of the firm is the supersession of the price mechanism."*

The observation in the NIE was that the market causes transaction costs in the form of costs for the acquisition of information, contracting- and adaption of the contracts. That is why Coase can be considered the inventor of the thought of transaction costs (Klaes, 2000, p. 191). The transaction costs form a central element in the research fields within the NIE, as their existence explains the importance of institutions for successful trading or transactions. It was Oliver Williamson in 1975 who introduced the term new institutional economics for the first time in his book on markets and hierarchies (Richter, 2015, p. 56). In an early stage of the formation of the institutional economics, two idealized institutions could be differentiated from each other (Hahn, 2012, p. 63): (1) Market and (2) Hierarchy.

It was not until the early 1990s that the assumption of an idealized dichotomy was expanded by alternative forms of coordination. These hybrid forms of coordination combine market, as well as hierarchy related forms of coordination (Beyer, 2015, p. 14). Depending on the accentuation of the individual elements these forms of coordination can be classified within a continuum between market and hierarchy (Williamson, 1991, pp. 269-296).

Besides the extreme forms of coordination of market and hierarchy, hybrid forms such as franchise systems, long-term business relations, contracts and mutual supply can be identified (Williamson, 1985, p. 83). The following graph depicts the research fields of the NIE. The for this research selected theories are marked with a circle of dotted lines and will be explained in subsection 4.1.1.

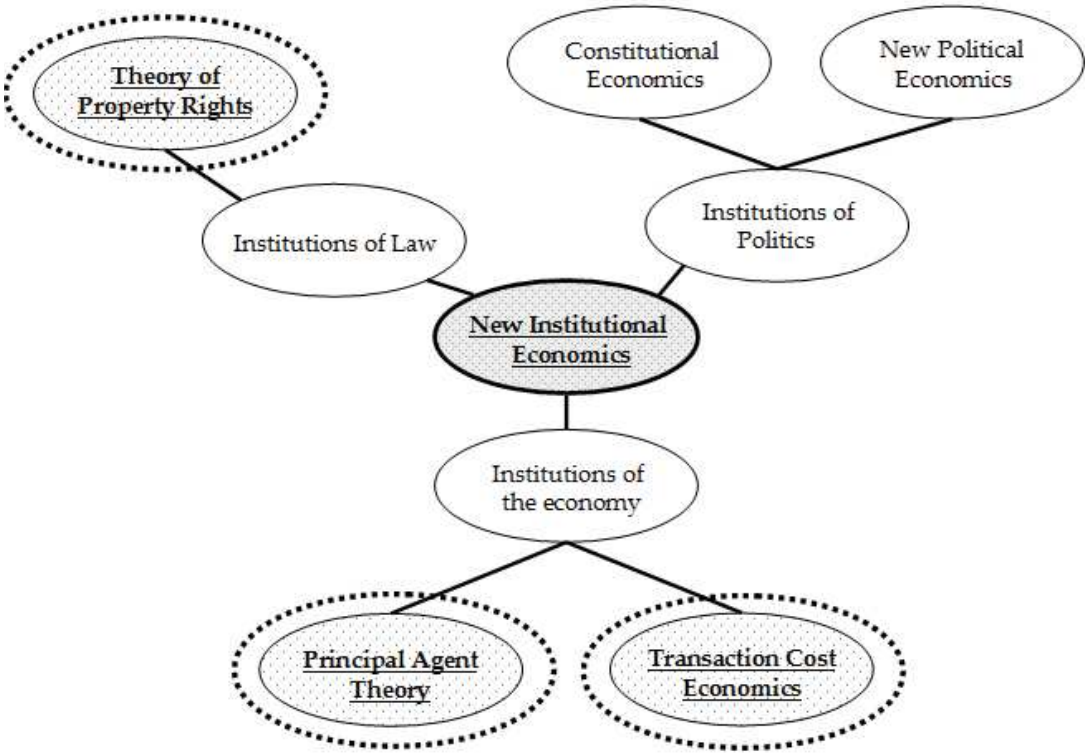


Figure 10: Research fields of the NIE, author`s graph, sources: Richter et al., 2003; North, 2002; Voigt, 2002

All of these above depicted theories are different research fields of the new institutional economics and have in common that they examine potential sources for interferences and thus cause of costs and loss of welfare within the transactional process. According to Buscher (1997, p. 101) they seek to:

(1) Explain the existing institutional infrastructure (explicative view).

(2) Offer options for possible institutional solutions, for specific situations where coordination problems exist, in order to solve these coordination problems in the most efficient way (instrumental point of view).

4.1.1 Selection of theories for this research

In the further proceedings of this study in order to examine the main research question if carsharing will in the future be an important business field for

the motor insurers on the German market in the light of the socio-demographic and technical changes, the focus will be on three selected theories of the NIE, the principal agent, the property rights and the transaction cost theories, which best comprise the major problems that motor insurers need to tackle. Why these theories are best suited will be explained during the deep examination of these theories in subsection 4.2 to 4.4. The three selected theories are:

(1) Principal Agent Theory**:**

Leipold (1989, p. 13 et seqq.) describes the the principal agent theory as a theory that analyzes in how far incentive structures have an effect on decision-makers within an organization and tries to give design recommendations to prevent opportunistic abuse of asymmetrically distributed information.

(2) Transaction Cost Theory:

According to Richter (1990, p. 571 et seqq.) the transaction cost theory searches for an efficient, for the production optimal and thus transaction cost minimal form of organization, for the embedding of transactions.

(3) Property Rights Theory:

Pejovich (1990, p. 29 et seqq.) refers to the property rights theory as a theory that explains which influence the allocation of the rights of disposal (property rights) have on the economic actions or activities of individuals.

4.1.2 Literature review

Institutions always had an important part in the history of mankind. At the very beginning the only guardrails for behaviour could be found in the simple rule of a Darwinian system, which Charles Darwin formulated in his book of the origin of species. It is the rule that only the most adapted survives and not the strongest. Parallel to the Darwinian system already earlier religion in its different forms always had an order function. This order function made itself evident from the very beginning in the form of gods that were introduced, representing rules of conduct (von der Osten, 2006, p. 119). In the later years the need for order and regulation took other forms, such as guilds in the middle ages (Rosser, 2015, p. 68).

Institutions are in general a not clearly defined term in economic and social science. Consistently though institutions are described as a system of rules that

shape the social behaviour of groups and individuals in such a way that they stabilize them and make the result for every individual more predictable. Institutions are therefore understood as fixed state or social bodies such as public authorities, courts or universities. Douglas North describes institutions as bodies defining the formal and informal rules of a society creating the incentive structures for a political, economic and social interaction of individuals (North, 1992, p. 3). The effects of institutions and their structures are diverse and broad. The most general definition of the term institution states, that institutions are a system of rules that create a certain social order (Gläser, 2006, p. 69). Order is created by institutions in the social field, that is there where individuals orientate their actions upon the behaviour of others. That indicates that order has the meaning of actions that are neither accidental nor arbitrary, but regulated and therefore calculable or predictable for others (Gukenbiehl, 1993, pp. 95-110). When speaking of institutions in general, not single order establishing rules are meant, but instead a system of rules that governs human behaviour (Richter et al., 1996, p. 7). Institutions are regarded as action systems that are based on a specific system of rules.

The system of rules is the important base for human behaviour, but the enforcement of a behaviour of these rules is equally important. How can it be guaranteed that any individual acts according to the rules? In order to have a reliable behavioural expectation for the conduct of the individual, it requires a punishment or reward system, which is implied on actions deviating from the system of rules. Therefore, in an economic context, institutions are often identified with a monitoring and enforcement system (Richter et al., 1996, p. 6 et seqq.). Entitled to give sanctions are in our society formal institutions. As there are also informal rules besides the formal rules, institutions are a connected system of formal rules (working with fixed legal rules) and informal rules (de facto accepted by society) with the function to steer the individual in his or her social behaviour into a certain direction.

Following Göbel (2002, p. 3) institutions are:

(1) A system of behaviour governing rules.

(2) Putting problematic areas of human interaction in an order following guiding principle.

(3) Applicable for a long period for a large number of individuals.

(4) Enforced in different manners.

4.1.2.1 Difference between institutions and organizations

In literature, institutions are often put on a level with organizations, though an organization is considered a special form of an institution (Elbe, 2001, p. 58). Organizations are groups of individuals who follow a common goal. Individuals of this group have to obey to the rules of the organization or leave the organization, while institutions are the rules that apply for the whole society. The NIE defines as a paradigm institutions as a means to reduce uncertainties. (Mahoney, 2004, p. 120) They represent therefore a rationalized form of an institution. Schreyögg (2003, pp. 9-11) considers organizations from the point of view of institutions and states that organizations should always fulfil three core characteristics:

(1) Organizations are goal oriented.

(2) Organizations have arranged orderly and intertwined processes.

(3) Organizations show a long-term delimitation towards other individuals or institutions.

Institutions define the rules for society for the strategic behaviour of the organizations, which follow their own interest. In the following course of this study, the term organization will be used in the sense of its initial meaning of bureaucracy or hierarchy.

4.1.2.2 Functions of institutions

It was shown that the actions of individuals are guided by institutions. Institutions also limit the arbitrariness of the individual actions and define the joint framework for action and the obligations that come along with it. According to Göbel (2002, pp. 5-8), the functions of institutions and their positive effects and reason for existence can be summarized as follows:

(1) Order-function: The main task of institutions is seen in an establishment of order and a reduction of complexity. Individuals are set up by their ability to

learn, to adapt their own code of behaviour and thus their own order for living together.

(2) Discharge-function: The restriction of all possible alternatives for action for the individual by institutions acts as a relief, as the alternatives are limited and thus less complex. It is also a relief in regard to fear and doubts for the individual that is abolished by deciding along the order of the society. In consequence, this generates time and energy for the individual to get involved in further actions, being able to increase their own and common welfare.

(3) Motivational-function: Institutions create a desired conduct of individuals, steering their behaviour into a wanted direction. By working with control- or monitoring elements, with possibilities to punish or to reward, institutions can work towards an amelioration of general behaviour in the public sector like law, justice or police, as well as in the private sector with contractual agreements for premiums for good performance.

(4) Coordination-function: The interaction between individuals in a society becomes more reliable with institutions, as one has the certainty through them that the other persons will most likely act according to the rules. The assumption that the other people act accordingly turns into almost certainty with institutions ensuring that collaborative actions fit together.

(5) Cohesion-function: Institutions create a feeling of belonging together enabling individuals to develop a common view upon issues. This facilitates the living together and supports the motivation- and coordination-function.

(6) Value-benchmark-function: Social evaluation is introduced by common understanding of what is allowed and what is not allowed or what is tolerated and what is not tolerated. The value system is the benchmark for correct behaviour and the legitimate basis for condemnation or reward.

(7) Special-functions: As many institutions are intertwined they also set the rules of who exactly has how much power over whom. This is an important aspect in the legitimacy of the governance system.

(8) Deduced-functions: Deduced functions are helpful in regard to a setup of a new organization, to help institutions enforce existing rules like with the police or justice system, or to help teach newer members about existing rules as it is necessary in the family, schools or churches for example.

4.1.2.3 Maintenance of institutions

Regulatory systems can only have positive effects on the actions of the individuals and thus positive external effects can only be produced, if the rules are respected and obeyed by as many people as possible (Leipold, 1997, p. 401). In recent research, Göbel (2002, pp. 10-11) structured the reasons for obeying rules into seven main points:

(1) Fear of punishment: If the individual does not obey the rules he or she will get punished. To rely strictly on this method bears the disadvantage that individuals will only obey the rules if a deviation can be detected and if the punishment is deterrent enough. Furthermore an extra effort has to be made which is costly in time or money, as an organization for control and punishment has to be implemented (Lehmann, 2015, p. 45).

(2) Expectation of reward: Along with the obedience of the rules comes the expectation for an advantage or reward. It is a self-enforcing rule and it is therefore better suited than the punishment-system, as it has a pull instead of a push character to steer the behaviour into a certain direction (Trimmel, 2015, p. 119). Yet it works only as long, as the incentive effect of the reward is high enough for the individual to follow the rules.

(3) Conformism: The individual follows the rules because everybody else does so too. In case the behaviour of the group changes, then automatically also the behaviour of the individual changes and the positive effect risks to erode.

(4) Habit: Rules are only followed out of a routine. This bears the danger that in order to change the behaviour of an individual, its routine must be changed and that is hard to do as it coincides with the discharge function of institutions.

(5) Emotional bond: The rules are followed as the individual respects the person that issued the rules. This can be endangered when the emotional bond towards this person is loosened (Patzelt, 2012, p. 31).

(6) Acceptance of the legitimacy of the regulator: Similar to emotional bonding, rules are followed by the individual because the legitimate authority of the regulator is accepted. These institutions though are considered to be especially stable as the individuals are convinced of the legitimacy of the institution and therefore its organizations to enforce them. The following of rules is stabilized by

an inner attitude or intrinsic motivation that the rules are correct, as the institution itself is regarded as correct, having the advantage that such a system even works when monitoring systems are failing or are incomplete.

(7) Comprehension of the validity of the rules: Similar to an acceptance of the legitimacy of the institution this bears the advantage that it can be considered an intrinsic conviction or motivation to follow rules.

These above described reasons must not be seen as isolated points, but it must be realized that they are interconnected, as the reason for something can be sparked by another reason.

4.1.2.4 The concept of the homo oeconomicus

The term homo oeconomicus is attributed to John Kells Ingram who used the expression *"economic man"* in 1888 for the first time in his book *"A history of political economy"* (Ingram, 1915, p. 105). The Latin term of homo oeconomicus was used for the first time by Vilfredo Pareto in 1906 in his work *"Manuale economica politica"* (Zorn, 2016, p. 17). John Stuart Mill introduced the term, according to von Hayek (1971, p. 76), in 1844 into the national economy in his essays, even though he did not use the Latin term literally. The homo oeconomicus is defined in literature as an economic agent or individual, who acts as a benefit maximizer in a strictly rational way in his decision taking (Birnbacher et al., 2015, p. 181). Thereby it is assumed that the homo oeconomicus has a complete set of information at his disposal regarding his action alternatives and he decides for every specific action alternative according to what decision is expected to bring him the highest benefit (Pies, 1993, p. 96). The homo oeconomicus is characterized by the following attributes and/or capabilities:

(1) Homogeneity in the objectives: Mansdörfer (2011, p. 43) states that the homo oeconomicus has a well-defined, consistent system of objectives, which remains stable in the course of time. He does not know any other economic targets or objectives.

(2) Economic Rationality or Principal of Rationalism: According to Ulrich (2014, p. 148) the strive for a maximum benefit from a consumer's point of view and maximum profit from an entrepreneur's point of view is the decisive factor for his actions.

(3) Complete Market Transparency: Piekenbrock et al. (2013, p. 23) explain that for all situations where a decision is necessary the homo oeconomicus knows all possible decision alternatives and their consequences.

It is important to explain the concept of the homo oeconomicus, as it is the underlying concept for a neoclassical approach, while in the NIE the concept of the homo oeconomicus is changed by adding the more realistic frame conditions of general opportunistic behaviour of every individual, bounded rationality and imperfect information.

4.2 PRINCIPAL AGENT THEORY

The elaboration above has shown that there is always a relationship between a motor insurance company as one party and the insured person, be it private or commercial, as the other party involved. Pratt and Zeckhauser (1985, p. 1) stated: *"Whenever one individual depends on the action of another, an agency relationship arises. The individual taking the action is called the agent. The affected party is the principal."*

This quote gives fundamental information in regard to the principal agent theory. It is the definition of the roles that the individuals involved in the economic process have in the principal agent theory. There is the principal on the one hand, who acquires the services of another person who has the role of the agent. The division of these functions will be explained in more depth in the following subsections. In order to examine the interdependency between these two parties involved and map out the strategic implications, the principal agent theory provides a suitable theoretic ground for this. Following Picot et al. (2005, pp. 56-57), the core objective of the principal agent theory is the dissolution of asymmetric information in order to counteract differing interests and thus inefficiencies between the different participants (principals and agents).

In an economic sense society has developed into a society of labor, which is seen by the majority of economists as positive due to the effect of specialization leading to increases in efficiency. That is why the principal agent theory focuses on the problems of the division of labor. It examines the fact that the principal does not have the full knowledge and control over the actions or intentions of the agent. In its core the principal agent theory is of high relevance in the economy and

consequently also for the insurers, as the insurance market is an imperfect market in which all participants have a different set of information concerning the other parties, service offerings and quality. Based on this approach develops the mentioned situation of asymmetric information between the parties, which can result in a loss for one of the parties, or in the worst case in a complete market failure (Spremann, 1990, pp. 561-586). In the following the focus will only lie on cooperation designs which can be directly influenced by the parties involved, therefore elements of governmental regulations or interventions to steer the flow of information in the form of laws or decrees will not be considered.

The principal agent theory, or agency dilemma, has its roots in the theory of incomplete contracts which was brought up by Ronald Coase. A change to the neoclassical approach was made by Coase in assuming that the market is not perfect, but bears market imperfections resulting in transaction costs in the trade of property rights (Furubotn et al., 1972, pp. 1137-1162). This was followed by the here referred to *"Theory of the Agency"* (Ross, 1973, pp. 134-139), which explains the specific agency problems as inflictions which derive typically from information which is distributed unevenly, known as asymmetric distribution of information. This implies that there are decision takers with a set of incomplete information, trying to establish economic relations with equally in regard to information unevenly equipped economic agents. The theory itself was mentioned first time in an article in 1976 by Michael Jensen and William Meckling (Jensen et al., 1976, pp. 305-360).

4.2.1 Assumptions of the principal agent theory

The for the principal agent theory characterizing situation of an asymmetrical distribution of information prevents an automatic acting of the agent in the interest of the principal, which would lead to an equilibrium of maximum benefit for both parties (Terberger, 1994, p. 96). It is assumed in the principal agent theory that the information advantage generally lies on the side of the agent (Göbel, 2002, p. 100). As a result, the information advantage is on the one hand the decisive factor why the principal gets the agent to do a certain task for him; on the other hand it proves to be potentially dangerous for the maximization of the welfare of the principal to let the agent have a lead in information. This lead in information on the side of the

agent makes the principal unsure if the agent will always act in the principal`s best interest, or if he may follow his own, the agent`s, interest to increase his return on the expenses or the welfare of the principal.

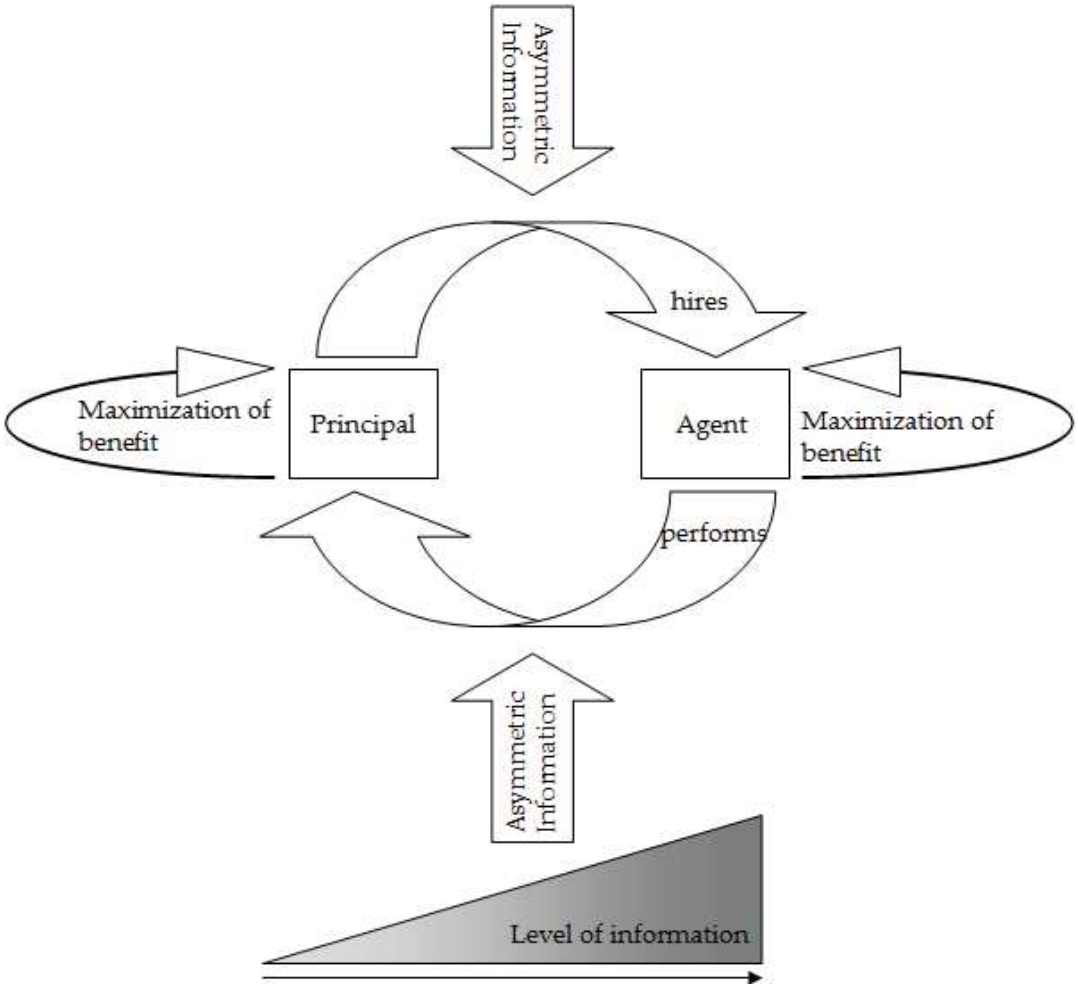


Figure 11: Correlating elements of the principal agent theory, author`s graph

Nevertheless, there are also situations when the agent is interested to minimize the asymmetric information, if he is for example a very careful driver and hopes to be differentiated from other customers in order to pay a lower premium (Breid, 1995, p. 84 et seqq.). The core objective of the principal is to

motivate the agent to act in his behalf and best interest. Consequently the principal has to find appropriate means to make the agent act in the interest of the principal and not in his own agent interest (Jensen, 1983, p. 321).

The problem gets more complex as the principal can also face more than one agent in a multiple agency relationship (Han, 2007). In the case of carsharing, the motor insurer as the principle has on the one hand economic relations with more than one agent in the form of the carsharing customers and on the other hand the carsharing provider is also an agent for him. In that case a comparison of the agents can lower the situation of asymmetric information as all agents are exposed to the same frame conditions and thus is their performance under ceteris paribus conditions comparable. Problems in such a constellation can arise in the expression of a teamwork that was performed and the performance of a single person cannot be isolated from the group performance, or if the agents arrange to common suboptimal behaviour. The multiple agency relationship can also occur in the form of a multi-level relationship, meaning through different hierarchy levels. But not only are multiple agency relationships possible, also multiple principal relationship are conceivable (Peters, 2001, pp. 1349-1372).

For an economic theory it is of high importance to explain the decision taking process and the effects of it for the participants involved. This is why the introduction of imperfections in the NIE stands in contrast to the neoclassical approach. This introduction of imperfections is of vital importance, as it explains the behaviour of the decision takers (Simon, 1986, pp. 209-224). Coming back to the imperfection in the form of an assumed opportunistic behaviour and transferring that onto the behavioural pattern of an agent (Alparslan, 2006, p. 2), it points out that a great danger lies in the fact that the agent is intrinsically tempted to use his room for maneuver in his own interest and thus neglect the interest of the principal. That is especially the case if there is not a clear regulation or motivation for the agent, which ensures that he acts at all time in the interest of the principal. This makes evident that with the assumption of opportunistic behaviour a conflict of interest between the agent and the principal is not only possible, but quasi predestined. The introduction of the elements of imperfection such as opportunistic behaviour, asymmetric information in favor of the agent and costs to correct the abuse of such an advantage for an agent shows that the core problem of

the principal agent theory is the approach to minimize the losses in welfare (Wenger et al., 1988, p. 506).

When discussing the principal agent theory, it also needs to be clarified which risk attitude the individuals involved have. This influences fundamentally their reaction patterns and needs to be known before analyzing possible solutions for agency problems. Depending on the individual risk attitude, the effects of the solutions and their efficiency can vary. A risk attitude can range from a risk-adverse individual, to a risk neutral and a risk seeking individual (Alparslan, 2006, p. 19). This applies equally to the profile of the principle as well as the profile of the agent or agents. In order to have comparable results in this study, the general assumption in this research is that all of the economic agents involved have a risk neutral risk attitude. Consequently efficient restrictions, rules or motivation must be found by the principal to ensure permanently that the actions of the agent are in his interest, under consideration of the individual risk profiles (Frey et al., 2001, p. 563 et seqq.). As an additional consequence of the imperfect coordination between agent and principal an overall loss in welfare is expected, contradicting the expectation that the market is a self-regulating instrument creating a pareto-optimal situation by itself. Measures need to be taken by the principal in order to ensure that the agent acts at all times in his interest. Such measures can be according to Eisenhardt (1989, p. 58), (1) the reduction of the asymmetric information situation, (2) the dissolution of conflicting goals and (3) the reduction of opportunistic behaviour of the homo oeconomicus.

4.2.2 Fundamentals of principal agent relations

The in the NIE given situation that the relationship between the principal and the agent is marked by asymmetric information highlights the danger that the principal needs to exclude the possibility for the agent to exploit him, in order to prevent the principal from suffering excess burden costs. Excess burden costs are costs which arise when the principal is unable to reach a status of optimal benefit or welfare (Mol, 1998, p. 61). After all the principal needs the agent and lets him act in his behalf, because the agent has a skill or other asset that the principal does not have, but desires. In the case of carsharing the motor insurer has the role of the

principle and needs the carsharing customer, who has the role of the agent, in order to generate profit.

On an imperfect market, such as the motor insurance market in Germany is, with its incomplete information the parties are confronted with exogenic and endogenic uncertainties. While exogenic uncertainties cannot be influenced by the parties, the endogenic ones can be influenced and are subject to the further examinations. The endogenic uncertainties describe the unpredictabilities towards suppliers and customers, towards products, prices and qualities which are different and subject to change, about which none of the participants have full information. This theoretical approach aims to explain the behaviour in an institution or hierarchy between (at least) two parties with different roles. The roles or relationships between the agent and the principal are characterized by the fact that the agent takes decisions which do not exclusively influence the level of his own benefit or welfare, but also the benefit or welfare of the principal. The basis of their working together is the initial situation that the principal gives a certain order or mandate to the agent to do a certain job or task in his interest. This includes the constellation of the agent being a customer of the principal. If the agent is hired by the principal with the objective to act always and at any time in the interest of the principal, it is important for the principal to secure the loyalty of the agent by contractual agreements or other measures with connected consequences and to create the reliability that the agent will always act in the interest of the principal.

The neoclassical market theory does not consider the need to create efficient frame conditions for such acting e.g. by law or contractual rules, as it does not consider opportunistic behaviour as having consequences for efficiency. Therefore the neoclassical thinking considers agency costs to be negligible, as they are non-existent in this theory due to perfect markets and perfect information for all market participants. This is not realistic in the attempt to find an optimal solution. It is not realistic to assume that the decision takers are always completely rational and have the same level of information. It is the homo oeconomicus who is operating on perfect markets creating an equilibrium by the exchange of offered goods and services in the neoclassical theory. In the principal agent theory, as part of the NIE research field, the assumption of the homo oeconomicus is expanded in the sense that both parties involved act as profit maximizers. This will reason the statement

in the NIE that opportunistic behaviour is involved and needs to be considered. It is problematic when each party involved in economic trade has different concepts of benefit, as this is the source for possible opportunistic behaviour of the agent taking advantage of the situation of asymmetric information.

According to the neoclassical thinking it is mainly a distribution and not an efficiency problem which the parties involved have to solve. Even rules of liabilities or property rights have no influence on the resource allocation and the redistribution of rights is irrelevant as it does not generate any increase in efficiency if the standard assumptions of the neoclassical market theory are fulfilled (Coase, 1960, pp. 1-44). This is the decisive point and difference of the principal agent theory as part of the NIE approach, as it states that the agent cannot, or at least not without generating costs, be stopped to take decisions which may be in his, but not in the interest of the principal.

Considering the characteristics in which problems can arise according to the principal agent theory between the principal and the agent, the following subcategories of problems can be formed (Picot et al., 2005, p. 88 et seqq.):

Type of Problem	**Momentum of emergence**	**Problem**
Hidden characteristics	Before contract closing **Ex ante**	Adverse Selection
Hidden intention	Before / After contract closing **Ex ante / ex post**	Adverse Selection / Hold-up
Hidden action	After contract closing **Ex post**	Shirking / Moral Hazard
Hidden information	After contract closing **Ex post**	Moral Hazard

Table 2: Possible agency problems and their occurrence, source: Picot et al., 2005, p. 88 et seqq.

The in the table above listed content is examined in detail in the following subsections. To eliminate these different types of problems which can occur and can cause disruptions in the relationship between the principal and the agent, measures have to be taken which incurs costs. These costs are called agency costs (Jensen et al., 1976, pp. 305-360) and are examined in subsection 4.2.2.6 and 4.2.2.7 in the ex ante and ex post consideration of the contractual phase, as well as in subsection 4.2.4 with a close-up on the agency costs.

The discourse in this subsection made obvious that there are different forms of agency problems, or in other words certain dangers that the principal could suffer from, which gives the agent a leeway for possible opportunistic behaviour. In the following, these agency problems are presented in detail, as it is of high importance for a motor insurer to know these problems in order to align his strategy accordingly and to be able to remain profitable.

4.2.2.1 Hidden characteristics

A first problematic field in the relationship between agent and principal can be found in the contractual ex ante phase, when the principal cannot be completely sure about the real characteristics of the agent. A more in depth consideration of the ex ante and the ex post agency problems will be carried out in subsections 4.2.2.6 and 4.2.2.7. Before the contract between agent and principal is agreed the two involved parties can encounter a problem of hidden characteristics (Göbel, 2002, p. 101). In general it describes the situation that either the agent or the principal is not aware of a certain characteristic of the other party, which bears the risk of taking a wrong decision and thus choosing the wrong contractual partner, which is described in literature as adverse selection (Rothschild et al., 1976, pp. 629-649). Adverse selection or negative selection in general describes the danger for the principal to choose the wrong agent (Arrow, 1985, pp. 37-54).

If the principal offers a contract which is designed to fit the characteristics of an average agent, the principal must fear that the agent with poor characteristics will conceal this critical personal information that he has about himself and will try to appear as an agent with good characteristics. An agent with good characteristics on the other hand is not motivated to enter a contractual relationship with the principal if the conditions are not appealing to him, as his characteristics are above

the ones of an average agent and there are not enough incentives for him to close a contract with the principal (Akerlof, 1970, pp. 489-500). Therefore the principal faces systematically the risk to select and enter a contractual agreement with an agent with poor characteristics or to have to renounce to a contractual binding with an agent where there might be the case of adverse selection.

The risk for the principal consists in the selection of an agent, who may not have the required skills or preconditions and only tries to display himself in the best light, hiding the lack of the required preconditions. The risk of adverse selection is not unilateral though, as the agent runs the risk of teaming up with a principal that might not fulfill his expectations and thus the agent might not receive the expected remuneration or benefit (Jost, 2001a, p. 27 et seqq.). With reference to an insurance contract the usual constellation is that the agent (person seeking insurance coverage) is choosing the contractual partner. From the point of view of the insurance company, the risk of adverse selection is that it could render coverage to an agent who chooses this insurance solely out of own opportunistic motivation, as he is aware that his risk profile is not the one that the insurer seeks. Yet the insurer does not know about that, as this motivation or characteristic of the agent or carsharing customer does not become evident before the contract is closed (Rothschild et al., 1976, pp. 629-649). The risk is only really existent though if the agent manages to hide his real characteristic (Kleine, 1995, p. 39 et seqq.), e.g. a person who has trouble parking a car having already produced a few accidents and now moves from the country where it had more space to a city with a tight traffic, has a higher probability to produce even more accidents. The person himself may be fully aware of his disability to assess risk situations in traffic, luck and the attention of other drivers may have just prevented more accidents in the past, but the person simply does not tell the motor insurer how he asses himself because is not asked about that.

4.2.2.2 Hidden intention

Another agency problem that can arise is the problem of hidden intention (Arrow, 1985, pp. 37-54). Even though the principal may be able to observe the action of the potential agent, he cannot fully assess the intention of the agent. The principal is not certain how honest or fair the agent really is and how he reacts in a

situation of conflicting interests. Typically the principal would like to know before the contractual agreement is closed, if the agent has a hidden agenda. This is especially relevant for the case when investments of sizeable amounts are made by one side that depends on the other (Breid, 1995, p. 824 et seqq.). This could result in a major loss situation for the side that invested and put the investor into a situation of dependency, in literature referred to as a hold-up situation (Picot et al., 1999, p 89). A hold-up problem can become evident in connection with the agency problem of hidden intention. In general terms, a hold-up situation can be described as a situation where one assumes to have two contractual parties, the principal and the agent, which close ex ante a contractual agreement (Williamson, 1990, p. 64). Therefore both partners are submitted to a lock-effect (Ewerhart et al., 1997, pp. 360-363) as they are tied to each other due to the contractual agreement. As a result of this lock-effect, the one party depends on the other and has no alternative. This situation of dependency may be exploited by one side. Transferred onto the example of the motor insurance, the whole concept of carsharing requires investments from the principal and these investments could be endangered by the agent (here it could be either the carsharing company or the carsharing customer) acting in an opportunistic way after the contract has been made (ex post situation) and dependency has been created. The risk for the principal is therefore that he could lose a formerly executed investment (sunk costs) which was necessary in order to achieve a contractual agreement with the agent (Göbel, 2002, p. 103). The contracts are ex ante incomplete when they do not comprise all necessary information about the possibilities, interests and intentions of the other person as they become only ex post evident (Breid, 1995, pp. 821-854). Time may prove to be an appropriate remedy, as an agent who is interested in a functioning contractual relationship of more than one period with the principal will not act opportunistically out of his own interest. Consequently the agent earns a certain reputation which is not only of advantage for future contract closure with this specific principal, but also with other principals as they can get information about the performance of the past. Also in lasting contractual relationships this is of advantage as long as this relationship is of benefit for the agent and he does not want to endanger the relationship. The principal can reduce the asymmetric information by being able to observe the performance over more than one period in time and thus have a clearer impression of the performance level of the agent.

4.2.2.3 Hidden information

Arrow (1985, pp. 37-51) defines hidden information as information which is not, or only in connection with costs, accessible for the principal. Therefore the principal can observe the action of the agent, but cannot evaluate if the action is the right or wrong one, meaning if it is fully in his interest (e.g. doctor and patient relationship). The term hidden information can be misleading as after all agency problems can evolve from the situation that the principal does not have all the information (Jost, 2001a, p. 9-43). In regard to the motor insurance it describes the situation of the client being much better able to assess his real risk situation by himself, as only he has the full information. This bears for the insurer the potential danger of an adverse risk selection as a person with a higher probability of a damage will much rather ask for insurance coverage than a person with a lower probability of a damage (Rothschild et al., 1976, pp. 629-649).

4.2.2.4 Hidden action

Following Kräkel (2007, p. 21-24) hidden action describes the agency problem that the principal can observe the actions of the agent, but due to lack of knowledge or full transparency, he cannot fully judge if the agent acted in an optimal way in the interests of the principal. It is not possible for the principal to observe the agent at any time in all of his actions (Hartmann-Wendels, 1991, p. 147). This situation of asymmetric information can be used by the agent to his advantage and he could exploit the principal.

4.2.2.5 Shirking and moral hazard

In the subsections above the problems of hidden characteristics, hidden information, hidden action and hidden intention were addressed. In a further step a closer examination and discussion is carried out in this subsection, in regard to what specific forms of core agency problems can occur if a situation of one of the four constellations above becomes relevant. These four constellations act as a source of uncertainty and need to be regarded as the source for the specific forms of problems that can result from them, given the general situation of bounded

rationality and opportunistic behaviour of economic agents, which is assumed in the NIE.

Hidden Characteristics	Hidden Information
Hidden Action	Hidden Intention

Figure 12: Sources of uncertainty in the NIE, author`s graph

In the following the two major forms of agency problems of shirking and moral hazard will be defined and discussed.

As a first form of agency problems resulting from uncertainties in the NIE, shirking can be identified. It can occur considering that the principal is not at all times able to fully observe the actions of the agent. In literature the seeking of advantages by the agent due to lacking possibilities to observe his actions by the principal is therefore referred to as shirking (Dahlhaus, 2009, p. 92).

(1) Shirking: A shirking problem can show itself in connection with hidden action. Shirking describes the behaviour of an agent of deliberately holding back a possible higher performance (Alessi, 1987, p. 51 et seqq.). Shirking has not only relevance in regard to the situation of asymmetric information within the principal agent theory, but also in the context that the market and transactions are not for free but are costly, which is addressed in subsection 4.3 in the transaction cost theory in more detail. Transferred onto the motor-insurance business this means that the insurance company cannot observe and thus know if the insured person (the agent) has tried everything to avoid an accident or damage.

Another major agency problem that could arise is the problem of moral hazard (Arnott et al., 1988, p. 383).

(2) Moral Hazard: Moral hazard becomes evident in an ex post contractual phase in regard to the sources of uncertainty of hidden action or hidden information. The term moral hazard, as well as the term adverse selection, derive from the insurance theory (Picot et al., 2002, p. 89). In the insurance theory moral

hazard specifically describes the danger for the provider of the insurance coverage (principal) that the policyholder (agent) does not fulfil all aspects of his duty of care, thus producing disadvantages for the insurer (Wolff, 1995, p. 95). This moral risk can span from negligence to avoid an accident up to deliberately producing or faking an accident in order to get the money from the insurance company for the claims settlement. It represents a standard example of negative change in behaviour due to the fact that a risk is insured, representing for the insured person an economic disincentive and thus to act irresponsibly and carelessly (May et al., 1995, p. 438). The aspect of the moral hazard is a very important one, because if the agents did not use their advantage of information in an opportunistic way, consequently no agency problem would arise (Schauenberg, 1998, p. 40). The easiest solution would be to raise the morale in the thinking of the agents. Yet in literature surprisingly this approach is not yet widely spread. In order to protect an insurance company against the above mentioned danger of moral hazard, deductibles can be introduced, making the agent pay a certain part of the claim.

4.2.2.6 Ex ante contractual phase

The common attribute of a situation of hidden characteristics, hidden intention in the contractual ex ante phase and hidden action or hidden information in the contractual ex post phase, which can have a negative impact on the benefit of the principal, is the situation of an asymmetric distribution of information among the parties involved (Spremann, 1990, pp. 561-586). Various approaches for the reduction of asymmetric information in an ex ante contractual situation are known, working against the dangers of hidden characteristics or hidden intention. It is important for the principal to work against these problem fields as they could cause a situation of an adverse selection, meaning the principle would engage, as previously explained, in an economic relationship with an agent who bears the risk not to act in his interest. Different approaches can be taken to counteract this situation:

(1) One approach is screening, as described by Ebers et al. (2014, p. 214). The principal can try to get as much information as possible about the agent in advance, in order to assess him better, e.g. by carrying out tests or getting several offers before closing the contract (Stiglitz, 1975, pp. 283-300). Screening comprises

the attempt by the principal to gather all information available, in order to get a clearer and more realistic picture of the agent. This can be carried out by using tests for example of a candidate before giving him or her a work or insurance contract. It could also consist in the questioning of sources who have gathered experiences in the collaboration with the agent before. In general screening describes the concept of the principal`s need and activity to lower the risk of engaging with the wrong agent into a contractual agreement (Stiglitz, 1975, pp. 283-300).

(2) On the other hand, there is the reciprocal approach of signalling (Spence, 1973, pp. 355-375). While the concept of screening is attributed to Joseph E. Stiglitz, the concept of signalling is being attributed to Michael Spence. Signalling describes the thought that the agent can have an intrinsic interest to make clear to the principal that he or she has a certain quality or ability and that the person does not want to leave any doubt about that. This is why he or she can signal to the principal that these features are really existent (Scholtis, 1998, p.85 et seqq.). Signalling can be performed in the form of reports, certificates or guarantees for example. Nevertheless, the trustworthiness of these signals is only plausible for the principal as long as the costs for producing these signals (e.g. to acquire the needed skill or quality) are higher than the costs necessary for sending false signals (Schauenberg, 1998, p. 38). In its core, this concept implies that the principal will have to compensate the agent for giving him more security by his signalling; otherwise it is not worth it for the agent to signal. In regard to the motor insurance, this could result for example in a lower premium for people (the agents) who prove on their own initiative that their claims ratios are low or that they have other forms of proof, which substantiate that the risk of having an accident is low with this specific customer or agent. It is therefore of great help if these proofs are standardized and thus enhance the comparability (Schuhmacher, 2004, p. 1116). The principal again can test this signal by presenting different variations of a contract to the agent for example, thus assessing which variation of contract he chooses and consequently conclude which strategy the agent follows. That is possible, because the agent signals by the choice of contract to the principal how he asses himself in his expected performance, as he will tend to choose the variation of the contract with the most advantages for his behaviour.

The possibility of forcing the agent to pass on certain information by law is not considered in this examination as it cannot be taken as an acceptable measure, neither by the principal nor the agent. Independent institutions can be consulted though by either the principal or the agent in order to get an examination with the result of a proof. As the normative agency theory implies a complete rationality of the actors involved with a complete ability to learn so that all problems can be solved ex ante, it is the case in reality that the actors have only a limited ability of taking up and processing information (Reichertz, 1993, pp. 258–282).

4.2.2.7 Ex post contractual phase

As examined in the ex ante contractual phase, it is of equal importance for the principal to regard the ex post contractual situation and initiate counter measures against problems that could arise. Such problem fields can exist in the form of hidden action or hidden information, respectively hidden intention. While in hidden action the agent can use a discretional leeway to act in his own interest in the moments he is not observed, hidden intention, as explained above, means that the real objectives of the agent in his acting are not known to the principal, while hidden information means that the principal can observe the actions of the agent, but he cannot fully judge them as he lacks knowledge to do so, due to the situation of asymmetric information. The result could find its expression in intentional malicious or opportunistic behaviour of the agent, which in general terms is according to Shavell (1979, pp. 541-562) subsumed under the term of moral hazard.

Therefore in order to work against the threat of moral hazard, an approach for the reduction of asymmetric information can be seen in the creation of an incentive system (Holmström et al., 1985, pp. 403-425) by the principal for the agent. A possible form of such an incentive model could consist in the attempt of the principal to tie the agent to the results that he achieves and make him participate in the successes or losses of it (Grossman et al., 1983, p. 10 et seqq.). Incentive systems can therefore be introduced to motivate agents to reveal their information which they use in order to act in behalf of the principal. The higher the participation of the agent is in the result, the more is he expected to consider the interests of the principal (Ebers et al., 2001, p. 214). This represents an attempt of goal harmonization, as the participation of the agent in the result has the effect of

harmonizing the interests of the principal as well as the agent and consequently reduce their potential of conflicting interests. This concept has even a general effect of lowering agency costs, as along with a reduction of the conflicting interests the need for information about the performance of the agent is lowered for the principal, which as a result reduces the agency costs for the principal. Nevertheless this concept is not free of criticism, as the agent tends to charge the principal a fee for taking over more risk, which depending on the risk, could increase the agency costs again. Therefore the principal must find a compromise between an optimal incentive effect and an optimal risk allocation (Küpper, 2001, p. 54).

In a post contractual phase another opportunity to reduce the asymmetric information can consist in the installation of a control or monitoring system (Picot et al., 1999, p. 93). Control systems are also referred to in literature as authority systems (Saam, 2002, p. 32 et seqq.) In the context of the principal agent theory and an approach to reduce agency problems, monitoring describes a procedure, carried out by the principal, of continuously observing or monitoring the actions of the agent. The principal can design a contract, which describes in detail how the agent has to act, but he needs to be sure that the agent really does act in this way and therefore has the need to monitor his actions. The monitoring can be carried out by actively observing the agent or by introducing other controlling systems that gather information about the real performance of the agent and are accessible to the principal (Alparslan, 2006, p. 46). If the principal wants to carry out all the monitoring activities himself he would soon find his limits, as a direct observation is very expensive and time consuming (Göbel, 2002, p. 112). Therefore the controlling mechanism can either be carried out by a third person or even a technical system (delegation of monitoring). This creates another problem, as the controller is yet again another agent for the principal. According to Strausz (1997, pp. 337-357) the advantage of the delegation of monitoring is that by this measure the asymmetric information between the principal and the agent is reduced in regard to the actions of the agent and the exogenous disturbances.

Besides a controlling system another attempt to reduce agency problems, especially the one of moral hazard, is the installation of an information or reporting system (Baiman et al., 1994, pp. 217-229). By introducing an information system, the principal can improve his level of information in regard to the agent or the

exogenous disturbances and consequently reduce the asymmetric distribution of information between the principal and the agent. The better the principal is informed about the performance of the agent, the more will the agent consider the interests of the principal as he is aware that he has very little chances that his real actions are not discovered (Eisenhardt, 1989, p. 60). The agent, who in the first place is interested in having a contractual agreement with the principal, wants to prove to the principal that he did his very best to achieve the best result and not get under the suspicion of not having done enough to prevent a certain negative result. For the principal it is almost impossible to always draw the right conclusions from the observation of the agent, as the alternative result of what would have happened if he had acted differently is not always clear. Therefore the agent has the interest to provide the principal information to strengthen his own position. An information or reporting system does not only possess the capability to reduce the asymmetric information between principal and agent, but it offers also the opportunity to lower the chances that opportunistic behaviour may be applied by the agent (Wolff, 1999, p. 139). Yet it needs to be considered that it is not in the initial interest of the agent to bring about a symmetric distribution of information, as that may reduce his own potential to maximize his welfare. Therefore alongside with the implementation of information system there is the need to implement a control- and incentive system (Ebers et al., 2001, p. 215).

An additional approach to reduce the situation of asymmetric information can be seen in the already indicated harmonization of goals of the principal and the agent (Burmann et al., 2005, p. 508). In an ex ante contractual phase the principal can, by using appropriate contract modules, tie the achievement of his own goals to the achievement of the goals of the agent. Therefore he can neglect disadvantages of not having the same information as the agent, by replacing it with an intrinsic motivation of the agent to strive to achieve the same goals as the principal as the remuneration or profit modules are connected from the very beginning to the achievement of certain goals (Wolff, 1999, p. 155 et seqq.).

In order to find the suitable agent or agents, the principal can confront him or her with a number of different contractual versions. To give an example for the motor insurance, the insurance company can offer different contracts from fixed premiums to premiums which get reduced when the customers drives without

damages. By choosing a contractual module which rewards the performance of driving, the principal already knows which type of agent he has in front of him and it reveals which expectation the agent has about his own behaviour (Spence, 2002, p. 435). The agent can show to the principal by this scheme of a self-selection information system, what he expects of his own driving and his claims probability (Jullien et al., 1999, p. 19-28).

Considering the risks of a system of incentives, the agent may suffer from a performance and may be punished for something caused by external effects that he is not responsible for, but which is also affecting the principal (Erlei et al., 1999, p. 120). Göbel (2002, p. 116) summarizes the problems that can arise as follows:

(1) If the measures are set falsely by the principal it can motivate the agent to follow the wrong goals.

(2) If the goals only concentrate on aspects which can be easily measured, it may trigger a reaction by the agent to only focus on these things, even though they may not be the really decisive ones. For example if the insured person is only rewarded for his short term actions he is not interested to take courses to improve his long term driving abilities.

To show from the very beginning to the principal that the agent is someone eager to follow the goals of the principal, he can signal to the principal that he is the right person to choose and thus start to build up a positive reputation (Kaas, 1990, p. 545). Reputation is very hard to copy and sends a strong signal to the principal that the probability is very high that the agent will act very much in the interest of the principal. It is considered to be more effective and stronger than the alternative option for the agent to just do advertisement or self-promotion for himself as these promises cannot be considered proven for the principal (Kaas, 1990, p. 544). The effect of wanting to live up to the reputation is considered to last also during the contractual phase for the agent. The agent has an interest to keep up his good reputation as other principals also consider this and thus it is important for a future principal (Spremann, 1988, p. 619) in case the agent wants or needs to change to another principal. Transferred onto the motor insurance the good reputation of a customer in the role of an agent is important to keep up if he considers to change to another insurer in the future.

In order to work against moral hazard problems the agent can also bind himself in a deeper way to the principal and thus create a situation of severe potential loss for him to show a commitment (Milgrom et al., 1992, p. 133), i.e. to make irreversible investments for example. In such a situation the agent has a strong interest to have a functioning relationship with the principal as a change would mean a sure loss for him. Such a long-term commitment is in literature referred to as bonding (Jensen et al., 1976, p. 323). Bonding is seen as an action where the agent makes a deposit that he is sure to loose, if the contractual agreements are not fulfilled.

4.2.3 Trust and agency problems

As it was pointed out, the NIE operates with the assumption of bounded rationality, asymmetric information and opportunistic behaviour of the economic agents. Considering this, there appears to be no room for the element of trust, as that can be suspected with the given frame conditions to only act value destroying for the principal. Consequently when looking at the existing literature of the NIE, not many sources can be found that advocate themselves for the implementation of trust as a means to solve agency problems. Quite the opposite can be observed, trust is not regarded to be a suited element to work against agency problems (Strübing, 2014, p. 76). In the research of this study this new attempt is made and tested in how far trust can be used in order to solve agency problems. It is done in an approach to consult the existing literature on the one hand, but to also with reference to newly published studies, conference papers and to gather new findings through the element of expert interviews.

Trust is considered a vital element in the daily routine of business. Every transaction requires an element of trust (Arrow, 1973, p. 24). Following Ripperger (1998, p. 45), trust is the voluntary delivery of a performance in advance, bearing the risk of the expected result not occurring at all or not in the expected quality. It is given without an explicit contractually manifested safety or control measure against opportunistic behaviour with the anticipation that the other contractual partner will not act in an opportunistic way, despite the lack of the instalment of such precautional safety measures.

The following figure 13 displays the enlargement of solution mechanisms for agency problems with the in the graphic displayed framed enlargement of trust to the existing, and in the classical literature discussed, mechanisms of the reduction of asymmetric information and harmonization of goals.

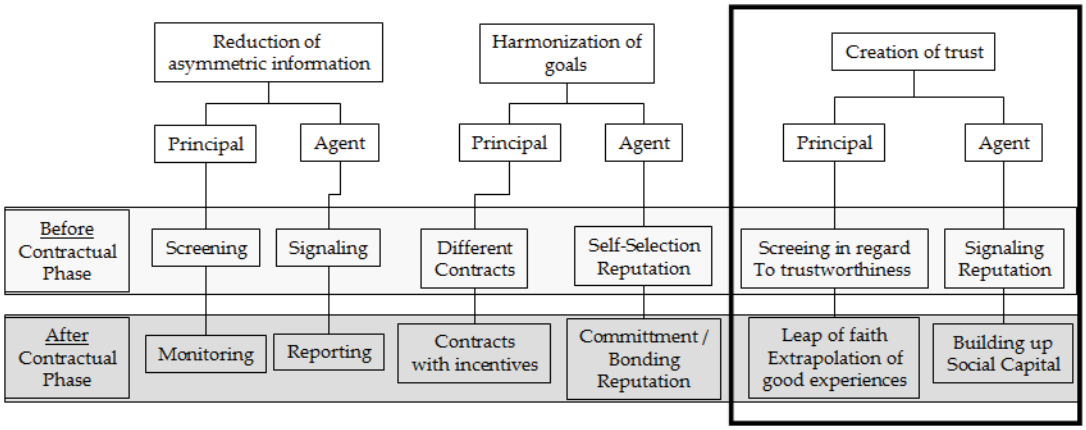


Figure 13: Trust in pre- and post-contractual phases, author`s graph

The implementation of trust in economic relationships means that the agent has the possibility to behave in an opportunistic way, while the principal agrees to a contract with the agent without, or with a limited element of control or clause, as the agent ensures from his side the full performance and result that he signed up for to the principal (Ford et al., 1988, pp. 239-243). As there is, as described in the definition of trust, almost everywhere an element of uncertainty, trust is a valid and universal approach to solve these uncertainties (Bea et al., 2002, p. 84). That is why trust and securing or controlling measures are normally used complementary, meaning that mostly both elements can be found in different degrees, depending on the specific transaction (Ripperger, 1999, pp. 67-99). Trust can therefore be called a type of glue that closes the openings of an imperfect controlling system. What cannot be controlled must be closed with trust or else a contractual relationship is not possible. Not only controlling systems, even incentive models leave gaps that have to be filled by trust, as no system is so secure that it cannot be deliberately bypassed or misinterpreted (Göbel, 2002, p. 119). For the principal the implementation of trust signifies a risk, yet it has to be a calculated risk, keeping a

possible loss and the reduction of agency costs at a sensible and balanced level (Wargitsch, 2010, p. 177). Trust is not just granted on a free will basis, but on calculated grounds, i.e. on the basis of information. Trust can be shown for example in the form of good relations. From the side of the principal towards the agent, trust can increase the motivation of the agent to work in the interest of the principal. Both show reciprocally an altruistic behaviour and make repeated investments into the trustworthiness. With every act of each side, which shows that one does not take advantage of the other side, the trust among them gets stronger. One can say a mutual reputation is being built up.

In general, the principal attempts to assess the trustworthiness of the agent with measures that reduce the problems and costs of asymmetric information. Having inserted the element of trust, the principal will look before the contractual phase for signals of trust within the agent by scanning the information he has about him from the market or other sources that he can get access to and which are credible to him (Kaas, 1991, p. 365). In the insurance business it is the act to inquire about the creditworthiness before a contract is closed with a customer, which can be carried out by a request at Creditreform for example. Creditreform is a private German company which acts as a credit reference agency and collector of debt information with a focus on enterprises. The Schufa is another institution in the German market providing information about creditworthiness of private individuals. The gathering of information has become more and more important for German insurers as they try with big data approaches to interlink the data and derive new and more reliable findings from that. Therefore, the extraction of data enables them to draw a conclusion about the creditworthiness and reliability of a potential or existing customer (Krohn et al., 2014).

After the contract has been closed, the principal needs to decide to either refer to costly control and monitoring mechanisms, or he can choose to replace these costly control and monitoring mechanisms by trust, if the experience he gathered in test fields is positive (Brune, 2001, pp. 109-113). The replacement of control mechanisms can be achieved by extrapolation of good experiences into the future, or to renounce from the very beginning to control mechanisms and give the agent a leap of faith. The only precondition is that the observations of the behaviour and performance of the agent must be possible, so that the principal

gains the ability to draw positive or negative conclusions from the observed behaviour or that he is able to compare the behaviour of different agents (Roiger, 2007, p. 16).

Not only the principal, but also the agent has the option to apply trust to his advantage. He can also use trust in order to solve agency problems in the following ways:

(1) Before the contractual phase the agent can try to signal his trustworthiness by referring to good experiences that other principals have made with him previously, i.e. consequently through the reputation that he has built up. Alternatively he can declare his willingness to have his trustworthiness put to a test on a free will basis (Scholtis, 1998, p. 85 et seqq.). With reference to the motor insurance it could be the case that the agent voluntarily shows to a new insurer that he has been for a number of years with another insurer and that his performance (low claims ratio) during that time was good. This acts as a confidence-building measure and increases the willingness of the principal to trust the agent.

(2) After the contractual phase the agent has numerous options to send signals confirming to the principal that he is worthy to be trusted. These signals affirm the principal that the agent has an intrinsic motivation to behave in a positive way and act in the interest of the principal. The behaviour, which the principal can observe is the relevant measure or criteria for that. With reference to the insurance industry, the agent can prove by careful driving and not producing any accidents or damages, that he is really a good and trustworthy customer and that the principal decided correctly in taking him on, in the sense of a contractual agreement (Spence, 1976, p.53). By this the agent can provide a stable image of being trustworthy also for the future and he can give the prospect to be able to avoid future losses for the principal, increase his welfare and to contribute for free (with trust), or in an inexpensive way (with limited trust), to the goal achievements of the principal.

In combination with the definition of trust it was shown, that a trusting principal is a person who takes on knowingly a behavioural risk and renounces completely, or in part, to monitoring or controlling measures. The decisive momentum for the agent to act even in unobserved moments in the interest of the

principal is the fact that he builds up this good reputation and in most cases the agent that renounces to opportunistic behaviour wins more than he loses (Göbel, 2002, p. 122). Due to the good reputation, the agent can save agency costs that he would normally have as an unknown person or a negatively known individual, by signalling to the outside or reporting to the inside, that he is trustworthy (Blum et al., 2005, p. 156). This good reputation is called social capital (Bourdieu, 1983, pp. 183-198) and the agent has a profound reason to hope for reciprocity from the side of the principal for his behaviour and thus achieve a greater freedom of action. Due to his renouncement to the possibility of opportunistic behaviour, the agent creates a situation of putting the principal in a kind of debt position, as this behaviour of the agent can be considered a unilateral investment (Ripperger, 1998, p. 166). Another benefit for the agent is a psychological one of winning the confidence of the principal, as he can have a clear conscience which acts as a reward for his trustworthy behaviour. This in return is also beneficial for the principal as betraying a person with whom one has close and trusted relationships with, incurs very high psychological costs (Rotter, 1980, pp. 1-7).

If the agent does not act in an opportunistic way, as he is normally expected to do even if it is not sanctioned, he has the advantage of having a standardized non-opportunistic behaviour which saves him the costs and risk of situative decisions (Richter et al., 2003 p. 224). He does not need to worry about giving or acquiring information, which is not for free, and thus he saves costs. He is in return an interesting contractual partner for the principal, as the principal can also save costs due to the standardized non-opportunistic behaviour of the agent. Trust and trustworthiness have a high importance for solving agency problems as they are extremely cost efficient (Bartelt, 2002, p. 104).

4.2.4 Agency costs

In the previous subsections the various forms of agency problems were defined and discussed. In the following part the costs are examined, which are incurred by solving agency problems.

According to Paul (2006, pp. 54-55) agency costs can be classified into the following subcategories:

(1) Steering and control costs: These costs represent the efforts of the principal to reduce his own disadvantage of not having as much information as the agent.

(2) Signalling costs: They represent the efforts of the agent to reduce asymmetric information by giving information by himself.

(3) Remaining excess burden costs: Divergences from the ideal situation of having a state of symmetric information or in other words, higher costs compared to the optimal situation (pareto-optimum).

Another approach (Jensen et al., 1976; Schneider, 1995; Picot et al., 2005) suggests that agency costs result as a sum of monitoring costs, residual loss and bonding costs. A fundamental assumption of the NIE and therefore also for the principal agent theory is, that measures to solve agency problems are not for free, but produce costs (Voigt, 2002, p. 22). While the neoclassical economics assumes that no costs are generated to stop the agent from taking actions which are to his advantage, but not to the advantage of both parties involved, the principal agent theory includes the element of costs to avoid such negative actions on the expenses of the principal. Welfare losses for the principal are possible if the agent uses the asymmetric information to his own advantage and on the expenses of the principal. It takes costs, the so called agency costs, in order to avoid such an opportunistic behaviour of the agent (Voigt, 2002, p. 84).

Even though measures can lower the risk that the agent can use information for his own advantage, they cannot completely rule out such a behaviour. Typically the introduction of measures is the catalyst for the above mentioned costs. As it is a trade-off between the costs generated for the introduction of measures and the loss expected without the introduction of the measures, it is not always profitable to reduce or eliminate these disparities of information or to counteract its consequences. When the costs for the reduction of agency problems exceed its benefit, it becomes uneconomical to follow this approach (Oesterdiekhoff, 2013, p. 14). Following economic thinking, the parties will attempt to do so in the most cost efficient way (Knorr, 2001, p.31).

In connection with the cost aspect the question arises, which system should be used in order to evaluate an option or approach to solve agency problems? In

literature (Furubotn et al., 2000, p. 344) costs, as in this case the agency costs have been identified as the relevant factor in an assessment of an option or approach either to choose this option or to discard it. To be able to carry out a solid assessment of the agency costs, a deeper analysis of the mentioned sum of costs, the monitoring, residual loss and bonding costs that were identified as the main cost drivers by Jensen and Meckling (Jensen et al., 1976, pp. 305-360) is necessary.

(1) Monitoring costs are costs resulting for the principal in order to influence the behaviour of the agent in his interest. Such costs are for example supervision costs, costs for premiums and incentives or the introduction of precise rules, etc. (Keil et al., 2005, p. 1). The principle of monitoring costs can be criticized though, as the principal must know exactly what effect the optional controlling or monitoring measures have in regard to the actions of the agent and his motivation not to reduce the welfare of the principal for his own benefit. The assumption that the principal has this specific knowledge is unrealistic (Müller, 1995, p. 67). Another aspect of criticism is that the costs of the monitoring actions, carried out by the principal or in behalf of him, cannot be fully assessed as all measures must be brought down to one common denominator in order to be comparable, which is to be achieved by the instrument of costs (Jensen et al., 1976, p. 309). Yet it is unclear not only how to evaluate the costs for observing and controlling the actions of the agent, but also if opportunity costs should be considered additionally, as the principal is blocked with controlling activities and cannot do anything else during that time (Bamberg et al., 1989, p. 483), if he himself carries out the observation. The opportunity costs remain therefore also unclear, as there are numerous alternative actions that the principal could take instead.

When desiring to determine the positive effects of his monitoring or controlling measures, the principal has to find out about the functional correlations between the possible measures and the quality of the activity of the agent. He must know the exact reaction of the agent towards every control, incentive or punishment measure (Ebers et al., 2001, p. 215). Only then is he able to find the optimal solution where the marginal costs of his controlling activities equal the marginal utility consumption on the job, or in other words loss of welfare for the principal.

(2) The residual loss represents a cost factor that arises from the difference between the optimal decision or action that the agent could have taken or made in the interest of the principal and the decision or action that the agent really took (Richter et al., 2003, p. 166 et seqq.). It is this gap that characterizes the difference of an optimal level of efforts by the agent in order to increase the welfare of the principal and what really turns out to be the achieved result. This approach can be criticized though as it can be stated that the optimal decision is not known to the principal as there is no situation of perfect information. That is after all the reason why the principal hired the agent as he has a lead on the level of information (Barney et al., 2006, p. 125).

(3) A third agency cost factor are the bonding costs. Bonding costs are costs resulting from activities to lower the situation of asymmetric information or to create a situation of congruent objectives for the principal and the agent. Bonding costs are generated by the attempt to bind the agent closer to the interests of the principal, to align their objectives and to consequently make the agent act in the interest of the principal. This can be achieved by establishing an incentive system for the agent, which is on the one hand costly for the principal, but on the other hand makes the agent see that it is worthy to act in the interest of the principal and to refrain from actions which could affect the principal in a negative way (Dietl, 1993, p. 136). Thus an agent has the opportunity to commit himself to contractual obligations in order to limit or restrict his own activity (Kaluza et al., 2003, p. 25).

As it was already pointed out in the examination of the monitoring costs, the principal always needs to evaluate for himself when the costs resulting from residual loss exceed the costs that monitoring or bonding incur for the augmentation of the principal`s welfare. The principal can for example lower his residual loss if he increases the supervision activities, but this creates in return higher monitoring costs for him (Spremann, 1988, p. 617). Consequently the minimization of agency costs can only mean to fix a limit of a maximum residual loss that the principal can still tolerate and to the search for a measure that fulfils the aim with a minimum effort and therefore minimum costs. If the principal is not willing to invest into monitoring though, his residual loss is expected to be even higher (Meinhövel, 1999, p. 7). Nevertheless, it cannot be confirmed that an optimal measure for implementing monitoring systems or bonding can be found

simply by considering and calculating the agency costs, due to the above discussed criticism of this method. Besides this defect, the introduction of the concept of trust criticizes a possible trade-off between monitoring costs and residual loss for the principal. The refusal to take controlling or monitoring actions can be seen as motivating for the agent to act in a non-opportunistic way and represents a possibility for an inexpensive solution for the principal in order to solve agency problems (Mayer, 1995, pp. 709-734).

The agency theory has the legitimate interest to point out the problems of the interactions between economic entities in a collaborative economy. Yet the positive side of the situation of asymmetric information is that as no principal can do every task by himself, because he does not always have full knowledge or the necessary time for every task to be completed in the best way possible, he will always need the aid of someone (Meinhövel, 2004, pp. 470-475). Positively speaking it is an advanced knowledge that the agent has and that the principal can use by transferring a task to him. Thus the principal can achieve a result which he by himself would not be capable of achieving (Krupp, 2014, p. 20). Considering this, one can move away from the dominant way of only considering agency costs, but consider also agency benefits (Cumming et al., 2013, p. 21). The benefits consist in the competitive edge in knowledge of the agent in comparison to the principal, from which the principal can benefit. The agent is an expert for the principal who can solve the given task in a much better way than the principal would be capable of doing (Horsch, 2004, pp. 531-536).

Trust, as shown, is an important and inexpensive instrument in keeping up a situation of mutual benefit between principal and agent, thus creating a situation of increased welfare for both parties involved. This proves that the situation of asymmetric information is not strictly a threatening one, but bears advantages if handled in the right way and goes against negative Tayloristic thinking, representing a demand for strict controls, thus causing increased agency costs (Taylor et al., 2011, p.18). The existing approach within the NIE and thus within the principal agent theory suggests that trust is not suited as a means to lower agency costs as it could give the agent an additional leeway for abuse and therefore other ways have to be used to lower the asymmetric information (Williamson, 1985, p. 47). Taking up the approach of agency benefit though, it becomes obvious that a

combination of traditional measures and trust could be effective in the attempt dissolve the situation of asymmetric information, even with the positive potential to create a mutual benefit for the principal and the agent at the same time. Such an approach represents a fundamentally opposing model to the Tayloristic structural model, which demands to practice a strict division of labour and introduce excessive control mechanisms. This Tayloristic thinking of assuming that only by close monitoring and performance bonuses individuals could be motivated to act in the best way for the principal can still be found commonly in today's economy (Bea et al., 2002, p. 47 et seqq.). From the point of view of the agency theory to operate with more room for decision for the agent, less monitoring and a higher degree of self-responsibility bears a high risk. Yet practice shows that companies who apply these mechanisms in contrast to a Tayloristic structural model prove to be more successful (Müller, 2000).

4.2.5 Hypothesis with reference to the principal agent theory

The principal agent theory as a part of the new institutional economy has shown that the aspect of asymmetric information between the principal and the agent plays an essential role in decision taking and thus the focus and strategic alignment for a motor insurance company. It is a theoretical foundation for its orientation. The hypothesis formed as a derivative of the research questions is:

Hypothesis 1: The information acquired about carsharing customers ex ante and ex post is sufficient to dissolve the fundamental problems of asymmetric information and counteract opportunistic behaviour.

As it was shown in the discourse above it is a multi-dimensional issue which requires in the analysis more than one aspect to be considered. Therefore the researcher decided to subdivide and segment the above stated hypothesis into three different research questions. The reason why three research questions were chosen is because it represents a suited way to examine in the following chapters the acquired data and information towards their relevance to aid in the avoidance of opportunistic behaviour of agent. In regard to the principal agent theory the main focus of the possibilities lies therefore in the avoidance of effects of (1) hidden action, (2) moral hazard or hidden intention and (3) adverse selection.

Consequently appropriate research questions were formulated with which the hypothesis in regard to the principal agent theory with reference to the strategy of motor insurers by the example of carsharing and the consideration of socio-demographic and technical changes will be examined.

Research Question 1 (Principal agent theory): Is there a way that the motor insurers can draw reliable conclusions about the behaviour and driving performance of a carsharing customer, as both have the same level of knowledge ex ante of the contractual phase?

Research Question 2 (Principal agent theory): Is there an efficient system to avoid an opportunistic and exploitative intent of a carsharing customer towards the provider and thus motor insurer ex post of the contractual phase?

Research Question 3 (Principal agent theory): How can it be assured that the right customers are selected as customers of a carsharing companies, when only the customer has full knowledge about his driving performance?

4.3 TRANSACTION COST THEORY

The origin of the transaction cost theory can be traced back essentially to a pioneering essay by Ronald Coase titled *"The Nature of the Firm"*, which was first published in 1937 (Coase, 1937, pp. 386-405). Coase mentioned in a letter to a friend that he had made an important discovery and that he had accomplished to find the link between organization and costs (Picciotto et al., 1998). In his publication Ronald Coase set off with the finding that the use of coordinating instruments such as the market and hierarchy is not for free. Due to the need to negotiate and agree on a contractual agreement, specific costs arise for the trading partners, as well as for using the market, which are called transaction costs (Picot et al., 1990, pp. 178-184). For the first time in literature Ronald Coase stated, that besides the production costs a firm or a company must also consider transaction costs, such as costs for the organization and settlement of the exchange of goods or products (Langlois, 1998, p. 4). The specificity is that the contractual agreement itself is in the center of the research interest (Saussier, 2000, p. 193). Ronald H. Coase`s achievement was to reveal that transaction costs are relevant in economic processes

and as a consequence he is also called the founder of the new institutional economics (Jensen et al., 1976, pp. 305-360). The transaction cost theory was in the following substantially refined by Oliver E. Williamson. The key assumption of Williamson in his refinement of the transaction cost theory is that there are no transaction costs in a perfect market. Williamson compares the transaction costs to friction losses, which can be observed in physical systems and sees them as a comparative example. Williamson (1985, p. 19) states: *"The counterpart to friction in physics is transaction costs in Economics."*

This bionic parallel from physics into the world of economy is a meaningful expansion of methodological design in order to research about the real motives behind economic behaviour of individuals. Transaction costs though are not only comprised of monetarily quantifiable costs, but include also all with the transaction related efforts and struggles (Picot, 1985, p. 224). As one can assume, according to the logic of the NIE, that the environment is characterized by market imperfections, it means that one hardly ever encounters the situation of perfect market conditions in reality (Calcagnini et al., 2010, p.5). These market imperfections cause the friction in the transaction processes and therefore represent the limitations for the economic agents. The main limitations and thus reasons for the existence of transaction costs are (Boyle, 2015):

(1) Limited (or bounded) rationality. This corresponds to the assumption of an imperfect market as the participants have a limited perception of the facts and different levels of information, which reasons why they do not act completely rational.

(2) Opportunistic behaviour as a general intrinsic motivation of the actors involved in the transactions. As already seen as an assumption of the principal agent theory, also here it is assumed that the participants act with the main aim to follow their own objectives taking into account to achieve also with wittiness and malice a maximization of their own welfare.

In this context limited or bounded rationality describes a modus of decision taking in behavioural science in which the decision taker wants to act rational, but is facing cognitive limitations (Simon, 1959, pp. 253–283). These cognitive limitations consist in the form of costs for the acquisition of information and in

uncertainty. Even if the person wants to maximize his welfare, he cannot and instead evaluates the costs for further efforts for welfare optimization, such as the acquisition of more or better information (Goldstein et al., 2002, pp. 75–90). Limited or bounded rationality is seen as a major paradigm for the new institutional economy.

These frictions, or in other words transaction costs, describe the operating costs of an economic system. Without them transactions are not possible, that is why they are an immanent and indispensable part of the whole economic system (Arrow, 1969, p. 48). Transactions are by definition the entities which enable the trade and are analyzed within this theory. Transactions describe all types of transfer of rights and possessions of goods and services which are being exchanged between at least two parties (Commons, 1934, pp. 58-64).

As shown in the principal agent theory, the momentum in time also needs to be considered when the transaction costs arise, as they can differ in their forms depending on whether they are ex ante and ex post transaction costs (Ebers et al., 1995, p. 209). Here ex ante means before a contractual agreement is made, e.g. search for a contract partner, gathering of information about the contractual partners, negotiation, contract costs, while ex post describes the phase after the contractual agreement has been made, e.g. costs for control, changes that may need to be made in the contract, etc. (Williamson, 1985, p. 20 et seqq.). In general transaction costs always occur when someone uses the institution of the market or the pricing mechanism of it (Coase, 1937, p. 390). But not only costs for using the market incur, as a high percentage of transaction costs is generated after the phase of using the market and in the form of so called administrative costs, which are costs of internal expenses which lie in the post contractual phase (Picot, 1982, p. 270).

According to Picot (1991, p. 344) transaction costs can be categorized into the following phases

(1) Search

(2) Evaluation

(3) Execution

(4) Control

For a more distinctive examination, especially for the analysis of the early phase of cooperative relations, a further breakdown of these phases is necessary. As a guideline for the characterization of the different types of transaction costs serves the indicated momentum in time when they occur (ex ante and ex post). To be more precise Williamson (1990, p. 22 et seqq.) added two more categories within the ex ante phase in contrast to Picot`s definition, before the transition of property rights can take place. The addition comprises costs for negotiation with possible partners and finally the closing of the contract or contractual agreement.

Ex post transaction costs occur by the execution of the contract, control and adaptation or dissolution of the contractually agreed exchange relationships (Williamson, 1990, p. 22 et seqq.).

With reference to Picot, Williamson and Albach the phases within the ex ante and ex post period can be subdivided as depicted in figure 14:

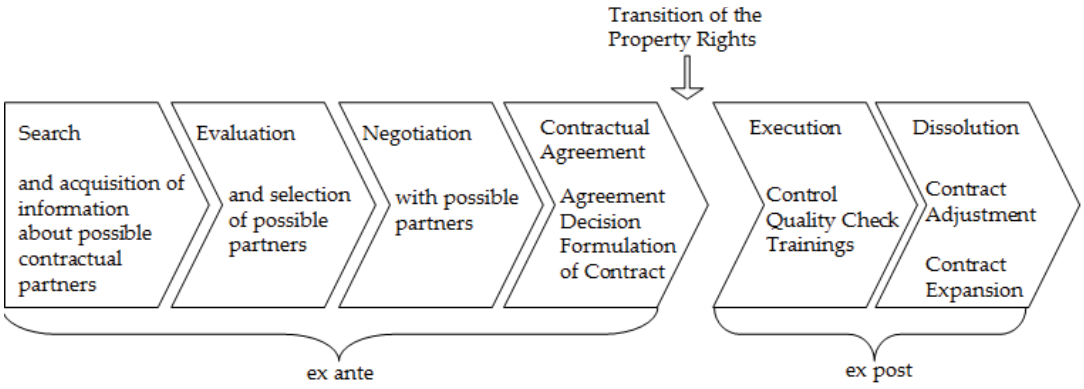


Figure 14: Structure of ex ante and ex post transaction costs, source: Picot, 1982, Williamson 1990 and Albach, 1988

As the contractual agreement itself can be made in an implicit oral or in an explicit written form, the key distinctive feature among transaction costs remains the differentiation into ex ante and ex post transaction costs. Therefore in the following the specific phases in which transaction costs can occur are examined in the order from their momentum in the timeline.

Ex ante phase:

(1) The search phase:

In the center of the search phase stands the specific search for information for the appropriate and suited contract partners. This phase is marked by the key question for the trading partners, with which institution or technological framework can the costs for searching and finding a partner be reduced (Albach, 1988, p. 1160)?

(2) The evaluation phase:

In the evaluation phase transaction costs occur for the examination, evaluation and first selection of possible contractual partners. In this phase the potential partners are subject to a thorough investigation in regard to common interests and targets for a possible cooperation (Butter et al., 2003). Before an investment into evaluation activities is made, at first the reputation of the individual or the enterprise is studied. This is especially the case, if potential contractual partners have no specific experience in the collaboration with the company. Then, before a time and costly evaluation phase starts, information about possible contractual partners is collected either by direct suppliers or reliable third parties (e.g. through Creditreform, an institution that assesses credit worthiness) that know both of the involved parties (Jobin, 2011, p. 448).

(3) The negotiation phase:

In the negotiation phase the content and integral parts of a future cooperation is assessed and clarified (Coase, 1961, p. 15). In this phase transaction costs occur in the form of travel or preparatory costs for the negotiation meeting, as well as worktime costs for the involved staff (Jobin, 2011, p. 456). In the negotiation phase all components of the contract, prices, quantities or volumes and the time for the object of production or service is discussed.

(4) The Contractual Agreement Phase:

All the results of the discussions during the negotiation phase are wrapped up in the contractual agreement phase and a contract for a cooperation is drawn as a result. The form in which the contract is made between the partners can span, depending on the complexity, specificity, or the transaction risk for the particular transaction from either a simple verbal agreement to a detailed and sophisticated

contract in written form (Artz et al., 2000, pp. 337–362). The fabrication of the draft, possible renegotiations and finally the signing of the contract can create substantial additional transaction costs (Bajari et al., 2001, pp. 387-407).

Ex post phase:

(1) The Execution Phase:

After the signing of the contract starts the execution or implementation phase, where the exchange of goods or services takes place. In this phase of the economic process, companies have to pay close attention to establish an efficient transaction process (Picot, 1982, p. 270). Controls of the delivered goods or services must be conducted repeatedly in order to ensure a desired service or quality level (Voigt, 2002, p. 111). Consequently inefficiency can be detected and quality increasing measures such as staff trainings can be arranged.

(2) The Dissolution or Adjustment Phase

After the execution of a transaction, the project of further exchange of goods or services gets either / and expanded, modified or terminated. The adjustment costs can consist in the form of stipulating changes in dates, quality, quantity or price (Picot, 1982, p. 270).

4.3.1 Assumptions of the transaction cost theory

As pointed out in the previous subsection 4.3 the main underlying assumption for the transaction cost theory is, according to its discoverer Ronald H. Coase and the prominent agent of this theory Williamson (1985), bounded or limited rationality and opportunism in the behavioural patterns of the individuals. In order to avoid complexity in the analysis of the decision taking, neutrality in risk taking for the acting participants is assumed, analog to the assumption in the principal agent theory in this research.

Considering the behavioural assumptions stated above an advice for the design of transactions can be derived, which was phrased by Williamson (1985, p. 32) as follows: *"Organize transactions so as to economize on bounded rationality while simultaneously safeguarding them against the hazards of opportunism."*

In other words, transactions should be designed in such a way that problems of insecurity, deriving from the limited rationality, are minimized in the most

possible way and that additionally measures of protection against a possible opportunistic behaviour of one of the contractual partners should be taken. The phase-specific transaction costs are additionally influenced by clear and unclear (ambiguous) transactional situations, insecurity in the environmental conditions, frequency of the executed transactions and general legal and technological conditions (Picot, 1982, p. 271). Considering this, it can be summarized that the costs for transactions are influenced with the given behavioural assumptions by three factors or characteristic traits of transactions (Williamson, 1985, p. 52):

(1) Asset specificity

(2) Uncertainty

(3) Frequency

The following graph depicts the three main influencing factors on transaction costs, which will be examined in subsections 4.3.1.1, 4.3.1.2 and 4.3.1.3 that are functioning as indicators for the transactions.

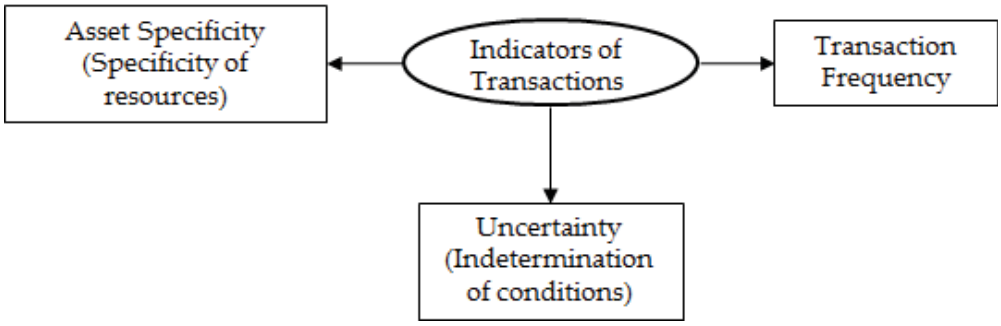


Figure 15: Main influencing factors on transaction costs, author`s graph, source: Williamson, 1985, p. 52

4.3.1.1 Asset specificity

Asset specificity describes the uniqueness and lack of interchangeability for goods or services (Arnold, 2000, pp. 23-29). It is considered the most important of the three in subsection 4.3.1 mentioned factors that influence the transaction costs (Rindfleisch et al., 1997, pp. 30-54). In general specificity describes all types of traits

of a service or product which make, from the customer`s point of view, a difference such as quality, origin, design, security, etc.. According to Williamson (1975b), specificity can be found in the form of:

(1) Location (closeness to the customer makes a big difference),

(2) Real capital (machines with a higher precision than others),

(3) Human capital (skill), buyer oriented investments,

(4) Time (time to market) and

(5) Brand (reputation of the product)

Especially with brand products it is not advisable to service all the sales channels with the same product, as the reputation of the brand can suffer, if the same product can be found in the high end as well as the discount sales channel, thus lowering the goodwill of the company.

This leads to a further criticism of the neoclassical approach. The neoclassical paradigm does not know specificity as it assumes that the goods of a market are homogeneous, i.e. there are always competitors who offer the same product (Veblen, 1898, p. 73). Yet that approach is not differentiated enough, as a transformation from an unspecific product into a specific one happens over the time with the growing experience of the contractual partners with each other. By gathering experiences in working together and showing reliability, the faceless agent can turn into a trustworthy agent who has built up valuable social capital in the form of reputation (Finch et al., 2005, p. 154).

With reference to the service industry in the form of the insurance industry, investments into a company specific qualification can be taken as an example for necessary investments. However, transaction specific investments may be required during the course of a transaction, which could be an investment into a specific production unit or knowledge (Williamson et al., 1993, p. 166). With this investment and the specialization an advantage in comparative costs can be gained. A possible result could be the demand for higher prices ex post in order to exploit the increased dependency of the contractual partner due to this specialization. This would require new negotiations and possibly higher transaction costs (Picot et al., 1990, p. 179).

4.3.1.2 Uncertainty

Literature divides between two types of uncertainty. On the one hand there is a parametric uncertainty (Picot et al., 2001, p. 43) which includes unpredictable external effects, that the individuals cannot include in their contracts and on the other hand there is uncertainty in the behaviour of the participants (Breisig, 2006, p. 59) which may result in opportunistic actions of the contract parties involved (Ebers et al., 1995, p. 213). The latter is favored by an asymmetric distribution of information between the contractual partners, which outlines how intertwined the three selected theories of principal agent, transaction cost and property rights are. Both uncertainties result in a rise of the ex ante and the ex post transactional costs (Wagner, 2004, p. 49).

Parametric Uncertainties (Environmental Unpredictabilities)	Behavioural Uncertainties (Unpredictabilities)
External effects e.g. changes in prices or in the demand make a renegotiation of the contract necessary.	Every contract party will try to get the best for him- or herself, even using opportunistic practices such as lying or covering up of information.

Table 3: Parametric and behavioural uncertainties, source: Williamson, 1985, p. 66

Here again the effect of a supposed underlying limited rationality of the participants excludes the possibility to anticipate all possible combinations of effects that can happen and to already include these possibilities to the full extent into the contracts.

4.3.1.3 Frequency of transactions

With every increase in the number of identical or similar transactions the opportunity of a degression of costs, specifically fixed costs and the creation of economies of scale or synergy effects is created (Ebers et al., 1995, p. 213).

In comparison to the first two above mentioned forms of influencing factors of transaction costs, the factor of frequency is in regard to the influence on transaction costs only of minor importance. The frequency of transactions can vary, yet it is only an indicator in how far controlling or monitoring systems need to be implemented, or if a transaction via the market is still more advantageous (Lambert et al., 2000, pp. 65-83). Again it is the specificity which is decisive, as it is only sensible to implement surveillance or controlling systems for frequent and highly specific transactions. Every transactions bears a risk for the parties involved, which requires precautions in order to work against possible problems that can arise. Possible problems of transactions that can arise are summarized by Williamson (1975b, p. 38) as follows:

(1) The in the transaction involved participants can influence the welfare of the other and they can have conflicting interests.

(2) The participants act only in a limited way rational as they strive to seek the most rational decision possible, but often encounter the limits of their search for information, information processing or the way they can express themselves.

(3) The complexity of the environment overstrains the limits of rationality of the participants, i.e. why they cannot asses all possible developments and close non-optimal contracts.

(4) The behaviouristic model of the homo oeconomicus is an assumed precondition only of the neoclassical paradigm, but not of the NIE. That is why the participants act in an opportunistic way and even trick the other parties in order to pursue their own interest and achieve the best outcome for themselves. Instead of informing clearly about their acting, they even cheat.

(5) The opportunity for opportunism arises as one party has more information than the other and thus a competitive edge or both parties have the same but incomplete information. A third possibility is that the specification of the good is so high that the contract partners cannot be easily exchanged anymore.

4.3.2 Approaches for the solution of transaction problems

Williamson (1985, p. 36) claims that the central demand of the transaction cost theory is: *"To organize transactions in such a way that the limited rationality must be scarcely used but at the same time transactions must be protected from the risks of opportunism."*

In order to find the optimal transaction, the sum of the production or creation of goods or services costs must be considered in conjunction with the transaction costs (Kieser et al., 2003, p. 52). That requires an ordinal institutional approach which contains the following steps according to Sydow (1992, p. 130):

(1) Assessment of the characteristic traits of transactions.

(2) Characterization of the different contractual and control alternatives, as well as control mechanisms.

(3) Execution of an institutional comparison with the result of a display of options showing the lowest sum of production and transaction costs.

4.3.2.1 Systems of supervision

Screening is an effective means in order to avoid possible negative consequences deriving from the situation of asymmetric information. Assuming that bounded rationality exists and that opportunistic behaviour is a general behavioural pattern of the agent, it is important that the principal is able to take counter measures in order to be able to control the real acting of the agent. Therefore systems of supervision are of increased relevance.

4.3.2.1.1 Control and surveillance by market mechanisms

Through the market standard goods or services can be easily traded. The form of the contract should be a classic contract, in which most eventualities are foreseen and in case of a dispute the rights can be easily clarified with the help of a lawyer (Williamson, 1985, p. 78). The enforcement of contracts is therefore easy and unproblematic, because every contractual partner can threaten to end the contract, due to the possibility of substitution. The monitoring system of the market is in this situation an ideal means, as it uses the element of competition among the market participants. The market creates competition, especially if it

offers a great number of homogeneous alternatives. The contractual partners can choose for every transaction a new transaction partner, because of the large number of suppliers and buyers (Göbel, 2002, p. 143). The possibility of an unproblematic and cost efficient transition from one to another contractual partner is the decisive feature for one partner in competition with another. It takes a compelling monitoring tool though, which sanctions opportunistic behaviour (Williamson, 1990b, p. 54). Like this the market participants can take new decisions due to their experiences, or if they lack experiences they can consult the experiences of other buyers or publications, e.g. independent consumer reports or ratings. It can be criticized though that this works only for mostly homogeneous products or services, while for products with increased specificity the market internal monitoring system fails. For this situation other solutions for safeguarding the transaction must be created as otherwise the ex post transactional costs may rise substantially (Bea et al., 2002, p. 155).

This discourse shows that the market control proves to be most effective towards all standardized non-specific transactions (Clegg et al., 2005, p. 25). The buyers make either their own experiences, rely on experiences of others or independent testers giving results, thus having the effect of lowering chances of an opportunistic approach of market participants as they stand in competition to each other. The overall transaction costs are assumed to be low in a well-functioning market with homogeneous goods or services, as the highest amount of them lies in the ex ante costs in finding the right contractual partner (Trigg et al., 2009, p. 13). That is why for such goods or services the market is the almost optimal control mechanism. The ex post costs tend towards zero, as a change is easily possible and does not incur high costs for a law suit in order to settle differences (Williamson, 1975a, p. 110).

4.3.2.1.2 Monitoring by third parties and surveillance systems

With contracts in general the imperfection exists that not all eventualities can be mapped in the drafts and in case of differences the parties do not necessarily want to immediately terminate the running contractual agreement or sue the other party. The fact that not all eventualities in the contracts can be mapped is the assumption of limited rationality in the NIE. Especially long running contracts are

therefore not fully complete (Bulte et al., 2007, p. 47). Because of this, adjustments in the contracts become necessary during the time they run. That is why in practice most differences are settled outside court in contrast to the belief of the neoclassical model, thus creating the need for a third party as a settlement institution. In case such a settlement is not successful, there is always the way to court after that option has failed (Williamson, 1979, pp. 233-261).

In a situation of occasional transactions of specified goods or services, the market fails in being an adequate instrument for control as both parties are interested in keeping up good relationships after a certain investment has been made for a specified good (Wiedemann et al., 2007, pp. 285-302). The key point is that this relationship cannot be easily replaced via the market. The investment is too important and the good or service too specific. In case of differences it is most likely necessary to involve a third person in order to act as a mediator to find a solution (Eisenhardt, 1989, p. 59). This third party has the role to monitor if the contractual agreements are fulfilled, or if a monitoring or controlling systems should be installed, that does this task for them.

4.3.2.1.3 Surveillance and standardized control

In long lasting and complex contractual relationships it becomes with time of less and less importance what the exact words of the contracts are, as the relationship of the contract parties grows and differences are mostly settled internally (Parker et al., 2003, pp. 97-108). The necessity to clarify disputes in the legal way becomes less important as the parties involved have a certain loyalty, accuracy and reporting obligations. Therefore one can rather speak of a cooperative relationship (Rahman et al., 2002, pp. 45-54).

Following Feldmann (1999, p. 161) such a cooperation can be characterized by one party giving up its independency (e.g. working contracts are a classic example for this) or by keeping it, which is the case when the market partners depend on each other due to their specificity. In the latter case complex contracts must be formulated in order to avoid differences. In order to control the correctness of the cooperation one partner can be allowed to monitor the production or service steps of the other one. This form of cooperation can be

defined as a hybrid cooperation, as it combines elements of a market trade with elements of a hierarchy (Eßig, 2002, p. 6 et seqq.).

Differences in the economies of scale are the most important reason in entering a mutual cooperation for mainly highly specific transactions (Suematsu, 2014, p. 77). Besides the advantage for production, as a producer of mass goods has with his economies of scale, another advantage can be seen in his core competence to be the right supplier. Both contractual parties keep their independency, which allows the supplier for example to sell an eventual overproduction to other clients (Starr, 2002, p. 272). The ex ante costs are assumed to be high, as both parties strive to enter a two sided contract. They search and screen the potential partner thoroughly, as the intention is to enter a long lasting business relationship, consequently they try to include all eventualities in the contract (Godfrey et al., 2000, p. 230). Both partners will have complex and not easy to find attributes that is why the search process is very intense.

To harmonize the control systems in a two sided relationship will create high transaction costs to set up an adequate control or governing system (Oliver, 1994, pp. 53-67). By taking over the other party, the one party would integrate the other and from that moment on this changes the motivation of the integrated contractual partner, as he is not operating on the market anymore. Profits will not flow directly to him anymore and therefore there will not be a market price anymore (Dow, 1987, pp. 13-38). That is why incentives must be replicated for the integrated partner, which is a costly process. Market prices are exchanged for internal transfer prices which bare the risk to be subject for manipulation (Moschandreas, 2000, p. 286). Measure and control problems which were formerly solved by the market must now be solved internally. This effort proves to be worthwhile for the case that repeated specific transactions take place and transaction costs can thus be reduced.

As seen in the discourse above a key element of the transaction cost theory is the specificity. That is in literature a key element for the choice of the right control system, as the approach is to say that the right control system saves transaction costs as ex post differences can be avoided (Commons, 1934, p. 64). Instead of a control or surveillance system Williamson (1990b, p. 89) speaks of a governance structure that needs to be implemented. He groups these control- and surveillance systems, or in other words the governance structure, according to the different

types of transactions. He puts the three dimensions of the characteristic traits of transactions as referred to in subsection 4.3.1, the asset specificity, transaction frequency and uncertainty in one correlative context. Williamson assumes a medium level of uncertainty and examines which governance structure (surveillance system) should be chosen, depending on the different levels of specificity and transaction frequency. The following graph depicts the effect the determinants transaction frequency and specificity at a given level of medium uncertainty for the specific choice of governance structure.

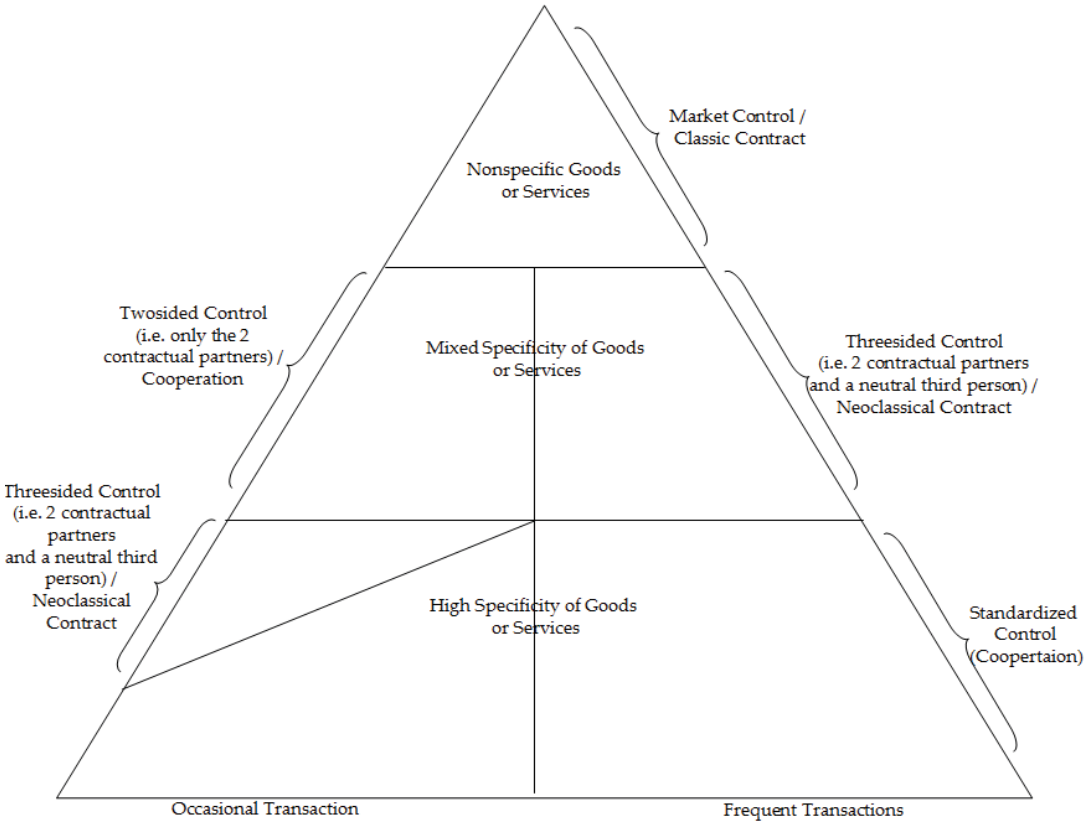


Figure 16: Governance structures in the transaction cost theory, source: Williamson, 1990b, p. 89

While the principal agent theory assumes that a certain constellation of contracts is given (e.g. contract of purchase, etc.) the transaction cost theory sees an

approach in the solution of conflicts by the choice of contract before the closure of the deal (Wallis et al., 1986, p. 98). Different types of transactions demand different types of contracts (Lai et al., 2003, p. 187).

4.3.2.2 Clanmechanism and bureaucracy

Until this point in the study, it was shown that the transaction cost approach provides a solution for the problem of the NIE, which was lacking a principle to evaluate the efficiency of organizations. It is obvious that there is the need for a clearer pattern in order to characterize the organizational efficiency in more detail (Ouchi, 1980, p. 129). For this problem William G. Ouchi developed within the transaction cost approach a solution, which offers the opportunity to determine the circumstances under which the costs of intermediation of transfers or trade are raised. The solution that Ouchi developed is another effective form of surveillance or control system for transaction cost problems, which sees, next to the known control mechanisms which are the (1) market, (2) hierarchy and (3) a hybrid form of market and hierarchy, an approach in a clan behaviour (Ouchi, 1980, p. 129). It will be shown though, that the clan approach is not really a fourth form next to the three forms mentioned above of market, hierarchy and a hybrid form of it, but rather a subdivision hierarchy within the intragroup organization, defined by Williamson as a special form of hierarchy (Jarillo, 1988, p. 34). Bearing this in mind, socialization in the form of a clan is a further means of mediation mechanism or control. Ouchi (1980, p. 132) stated: *"Thus, industrial organization can, in some instances, rely to a great extent on socialization as the principal mechanism of mediation or control, and this "clan" form … can be very efficient in mediating transactions between interdependent individuals."*

In contrast to Williamson (1990b, p. 88), who assumes that the goals and interests of the individuals within an enterprise are mostly congruent and that the hierarchy solves problems of measuring by experience and monitoring, Ouchi on the other hand assumes the existence of principal agent problems also in a hierarchy. He presumes that also in hierarchic forms of organization measuring problems exist (Pfannschmidt, 1993, p. 127). Therefore the two main sources for cooperation problems are according to him measuring problems and the existence of conflicting goals. The hierarchy solves the measuring problems via bureaucracy, meaning clear targets are given out and the achievement is controlled and possibly

punished. The possibilities for control of the standards and guidelines and the sanctioning when deviations are detected are considered by Ouchi, as very limited (Ouchi, 1980, p. 134). Especially when there are specific, new or complex tasks to be done, measuring is considered to be very difficult due to the lack of appropriate data for comparison (Ouchi, 1980, p. 135).

As a solution for this problem, Ouchi suggests the elimination of target incongruences by a corresponding socialization of the people. Wandosell, Peña Acuña and Del Henar Sánchez Cobarro (Wandosell et al., 2015, pp. 944-966) elaborated in a precise comparison among the multinational companies of Inditex, Banco Santander and Telefonica the vital contribution of strategic communication as a form of adaptation in the culture of a company to ensure the survival of an enterprise in an ever faster changing market environment. In terms of the principal agent theory, the bureaucracy helps to reduce asymmetric information, but the control mechanism reaches its limit when the tasks become more complex or inseparably connected with other tasks. That is when Ouchi suggests to direct everyone towards one common goal instead of having a mere goal congruence (Foster, 1998, p. 121). Through this socialization of the participants a common feeling of solidarity is expected to build, counteracting a potential opportunistic behaviour of the individual. That is what is meant with the term of clan, not a system of incentives, but a system of common values and convictions creating a mutual philosophy and view upon things. A strong feeling of belonging together should be created in order to counteract traits of opportunistic behaviour. Ouchi calls this the formation of clans and states (Ouchi, 1980, p. 136): *"In this sense, any occupational group which has organic solidarity may be considered a clan."*

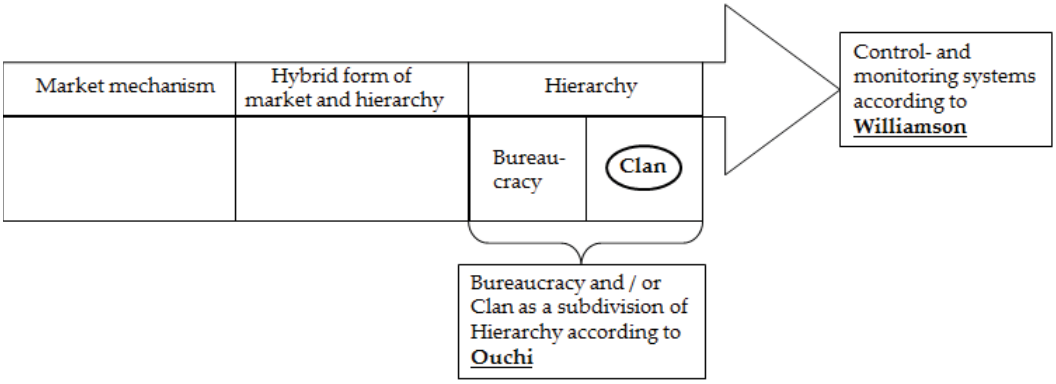


Figure 17: Clan and bureaucracy as part of hierarchy, author`s graph, source: Williamson 1990b, p. 88 and Ouchi, 1980, pp. 135-136

The clan system, in today's terms, can be found as corporate culture and it can be regarded to be a subsystem of the hierarchy as a control- and surveillance system. It does not put the emphasis on the control aspect, but on the aspect of solidarity among the people within a company (Alvesson et al., 1993, pp. 427-452).

The basis for the formation of clans are not contractual regulations, incentive systems or structures, but instead a common identification with values, standards, convictions and traditions, hence creating a common corporate philosophy or identity (Kirsch, 1997). Consequently the clan mechanism describes an attitude which is not an additional monitoring or system of domination next to the system postulated by Williamson, but it offers the chance of an internal monitoring and a common feeling of commitment to act in a non-opportunistic way within each member of the group. Barnat (2005, p. 10) adds that a necessary prerequisite for a functioning clan mechanism is the mutual trust of the members of the group. Only if the participants trust each other and define trust as their core value, then the clan mechanism can work.

The discussion in the literature regarding bureaucracy (control) is controversial. It is not clear if it shall be seen separately from a corporate culture or clan (socialization), as a hierarchical element of surveillance or dominance system (Zintl, 1993, pp. 89-117) or not. William G. Ouchi (1980, p. 138) regards bureaucracy as a form of organization, based on formal directives which are given

by a central body. According to him bureaucracy works with clear instructions and control, while the clan mechanism is based on solidarity of the people and has therefore not the implication of instructions and control from a central body. Henslin (2009, pp. 124-125) confirms this point of view and sees bureaucracy as part of the hierarchy and authority within an organization with a clear set of rules that are written down.

Both described mechanisms in dealing with the problems of cooperation show that bureaucracy and clan (socialization) are on the one hand complementary and on the other hand opposing. The danger of bureaucratic controls is that they can act counterproductive and can be regarded as a declaration of mistrust for the employees, having a discouraging effect (Williamson, 1975a, p. 55). The employee only acts according to the rules and only fulfills his jobs according to the rules, but without any further involvement. Therefore it can be stated that control mechanisms can fail under certain conditions. In order to set their strategy and to decide which control mechanisms should be implemented, companies must be fully aware of when a control mechanism can fail. The following points give an overview over when control mechanisms are set to fail (Ouchi, 1980, p. 135):

(1) When the task becomes more complex or a new task is introduced it is difficult to set a new measurable standard of behaviour for the employees.

(2) It is difficult to assess whether set standards have been reached and if the employee is responsible for it.

(3) It is not enough to have the employees fulfil the expectations, but to motivate them to exceed the expectations and develop an entrepreneurial spirit.

Whenever measuring problems are high, the clan mechanism is suited to solve the principal agent problems and create high performance ambiguity and low opportunism.

4.3.2.3 Contract typologies

In addition to the coordination pattern of Ouchi, who sees the three forms of market, bureaucracy and clans, Macneil (1978, pp. 854-905) differentiates between three types of contract typologies:

(1) Classic typology (for simple short term transactions). The classic typology describes the agreement (contract) between two contractual parties either in verbal or written form.

(2) Neoclassic typology (for long-term complex transactions). In this typology a third party is required in the contractual process with the task to evaluate the performance and resolve disputes, in case they appear, making the contract subject to a trilateral governance.

(3) Relational typology (for a continuous, not very detailed exchange of goods and / or services). The relational typology describes a form of contract, which has its effect based on trust; a relationship of trust, between the contractual parties. There are on the one hand the explicit terms of the contract, which only serve as an outline and on the other hand there are the implicit terms that is the individual interpretation and understanding of the words of the contract that really define the behaviour or real acting of the parties.

Macneil considers the first two typologies (classic and neoclassic) as insufficient and even inaccurate when studying contracts. He states though, that when the object of negotiation is simple and non-complex, then a simple form of contractual agreement, such as the verbal agreement can be chosen, while in a longer lasting and more complex transactional situation, a specified and written contract form should be chosen (Macneil, 1980, pp. 149-158).

4.3.2.4 Advantages of institutional arrangements

Throughout the time many different forms of contracts have been created, not only consisting in pure forms such as purchase, rent, work, etc. contracts, but also in hybrid forms, such as loan or franchise contracts (Groenewegen, 1996, p. 197). According to the transaction cost theory the diversity of forms of contracts has been created due to the search of an optimal way to handle transaction cost problems. Following the thoughts of Williamson (1985, p. 19), it is the main interest of economic institutions of capitalism to reduce transaction costs.

Despite the innovative essays and findings of especially Williamson and Ouchi, there is a common opinion in literature that no undisputed definition of transaction costs exists (Williamson, 1979; Arrow, 1969; North, 1989; Dahlmann, 1979). The term itself remains vague. That is why the majority criticizes that

transaction costs cannot be properly measured (Terberger, 1994, p. 34). Furthermore, it needs to be considered that institutional arrangements do not only differ in regard to transactions, but also in regard to production costs. Economies of scale and economies of scope can for example be realized by an external producer, which could never be achieved by the customer himself (Lyons, 1995, pp. 431-443). As it is not clear which part of the costs derives from the production or which from the contractual part, it remains unclear if the economies of scale or scope were achieved by negotiating the specific contract with the customer or by simply more effective production. The postulation is therefore, that costs must be seen as a sum of transaction and production costs (Williamson, 1990, p. 25). In general terms, the circumstances of the location where contracts are made must be considered, as one form proves to be effective in one country or culture and the next is better in another country or culture for the same transaction. In the case of goods, transport costs must also be considered.

Criticizing the transaction cost approach, it can be argued that any form of institutional arrangement (contract) is suited to lower the transaction costs that is why there is no optimal form of contract (Vasiliauskiene et al., 2009, p. 1018).

The above shown status of research demonstrates that standard transactions are rather executed via a market, while highly specified transactions are rather carried out in a hierarchy, be it a bureaucratic one or rather in a clan form. The choice of the institutional arrangement should always be dominated by a cost-benefit evaluation whereas the amount of the transaction costs is only one aspect among others.

4.3.3 Comparison to principal agent theory

While the principal agent approach can be criticized for focusing too much on the problems arising from the issues of the agency relationships, the transaction cost approach can be criticized for making the specificity of the goods traded too much liable to be a cost driver (Bayón, 1997, p. 375). In both cases it can be criticized that the consideration of an agency-benefit is neglected, making the division of labor seem disadvantageous (Meinhövel, 2005, p. 77). The focus of the new institutional economy is the consideration of costs and its reference model is

the ideal market of the micro economy (Göbel, 2002, p. 155). From the point of view of the ideal market measuring problems, such as asymmetric information, hamper a transparency of the market. Furthermore specificity is considered to hamper competition, therefore the demand is that specificity should be avoided (Klein, 1980, pp. 356-362).

When comparing the transaction cost theory with the principal agent theory it becomes obvious that:

(1) Both theories assume that the idea of man is based on the homo oeconomicus with the inclusion of bounded rationality, asymmetric information and opportunistic behaviour.

(2) While the principal agent theory, at least in its normative approach, assumes that all participants are rational, the transaction cost theory assumes that there is only a limited rationality. That implies that the given contracts must be constantly made more concrete and updated in regard to who needs to do what and when, while also the control and incentive mechanisms need to be constantly adapted.

(3) The asymmetric distribution of information is in the transaction cost theory only one source of problems, next to its major problem, the specificity.

(4) The transaction costs are usually higher than the principal agent costs as the latter theory does not consider costs for contract negotiations or adaptations of contracts due to the limited rationality, but only focuses on the contents of the contracts, as the agreed premiums for the negotiated services.

While the principal agent approach assumes that every offer is somehow supplied by the market and the only costs that can incur are the ones to search for this offer, the transaction cost approach assumes that not every service is offered by the market (Windsperger, 1983, pp. 889-903). A certain offer may be too specific that the person offering it may not have a broad base of customers, thus making him vulnerable for opportunism (Zernott, 2004, p. 51). The transaction cost theory states that there are rational economic reasons for why some transactions are better to organize in one way, while other transactions are better to be organized in another way (Williamson, 1985, p. 59). In the following, the aspect of information

and its different forms and consequences is discussed in more detail, as it has a formative effect for the relevance of transaction costs.

(1) Asymmetric information and specificity: According to Williamson the problem of asymmetric information and opportunism can occur in the principal agent theory, as well as in the transaction cost theory, as long as limited rationality is assumed and the contracts are not fixed ex ante in a very detailed way, anticipating the resulting problems and their solutions via contract regulations (Williamson, 1991, pp. 269-296). Only with emergence of limited rationality opportunism and asymmetric information the situations can become problematic. But as long as the goods or services traded are not specific this does not pose a real problem, as the market can then execute its control function (Picot, 1982, pp. 267-284). In a multi agent market, the agents stand in competition to each other, knowing that if they behave in an opportunistic way, they are not considered anymore when contract renewal negotiations are scheduled again (Alparslan, 2006, p. 28). The rivalry compensates the initial situation of asymmetric information. First of all the fact that a large number of similar agents is available lowers the status of asymmetric information, due to the this situation accompanying possibility to compare with others. Second, the principals can make their experiences with the different agents and find out ex post about their real behavioural pattern, thus lowering the risk of opportunism (Arrow, 1969, pp. 47-64).

(2) Identical but incomplete information: Even when contracts have been made anticipating every situation and result that can occur, the parties can have disputes later on about the fulfilment of the contract. This dispute can arise as the anticipation of all possible results was based on incomplete information, therefore the contract could not cover entirely all constellations of possible outcomes (Williamson, 1979, pp. 233-261). It can be said for example, that the car is insured when it is parked in a supervised parking lot. When the car gets stolen anyhow because the lot has corners which cannot be seen from every angle of the guard house, then the dispute can be that the car was not parked under supervision and the theft is not covered. The information is identical, but the interpretation is different and this can also incur transaction costs.

(3) Asymmetric information towards third parties: An opportunistic agent can lie about his motives (Suematsu, 2014, p. 195). To give an example for such a motive is, if a person drove intentionally too fast over a bump because he wanted to be faster at his arrival point and thus ruined the suspension of a car that belongs to the company, he can tell the employer that it broke because he was forced to run over something cause he had to steer away from a suddenly appearing obstacle. If an expert has to evaluate the damage and has another opinion on the information, this can cause ex post transaction costs (Dahlstrom et al., 1999, pp. 160-170). Among the contract parties of employer and employee there is no asymmetric information, but among the contract parties and the third party, the evaluator there is. This is a criticism of the principal agent theory as it assumes that the contract parties fulfil their contractual agreements and that a court decision can be gotten for free in order to settle the claims. This is seen differently by the transaction cost theory, as it is not considered to be realistic to settle a dispute without costs (Williamson, 1996, pp. 59-60).

In literature it is stated, especially by Williamson, that specificity is the central problem in the transaction cost theory. Williamson (1985, p. 64) remarked: *"The importance of factor specificity for the transaction cost theory cannot be emphasized enough."* Given asset specificity, which is the uniqueness and non-interchangeability of a good or a service, Perry (1989, pp. 183-225) identifies the hold-up situation as a central problem in the transaction cost theory. As long as there is no factor specificity, the contract partners have the choice between homogeneous offers and consequently they have no interest to always keep the same agent for a certain task, as the partners appear to be interchangeable. They only become different and thus diverge in their skill and value by a difference in their factor specificity, such as in their qualification (Picot et al., 1999, p. 70). This situation ends and can be described as a lock-in situation when one agent offers such a specific good or service which is more or less unique and thus puts an end to free interchangeability. This leads to a hold-up situation, in which the contract partners either renegotiate clauses of the contract and its interpretation during the contractual phase, or when the prolongation of a contract is to be negotiated (Den Butter, 2012, p. 63). While the danger of a hold-up situation is only of minor importance in the principal agent theory, it is of central importance in the transaction cost theory (Göbel, 2002, p. 137), as one partner can literally rob the

other partner due to his bargaining power resulting from the specialty of his offer and the dependency of the other one on it (Sanford et al., 1986, pp. 691-719.). Having this bargaining power one party can, during a contractual phase, renegotiate environmental changes with the aim to achieve changes in prices or in other conditions, which demand a renegotiation of a contract (Ouchi, 1980, pp. 129-141). The supplier cannot risk losing the customer due to his dependency on him and if the customer can choose another supplier his negotiation position is very strong. In such a situation there is a high probability that the stronger partner annexes the quasi benefit of the other partner (Perry, 1989, p. 213). The logic of the quasi benefit is depicted in the following figure 18.

Quasi Benefit: p1 – p2 = pQ

p1 = Price the supplier can achieve in a transaction

p2 = Price the supplier can achieve deducting the bargaining power of the customer

pQ = Quasi benefit

Figure 18: System of quasi benefit, source: Milgrom et al., 1992, p. 269 et seqq.

If the supplier cannot sell his services or the customer is extremely strong as there maybe for example no other customer besides him, he could only sell for p2, which means for his variable costs, thus passing his whole quasi benefit on to the customer (Milgrom et al., 1992, p. 269 et seqq.). If not even that is possible he would achieve a negative marginal income. If he cannot even sell for that price he is likely to disappear from the market as his loss situation becomes severe.

To sum up, due to the limited rationality, all the different variations of possible situations cannot be included in the contracts. That is why a renegotiation is certain to occur, consequently causing transaction costs (Simon, 1991, pp. 125-134). Especially difficult transaction problems arise when limited rationality, opportunism and specificity occur at the same time (Stuckey et al., 1993, pp. 71–83).

4.3.4 Hypothesis with reference to the transaction cost theory

The transaction cost theory as a part of the NIE has shown that the key problems in contrast to an ideal market are:

(1) Limited (bounded) rationality

(2) Opportunistic behaviour

(3) Specificity

The above mentioned limitations incur transaction costs. For an insurance company on the German motor market the key question is how to keep the transaction costs as low as possible in order to answer the main research question, if an engagement in the German carsharing motor market is sensible with reference to the socio-demographic and technical changes. In the discourses above it was pointed out that in the methodological approach of Ouchi the clan system, as a subsystem to hierarchy with the function of a control- or surveillance method requires one very important prerequisite: Trust. Therefore a very new approach will be examined in this study, which cannot be found in literature yet. It is the effect of trust as a means to lower transaction costs. Trust is so far not found in the transaction cost approach, as it would contradict the strive to reach a pareto-optimal welfare, due to the limitations of the market, especially with the assumption of opportunistic behaviour.

In order to research this new aspect of trust as a means to reduce transaction costs in the course of this study, the following hypothesis in regard to transaction costs is formed by the researcher:

Hypothesis 2: The introduction of trust as a new element will lower the transaction costs in carsharing.

The investigation will be carried out as explained earlier in a matrix form putting the research and subresearch questions in relation to the formed codes in order to assess their relevance. To be able to do so, a suited research question is needed and therefore formed.

Research Question 4 TAC (Transaction cost theory): Does the introduction of trust effectively counteract opportunistic behaviour, lead to a more responsible way of driving and to what extent should it be used ex ante and ex post?

4.4 PROPERTY RIGHTS THEORY

The property rights theory is a separate research field within the NIE, next to the fields of the principal agent or the transaction cost theory. The origin of the property rights theory can be seen in the works of Ronald Coase (Coase, 1937, pp. 386-405), whose approach was refined in the late 1960s by Armen Alchian and Harold Demsetz. The central idea of this theory is to consider goods or services as bundles of rights and to consider the trade of goods and services as the trade of bundles of rights (Schlager et al., 1992, p. 249). The main objective of the property rights theory is the microeconomic investigation of the structure of rights of disposal in regard to goods and services, as well as in regard to individuals (Alchian et al., 1972, p. 795). Richter and Furubotn (Richter et al., 1996, p. 83) summarized: *"The property rights theory represents the right over material or immaterial resources, entitled by law, a contract or social obligations."*

According to this theory the right over a certain scarce property, in the form of a good or a service, entitles the proprietor to use this good or service and to benefit from its use, as well as giving him the right to block others from doing so in regard to the same asset (James, 2011, p. 37). Franz and Kebeet von Benda-Beckmann (von Benda-Beckmann, 2010, p. 24) state that the term good or property can exist in three different forms. It can be comprised of (1) material goods (e.g. services from individuals and contributions in kind), of (2) immaterial goods such as rights (e.g. receivables, copyrights, patent rights) and of (3) relations (e.g. the customer base of a store).

4.4.1 Assumptions of the property rights theory

In its roots the property rights theory is based on the assumptions of the neoclassical theory, but as shown for the cases of the principal agent as well as the transaction cost theory, the behavioural assumption of bounded rationality,

asymmetric information and opportunism is assumed in contrast to the neoclassical paradigm. Furthermore the neoclassical thinking is modified and extended with the thought of scarcity in the goods or services, as well as the existence of competition among the participants.

According to Carroll (2004, p. 54), the property rights approach can be differentiated into the economic and the legal property stream. The economic property rights of an individual over a commodity or an asset is the right for the direct consumption of the good or service by the individual, or the indirect consumption of the good or service by exchange (Demsetz, 1967, pp. 347-359). The legal property rights are the rights that are accepted and prosecuted by the government (Barzel, 1997, pp. 1-2).

In the following course of the research, in this study the focus will be on the economic property rights in order to stay inline with the main objective of the property rights theory, to carry out a microeconomic investigation of the structure of rights. According to Ebers and Gotsch (Ebers et al., 1999, p. 201) the economic property rights can be classified into different forms according to their utilization:

(1) The right to use a good (usus)

(2) The right of benefits deriving from the good (usus fructus)

(3) The right to change the good (abusus)

(4) The right to transfer all or a single right onto others (ius abutendi)

(5) The right to exclude others from the use of the good

This classification illustrates that the economic worthiness of a property is not only assessed by its material value, but also by the possibility of what to do with it. It is important to highlight that the property right is not considered to be one specific right but instead, as pointed out, a bundle of rights (Lueck, 2008). The aspect of being able to exclude others from the use of something is manifested in §903 of the German civil code (BGB). To associate the described situation of bundles of rights with the practical implications for this study, one needs to reference it to automobiles and their utilization. The right to use a car, to drive it, is the usus. The right to rent out the car and to keep the profit of it, the lease, or the rent, is the usus fructus. The right to change features of the car, be it technical or in

its appearance, is the abusus, even though it has the connotation of possible misuse. The right to sell the car or parts of it is the ius abutendi.

Well defined and enforced property rights are the basis for economic growth (O`Driscoll et al., 2003, p. 2) or in other words, the basis for a functioning business model, such as carsharing. Without these clearly defined property rights, there would be uncertainty and thus a restraint to implement such a business model as it is uncertain that the benefits (usus fructus) of the use could be collected by the carsharing provider or the motor insurer providing the insurance coverage.

4.4.1.1 Double prisoner`s dilemma

Without a clear regulation of property rights a situation can arise that is characterized by conflicting interests of an individual and the group that the individual forms part of. In literature it is described as a double prisoner`s dilemma (Meister, 2015, p. 121). In economics the term prisoner`s dilemma is regarded as deriving from the game theory and is therefore allocated to the organizational theories. The term describes the dilemma that two prisoners are interrogated separately from each other, with the frame condition that if both deny to have committed a crime they each get a low sentence. If they both admit to the crime they each get a high sentence, but if one admits and the other denies the crime, the one who admitted the crime will become the principal witness and get no sentence, while the other will receive the maximum penalty (Kollock, 1998, pp. 183-214). The specific dilemma is that every prisoner has to decide whether to admit or deny the crime without knowing what the other prisoner said, as the sentence is passed on the basis of the decision of both of the prisoners together. In regard to carsharing and the customers, it is a double prisoner's dilemma because the dilemma exists for the group on the one hand and the individual carsharing customer himself on the other hand. In the following the problem is specified:

(1) It is more profitable for the individual in a collective not to respect the property rights in order to increase the individual welfare (e.g. drive with the carsharing car recklessly to save time). The benefit lies fully on the side of the driver, as he collects the whole benefit result from his behaviour (earlier arrival and less costs in a time related pay per use car sharing model), while the collective

is responsible for possible costs such as an accident or damages due to negligence and these costs are absorbed by the collective.

(2) It is in the interest of the collective to punish persons who disrespect the property rights. On the other hand, it is not in the interest of the individual to participate in the costs for the punishment (e.g. installation of surveillance systems in carsharing cars to track the driving behaviour) or its enforcement as the individual could be part of it.

Demsetz (1967, pp. 347-359) used a more literal example with a comparison to an Indian tribe of the Montagnais, trading beaver fur. As long as the demand is low there is no need for a clear regulation of property rights as the incentive to hunt too a lot is very low. Only with a rise in the demand it becomes necessary to regulate the property rights (here hunting area and the right to hunt) to internalize the negative external effects and counteract a situation in which too many animals are hunted.

That the chosen theories of the NIE are interconnected becomes once again evident by the fact that a change in property rights also incurs transaction costs (Ullrich, 2004, p. 137). The allocation of property rights can be changed though and is not static. Umbeck (1981, pp. 38-59) formulates that as soon as new external effects emerge, a pressure to adapt is created to internalize these new external effects created by the repartition of the property rights. It is this repartition of property rights that incurs transaction costs, as negotiations have to be held to decide about the right extent of a repartition, considering a cost-benefit effect. Therefore, the involved parties must decide between the status quo of the benefit in the present situation of property rights, compared to a possible increase of the benefit, which requires changes and thus produces transaction costs (Tietzel, 1981, p. 214).

4.4.1.2 Demand for no transaction costs

Ronald Coase (1960, p. 2) stated in his theorem that the market is a self-regulating system that is capable to compensate the external effects, as long as the situation is given that the market participants can negotiate themselves about the allocation of the resources and that for the negotiation and trade no costs arise.

The demand to be able to operate without cots is a fundamental precondition which needs to be fulfilled, yet it is considered to be unrealistic. A pareto-optimal result can only be achieved if no costs are generated. In reality, this is where the transaction cost theory on the one hand and the property rights theory on the other hand intertwine. The precondition of no costs is not fulfilled if transaction costs are generated. That can also be the case if an allocation of property rights is missing, making it complicated to reach a solution by negotiation, which is thus generating costs as no solution can be reached without negotiation. As soon as transaction costs exist, a trade-off occurs between a complete allocation of property rights and the implementation of the property rights, as external effects decline and transactions rise, leading to a dilution of property rights (Engel et al., 2006, pp. 73-98). It is not always necessary though that the government intervenes in the allocation of property rights when transaction costs occur as it can, with the restructuring of other framework conditions or institutions, set the ground for a reduction of transaction costs to such an extent that solutions by negotiations can be found again (Erlei et al., 2007, pp. 339-351).

4.4.1.3 Material and immaterial property rights

Property rights can exist not only for material but also for immaterial goods, such as the reputation of a company or person, or by an individual showing a reliable behaviour during the duration of a contract (Richter et al., 2003, p. 594). The material evaluation is shown in the goodwill of a company or person, which can exceed its value of the sum of material property by far.

Part of the asset of a person is also the right that the person has towards a certain other person, the so called relative property rights or receivables (Richter et al., 2003, p. 88). Typical relative property rights are for example rent, lease, interest or remuneration demands. Here comes the government into play again, as the largest parts of absolute and relative property rights are protected by law.

Part of the property rights of a person are the personal relationships that a person builds up with time, which implies the right to cooperativeness, truthfulness and loyalty. In this context, one speaks of social capital (Francois et al., 2005, pp. 51-94). Such immaterial relative rights can only be executed in

combination with people that one interacts with for a longer time span. These rights are an asset as they do not only contribute to the wellbeing, but also because they facilitate economic transactions and make them more efficient, as control costs are reduced or become redundant. The element of trust is a prominent example for social capital. Reliable behaviour builds trust and therefore does not only increase the welfare, facilitate transactions and makes them more efficient, it also enables to have access to the resources of the ones that the economic agents are committed to (Ripperger, 1998, p. 166). Social capital, such as trust, can enlarge the own resources. Also in this context, as seen before in subsection 4.2.3, trust is regarded to function as an essential glue for society (Uphoff, 2000, pp. 215-252). This finding goes back to the Aristotelian consideration in book 1, chapter 2 of the Zoon Politicon, which means that Aristoteles realized that humans are not only different from each other in their knowledge, characteristics and resources, but also in their demands and aspirations. The key difference in comparison to the assumptions of the neoclassical theories is therefore the underlying concept of man. According to Adam (2007, p. 5) Aristoteles considered man as striving by nature for good purposes, developing into a neutral strive for an optimal goal in the neoclassic paradigm, which was then enhanced in the NIE attributing man by nature an opportunistic behaviour in a setting with asymmetric information and bounded rationality.

4.4.1.4 The restricted use of property rights

Property rights are limited by law as the property of one person normally has effects on another person. That is why legal regulations have to be taken to protect the individual from unwanted negative effects (Coyle, 1993, p. 14).

Transferred onto carsharing, it is the restricted use of the carsharing vehicle regulated between the carsharing company and the person renting the carsharing car. Following Wernick (2007, p. 65), external effects occur with the process of negotiating the terms of the restricted use. This needs to be considered in the cost-benefit calculation and a structure for the cooperation should be chosen incurring a minimum of transaction costs and external effects. Insurance companies must therefore consider in which way a developed tariff can cause an external effect onto the customer and these effects must be clear and accepted by the customer ex

ante, as otherwise legal conflicts can arise (Schmeider et al., 2015, p. 15). The regulation must be designed in that way though that it can be executed, meaning controlled and enforced. The benefit of the use of a resource depends therefore not only on the rights one has to use the resource, but also on the costs for the use of it (determination, enforcement and transfer of the property rights). In reality every trade incurs transaction costs, which each individual strives to keep as low as possible (Tietzel, 1981, pp. 207-213).

4.4.2 Forms of property rights

According to Lehavi (2013, p. 104) the property rights can be categorized in another form than the previously presented ones. Lehavi suggests a categorization into different property or management forms or regimes. He categorizes the forms of property rights by the approach of ownership, which can be in the hands of private persons or enterprises or in the hands of more than one owner, a group ownership for example. Furthermore, the rights can be held by a public institution, rather than a private person or group. In subsection 4.4.2.1 until 4.4.2.3 these different categories are presented.

4.4.2.1 Private property

In the following it is presumed that the private property has some advantages in comparison to the thought of common property, as people with private property use their resources scarcely and cautiously, because they want to keep the value for a future transfer as high as possible (Schüller, 2002, p. 86). They try to keep the value as high as possible, while the community benefits from this approach. Beutter (1971, p. 123 et seqq.) states that the effects of private property can therefore be seen in:

- Rational decision taking of the participants
- Low control costs, as every private owner will handle his property as efficiently as possible.

A deviation from this optimal concept is the situation of an allocation of property rights onto different people, as it is the case when persons appear as lessees for carsharing contracts.

4.4.2.2 Common property

In common property the entire bundle of rights belongs to several participants (Stevenson, 1991, p. 57). Next to the public common goods which are accessible for everyone such as air, the sea, space, etc., there is common property in the narrower sense, which is the property of a well-defined group (Lise, 2007, p. 21). Several people can own and share a car for example. Outside of the group the ownership is clearly defined, while towards the inside it is not. If the internal property rights are not clearly defined this generates automatically negative effects. A typical danger for common goods is their overuse by individuals and at the same time an underinvestment into the common goods to keep up the quality. That is why private property is seen as a better form for an efficient factor allocation (Cubbage et al., 2017, p. 266). The bigger a group gets and the less the participants know each other, the higher are the costs generated for an efficient settlement, which prevail the advantages of common goods.

4.4.2.3 Public or state property

The rights on public or state property, or rather the property itself, is characterized by the property being freely accessible by everyone, bearing the high risk of overuse and underinvestment by every individual in order to increase his or her own welfare. This form is not considered further in this work, as carsharing cars are limited in their use only to a group of members in possession of a valid driver's licenses and not to anyone.

4.4.2.4 Levels of association and property regimes

Ostrom and Schlager (Ostrom et al., 1996, pp. 127-156) categorize five states or levels of association:

(1) Owner (Full owner): This form comprises the strongest form of legal entitlement, as the individual is not only authorized to the utilization of a specific

resource, but has participation rights and can decide whether or not to exclude another individual. Furthermore, the individual can decide on whether to sell or rent the resource.

(2) Proprietor: The individual has next to the entitlement of utilization of a specific resource and a participation right also a stronger right, which is the right to participate in the decision on whether or not to exclude another individual.

(3) Claimant (authorized claimant): Next to a simple utilization of a resource, the individual is equipped with participation rights.

(4) Authorized user: The individual is entitled by law to make use of the specific resource, but strictly in the sense of utilization, not in the sense of any further exploitation.

(5) User (authorized entrant): The individual is only allowed to utilize the specific good or service, without any further rights connected to the use.

If one puts the different property or management regimes in perspective with the distinct stati or levels of association, one can work out the following combination:

Entitled Individual	Property or Management Regime	Rights
Individual	Private	Owner (full owner)
Group	Private	Owner (full owner)
Group	Common	Proprietor Claimant (authorized claimant)
Public	Government	Authorized User
Noone	Open Access	User (authorized Entrant)

Table 4: Combination of property regimes with levels of association, source: Bromley, 1991, p. 22 et seqq.

Considering the three explained main forms of property or management regimes of private, common and public property, Bromley and Cernea (Bromley at al., 1989, p. 11) also suggest a fourth form of property regime, an open access or non-property regime. An open access or non-property regime is characterized by a situation in which property does not exist. The logic is here that as no property exists, consequently property rights also do not exist, which makes institutional efforts or arrangements to regulate the use and the access of property superfluous.

It was previously stated that the form of private property is the most efficient one. That is only the case though if the costs deriving from the maximization of the welfare of the individual according to the behaviour of the homo oeconomicus remain mostly external (Kirsch, 2004, p. 31). If the individual feels the costs of his actions more, which is the case in common property, his decisions would be directed more towards an increase of the welfare of the group (Ostrom et al., 2010, p. 55). This assumption motivates insurance companies to develop tariffs with a more group-specific approach, to stimulate the social behaviour in order to maximize the benefit of the group of people participating in the carsharing. The essential point is that the members of the group of drivers must realize that their positive behaviour contributes to the maximization of the benefit for the group and thus for the maximization of their own benefit (Barbanell, 2001, p. 136). If everyone thinks that the additional external costs of the misbehaviour of a single participant is absorbed by the group (sheer endless seeming resources of the community), then it is the tragedy of external effects that leads the whole model into ruin (Meister, 2015, p. 121) and thus to a dismissal of the business model of carsharing.

4.4.3 Varieties of splitting up property rights

Considering the costs and the benefits of having a car, especially in big cities, people tend towards a solution of sharing a car. That has the consequence that problems in the use of this common good car can arise. The problem is rooted in the assumption of the NIE that every individual strives to maximize his own benefit in an opportunistic way (Erlei et al., 2007, p. 53). Different standard contractual situations can be defined for the distribution of property rights bearing in each different model potentials for conflicting situations (Göbel, 2002, p. 79):

(1) Lease and rent contracts

(2) Loan contracts

(3) Contracts for services

(4) Contracts of employment

(5) Contracts of association

In the following the focus will be on lease and rent contracts, as the relationship of the carsharers towards the carsharing provider is a relationship that requires a lease or rather rent contract, which also affects the motor insurer.

4.4.4 Lease or rent contracts

In a rental contract the right to use a certain object is transferred onto another person, while the ownership remains with the lessor (Schmidtchen, 1981, p. 10). Any mobile (e.g. a motor vehicle) or immobile good can be rented out to another person.

At the beginning of this subsection 4.4, it was stated that the property rights are defined as being a bundle of different rights (Christman, 2002, p. 196). In the case of renting out objects, the classic rental contract only transfers the right to use the object (usus) onto the other person, while the right to generate profit with this object (usus fructus) is not transferred onto the hirer. If the right to generate profit with the object is transferred onto the other person one speaks, according to § 581 of the German Civil Code (BGB), of a lease contract. The natural contradiction inflicted by rental contracts is the antipode that the lessee wants to have the object for as little costs as possible and also does not want to invest into its maintenance as he is indifferent towards maintaining the value of the rented object (Coyle, 1993, p. 200). The lessor wants to get as much profit as possible from his bundle of rights and wants the lessee to use it as little and carefully as possible. In combination with the principal agent theory this opens the threat of moral hazard, as every participant will try to maximize their own welfare (Ricketts, 2002, p. 101). The lessee has in regard to the lessor an advantage in the information as he knows the condition of the object he leaves it in, after he used it, much better. For example, if the lessee scratched the rented car just a little bit, it is not sure that this will be discovered. Being correct he would have to report it, but if he does not report it, it

has very good chances that it is not discovered and he does not have to pay for it. The lessees of an object do not have an incentive to treat the object carefully and maintain or increase its value if such an incentive is not created (Ullrich, 2004, p. 146). Naturally it is quite the opposite, as the lessee is set to exploit the object as much as possible for his own benefit.

4.4.5 Hypothesis with reference to the property rights theory

The property rights theory as a part of the NIE has shown that the contractual arrangement, which determines how the bundle of rights is transferred, is of significant importance for the resulting transaction costs. The hypothesis formed is:

Hypothesis 3: The contractual agreement between the carsharing companies and customers must be detailed to achieve a better risk distribution and encourage safe driving.

The investigation will be carried out in a matrix form putting the research and subresearch questions in relation to the formed codes in order to assess their relevance.

Research Question 5 (PR = Property Rights Theory): To what level should contractual agreements be detailed and is an element of ownership a suited self-regulating means in order to let the individual participate in the success or low-performance of the group of carsharing drivers?

4.5 CONCLUSION

The new institutional economics has gained significant importance in research and is considered to be a refinement of the neoclassical paradigm with the approach to work with the more realistic assumptions of bounded rationality, opportunistic behaviour and asymmetric information. For this reason, selected theories of the NIE in the form of principal agent, transaction cost and property rights have been chosen in order to examine their contribution for an optimal

alignment of motor insurers in their challenge to find the right strategy to stay ahead of the competition in a world with dramatic changes in terms of digitalization and socio-demographic developments. In the previous subsections it was shown that the selected theories are intertwined and interdependent. The principal agent and the transaction cost theory are assigned to the research string of economic theories within the NIE, while the property rights theory is assigned to the judicial or legal string of the research field of the NIE. With this selection the researcher ensured that in this study has a strong focus on the economic aspects on the one hand, with two theories deriving from the economic field, but also a consideration of the fundamentals of the contractual side with the property rights theory on the other hand.

It was shown that the principal agent theory addresses a key problem for the motor insurers, which is the problem of asymmetric information, the focus of the examination conducted in subsection 4.2. The different characteristics and consequences of asymmetric information in the form of hidden characteristics, hidden intention, hidden action and hidden information were discussed and it was worked out that the principal, as the contracting authority, has to take counter measures in his relationship with the customer or agent not to suffer from consequences as adverse selection, moral hazard, shirking, or a hold-up situation. To reduce these problems agency costs are incurred, as the NIE assumes that the use of institutions is not for free in contrast to the beliefs of the neoclassical paradigm. As the appropriate measures can differ significantly, it is advisable to separate them according to an ex ante or an ex post contractual situation. Next to approaches of goal harmonization between principal and agent in the form of incentives or effects of screening and signalling, the researcher presents a new approach by the introduction of trust as a possible element to reduce agency costs, which is seemingly contradictory to the underlying assumption of opportunistic behaviour of the individual within the NIE. The theoretical examination shows though, that trust is generally suited when accompanied by certain monitoring or surveillance measures. The examination of the cost aspect is of central importance within the NIE, as the use of institutions is assumed not to be free of costs. Therefore, this aspect is examined in depth in the subsection 4.3 of the transaction cost theory. Transactions produce costs and costs are considered to be friction,

resulting in a possible residual loss for the motor insurer. The aim of every economic agent is therefore to keep the transaction costs as low as possible. The key problems, that the individuals in their striving for this aim encounter is the restriction specificity in the form of asset specificity, which is the core problem, in combination with transaction frequency and uncertainty as accompanying problems. In the search for an optimal solution a trade-off has to be made by the individual between a secure and expensive system with very little leeway for abuse and the establishment of an inexpensive system with a higher probability of abuse, due to opportunistic behaviour. These systems described are monitoring and surveillance systems in a hierarchic form of direct control and bureaucracy, or in relational approaches like social capital, or a clan system which sees a functioning mechanism in the socialization of people, having a common culture or beliefs. A third aspect, which is examined in subsection 4.4 within the property rights theory, is the contractual background as a basis for transactions. This judicial aspect is equally important for the consideration for a strategic alignment of a motor insurer, as the form of contract sets the binding ground for a functioning business model in carsharing. It is especially relevant, as the cooperation model usually exists in a triangular form between the carsharing customer, the motor insurer and also the carsharing company as an intermediary. This makes the contractual situation more complex, but also more important for the motor insurer. It needs to find an optimal allocation of the rights of disposal for the formation of a successful strategy. As property rights represent a bundle of rights that are traded, an efficient form is found in private property regimes, because having the status of an owner coincides with the expectation that the individual handles the objects or services with more care. This thought will be taken up in the further examinations in this study in the search for ways to put carsharing users more in the role of an owner, in order to stimulate positive conduct with the carsharing vehicles.

5. THE MOTOR INSURANCE MARKET IN GERMANY IN THE LIGHT OF SOCIO-DEMOGRAPHIC AND TECHNICAL CHANGES

The motor insurance market in Germany started its development shortly after the discovery of motor vehicles in the form of motorbikes and motorized vehicles with more than two wheels at the end of the 19th century. Very soon after the invention of these vehicles first accidents occurred and people realized that these vehicles pose a greater risk than the until then known slower vehicles, which called for insurance solutions.

5.1 THE MOTOR INSURANCE MARKET IN GERMANY

Historians state that the invention of the motor vehicle started in the year 1885 with the development of the first "Reitwagen" or riding wagon, by Gottlieb Daimler and Karl Maybach (Fiala, 2006, p. 266). It had a 0.5 horsepower engine and was the first motorcycle in the world.

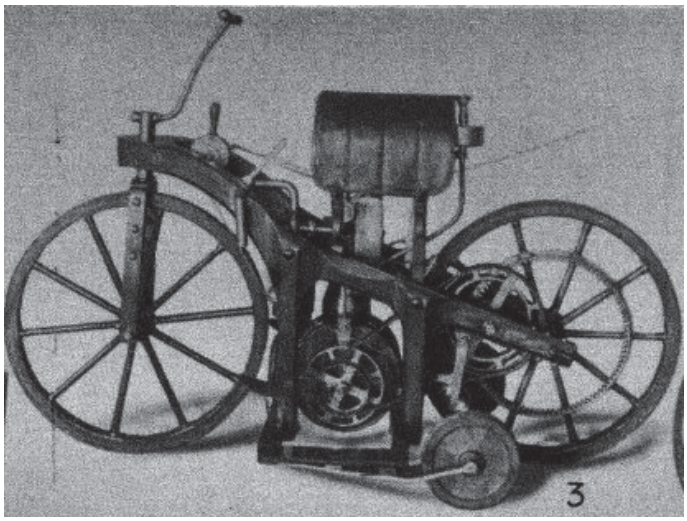


Figure 19: First motorcycle from 1885, source: Allgemeine Automobilzeitung, 1930, p. 27

This development was followed in 1886 by the integration of an engine (with 1 ½ horsepower) into a carriage for the first time, conducted again by Gottlieb Daimler and Karl Maybach. It was the first motor carriage, or car, in the world and documented in the German patent office under "Reichspatent" number 34926 (Sass, 1962, p. 92).

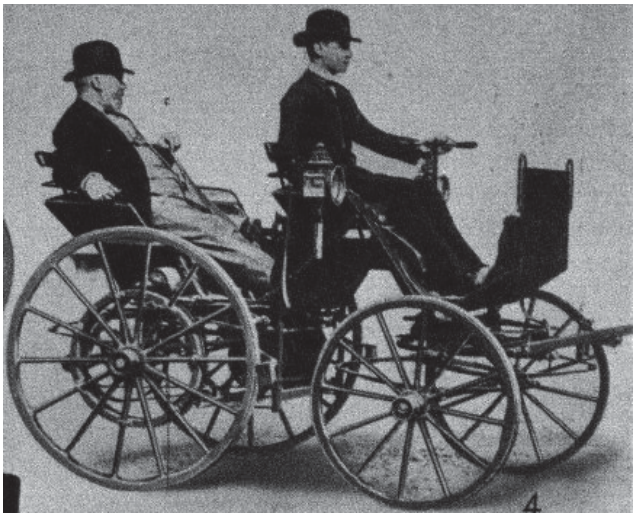


Figure 20: First motor carriage from 1886, source: Allgemeine Automobilzeitung, 1930, p. 27

With this development a means of transportation was born, which created with its growing acceptance even more the necessity to insure possible risks arising from the use of such vehicles (König, 1997, p. 449). These motor powered carriages bore a higher risk than the so far known horse carriages and equipages as they were faster and people were not used to them in terms of driving and traffic conduct.

5.1.1 Historic development of the motor insurance

The origin of the motor insurance came along with the development of the motor vehicle and started in the United States of America, where motor vehicles spread rapidly due to better and more efficient production made possible by the invention of an assembly line production technique by Henry Ford. In 1905 American insurance companies already had 27 million US-Dollars in premium

income (Koch, 2011, p. 688). From the United States of America this insurance branch was carried over to England where in London the fatal accident of a woman colliding with 7 km/h contributed to the development of the motor insurance, resulting in the creation of the first specialized insurance one year later called the Cycle and Motor Car Insurance Company (Arps, 1965, p. 235). At the beginning of 1900 it was doubted if this branch of insurance would ever be a market. That it became a whole industry is shown by the dynamic dispersion and growth in the number of registered cars is illustrated in table 5 below:

Year	Total Number of motor vehicles in Germany	Of Total Number: Number of passenger cars in 1.000	Change in Percent	Of that: Number of trucks in 1.000	Change in Percent
1950	1.774	475	-	335	-
1960	7.054	3.954	+ 732%	594	+77.3%
1970	14.811	12.280	+211%	897	+51%
1980	23.929	20.428	+66.4%	1.114	+24.2%
1990	31.547	27.028	+32.3%	1.211	+8.7%
2000	45.328	37.734	+39.6%	2.204	+82%
2010	50.184	41.738	+10.6%	2.385	+8.2%
2011	50.902	42.302	+1.4%	2.441	+2.3%
2012	51.735	42.928	+1.5%	2.529	+3.6%
2013	52.391	43.431	+1.2%	2.579	+1.9%
2014	52.967	43.851	+1.0%	2.629	+1.9%
2015	53.716	44.403	+1.3%	2.701	+2.7%
2016	54.602	45.071	+1.5%	2.801	+3.7%

Table 5: Growth in number of motor vehicles in Germany, source: GDV, 2016, p. 101

The above depicted table shows the development of the number of motor vehicles growing continuously in Germany. It is especially interesting to observe the trend and find that after the triumphant rise in registrations for private passenger cars in earlier times, it is now a phase of consolidation, while the registrations for trucks still rise strongly, even after 2010. The segment of private passenger cars is also still growing, but the trend is visible to ship even more goods by truck than by train or inland waterway ways, as trucks have a superior feature of flexibility in their routing for transport companies. Trucks can start their route anywhere and can be rerouted even at short term notice to pass by other stations, if necessary. Trucks are not bound to a specific route or departure time (Ihde, 2001, p. 175).

It is striking though, that until today there has been a constant rise in the number of vehicles, despite all negative external factors such as a continuous traffic congestion, especially in the cities, continuously rising maintenance costs for vehicles, limited and expensive parking space, etc. (Schöller et al., 2007, p. 736). Therefore, the question that arises for the future strategy for motor insurers is if this continuous rise in the number of vehicles will pursue? If a decline in the number of vehicles is possible, what will be the answer of the motor insurers? Not only this numerical factor of rise is of importance, but it is also questionable if driving a car will still be the same in the near future, considering the changes in society or in technology?

As a starting point for an analysis of the motor insurance market, it is of importance to consider the relevance of the motor market segment in Germany against a worldwide scale. In terms of the absolute number of motor vehicles, Germany was ranked in 2011 with 44.7 million vehicles number 4 in the world, after the US (249 million), China (93.5 million) and Japan (75.5million). Also in the number of motor vehicles per 1.000 inhabitants, with 622, Germany ranks fourth in the world (Koch, 2011, p. 688). In this consideration, states of less than 10 million inhabitants were exempted, e.g. San Marino, Monaco, Liechtenstein, etc..

Shortly after the development of the motor vehicle, the era of the motor insurance began, as the necessity became obvious to cover this so called transport risk of a different kind. In Germany, the first motor insurance was introduced in 1899 as a third party motor insurance by the Allgemeine Deutsche

Versicherungsverein (Arps, 1968, p. 111). At the beginning, the customers came from an elite circle such as lawyers, notaries, public officers, doctors or pharmacists. Being at first a part of the transport insurance, the motor insurance developed as an own branch within the insurance. The fast growth of motor vehicles, the rising value of cars due to technical improvement and the rising number of accidents turned the motor insurance from an individual to a high volume business.

In 1907 a first product development could be observed, regarding the third party liability insurance, as a differentiation was introduced distinguishing between two seats and more for private vehicles, yet still regardless of engine power, due to a lack of statistical data to exactly evaluate the risk (Asmus et al., 1998, p. 17). A next step was taken in 1910 by differentiating the tariffs for:

(1) Private vehicles: The differentiation was done according to steering horse power (indirectly cylinder capacity).

(2) Motorbikes: The differentiation was done according to the type of seat (saddle seat or chair seat).

(3) Trucks: The differentiation was done according to maximum speed.

When World War I happened, no further development in the tariffs could be observed.

In 1925 a first attempt was made to operate in a more risk adequate way, by considering the horse power of the engine (i.e. engine power, speed, weight, measures and value of the vehicle), while for trucks the differentiation was done in categories of loading capacity. It was then that for the first time motor insurers expanded the coverage and combined elements of third party liability, comprehensive and accident coverage in one coverage. In 1928 the association of German motor insurers was founded, which started with 41 members, a commonly developed tariff and the task to function as a body of regulation for premiums, terms and conditions, as well as gathering overall market data and set up transparent claims statistics (Lammers, 2006, p. 4). The year 1928 was also in another regard a milestone for the German motor insurance, as a first insurer, the Gothaer insurance, introduced a tariff with attributes that relate to regional

classifications (Jannott, 1940). This is a principal which is still used today for risk segmentation. It was found out by analyzing accident reports, that in densely populated areas the risk of having an accident was much higher than in scarcely populated areas. Also discounts for certain less risky jobs were given as they were seen to stand in positive correlation with the risk attitude of the individual. Also at that point for the first time an insurance company paid customers money back when they stayed free of accidents for a period of five years (Koch, 2011, p. 690).

The harmony did not last long as after only a very short time competition among the members of the association of motor insurers became evident and consequently the regulation of fixed prices was lifted in 1929, only one year after it had been introduced. After 1929 the tariff differentiation for private motor vehicles found its expression in a consideration of engine power and the criteria if the body of the motor vehicle was open or closed. First experiments with deductibles proved to be unsuccessful at that time (Asmus et al., 1998, p. 23). Against the trend, which was dominant at that time, that insurance companies offer all various types of risk coverages, a first insurance company in Germany specialized exclusively in the field of motor insurance at the beginning of the 1930`s, the HUK, later called HUK Coburg (Haftpflicht-Unterstützungs-Kasse kraftfahrender Beamter Deutschlands).

Only 31 years after the development of the first automobile and a first tariff for this means of transportation, the consequences of the competition among the insurance companies took its toll as in 1931 an element of misinterpreted free market behaviour led to a first aggressive price war. This resulted in the first insolvencies of motor insurers and as a consequence of this, the comprehensive coverage was put under the control of the insurance supervision, thus implicitly deciding that the motor insurance was no longer part of the transport insurance, an insurance field which was free of supervision (Jannott et al., 1952, p. 227). It was then that the first cyclical market behaviour of insurance companies in the motor segment could be observed. From then on an oscillating trend in the price reaction pattern of motor insurers was inaugurated. It was the starting point for a continuous cycle of raising and lowering prices, which marked the fight for customers. Yet as long as the market was regulated these oscillations were not as drastic as they became after the market was deregulated by end of July 1994 (Britzelmaier et al., 2002, p. 96).

Going back to 1938, a single standard tariff for all motor insurers was introduced by law lowering tariffs for motorbikes and private cars in order to support mobility and the production of the beetle by Volkswagen. Regarding the developments in the third party liability one has to look back into the year 1933. While in the infancy of the motor insurance, a third party motor insurance was voluntary, it became compulsory in 1933, at first for driving instructors, then in 1934 for passenger transports and in 1935 for long distance transports of goods as well. The swing back towards a single standard tariff occurred in 1933. Due to high losses, a voluntary deductible was introduced in 1937 by insurers in the third party liability. The still young market did not react too well to this change and its introduction was accompanied by incomprehension and fierce protests of the consumers. After turning down several attempts to make the motor third party liability insurance compulsory, it was finally ratified on February 12th 1937 to make it compulsory (Jannott, 1937) and finally introduced as legally binding by a law, approved by Adolf Hitler on June 7th 1939 and put into legal practice on July 1st 1940 (Barner, 1991, p. 103 et seqq.). It was then in 1940 that a third party liability insurance for motor vehicle owners was not only advisable, but became compulsory by law (Hedderich, 2011, p. 344). At the end and shortly after the Second World War the motor insurance in Germany lost its relevance, as many motor vehicles were deregistered or confiscated. In order to reward drivers who remained free of accidents and claims, a form of premium refund was introduced in 1950. This idea was taken to a higher level two years later in 1952 with the development of an even more refined bonus system for such contracts (Lammers, 2006, p. 6).

Despite a liberal spirit for market economy of the first German minister for economic affairs after World War II, Ludwig Erhard, the principle of a general tariff, a tariff which has to be in its core structure and pricing the same for all insurance companies, was kept as it had been practiced in the past. Thus free competition in the motor insurance market in Germany was not possible and competition was regulated until December 31st 1961 when the decree PR Nr. 15/59 loosened the price fixing. This decree was a first move away from a rigid system of inter-coordinated tariffs and was continued in 1962 with the liberation of the tariff design, which enabled every insurance company to diverge from the common

tariff and instead develop an own approach in order to market it (Hofer, 2004, p. 113). It can only be considered a first move towards a liberalization of pricing, as these tariffs still had to be ratified by the association of German motor insurers.

The above mentioned fundamental turning point in the history of the motor insurance came precisely on July 29th 1994, when the entire insurance industry in Germany was, in conjunction with the creation of a single European market, deregulated (Koch, 2012, p. 474). Since this date insurance companies in Germany were not completely free in the calculation of their pricing. From this point on, the approval of the association of German motor insurers for a tariff was no longer necessary. Free product development and price setting became possible. Before this time the tariffs of motor insurance companies were to a high degree interchangeable and no substantial competition was conceivable. As a consequence, the reaction pattern of motor insurers in Germany was very heterogeneous. The core implications of the deregulation of the German insurance market can be summarized according to (Müringer, 2005, p. 16) as follows:

(1) Insurance policies of other European countries could now be sold freely on the German market.

(2) Products and tariffs could now be introduced on the market without having to follow a limiting corridor of requirements and inspections from national committees.

The primary consequence of this deregulation was the beginning of the indicated fierce competition among German insurers and especially motor insurers, notably in regard to pricing. It became a ruinous price competition, marked by attempts of insurers to crowd out others by using the strategy to dissolve strong claims reserve positions in order to finance this price competition (Towers Watson, 2013, p.18). Summarizing reason why motor insurance contracts were affected so rigorously are given by Horgby (2014, p. 8):

(1) Motor insurance contracts are mostly short term.

(2) Motor insurance contracts are transparent and can be easily compared with other offers, for example by aggregators (price comparison portals).

(3) Motor insurance contracts are entry products to win new customers for cross-selling in the insurance business.

(4) Price is the most important criterion in the choice of a motor insurance. The extent of coverage becomes a sub-criterion in the decision process for or against a motor insurance offer.

5.1.2 The situation of the motor insurance market in Germany

The German motor insurance market is with a premium income of 25.9 billion EUR in 2016 a substantial column of the general premium income for German insurers and it is the largest business segment in the German property and casualty insurance (GDV, 2017). Looking at the German motor insurance market closely an opposite trend is noticeable, that indicates a widening gap between a moderate premium growth and strongly rising average claims costs. On the one hand the premium income has not risen as continuously as the number of cars in Germany has risen and on the other hand damages and thus claims have become significantly more expensive each year due to the fact that more technology is integrated in parts of the cars, making the average claim more expensive. The following figure provides a segmented overview over the German motor insurance market in regard to the types of coverages. The values displayed in the following figure 21 and 22 are in billion EUR.

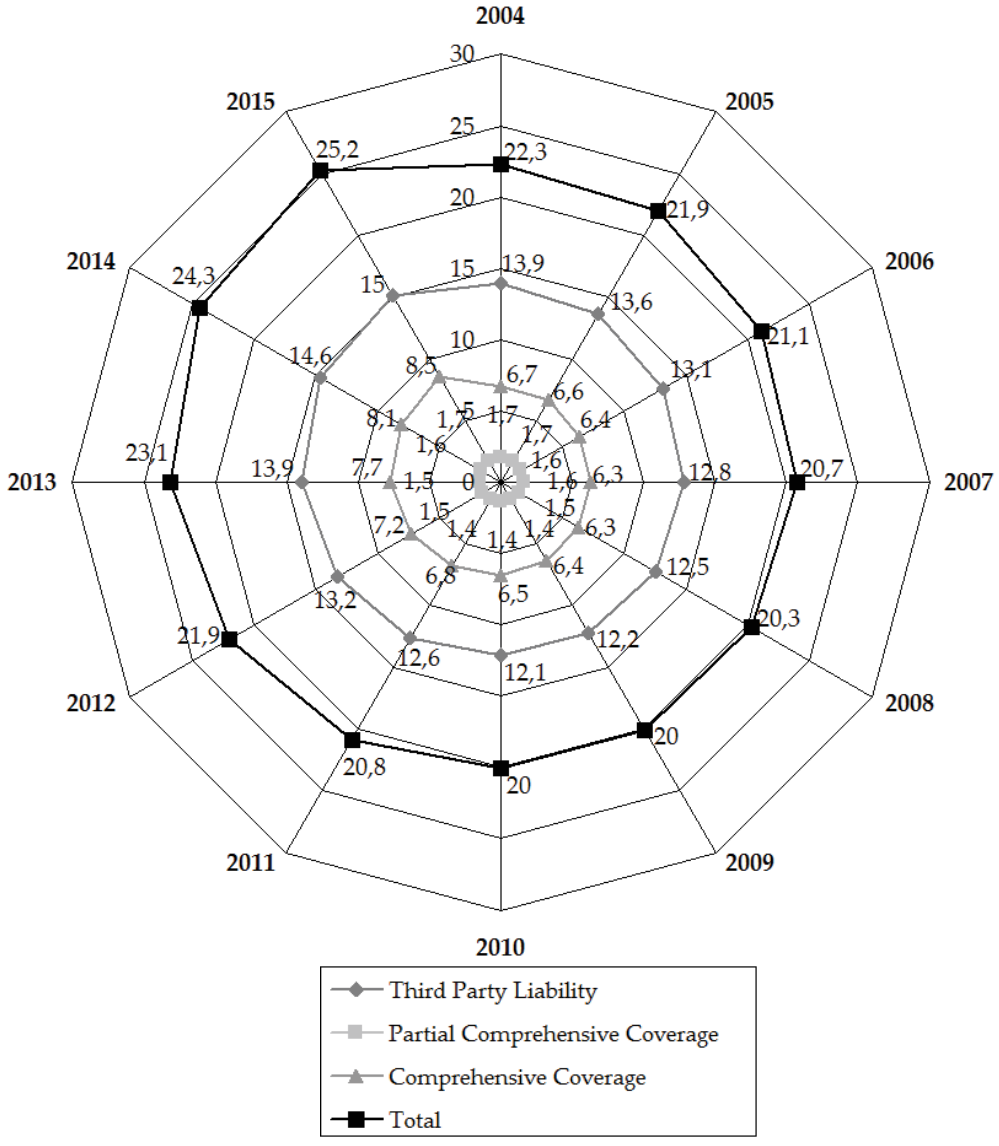


Figure 21: Premium share by coverage of the German motor insurance market, author`s graph, source: GDV, 2016, pp. 77-81

This trend explains why a loss situation of 5 billion EUR was generated between the years 2008 and 2013 in the German motor insurance. Fundamental product innovations were not made and consequently the competition mainly focused on the price (Schmeiser et al., 2015, p. 22).

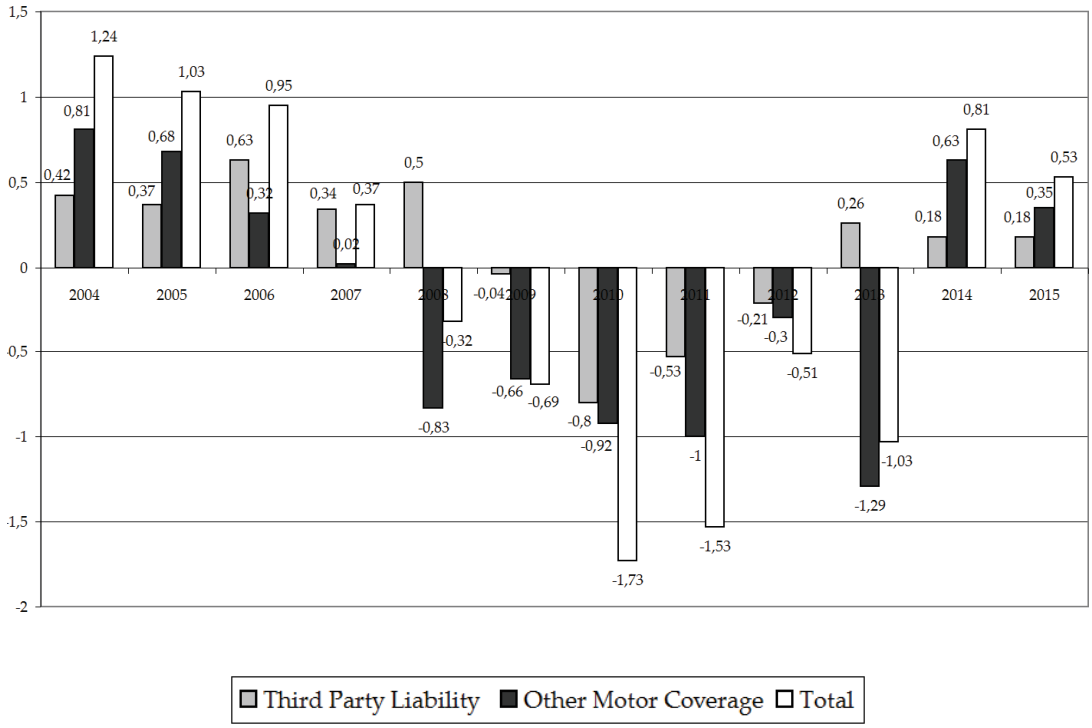


Figure 22: Underwriting results of the German motor insurance (2004-2015), author`s graph, source: GDV, 2016, p. 89 et seqq.

Examining the figures of the German association of insurers, a continuous 5-year cycle of lowering premiums to generate growth and then again 5 years of raising prices when the losses become too large can be observed (see figure 22). After having the situation that the prices were in 2012 at the level 2001, prices have picked up again and the cycle of rising premiums has started again showing increasing rates of over 5% p.a. since then, but already currently showing the trend again of going back to a rate of 3.5% in 2015, indicating another downswing in the cycle (GDV, 2016, p. 77 et seqq.).

The data for the following chart 23, a comparison of the development of the number of motor vehicles in thousand and the development of the overall premium in million EUR was comprised of data, that was made available through access of an information portal that the association for German insurers (GDV)

offers as access for their members. The portal is called VIS (association information system). The ordinate- (Y-) axis displays the third party liability and comprehensive coverage in sum and the abscissa- (X-) axis displays the timeline from 1996 to 2016. The exact figures are listed in table 6 below:

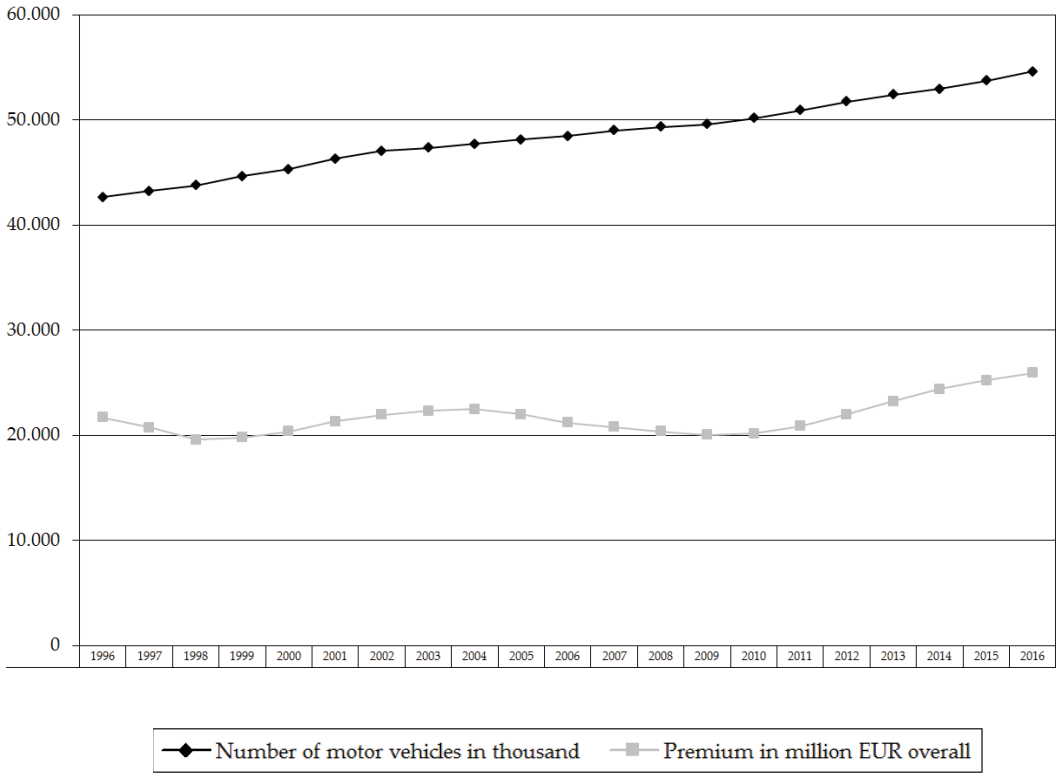


Figure 23: Development of number of motor vehicles and overall premium, author`s graph, source: GDV, 2017

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of motor vehicles in thousand	42.660	43.258	43.759	44.661	45.328	46.318	47.041	47.350	47.726	48.112	48.456
Premium in million EUR overall	21.715	20.753	19.595	19.776	20.358	21.341	21.968	22.325	22.504	22.005	21.221

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Number of motor vehicles in thousand	48.987	49.330	49.603	50.184	50.902	51.735	52.391	52.967	53.716	54.602
Premium in million EUR overall	20.800	20.372	20.057	20.158	20.887	21.989	23.260	24.380	25.227	25.920

Table 6: Exact numbers for figure 23, source: GDV, 2016, p. 89 et seqq.

The analysis of figure 23 above shows clearly a continuous rise in the number of motor vehicles on German streets. It equally reflects the previously discussed cyclical development of the overall premium for the motor business in the German market. This development is symptomatic for the pricing on the German motor insurance market. Phases of rising prices are followed by phases of decreasing prices, making the price war on the motor insurance market obvious. Insurers continuously try to grow on behalf of other insurers by reducing the prices, thus creating cyclical trends (Pohl, 2008, p. 86). This observation is confirmed by Knospe (2006, pp. 14-21), who states that the motor insurance market in Germany is characterized by an intense price war among the motor insurers. This aggressive competition in regard to prices can also be found in other segments of the financial industry, such as banks (Frère et al., 2008, p. 15), which are related with the insurance industry.

Another confirmation of this cyclical market behaviour since the deregulation can be found in the development of the underwriting results or technical profit. The underwriting result is defined as the result achieved by subtracting the incurred claims and also the expenses and commissions from the earned premium (Booth et al., 2005, p. 396). Also for the following chart 24, the relevant data was comprised of data that was made available to the researcher through access of the association information system VIS, the information portal that the association for German insurers (GDV) makes available for their members. Comparable data was only available until 2012, that is why own estimations were made for the time after 2012 until 2016, on the grounds of existing data and market figures provided by the GDV. The ordinate- (Y-) axis displays the percentage value of earned premium, while the abscissa- (X-) axis marks the timeline from deregulation in 1994 until 2016:

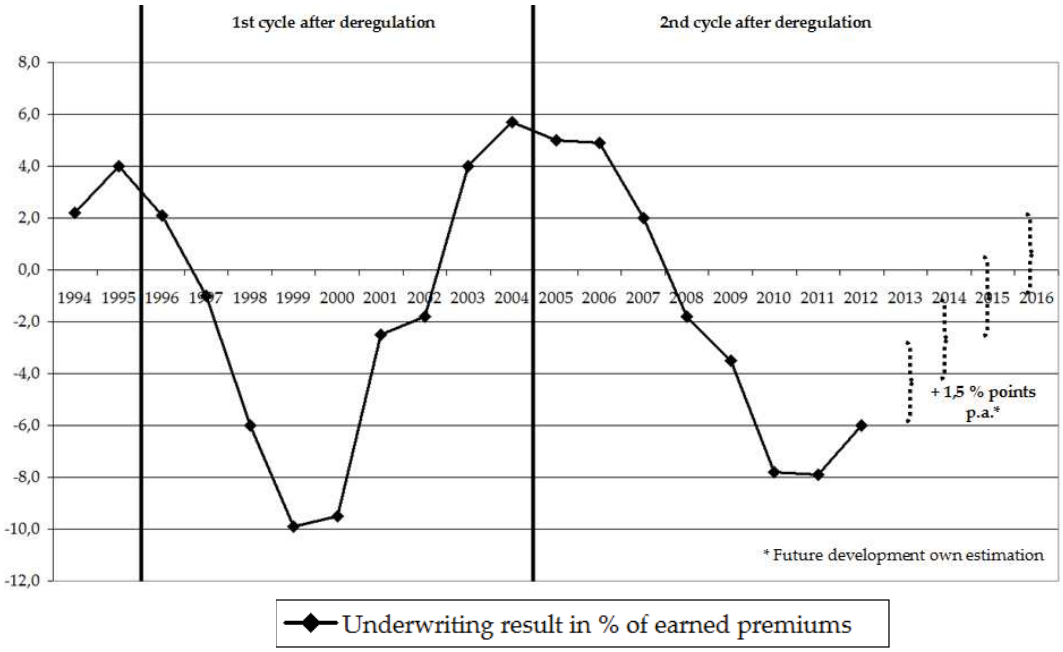


Figure 24: Underwriting results of the German motor insurance market, author`s graph, source: GDV, 2017

The graph above shows clearly that two cycles of each about 10 years (with turning points after 5 years) can be identified. The 10 year cycle is comprised of the described two phases of about 5 years each of lowering prices in the course of a predator price war to get as much market share as possible, followed by another 5 years of raising prices to get out of the generated loss situation caused by the price war. The loss situation is visualized in the graph above by a negative value of the underwriting result in % of the premium.

When talking about costs for mobility the motor insurance plays a decisive part for car owners in Germany, as it is a major cost block in the running costs for an automobile. It ranked with approximately 20% in 2014 on average third in the up keeping expenses for a car, behind first the costs for gas and second maintenance or repair costs (Stiftung Warentest, 2014). This shows the above explained price sensitivity of consumers and the resulting disproportion between premium income, underwriting results and continuously rising number of automobiles.

The world of mobility is currently subject to a radical change in regard to its demographic and socioeconomic basic parameters (Nijhuis, 2013, p. 225). This change has substantial effects on the motor insurance market and is set to transform all the parameters for the product development and pricing for the motor insurers, that have until now been considered as mostly fixed and standard. Therefore it is of high importance to have a deep understanding of these changes, before analyzing the effects of them, interpret findings and draw conclusions.

5.2.1 Demographic situation and changes

As of today cities cover only 1% of the earth`s total surface, but at the same time provide shelter for more than half of the world`s population. The world population was in 2013 at 7.1 billion inhabitants, which represents a rise of over 33% compared to 1990 (Statistisches Bundesamt, 2015b). Cities consume 75% of the total amount of energy and are responsible for 80% of all greenhouse gases. It is significant, as it is for the inhabitants not only an issue of global warming, but a mere matter of survival and increasing the quality of life by reducing the emission of dangerous gases. Around 9.500 people die prematurely per year because of traffic pollution in Britain for example (Reis et al., 2017, p. 141). In China there are already over 170 cities with more than 1 million inhabitants, that is more than double the number than in the US and Europe together (Fischer, 2015, p. 54). As no shift of this trend is visible, it is expected that by 2050, 70% of the then expected 9 billion inhabitants of the world`s population (i.e. about 6.3 billion people) will live in the worlds` major urban areas (Clemens et al., 2011, p. 9). That is expected to lead to a further increase of mega cities. Following Taubenböck (2015, p. 50) who refers to a report from the United Nations, megacities are characterized as cities or urban agglomerations that have more than 10 million inhabitants.

While there were only 5 megacities in 1975, their projected number was expected to rise by 2015 to 26 (United Nations, 2004, p. 84). This trend is even more dynamic, as in reality there were in 2016 already 31 megacities (United Nations, 2016, p. 3). The majority of the megacities are located in the global south and there are overall 10 more cities expected to become megacities between 2016 and 2030. It

is that 24 out of the 31 megacities are located in developing countries. The trend of megacities in the global south increases when looking at which of the 10 cities are expected to become megacities until 2030. These cities are: Lahore, Pakistan; Hyderabad, India; Bogotá, Colombia; Johannesburg, South Africa; Bangkok, Thailand; Dar es Salaam, Tanzania; Ahmanabad, India; Luanda, Angola; Ho Chi Minh City, Vietnam; Chungdu, China (United Nations, 2016, p. 3). Besides megacities one must include in the research the trend of mega-urban-regions. These are agglomerations made up of closely interlinked medium- and large-sized cities tend to grow more intertwined, such as the Rhine-Ruhr metropolitan region in Germany, which is home to 11.9 million people, representing about 15% of the overall population in Germany (Bretzke et al., 2012, p. 336).

In a megacity, traffic congestion is named most frequently as the most crucial infrastructural problem, which outranks even the problems related to water supply and power, as well as health and safety. This is mainly due to sharp increases in private car ownership.

5.2.2 Urbanization

Germany had in 2016 a population of 82.8 million people (Zahn, 2017) and also in Germany the international trend of moving into big cities, away from rural areas, is identifiable. The number of German inhabitants has grown continuously with the time.

When examining the development of the population in Germany it becomes obvious, that after a long period of steadiness in the number of people living in big cities, in later times an increase of people moving into big cities, especially in the last decade, can be observed. Big cities are by definition cities with more than 100.000 inhabitants (Glatzer et al., 2002, p. 78). The following figure displays this growing trend of urbanization:

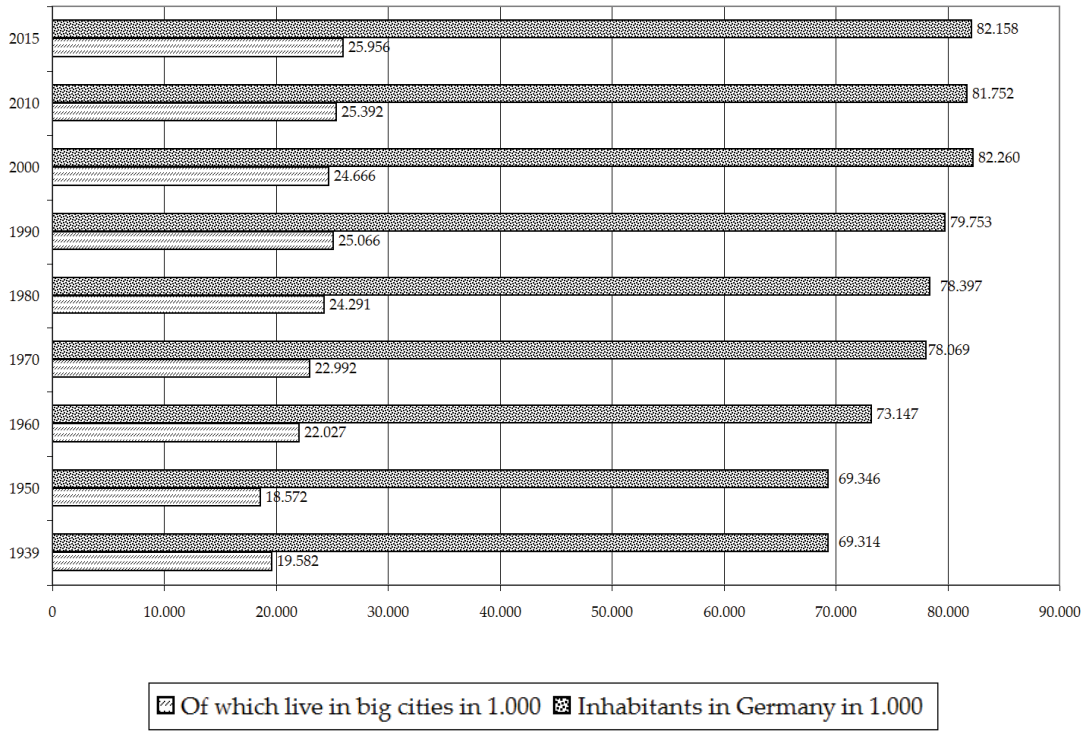


Figure 25: Development of population and urbanization in Germany (1939-2015), author`s graph, source: Statistisches Bundesamt, 2017

In figure 25 the ordinate- (Y-) axis displays the year, while the abscissa- (X-) axis marks the number of inhabitants in Germany and a separate view of which of the inhabitants live in big cities, each in thousand. A more detailed diagnosis of the trend reveals that among big cities, the trend to move into the very big cities is even stronger. More than half of the people in Germany, who live in the 79 big cities, live in the 15 biggest cities (Zimmermann, 2015, p. 364). The following figure 26 displays the trend in Germany to move into cities, but especially big cities. In this figure the ordinate- (Y-) axis displays on the one hand the number of big cities in absolute numbers and on the other hand the percentage value of the part of the population living in big cities. The abscissa- (X-) axis marks the years from 1939 to 2015.

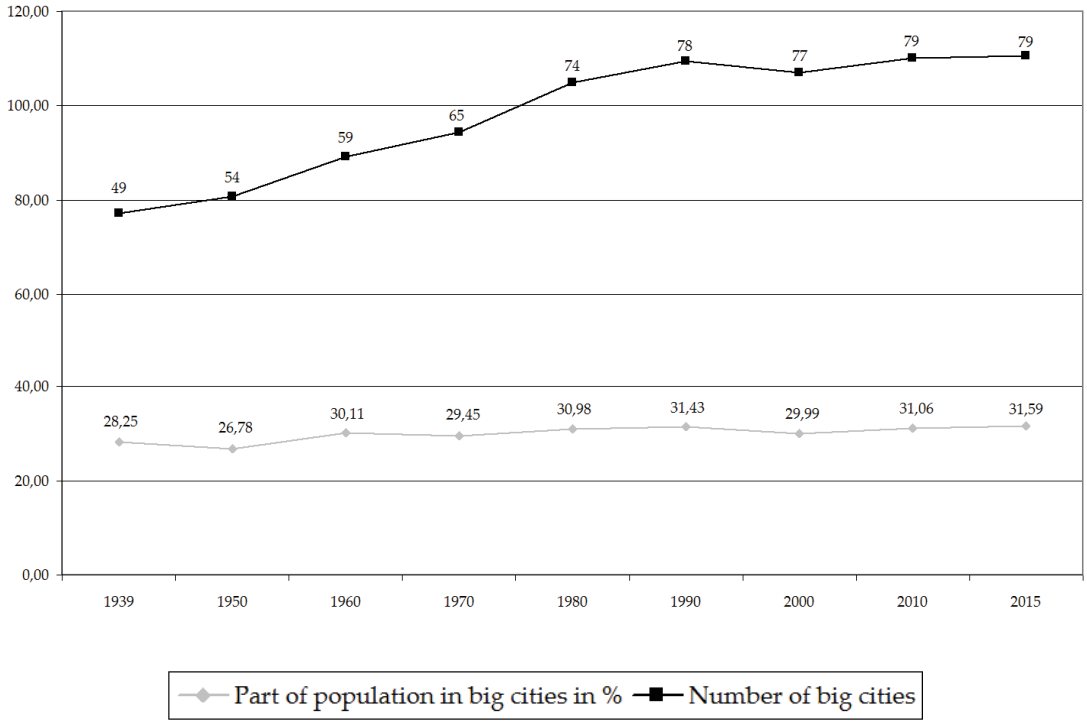


Figure 26: Development of city and big city inhabitants in Germany (1939-2015), author`s graph, source: Statistisches Bundesamt, 2017

The trend to move into big cities goes along in combination with a migration effect within the population, as a substantial fluctuation towards the western federal states from the eastern ones can be observed in Germany. It is noticeable that since the reunification of Germany on October 3rd 1990 a constant negative growth in the population of the eastern federal states, respectively a slower growth than in the western federal states, is visible (Statistisches Bundesamt, 2017).

In general the trend to move away from rural areas into cities or big cities is a worldwide trend. It is the incremental development of people moving into cities, and on a global scale the development of the phenomenon of always faster growing megacities. Along with the growth of big cities goes very clearly the growth of the population living there. But not only does the number of inhabitants in big cities constantly rise, but also the number of big cities rises constantly in Germany. Germany had in 2015 as mentioned 79 big cities, in which 32% of the

total population live (Radtke, 2016, p. 84). This again is a trend complying with the observation of constantly growing megacities.

5.2.3 Population

Another demographic change is an expected decrease in the number of the German population and increase in their average age. The German population is expected to decrease from 82.8 million people in 2016 to between 67.5 and 71.1 million people by 2060, despite a migration surplus from other countries of about 100.000 people per annum (Zahn, 2015).

For the prediction of the development of the German population, the German statistical institute (Statistisches Bundesamt, 2015a) has published a scenario (medium scenario) with the following assumptions for the years 2015 until 2060: The statistical institute assumes a relatively old population with a birth rate of 1.4 children per woman, a life expectancy at birth in 2060 of men of 86.7 years and of women of 90.4 years and a long-term immigration surplus is estimated to amount to 100.000 persons.

The above shown assumptions are disputed in literature, because the effect of the recent immigrations of refugees in Germany is unknown. If 100.000 persons more per year than expected entered Germany, it could have an estimated effect of an augmentation of the German population of 5 million people in total by 2060 (OECD, 2016, p. 104).

When looking at the expected distribution of men and women in the population, there is a steady decrease in the number of population that is predicted with a minor surplus of women compared to the number of men in the timeline of 2015 to 2060 (GDV, 2016, p. 90). In the following figure 27, the ordinate- (Y-) axis displays the number of men and women in thousand, while the abscissa- (X-) axis marks the timeline from 2015 until 2060. The exact figures are listed in the table 7 below:

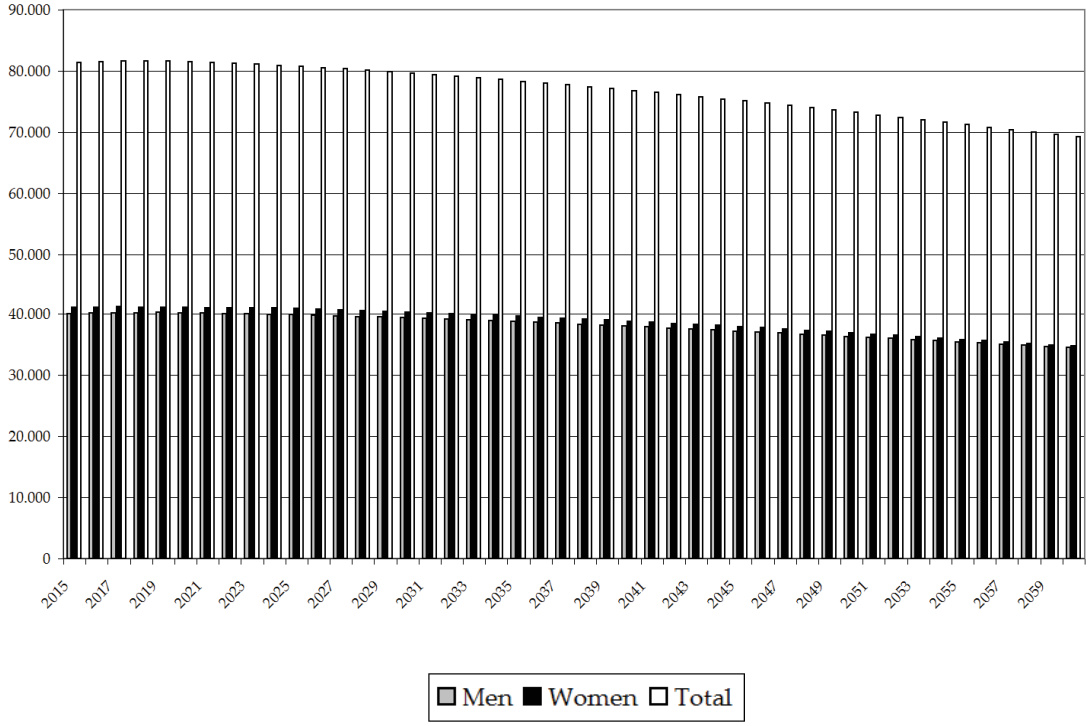


Figure 27: Forecast and distribution of German population (2015-2060), author`s graph, source: Statistisches Bundesamt, 2015a

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Men	39.959	40.068	40.143	40.185	40.194	40.173	40.118	40.057	39.990	39.916	39.836	39.749
Women	41.394	41.427	41.441	41.434	41.404	41.347	41.266	41.181	41.091	40.996	40.895	40.787
Total	81.353	81.495	81.584	81.619	81.598	81.520	81.384	81.238	81.081	80.912	80.731	80.536

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Men	39.655	39.555	39.449	39.337	39.220	39.099	38.975	38.846	38.714	38.578	38.438	38.295
Women	40.673	40.552	40.426	40.294	40.158	40.018	39.874	39.726	39.576	39.422	39.266	39.106
Total	80.328	80.107	79.874	79.631	79.378	79.117	78.848	78.573	78.290	78.000	77.704	77.401

	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Men	38.147	37.996	37.841	37.683	37.521	37.356	37.187	37.016	36.842	36.666	36.488	36.309
Women	38.943	38.777	38.607	38.432	38.254	38.071	37.883	37.691	37.495	37.294	37.089	36.880
Total	77.091	76.773	76.448	76.115	75.775	75.426	75.070	74.707	74.337	73.960	73.577	73.189

	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
Men	36.128	35.946	35.764	35.583	35.401	35.220	35.041	34.863	34.687	34.514
Women	36.668	36.452	36.234	36.014	35.793	35.570	35.348	35.127	34.906	34.688
Total	72.795	72.399	71.999	71.597	71.194	70.791	70.389	69.990	69.593	69.202

Table 7: Exact numbers for figure 27, source: Statistisches Bundesamt, 2015a

Besides a diminishing population, Germany is expected to have a structure of much older men and women in 2060 compared to 2015. The key customer target group for motor insurance companies in Germany is the population between 20 and 64 years of age. In 2014 60.8% (49.4 million) were part of this group, while in 2060 this number is expected to continuously decrease to 49.7% of the whole population, regardless of assuming a low or high trend of immigration (GDV, 2016, p. 90). Effects of current refugee immigrations are exempted as they are incalculable at this point and it is unpredictable if is a limited one off effect. The refugee adjusted development represents a decrease in the potential target group of 12%-points, or in other words between 11.4 to 15 million people less of this target group, which will significantly impact the number of first and second cars in German households. As of today 82% of the German households have at least one car, while 29% of the population have two cars or more (ADAC, 2010, p. 15).

A further effect of a change in the age structure of the population implies an increasing ratio of older drivers versus younger drivers, impacting negatively the current risk portfolio for motor insurers. The following two graphs 28 and 29 depict the expected development of the male and the female population in Germany along the timeline of 2015 to 2060.

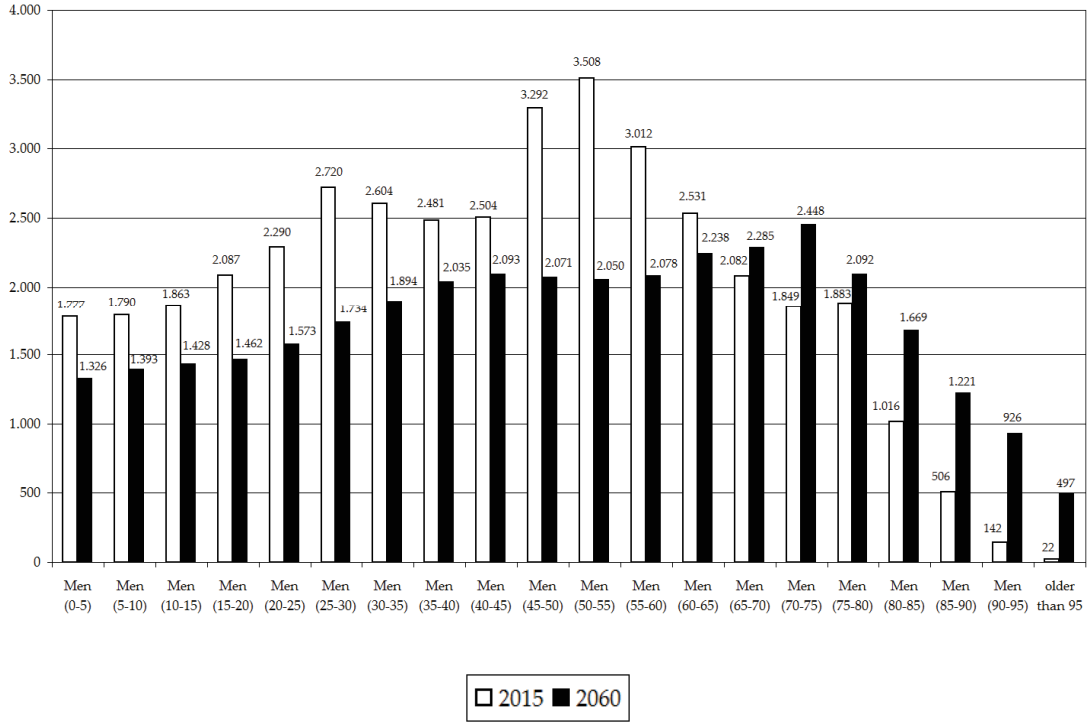


Figure 28: Existent and expected male population in Germany (2015/2060), author`s graph, source: Statistisches Bundesamt, 2015a

In the figures 28 and 29 the ordinate- (Y-) axis displays the absolute number of the male or female population in 1.000 persons, while the abscissa- (X-) axis marks the age clusters of men or women in sections of 5 years. The bars represent a direct comparison between the years 2015 and 2060.

The expected development of the female population in Germany between 2015 and 2060 shows a similar picture, as shown in figure 29.

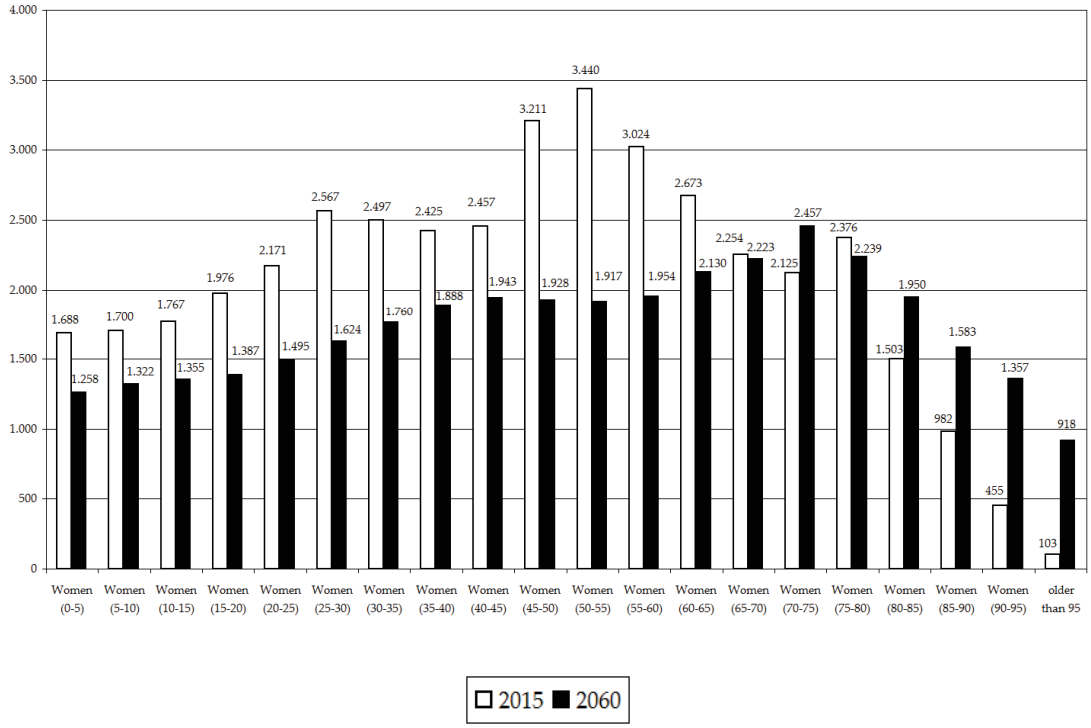


Figure 29: Existent and expected female population in Germany (2015/2060), author`s graph, source: Statistisches Bundesamt, 2015a

Comparing the figures, the core problem for Germany's population development in the future becomes obvious. Germany is facing a diminishing population with an excessive proportion of older people compared to 2015. The dilemma for the future development for motor insurers becomes clearer, when considering that there is, as above shown, a continuous growth in the number of motor vehicles admitted to public traffic. A permanent rise in the number of motor vehicles reflected against the socio-demographic development of a diminishing population represents an intrinsic disaccord due to the adverse trends. Therefore a continuation of this development is under consideration of these facts not possible.

To depict this contradiction, the following table shows the development of registered passenger cars in use. Until January 1st 1999 temporarily or permanently deregistered vehicles were included, that is why in the following table 8 in the year 2000 an x is marked at change towards previous year.

Date	Passenger cars	Change towards previous year
1.1.1994	39.202.066	
1.1.1995	39.917.577	+1.8 %
1.1.1996	40.499.442	+1.5 %
1.1.1997	41.045.217	+1.3%
1.1.1998	41.326.876	+0.7%
1.1.1999	41.716.738	+0.9%
1.1.2000	38.426.776	x
1.1.2001	39.058.937	+1.6%
1.1.2002	39.388.319	+0.8%
1.1.2003	39.720.951	+0.8%
1.1.2004	40.017.482	+0.7%
1.1.2005	40.179.477	+0.4%
1.1.2006	40.659.500	+1.2%
1.1.2007	41.019.700	+0.9%
1.1.2008	41.183.594	+0.4%
1.1.2009	41.321.171	+0.3%
1.1.2010	41.737.627	+1.0%
1.1.2011	42.301.563	+1.4%
1.1.2012	42.927.647	+1.5%
1.1.2013	43.431.124	+1.2%
1.1.2014	43.851.230	+1.0%
1.1.2015	44.403.124	+1.3%

Table 8: Passenger vehicles in use in Germany (1994-2015), source: Statistisches Bundesamt, 2016a, p. 151

To illustrate specifically the importance of passenger cars in the German motor insurance market, in the following their ratio against the totality of vehicles in Germany is displayed in the timeline from the year 2000 until 2015. The year 2000 was chosen as starting point as on the one hand especially the recent trends are subject of this research and on the other hand it can be criticized that until the year 2000 the statistics of vehicles included the number of temporarily and permanently deregistered cars, thus tampering the figures before the year 2000. The exact numbers for figure 30 are listed in table 9 below. The values include trailers and exclude autobuses and other vehicles and are displayed in 1.000 vehicles.

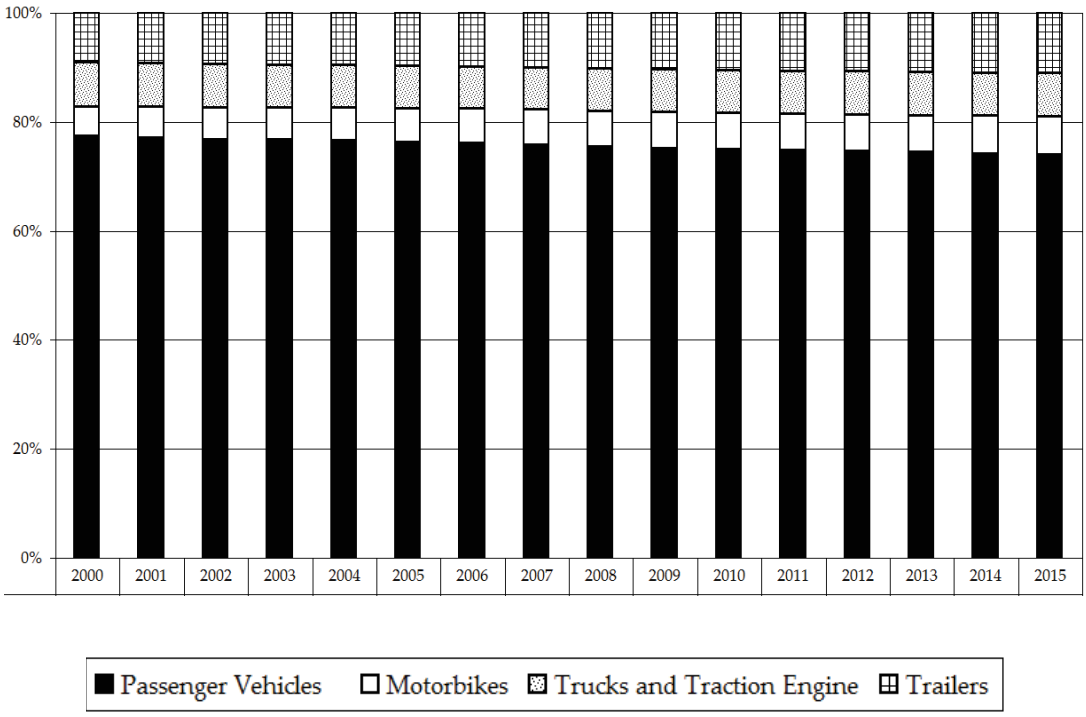


Figure 30: Ratio of passenger cars against totality of motor vehicles (2000-2015), author`s graph, source: Statistisches Bundesamt, 2016a, p. 151

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Trailers	4.567	4.719	4.846	4.949	5.060	5.191	5.318	5.487	5.642
Trucks and Traction Engine	4.020	4.071	4.076	4.046	4.035	4.039	4.069	4.161	4.246
Motorbikes	2.646	2.843	2.985	3.094	3.201	3.292	3.384	3.476	3.566
Passenger Vehicles	38.427	39.059	39.388	39.721	40.017	40.179	40.660	41.020	41.184

	2009	2010	2011	2012	2013	2014	2015
Trailers	5.775	5.911	6.057	6.214	6.359	6.500	6.674
Trucks and Traction Engine	4.287	4.345	4.432	4.557	4.631	4.711	4.812
Motorbikes	3.659	3.763	3.828	3.908	3.983	4.055	4.145
Passenger Vehicles	41.321	41.738	42.302	42.928	43.431	43.851	44.403

Table 9: Exact numbers for figure 30, source: Statistisches Bundesamt, 2016a, p. 151

5.2.4 Socio-economic situation and changes

The socio-economic aspects define the relationship or the involvement of a combination of social and economic factors, which have an implication on the behaviour of people in regard to mobility. Consequently it is important to analyze the status of the current situation in order to predict future trends or behaviour. A multitude of interactions can be found in recent studies. According to Ehrsam (2013, pp. 2-23) this conglomerate of aspects in the various studies can be summarized as follows:

(1) Cities intend to limit the individual traffic in order to: Reduce the CO2 emissions, limit spaces for parking spots to use the capacities otherwise, move the volume of traffic more efficiently with fewer vehicles, thus reducing the inner city traffic to increase the attractiveness of cities.

(2) Young people have shifted their priority from having a car as a status symbol towards other values. People between 25 and 34, especially in cities, focus

much more on electronic goods such as smartphones or electronic pads, instead of owning an automobile. Not to own but to use seems to be the credo in the so called urban jungles. The sharing economy or the "I have … you need" principle becomes more common among people in every perspective of life, including mobility. The principle of sharing is currently evolving into a significant element of the economy. About 50% of car owners in industrialized countries stated that they would be generally willing to share their vehicle with others. In terms of revenue the mobility sector, is one of the fastest growing segments of the shared economy (Freese et al., 2014, pp. 3-5). The progressing digitalization favors this development as more technical platforms emerge, that make sharing via internet offers easier. This coincides with the fact that young people tend to close their deals more and more online now, after they had advice or know exactly what they want (Frère et al., 2013, p. 2).

(3) Besides the expectation of a car losing its importance as a status symbol, it is needed to run errands or certain activities for which the public transport is not suited (Witzke, 2016, p. 23).

(4) Hardly 20% of young people take their driving test before or at the age of 18, which represents a dramatic change compared to 10 years ago, when 90% of young people took their driving test at the age of 18. In 2015 it took 6 more years to have a coverage of 90% of people with a driving license, which is now reached at the average age of 24 years and not at 18 anymore (Engel, 2015). The young generation in Germany, especially in the urban environment, prefers to use public transport or a bike, instead of using an own car (Bundesministerium für Verkehr, Bau und Stadtentwicklung, 2010, p. 75). This is another confirmation for a shift in priorities.

(5) Another trend is that the number of single households is rising in Germany, which is also the type of households with the lowest penetration rate of automobiles. Almost 50% of the single households are without a car, while full motorization is more a characteristic of a multiple person household.

(6) People have other possibilities to make their way, so only the transport function remains primarily for mobility. Car producers such as Daimler, BMW, Peugeot or Ford have recognized this trend and signed themselves a new mission, which is not only to produce cars, but to offer mobility. With these mobility offers

by car producers the boundaries between individual traffic and public transportation become more and more intertwined.

(7) With the development of the internet entry barriers for other means of transportation such as carsharing become easier and very transparent.

(8) In financially difficult situations for the public sector, slow or negative economic growth and rising carburant costs, there is a decrease in mobility demand to own a first or a second car.

(9) The current climate policy favors models like carsharing, that is why carsharing can be considered a growing alternative in comparison to the private automobile.

In this study the above mentioned key elements in the current socio-economic developments will be reflected against selected theories with consideration of behaviouristic elements. The behavioural changes set the modus operandi for motor insurance companies, but it is also the basis to understand the future developments and react appropriately to them. It is therefore of upmost importance for a motor insurer to predict the behaviour of consumers in the future, in order to keep a competitive edge. It is expected that there is in the future a slump in the sale of motor insurance due to the fact that the car loses the importance for the individuals and the effort of politics to promote public transport, especially for short distances (Parment, 2016, p. 18).

Another socio-economic premise is a macroeconomic view onto the German economy. The expectation is that the German economy is to grow only moderately until 2050. Tied to this moderate growth is the development of the disposable income, which is expected to grow adequately at a moderate pace (Birg, 2006, p. 116). Global warming is expected to continue, resulting in a growing understanding for environmental measures among the population to improve the climate situation (Matzler et al., 2009, p. 430). One of the expected measures to be introduced in Europe is an overall speed limit of about 120 km/h on highways. Energy costs and thus costs for automobile mobility are expected to rise sharply until 2025, making regular cars, especially with combustion engines, disproportionately expensive. The car as a status symbol is expected to lose even more drastically in importance as not owning, but borrowing a vehicle is on the

rise, increasing the attractiveness of carsharing business models (Witzke, 2016, p. 23).

5.3 TECHNICAL CHANGES IN THE GERMAN AUTOMOBILE MARKET

As in other fields of everyday life, technical improvements make a rapid progress and have a strong impact on the mobility behaviour of the individuals. It is another formative aspect, besides the socio-demographic changes, that needs to be considered when looking at the expected impact of these changes. These transitions caused by digitalization are expected to have a substantial impact on the claims frequency and loss ratio in the motor insurance, leading to a changing customer need and behaviour. This is expected to produce a change of the role of the automobile industry and consequently the requirements towards the motor insurers (Johanning et al., 2015, p. 1). The development of driving assistance systems, as well as the autonomous driving concepts, are coming along at great speed. Yet it is difficult to assess all of their implications for the motor insurance. However, not only the assistance systems integrated in cars have an impact on mobility, also other technical improvements such as 3-D printing will influence mobility. When things of very different material components can be printed out closer to the point of need or consumption, this will lead to a reduction of the transport traffic. 3-D printing it is expected to make rapid progress and to enable producers to print with other materials than the so far known ones very soon. In 2017 printing with Titan is expected to be possible, as well as with high grade steel and also in 2017 with aluminium. The expected reduction of transport traffic until the year 2030 is estimated to be about 35% (KPMG, 2015, p. 6). The number of new 3-D printers is expected to rise at an equal rate of about 20% per year from worldwide 217.000 in 2015 up to 2.3 million by 2019, generating a potential market volume of 6.5 billion Dollars in 2019 (Leupold et al., 2016, p. 45).

The possibility to print in 3-D is changing production workflows fundamentally and some experts even suspect that 3-D printing can abolish globalization (Maxeiner, 2015). The conjunctions with the motor insurance are manifold. Siemens estimates that within the next 5 years the costs for 3-D printing will be cut by 50% and the printing speed will increase by 400% (Zistl, 2014). The direct effects for the motor insurance are listed in the following points:

(1) Lowering of claims costs: It is expected that claims costs will be lowered, when parts can be printed in the garage and do not have to be ordered and shipped. Less transport traffic is expected to produce fewer accidents.

(2) Lowering of transport volume and costs: Instead of transporting the complete good or spare part, the raw material could be transported out of which the various products could be printed. Fewer vehicles are needed and therefore less insurance for motor vehicles in the transport field is necessary.

The current president of the German association of the automobile industry expects that within the next three to four years about 16 to 18 billion EUR is invested into the research of digital improvements, giving the development of assistance systems in cars a strong boost (Wissmann, 2015). This is plausible considering that out of the 65.958 patents registered in 2014, 18.340 came from the automobile industry, equalling 28% of all patents introduced (Deutsches Patent- und Markenamt, 2014, p. 88).

5.3.1 Assistant systems

More and more electronic assistant systems are included in new automotives, such as automatic distance keepers, automatic emergency systems or telematic applications (Dudenhöfer, 2016, p. 112). It is important to differentiate between assistant systems and telematic systems, as in literature they are often mentioned in the same context. Telematic systems are discussed in detail in subsection 5.3.4.

According to a study of KPMG (2015, p. 17), when talking about assistant systems one has to differentiate between:

- Assisted driving
- Partial autonomous driving
- Highly autonomous driving
- Autonomous driving

It is assumed that if the already existing technical assistance systems were installed in all of the existing vehicles in Germany, the number of claims in the comprehensive coverage would be reduced immediately by 75% and in the third party liability by 65% (KPMG, 2015, p. 18). When talking about the existing

assistant systems, it reflects the assumption that the 6 most important driving assistant systems are integrated in all cars. These 6 most important assistant systems can be categorized as follows (Lich et al., 2013):

(1) ESP: Electronic Stability Program, keeps a car from swerving when breaking, by breaking the wheels individually according to their need.

(2) AEB: Autonomous Emergency Brake, breaks automatically if a slower car, for example on the highway, appears right in front of the own car.

(3) AEBpc: Autonomous Emergency Brake personal contact, breaks automatically if a person or similar object appears right in front of the car.

(4) LDW/LK: Lane Departure Warning / Lane Keeping assistants, keeps the lane after a lane change has been made, or warning the driver before when he appears to get out of the lane.

(5) LCA/BLIS: Lane Change Assistant / Blind Spot Detection, assists in safely changing the lane and not overlooking another vehicle when doing so in the blind spot of the rear view mirrors.

(6) PMA: Parking Maneuver Assistant, parks the car automatically in a spot.

Considering that 90% of accidents are caused by the driver of a car and that 90% of the accidents happen in cities, of which 40% are caused by parking or maneuvering (80% of these while reversing), it becomes obvious that the assistant systems have a large number of opportunities to unfold their potential to avoid accidents (Brunner, 2006, p. 119). In the United States for example, the car manufacturing industry agreed on a self-commitment to only introduce models from 2016 on into the US market, which have an emergency braking assistance system (Fromme et al., 2015). Apparently the mobility sector represents a testing ground for the hard- and software solutions of tomorrow.

5.3.2 Legal aspects and assistant systems

Having seen the rapid development of driving assistant systems, it is of equal importance to clarify who in the end has the responsibility if driving assistant systems fail in the pivotal moment. According to German jurisdiction

there is the principal of absolute liability regardless of negligence or fault according to §7 German Road Traffic Act. This means that after all, the driver is fully liable for any accident that happens. This is currently under discussion and the need for adaptation has been identified, as these technical aid systems take over functions for which the driver normally is fully responsible. Looking at a technical component the complex and delicate problem situation arises that this part may consist of other parts which may have been produced by different companies and assembled by another, before it was built into the vehicle by the car manufacturer. Therefore it is difficult for car producers to assess which company built which part, or part of a part for them and consequently which company can be held liable for the fault causing the damage. Since the 1980s the production chain has continuously diversified and involved a multitude of different producers, resulting in an unclear judicial situation, in case a driver needs to take regress against the responsible one for the damage (VDA, 2015, p. 63). Today the car supplier or subcontractor is only responsible for the main part, or the part that he produced within the whole component.

Historically in Germany the producers came from a responsibility principle of a system supplier in the 1980s, being responsible for the whole part, which later changed to a system of component supplier, being only legally liable for the specific part in the component that he produced and delivered (Hahn et al., 2002, p. 161). The expectation for the future is that the development from the principle of the system supplier, being responsible for the whole component, to the principle of a component deliverer as of today will be reversed again, back to the principle of a system supplier again, making it easier for legislation to have only one person or company clearly responsible (Schade et al., 2012, p. 125).

The following overview gives a detailed insight into the development of the responsibility of car part supplier or subcontractor relations with automotive companies (Eisenberg et al., 2014, p. 95):

(1) 1980s: Principle of system supplier. According to this principle the deliverer or supplier is fully liable for all the parts built in the component and delivered to the automotive company, regardless if it was built or not by this supplier.

(2) Today: Principle of component supplier. The system of the component supplier makes the deliverer or supplier only liable for the parts he produced himself and which are included in the component. He is not liable for the whole component itself.

(3) Tomorrow (expected) as of 2025: Principle of system supplier again as explained under point (1).

The technical problem gets more complex when examining the process chain of when a shared car is booked. There is additionally a whole number of players involved to process the request: Online platform operators, IT technology providers and the suppliers of hardware, which includes the vehicles themselves, and most certainly also insurance companies. As shared mobility companies gather to a large extent customer information online and during the driving process, they also set an example and thus a data source for motor insurers of how big data can be analyzed intelligently and put to good strategic use (Toma, 2005, p. 11). As of today not all relevant questions are legally fully answered, such as who the owner of the data is. This still has to be clarified and settled in order for motor insurers to be able to use the data for insurance pricing purposes for example. It is a prerequisite that the use of the data generated by the interfaces involved must be legally clear to use.

5.3.3 Digitalization and connectivity

The penetration rate and speed of developments in the field of digitalization is extremely dynamic with more and more impact on the above mentioned driving assistant systems and autonomous driving. Due to that effect a fundamental impact on the insurance market, specifically the motor insurance market is expected (Roßbach et al., 2016, p. 11). Furthermore these changes are expected to have a sustainable spinoff effect on the trends in the automotive and in general the mobility sector.

The excessive growth in digital devices becomes obvious, when examining the development rate of online capable devices in comparison to the world`s population and the diffusion of smartphones.

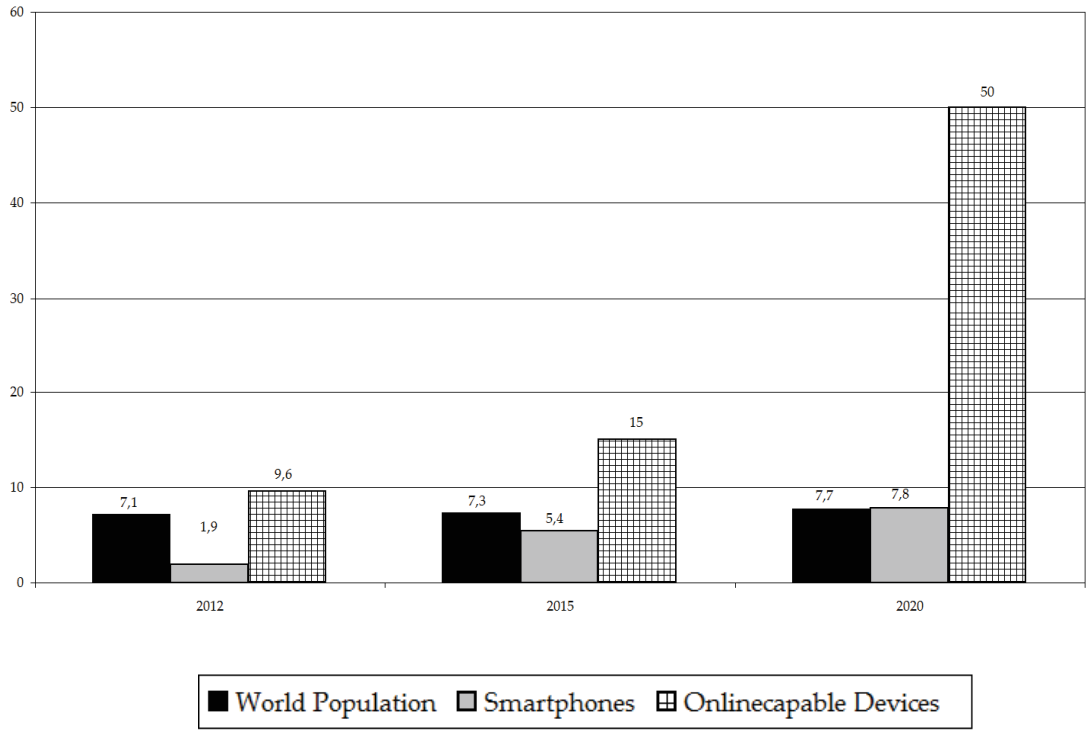


Figure 31: Speed of digital transformation (2012-2020), author`s graph, source: Statistisches Bundesamt, 2016b

In the figure 31 the ordinate- (Y-) axis displays the absolute numbers in billion, while the abscissa- (X-) axis marks the objects of comparison along the timeline of 2012, 2015 and 2020. Considering the described fundamental changes caused by the dynamic speed of technical developments in the automobile, as well as the insurance industry, both industries face a paradigm shift, which can be called a digital revolution. Taken all the described effects together this adds pressure onto the premium volume in the motor insurance (Cramer, 2014, p. 13). It makes electronic giants like Google or Apple competitors to car manufacturers, as more and more electronic devices are integrated in the cars, reducing the role of car manufacturers to platform providers simply for the construction of cars. Automobile producers seek to avoid the same outcome of the effects of digitalization that mobile phone producers already suffered from. The decision to

buy, rent or take a carsharing provider could therefore depend on the level of digitalization that this car offers. The current development also shows integrated approaches of connecting devices. According to Macaulay (2017, p. 9) connected devices are technical devices that are designed to have rather an inter-device communication, meaning devices communicate rather among themselves than with the user, with a focus to primarily transmit than receive information. They can exist in an automated form requiring no human commands or input, or in a semi-automated form, where at some point human input is required. The car producer General Motor for example equips all of his vehicles since 2016 with the connectivity to Apple`s CarPlay, offering the opportunity to make the vocal, in Apple devices integrated in the form of a software, helper Siri the assistant of the driver. Like this the driver can connect his mobile device with the car and use its integrated features via a display and output platform in the car, which is also thinkable as a feature for carsharing cars (Ramsey, 2015). Taking this concept one step further is the idea to refine the automobile infotainment system into a complete on-board computer by a provider like Google or Apple for example. But also already existing models can be upgraded in terms of connectivity and can be equipped with a device, for example like HUM (artificial name) by Verizon, giving information on consumption, service intervals, or offering assistant services such as an e-call or localization of the car in case of theft or accident (Rawlins, 2015). The motor insurance industry has already reacted by launching products offering connected car solutions. In 2015 already 60% of the European top insurers have such a connected car solution in their repertoire, while in contrast the market penetration of such products is rather slow (Roland Berger Strategy Consultants, 2015, p. 4).

5.3.4 Telematics

Telematics is a new development in the motor industry, which is besides the assistant systems also of substantial importance for the German motor insurance market. The term telematics describes the amalgamation of telecommunication and information technology, which functions in the way of being able to send, receive and store information via telecommunication devices together with the ability to affect control on remote objects or the integrated use

of telecommunications and informatics for application in vehicles, as well as with control of vehicles on the move (Winner et al., 2015, p. 1073). In brief words, telematics combines per se telecommunication, as well as information technology. It registers and transmits the following data (Bock, 1998, pp. 68-69):

(1) Geo positioning data

(2) Time stamps

(3) Vehicle data

(4) Entries made by the driver

Zerdick (2014, p. 4) summarizes the possible uses for telematics systems as follows:

- Locate a vehicle
- Vehicle management
- Traffic management
- Emergency call
- Road user charge
- Car to car communication
- Autonomous driving
- Driver assistance systems

Because of the ability to collect various data through telematics, this indicates that the technology of telematics may offer the opportunity for motor insurers to revolutionize the market of product design and pricing. Given that adequate products are developed by the motor insurers, it provides the possibility for consumers to acquire an insurance product, which is set to be fairer and gives the feeling to the customer that he or she is even more able to influence the premium by his or her driving performance (Heinsen, 2001, p.133). Furthermore it offers the opportunity to users to participate in expanded services, such as safety features for the drivers or their families, like the emergency call offers. It sends in case of an accident by itself an emergency call to a rescue station and the car can be automatically localized.

The motor insurance companies are especially interested in the data that allows statistical inferences on the driving behaviour, such as the speed driven within the cities, on country roads or highways, the acceleration and breaking behaviour or rounds per minute of the engine. This information serves to distinguish the driving behaviour of the different drivers, assess whether it is a risk-seeking or risk-averse driver and thus potentially expensive driver in terms of expected claims (Sommerfeld, 2014, p. 12). In other words, the motor insurer can benefit by understanding more about the risk exposure of their clients by knowing more about him or her, respectively receiving data with which predictions can be made based on big data analysis approaches. Furthermore, with the help of a direct driver feedback, the rate of accidents and thus claims costs can be reduced thus offering a potential to reduce the premium for motor insurance.

One of the first pioneers to introduce a premium relevant telematics component in the product development on the German motor insurance market was an insurance product designed by the German savings bank Sparkasse, called S-Drive-Service (S stands for Sparkasse), which was launched in 2014 (Kieffer, 2013). First experiments with an application for a mobile phone, which measures the driving behaviour, were carried out. As shown above though, the market penetration of telematic products is rather slow. The leading insurer for such telematic policies in Europe cannot be found in the German market, but in the Italian market with Unipol, holding almost 50% of the telematic policies in Europe. In fact, Germany is the least advanced country in terms of connected car insurance solutions, offering a great potential to catch up in this field (Roland Berger Strategy Consultants, 2015, p. 6). Seen in connection with driving assistant systems the German motor insurers are challenged by the technical changes to develop connected car insurance solutions, which exceed the level of pure telematic approaches.

The development of telematic tariffs for the German motor insurance market has taken up in speed though lately, which is demonstrated in the following table 10. As it is a very young market the timeline starts in 2014.

Date	Motor Insurance Company	Telematic Product Launched
01 / 2014	Sparkassen Direktversicherung	Start of a pilot project: "Telematics-Security-Service".
10 / 2014	Signal Iduna	Introduction of a tariff: "App Drive" through the brand Sijox.
11 / 2015	Admiral Direkt	Introduction of the tariff: "Telematik Spar Option".
12 / 2015	Sparkassen Direktversicherung	Finalization of the pilot project: "Telematics-Security-Service".
12 / 2015	AXA Versicherung AG	Introduction of the tariff: "DriveCheck".
01 / 2016	VHV	Introduction of the tariff: "VHV-Telematik-Garant".
04 / 2016	Allianz	Introduction of the tariff: "BonusDrive".
10 / 2016	HUK	Introduction of the tariff: "Smart Driver".

Table 10: History of telematic tariffs in Germany, source: author`s data according to the research of carsharing provider websites

When looking at telematic tariffs in more detail, it is possible to identify different components of which a telematic tariff consist, or which need to be considered in order have a functioning telematic tariff. Considering the existing literature on the one hand and comparing the already on the German motor insurance market existing tariffs on the other hand, the following mandatory components for telematic tariffs can be identified:

(1) Technology

(2) Data

(3) Product

(4) Target Group

These components will be examined in depth in the subsections 5.3.4.1 until 5.3.4.4.

5.3.4.1 Technology

The technological aspect divides the need for the appropriate hardware into different categories. A general precondition that must be fulfilled though is that the data generated by driving must be recorded or directly transmitted with some device, so that it can be interpreted upon reception. In regard to the device the motor insurers have different options. The analysis of the existing telematic tariffs and the therefore needed devices and software, such as an application (app), brought the following result:

(1) Applicator / smartphone app: It is the most commonly used means to record data in the current motor insurance market for telematic tariffs (used by: Signal Iduna, Admiral Direkt, VHV, Allianz and AXA). It has the advantage of being easy in terms of distribution to the customer, as an existing hardware (e.g. smartphone) that a user needs to possess can be used. The user simply has to download the app and automatic software updates can also be carried out without the need for any further devices or having to send out a software update by discs to the customer (Kohne et al., 2015, p. 105).

(2) Retrofitting: With this method a device is implanted into the car. For that the car needs to come into a garage so that the device can be installed by a technician. The only insurer on the German market is the Sparkassen Direktversicherung which is using this system.

(3) Installation at point of production of the vehicle: So far this variation of technical devices for telematic data recording is not employed in the German private or commercial customer motor market, as there is no common standard for the technical design of these tools and there is an ongoing dispute about who is owning the data generated while driving (Wallentowitz, 2006, p. 466).

For carsharing it is different as every carsharing provider has the need to have such a telematic system installed in the car, as they need to be able to track the cars and their status, due to transparency and safety reasons for their own, as

well as for the customers` benefit. Every carsharing provider has his own fixed integrated telematic system in the cars, so it is not the car producer who installs it at the point of production, but it is an extra item which is mounted into the specific car by the car producer, comparable to an extra item from the list of extra equipment.

5.3.4.2 Data

The collection and transmission of data is only one issue, but data also needs to be stored to be able to refer to it at a later point for analysis purposes. Storing the collected data properly allows the insurance companies to work with a big data approach and experiment with combinations of data in order to generate better risk profiles for their customers and consequently design products that can better reflect these risk profiles. Whole data lakes can be created with a continuous inflow of new data, serving as a source for the insurance companies and from which they can draw their information (Jain, 2017, p. 24). Current technical standards suggest three major possibilities for data storage:

(1) Third-party provider: A separate company provides the hosting of the data and provides the technical environment for the distribution of the data for the different receivers. This is the most commonly used form for German motor insurers in the field of telematics (Sparkassen Direktversicherung, Admiral Direkt, Allianz, Signal Iduna, VHV).

(2) Shared platform: This variation enables the motor insurer to collect some data directly, while other data is hosted with a third-party provider. This system is used by the AXA in the German market.

(3) Own platform: The motor insurer hosts all the data on an own platform and services all access points himself. This system is not used in the German market due to cost reasons.

5.3.4.3 Product

The reason why motor insurers consider telematic tariffs as attractive is because it offers potential advantages to the customer, as well as for the motor insurer. The customer can benefit from a good driving performance, while the

motor insurer collects the data and can work out more precise risk profiles and have a more exact pricing and product development. The key factors and approaches that need to be considered in the process of the development of a telematic tariff are the factors of on which basis the prices should be calculated and for what purposes the telematic data generated can be used. The following consideration gives a market overview over the purposes for which German motor insurers currently consider the use of data generated by telematics:

(1) Usage-based insurance PAYD (Pay as you drive) / PHYD (Pay how you drive): These forms of telematic usage reward the good driving performance and generate a negative effect for a driver with a bad, i.e. claims related, driving performance. They offer the possibility to set a price according to the concrete results of the driving. This system is especially of relevance for carsharing, as here the driving performance of a specific driver can be recorded over the time and pricing for next trips can be influenced by his risk profile. The insurance part and consequently the pricing can help the motor insurer work against the accident rate of the carsharing fleet. Especially the common pricing models of carsharing providers, to bill the customers for the time of usage for the car leads to time pressure on the side of the driver in order to save money and therefore to negligence in his attention with a higher probability to have an accident or damage with the car (Schade, 2008, p. 37). This system is the target system for most of the motor insurers with telematic tariffs in the German market. The following companies have implemented this system in the German market: Sparkassen Direktversicherung, Admiral Direkt, Allianz, Signal Iduna and VHV.

(2) Emergency systems / roadside assistance: The emergency systems offer the possibility to be tracked online and to be located, so that in case of an accident or breakdown, the car assistance company can find the location more easily and sometimes additionally they are informed automatically about the extent of the damage (Rosenow, 2012, pp. 42-43). Such emergency call systems will be compulsory for new cars and have to be generally installed after March 31st 2018 in Germany (Petrovs, 2016, p. 8). Functions of this type are already integrated in the offers of Sparkassen Direktversicherung, Admiral Direkt and Signal Iduna.

(3) Vehicle localization: The function serves in contrast to the emergency call systems not to send out an emergency information, but it serves simply to locate

the vehicle, either for the purpose of data recording or as a basis to offer other services, such as suggestions for restaurants, or simply use the information as raw data to calculate speed, etc. for further analysis purposes. In this regard Sparkassen Direktversicherung, VHV and Allianz have implemented this on the German market.

(4) Service Features: Service Features are mainly analysis possibilities of the driving behaviour that the driver can carry out by himself from his home. It can also mean though, that a tracking for example for the tire quality is installed, so that an indication pops up and an appointment with a tire store is made automatically, if the system detects a flaw in a tire. Currently Allianz and Admiral Direkt are active in this segment.

5.3.4.4 Target group

The target group is the group of customers that the motor insurance company designs the tariff for. It is the end customer. It can be on the one hand a private person, or on the other hand a company, for example in the form of a carsharing fleet. The carsharing providers mainly seek coverage for the by law obligatory part of third party liability. The comprehensive coverage, which is more profitable for the motor insurance companies than the third party liability coverage (Fürtjes et al., 2005, p. 45) is mainly covered by the car sharing companies themselves. As the target group is the customer or driver, the type of driver can be classified into different segments.

(1) Beginner and experienced drivers: For a motor insurer a tariff which includes telematics elements offers the possibility to track beginners and thus offer a price according to their driving behaviour. Especially young drivers and beginners, or a combination of these two attributes, bear the highest risk potential for accidents for a motor insurer (Hesse, 1993, p. 44). Experienced drivers have the chance to get a premium reduction by using telematics to be tracked and analyzed, using this as a form of pre-bonus. Besides the fact of collecting and analyzing data, there is also a psychological effect involved. The driver knows he or she is being tracked and that leads him to a more cautious way of driving (Rötzer, 2015, p. 97). It could even be used as a placebo-effect. Literature is only skeptical about how long lasting this effect is, or if the driver gets used to being tracked after a while

and draws back to his old behavioural pattern. Signal Iduna, AXA and Allianz especially target this group of drivers with telematic tariffs.

(2) Low or high claims category: In Germany the claims free history of a driver has an impact on the premium for his motor insurance. The history is being updated every year and says in which claims category the driver is. The longer one drives without an accident, the higher is the no-claims category (Fürstenwerth et al., 2001, p. 562,). With telematics a driver can prove to be a reliable and cautious driver, even though he may not have the best historic record of his no-claims category and thus get a better price. Admiral Direkt is targeting these customers on the German market.

(3) Frequent and non-frequent drivers: Drivers who drive very much would normally pay a higher premium, due to the many miles they drive and the increased risk to have an accident. With a telematic approach they could possibly reduce the premium with a pre-bonus for being tracked. At the same time there are drivers who do not drive much. They would have the chance to prove when being tracked that the few miles they drive, they do it well despite a lack of practice.

An even further development, when no driver is required anymore is the introduction of an autonomously driving car. Google recently reported that since the first tests were taken up in 2010 the autonomous cars have already driven until November 30th 2016 2.4 million miles, which converts to 3.8 million kilometers, autonomously (Google, 2016, p. 1). Google`s car is now starting to be able to master the city traffic autonomously. By 2018 a first version of a self-driving car is expected to be introduced. For motor insurers that raises questions of liability which still needs to be clarified by the legislative authorities. In a survey carried out together with the AXA insurance, 51% of the men, in contrast to 23% of the women, trust that in the future autonomously driving cars will be safer than cars driven by human drivers (AXA Versicherung AG, 2015). One third of the interviewees believed that autonomously driving cars will drive better than they themselves drive. Considering telematic services and safety features like the ability to call for help (e-call) at the push of a button, or anti-theft features, were with 92%, respectively 89% widely accepted, while features to monitor the way of driving were at the bottom end of the acceptance scale with only 22% (AXA Versicherung

AG, 2015). The tracking of the driving behaviour of a person was seen most critically.

Evaluating all the developments described above it becomes clear that technical developments are on the rise and are expected to change the concept of mobility dramatically. Therefore new concepts are needed to master the balance between the trend of more people living in geographically limited areas (trend towards moving into cities, creation of mega cities), different priorities of individuals in life towards owning and sharing, as well as new technological developments. It outlines the need for alternative mobility concepts. As flexibility is a vital element in mobility, carsharing comes into focus of such alternative mobility concepts especially.

5.3.5 Mobility behaviour in Germany

When examining the mobility behaviour of the German population it is important to structure the most influential criteria into different categories. In this study the categories that were found to be decisive will be examined in depth in this subsection. They are the categories describing the participants in traffic, volume of traffic, traffic performance, time spent on mobility, means of transportation and purpose of the way. According to a study of the German ministry of traffic the criteria have the following characteristics in Germany (Bundesministerium für Verkehr, Bau und Stadtentwicklung, 2010):

(1) Participation in traffic: 90% of the persons that were interrogated had left on this specific day the house for whatever trip or way. A way is defined as a single one way trip.

(2) Volume of traffic: Every person takes on average 3.4 ways or errands per day; in total the German population takes 281 million ways daily, or 102 billion ways per year, out of which 42.7% (44.5% in 2002) are taken by driving in a car, be it as a driver or as a passenger.

(3) Traffic performance: The average distance of the ways of a person per day is 39 kilometers (on average 11.5 kilometers per way); in total that amounts to 3.2 billion kilometers for the whole of the German population each day.

(4) Time spent on mobility: On average every person spends 79 minutes per day on their ways or errands.

(5) Choice of means of transportation: 58% of all ways are completed by passenger car or motorbike. If additionally considering the ways that were completed travelling as a passenger, it amounts to 79% of all ways, which equals the level of 2002. By foot 24% of the ways were completed, while by bike it amounted to 9%, while 8% of the ways were completed by public transport, which represents an increase compared to 2002 of 3%.

(6) Purpose of the way: Of all ways, 32% are made out of leisure reasons, 21% because of shopping reasons, equally 21% are work or formation related ways, 20% accompanying other people for various private errands and 8% are done in execution of the job.

Bringing the figures together it is important to consider the travel times in the light of growing urbanization, a trend illustrated above in the demographic developments. In consequence this implies that people get more flexible in their choice of their means of transportation, which is backed by the fact that for the first time in the history of local mass transit, more than 11 billion people travelled in Germany by bus, rail or tram in the year 2012, which is an increase of 0.7% compared to the previous year (Statistisches Bundesamt, 2013). As the recording of comparable data for public transport has only started in 2004, one can only relate to the time span, due to the lack of reliable data. The development of growing urbanization is also reflected in an increase of inner-city and near city travel. This is proven by an examination of the development in the time span between 2004 and 2012. In 2004 10.1 billion trips were made by public transport. Ten years later in 2014 an increase of 9.3%, which equals an additional 1 billion trips, could be observed. This adds up to 11.1 billion trips that were made by public transport in 2014 in Germany, which equals to 30 million trips by people per day that are made by public transportation (Die Zeit, 2015). With the liberalization of bus transport between long distance destinations, as competition to the Deutsche Bahn (German railway), it remains to be seen if more people can be attracted to public transport even for long distance trips.

A change in the parameters, related to cost increases for owning a car, boosts the demand for alternative transportation concepts in contrast to possessing a car. Especially for the younger generation the use of public transport has doubled from 9% in 1997 to 18% in 2007, indicating clearly that a shift in priorities and values has occurred (Institut für Mobilitätsforschung, 2011, p. 9). In an environment of growing urbanization, parking space becomes a scarce good in cities, motivating people to use more public transport as they are not willing to spend a long time searching for parking spots, paying for tickets for wrong parking or having their car towed away (AXA Germany, 2012, p. 7). The growth of cities encounters its limits, when considering that according to German legislature, every new housing project has to prove that with every new apartment or office enough parking space can be provided for the new tenants or owners. As an example, in the German state of Saxony it is compulsory to create one to two parking spots and a bike parking possibility per new apartment. For business and administration buildings the requirement demands to create per 30-40 square meters floor space a parking spot and a bike parking (Meyer, 2013, p. 123).

Considering that on average an automobile is parked 95% of its time on private or public ground, or in other words 23 hours per day, it becomes obvious how vital parking space is for a car owner (Topp, 2007, p. 269). For freight transportation vehicles the parking time lies between 12 to 14 hours per day (Randelhoff, 2013). This leads to the question if it is still worth it to own a car when a car is parked for such a long time, while from a public point of view it is also questionable if the public space cannot be used rather differently. This is the reason why critics say that parking and the need for parking space is one of the biggest inefficiencies of owning a private automobile (Randelhoff, 2013). In order to solve this problem cities take the approach to price parking space highly and reward the use of alternative mobility concepts, such as public transport or carsharing.

Due to financial shortages many cities and communities have developed a financial planning process according to which penalties for traffic violations have become a fixed part of their budget. This trend is confirmed when examining the development of money generated through traffic controls. Since the 1980s the control of stationary and moving traffic was transferred from the police to the local municipalities in Germany. Since then the money generated by traffic violations,

which is not linked for cities or communities to a compulsory reinvestment into traffic related projects, has grown steadily. It has even become a business model for private companies, which offer the equipment or even the full service to carry out traffic controls. As every city is very restrictive with the information it is difficult to get reliable data on the amount of income generated by traffic violations.

The example of the budget planning for the city of Cologne describes representatively the general preceding for all cities and communities in Germany. The city of Cologne generated in 2016 an income in penalties from traffic violations of moving and non-moving traffic of 41.9 million Euros, which is an increase of about 42.5% compared to the year 2010 with an income of 29.4 million Euros. The plan for 2017 was again increased to almost 42 million Euros. From 2010 on it was planned to increase this position in the budget every year steadily in order to generate an extra income. This optimistic plan was corrected though from 2016 on, due to reality showing that a double digit increase every year is not realistic. The current situation for Cologne is as follows:

Year	Plan in EUR	Generated in EUR
2008	26.546.452	27.012.491
2009	27.643.960	28.624.547
2010	28.647.857	29.365.658
2011	30.520.452	30.364.457
2012	33.600.000	30.857.584
2013	37.100.000	31.550.268
2014	40.600.000	31.675.268
2015	41.000.000	41.214.731
2016	41.500.000	41.894.731
2017	42.000.000	Not yet known
2018	42.000.000	Not yet known

Table 11: Cologne traffic control budget plan (2008-2018), source: Stadt Köln, 2017

The planned budget generated from traffic violations had even doubled Germany wide within only 7 years, from 1995 to 2002. As shown above, this planned budget has been steadily increased year after year, making parking even more difficult in densely populated areas and therefore lowering the incentive to own an automobile.

5.4 CONCLUSION

From the very beginning the motor insurance market has been subject to an intensive competition among motor insurers in Germany in regard to pricing. It is a highly competitive business field for the German insurance industry, which is marked by aggressive cyclical price wars in order to exclude other insurers from the market. This harsh field of competition got even more intensified when the protection of a regulated insurance market fell at the end of July 1994. This opened the opportunity for non-German insurers to enter the market and broadened the possibilities for product development to find new approaches in order to stay ahead of competition. The competition in the motor insurance changed since the point of deregulation from an intense to a predatory competition. To make matters even more challenging for this business segment a fundamental change in the exogenous factors or framework conditions can be observed. Values and behavioural patterns of people change. The age structure advances creating a situation of an aging society in Germany as people get older and not so many children are born. More people move into cities, creating a trend of growing big cities and a diminishing population in the surrounding areas. Consequently room for parking gets scarce in cities and the car becomes more and more a burden. With a still time of about 23 hours per day parking is becoming increasingly a financial challenge for car owners. The situation gets even worse when considering that cities and communities already include a steady increase of income from traffic violation in their budgets. Especially young people, without strong financial backing cannot afford that and a car in a big city becomes even more a burden rather than a help. That is why the average age of people taking the test for a driving license increased steadily in the last years. Furthermore, young people follow rather the digitalization trends and embed this into their daily lives, than

thinking of buying a car. That is why for young Germans it becomes more important if one has the latest model of a mobile, PC or tablet computer, than a car. In connection with the trend to share rather than to own and with the transparency of digital platforms carsharing has become significantly accepted and popular in big cities. It combines digitalization, the trend for the sharing economy, the change in values on the nourishing ground of growing big cities. On the other hand the latest developments in digitalization also offer carsharing providers whole new options. Telematic systems allow a complete control of the vehicles from the distance not only for the carsharing customers. All relevant information can be seen by the provider and selected information of this can also be passed on to the carsharing customer and motor insurer. This allows to set up a transparent system of not only where a carsharing car is located, but also of what the status of this car is. As the car still plays an important role in the everyday mobility, despite a growth of the use of public transport, it becomes obvious that carsharing has good chances to become even more accepted, especially in cities and if a clear analysis and segmentation of possible types of drivers is carried out, this can be a rewarding business segment for German motor insurers.

6. CARSHARING AND IMPLICATIONS FOR MOTOR INSURERS

The current trend of consumers to share rather than to own also found its way into the world of mobility and can no longer be neglected by insurers, when choosing a strategy for the German automotive market (Nelskamp, 2015, p. 24).

6.1 CARSHARING

A study carried out by an acknowledged German market research company forsa, Gesellschaft für Sozialforschung und statistische Analysen mbH in 2014 showed that 73% of the people asked in Germany have heard of carsharing and 21% can imagine to use carsharing, of which 25% live in cities and 13% in smaller towns (Forsa, 2014, pp. 1-5). Yet the acceptance of carsharing is clearly related to age, as younger people can imagine using it more often, as well as people with a higher educational degree or people living in bigger cities. The opposite result was found for people of a more advanced age, less education and / or living in smaller cities or villages (Forsa, 2014, p. 3). Most rides or trips a person takes in average during the day are as shown above short and are made alone, or with only one more passenger. For these short trips a small car is most of the time sufficient. (Bundesministerium für Verkehr, Bau und Stadtentwicklung, 2010, p. 3).

Especially when considering that mobility in total, i.e. with insurance and other costs such as maintenance costs, loss in value, etc., is a cost factor which consumes 15% to 25% of the disposable income of an average German household, it is a clear incentive, combined with a growing environmental consciousness and technical improvements, to consider more efficient forms of mobility (Matzler et al., 2009, p. 430). In the following the average costs for motor insurance per year are listed, exemplary for the year 2015 (GDV, 2016):

(1) 249 EUR p.a. motor third party liability, an insurance which is compulsory in Germany for every car parked or driving on public roads or ground. It covers damages which occur to the other party or property involved in case of the fault of the driver for an accident or damage.

(2) 314 EUR p.a. motor comprehensive coverage, an optional insurance, which can be bought in addition to third party liability insurance to cover damages in regard to the own car involved in an accident to the full extent with only minor exclusions.

(3) 90 EUR p.a. motor partial coverage, an optional insurance, which can be bought in addition to the third party liability to cover damages in regard to the own car involved in an accident to a limited extent with certain exclusions.

The following graph 32 displays the development of the average premium per year for the third party liability in comparison to the comprehensive and partial coverage. The ordinate- (Y-) axis displays the absolute amount of the premium in EUR, while the abscissa- (X-) axis marks the timeline from 1980 until 2015. The exact numbers for this graph are shown in detail in table 12 below.

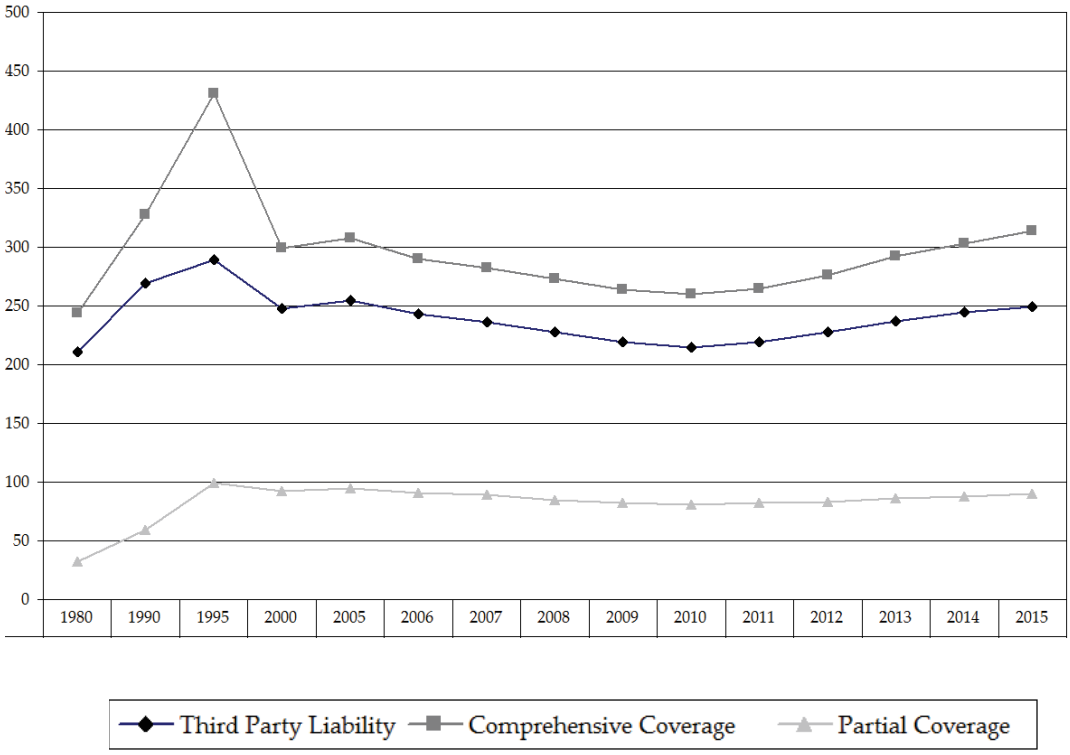


Figure 32: Annual average premium development (1980-2015), author`s graph, source: Gesamtverband der Deutschen Versicherungswirtschaft (GDV), 2016, pp. 64-81

	1980	1990	1995	2000	2005	2006	2007	2008
Third Party Liability	211	269	289	248	255	243	236	228
Comprehensive Coverage	244	328	431	299	308	290	282	273
Partial Coverage	32	59	99	92	95	91	89	85

	2009	2010	2011	2012	2013	2014	2015
Third Party Liability	219	215	219	228	237	245	249
Comprehensive Coverage	264	260	265	276	292	303	314
Partial Coverage	82	81	82	83	86	88	90

Table 12: Exact numbers for figure 32, source: Gesamtverband der Deutschen Versicherungswirtschaft (GDV), 2016, pp. 64-81

The costs for individual mobility as part of the motorized individual traffic is expected to rise even more by another 10% until 2025 (Deutsches Institut für Wirtschaftsforschung Berlin, 2008, p.12).

6.1.1 Sharing economy and mobility

The discussion in the subsection 6.1 above demonstrated that for an individual person the traditional model of owning a car is a rather expensive and therefore it is a relatively uneconomic model, especially when considering that the average still time of a private vehicle is 23 hours (Topp, 2007, p. 269). A differentiation must be made though between the private and the commercial use of a vehicle, as the still times vary. In the commercial field shifts with different drivers are taken, changing still times significantly. In the transport sector the average use time for the transport of goods is about 10 hours per day and in the transport services for personnel, such as taxis or driving services, the use time is up to about 22 hours per day (KPMG, 2015, p. 28).

The ordinate- (Y-) axis of figure 33 displays the different forms of uses for a vehicle, while the abscissa- (X-) axis marks the percentage of use and still time, also converted into hours per day.

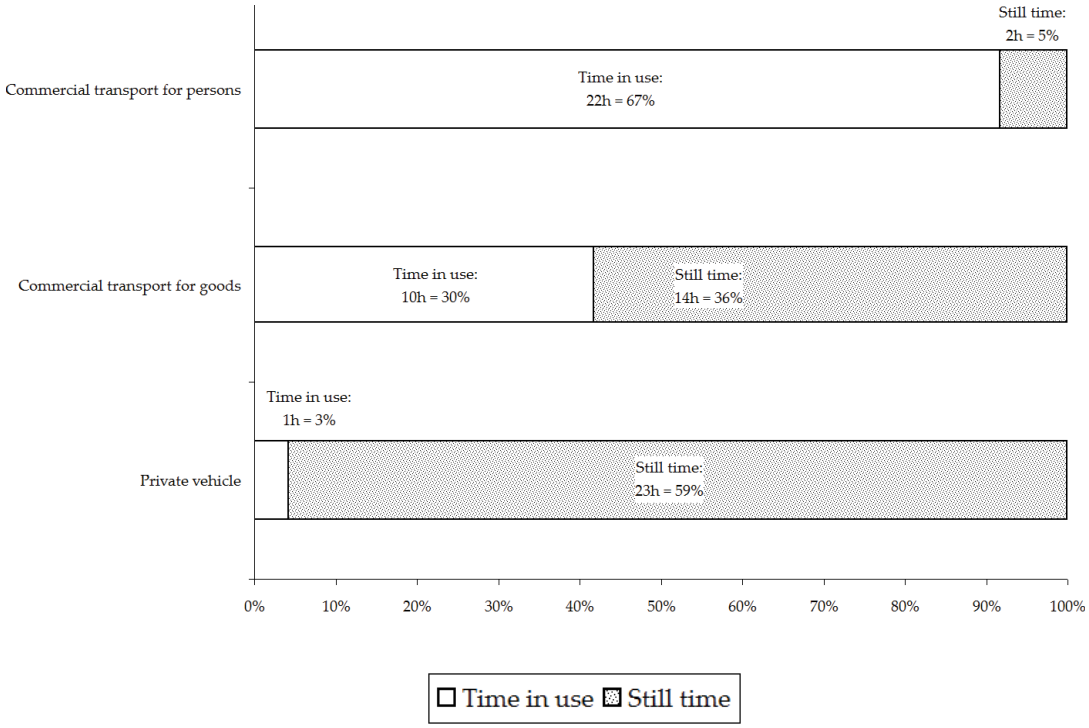


Figure 33: Average vehicle use and still times, author`s graph, source: KPMG, 2015, p. 28

The use time of a vehicle in the private sector is as shown above so minimal that the costs for the use of a car seem hardly justifiable. The costs of public transport on the other hand are expected to rise by even 40% compared to now, due to subsidy reductions by the government, as the budget gaps in public households are expected to rather widen than to diminish (Kunert et al., 2008, p. 13). This is the reason for an intensification of the trend of a growing cost increases in the public transport.

Despite the fact that sharing is often perceived as the symbol for an economic system that can be described as being rather completely alternative, shared mobility has not the least to do with non-profit market aspirations of a certain

community. The new mobility market works essentially along the same lines as existing economic mechanisms and overrides by no means the logic of the marketplace. Offerings made in this sector will only be successful if they provide benefits for provider and the user alike. As it will be shown in subsection 6.2 in detail, an exponential increase in the number of users shows that customers of carsharing clearly accept the commercial profit driven motivation that underpins shared mobility. But the customers are at the same time very demanding, insist on offers that are simple fast and flexible, as well as prices that are fair and transparent. The shared mobility sector is taking root in selected markets (Nelskamp, 2015, p. 24).

In a perfect world, the customer would choose the size and model of a car according to his need at that specific moment. Keeping this structure of preferences in mind, the customer would have a constantly changing car, which reflects his current need at the specific moment and which is not static. The car he buys, he usually buys it according to his maximum need for peak times and not for his average need. The approach to be able to use a car according to the specific need and not the permanent maximum need would significantly lower the CO2 emissions and reflect the increase of environmental awareness in the population (Phleps et al., 2015, p.38). This conclusion is confirmed by the fact that when a car is purchased, besides various aspects, the criteria of holiday journeys or rare weekend excursions are considered. The buying criteria to be prepared for the highest peak moment of need for the car has the consequence that it leads to a purchase of a highly fuel consuming car, which is not really suited for the day to day city trips or errands that need to be run, but covers the infrequent demand for long journeys with the need to transport luggage (ADAC, 2011).

6.1.2 Definition and different forms of carsharing

That carsharing is a new phenomenon can be seen by the fact that in literature, presentations, press releases or other forms of published material, there is until now no common understanding in the spelling of the term carsharing. Different forms of spelling exist and the following different variations can be found:

- Carsharing
- Car-Sharing
- Car Sharing

According to the official standard encyclopaedia of German orthography, the word is spelled in the form of "carsharing" as the recommended form of writing, with an accepted variation of "car-sharing" (Duden, 2017).

The concept of carsharing is directed towards the short term use of motor vehicles and can be described in contrast to similar concepts which refer to motorbikes, scooters or bikes as follows: Carsharing is the concept of an organized use, often connected with a fee, of an automobile by a number of different individuals for a limited time for each individual (Witzke, 2016, p.8).

When it comes to choosing a carsharing vehicle, this choice is mainly influenced by the costs for the car, in which insurance costs play part of it. Even the government has the chance to subsidize insurance costs for small and efficient vehicles in the carsharing market to make it more attractive. The general principle of carsharing is always the same. It is about being able to use an automobile spontaneously and flexibly without having to own a car oneself. In Germany the idea of carsharing originated in mid-1988 with the first provider called Statt Auto offering its services in Berlin (Loose, 2014, p. 11). Besides the appearance of individual homepages of the specific carsharing providers, the association of carsharers pushes the efforts of its members on a meta-level by providing a homepage (www.carsharing.de) where the providers of each region are displayed and can be accessed through this meta-site. When analyzing the concept of carsharing, three fundamentally different forms can be identified. Carsharing exists in the forms of (1) staion-based, (2) free-floating and (3) private carsharing.

6.1.2.1 Station-based carsharing

The characteristic trait of the classic form of station-based carsharing is a fixed station where to pick up and drop off the car. This form is offered by providers such as Flinkster or Stadtmobil in Germany. The carsharing customer selects a certain station, a car which is available there and books by internet or

smartphone this car for a certain period, which can be prolonged if so needed. The drop off of the car must always be at the same station where the car was picked up.

6.1.2.2 Free-floating carsharing

Free-floating carsharing is a new form of carsharing that has developed in cities. The characteristic trait of a free-floating carsharing concept is a geographically fixed business area (e.g. a certain city), where the automobile can be picked up and dropped off at any time. This form is offered by providers such as Car2go or DriveNow in Germany. The significant novelty in this concept is that the car can be parked for free at any public (not private) parking space, i.e. all parking spots that one normally has to pay for. This is a considerable advantage, as costs for parking have become an incremental cost factor in mobility.

Figure 34: Exemplary display of carsharing vehicles in free-floating concept, source: Website car2go, https://www.car2go.com/DE/de/

6.1.2.3 Private carsharing

The characteristic trait of the concept of private carsharing is that private persons offer their car for temporary use by other persons. It is practiced via an internet platform that brings both sides together, the carsharing user and the provider of the vehicle. This form is offered by providers such as Tamyca or Autonetzer in Germany.

6.1.3 Motives for carsharing

The importance of the car as a means of transportation becomes even more obvious, if one does not only analyze the mobility of people according to distances of below 250 kilometers, but by the modality split on a deeper level, meaning shorter distances. The most recent and reliable figures and statistics that can be found date from the year 2014. The following figures and charts are compiled from the statistical raw data of the statistical yearbook 2014 of the Federal Statistical Office of Germany.

In the year 2014 the traffic volume of passenger transport in Germany amounted to 100 billion ways that were made with 275 million ways per day, which average 3.4 ways per person and day. The average length of a way was 12.4 km (Statistisches Bundesamt, 2014, pp. 581-596). Just to remind the reader, it is a mathematical consolidation of all trips and all modalities taken in 2014.

The following graph displays the modal split of the traffic volume in regard to the number of ways that were taken by different means of transportation or by walking. The figures show the value in percentage.

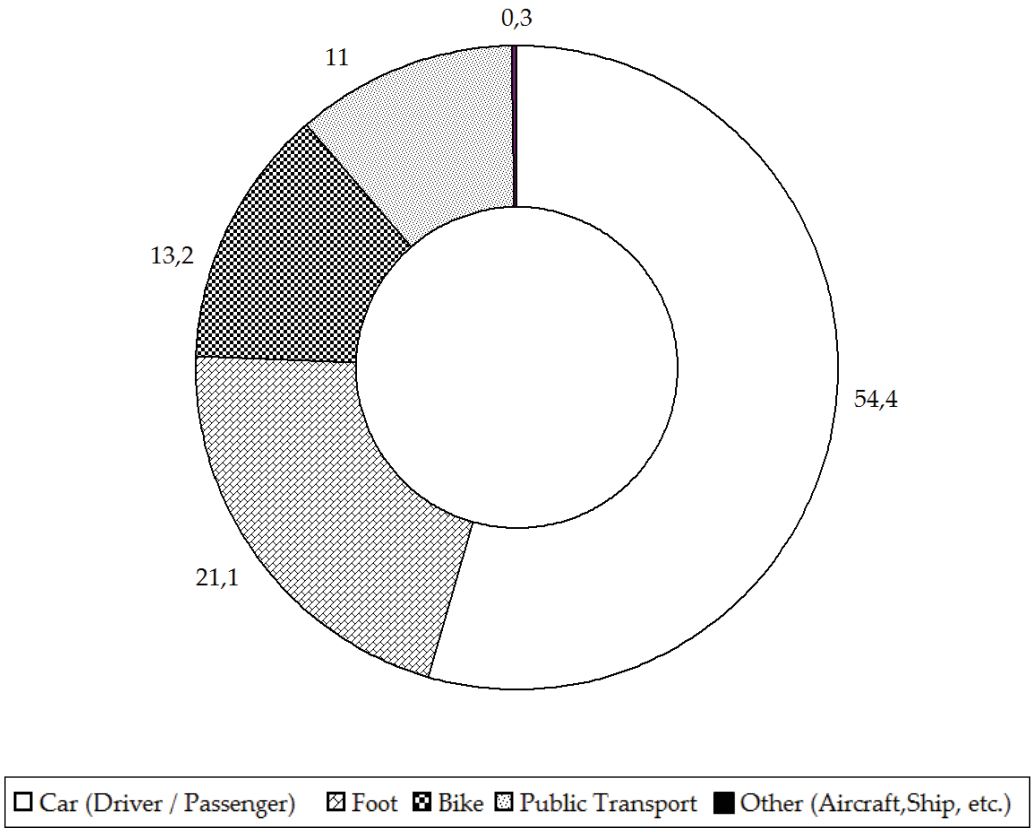


Figure 35: Modal split by means of transportation in percent, author`s graph, source: Statistisches Bundesamt, 2014, pp. 581-596

With 54.4% the car is still the most frequented means of transportation for the daily ways, followed by foot with 21.1% and at a similar level by bike with 13.2% and by public transport with 11%. As explained in subsection 6.1, the carsharing concept can be used either by private or commercial (for business trips in the nearer area) users in various ways. When analyzing the traffic volume in regard to the purpose for the way, it becomes obvious that only 16.4% (that is work and business purposes taken together with educational purposes) of the ways are related to commuting, in which even a part of business trips is included, which could be taken by carsharing, while the other 83.6% of the ways are related to shopping and services, leisure time, ways home, or other ways. This result is

displayed in the following figure 36, which depicts the modal split of the traffic volume depending on the purpose of the trip in percent.

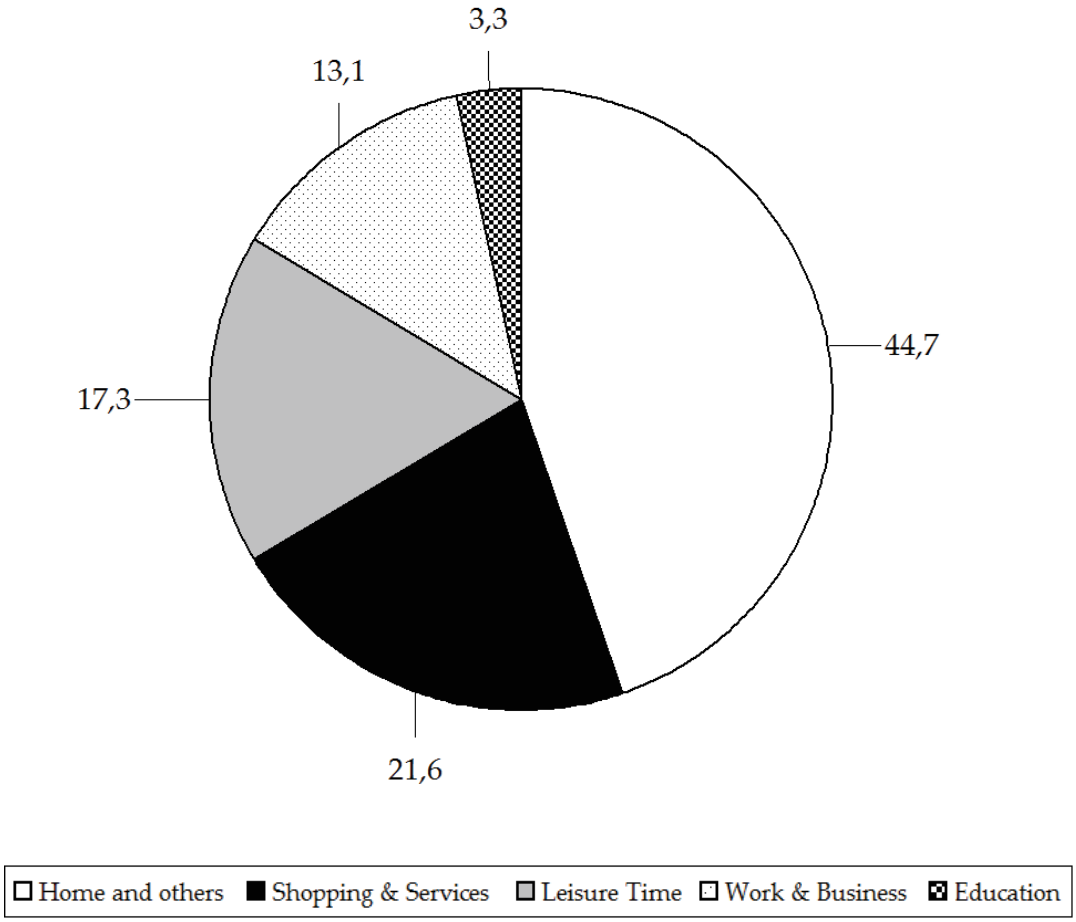


Figure 36: Modal split of traffic volume by purpose of trip in percent, author`s graph, source: Statistisches Bundesamt, 2014, pp. 581-596

The above discussed motivations for carsharing can be categorized into different effects. These in the course of the research found relevant effects of carsharing are (1) economic, (2) convenience and (3) ecological effects, which will be discussed in detail in the following excerpt.

(1) Economic effects of carsharing for the user can be classified according to Goerke (2009, p. 115) as follows:

- For persons with a driving mileage of below 10.000 kilometers per year, carsharing is less expensive than owning a car.
- The buying and maintenance costs for a private car are non-existent.
- The costs for the use of a carsharing car are transparent and are therefore easily plan- and calculable for a user.
- Even households with a low income can participate in the carsharing, as a car can be used according to the specific financial situation at the moment.

(2) Convenience effects of carsharing for the user can be described according to Klemmer (1999, p. 94) as:

- Carsharing cars are usually always available and can be easily booked and returned.
- Carsharing cars offer a certain comfort, as they can be booked according to the need at the specific point in time.
- Carsharing offers the possibilities of special trips in areas which are not well covered by public transport.
- The access to carsharing cars is easy, as they are parked in junction points, which are easily accessible by public transport or in residential areas.

(3) Ecological effects of carsharing for the user are defined by different authors as:

- 55% of users of carsharing signalled in 2005 to be willing to abolish their car and replace it with the carsharing model (Kählert, 2005).
- 37% of users of carsharing have already replaced their own car with the carsharing model in 2015 (KPMG, 2015, p. 6).
- A carsharing car replaces about 10 privately owned vehicles, which results in a saving of resources, such as metals, etc., which would have to be used otherwise to produce the private cars (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit, 2011, p. 133).

- One thinks more before using a carsharing car, as every use incurs costs and thus the number of kilometers and emissions are reduced. To express it in figures, the CO2 emission of the average car owner is expected to be reduced between 39% to 54%, by his or her conversion to carsharing (Shaheen et al., 2007, p. 82).
- Carsharing represents a contribution to an overall reduction of traffic volume, especially in big cities. It helps to decrease the number of vehicles on the streets, to reduce noise and fewer parking spaces are needed, therefore less land sealing is necessary.
- Carsharing cars are in general newer than the privately owned cars and have a more efficient technology (Tully et al., 2006, p. 224).
- Most carsharing fleets consist of compact cars which results in an environmental relief, as less and smaller parts are needed, the small cars consume less carburant and consequently have less emission (Kählert, 2005).

From the point of view of a changing value system in the German society there are also other advantages of carsharing that can be remarked. These are that modern values are connected with carsharing, carsharing represents a gain of personal freedom, offers higher flexibility in the mobility and the green image is considered positive and contributes to a growing user community of carsharing.

The analysis above indicates that carsharing has a broad base of potential customers and fits well with the socio-demographic and technical changes within the German society. Therefore it is an important strategic issue for the motor insurers in Germany to decide in how far, to what extent in terms of coverage and at what point in time, they want or not want to enter the market of insuring carsharing mobility.

6.2 THE CARSHARING MARKET IN GERMANY

As of today, Germany has developed into the biggest carsharing market in Europe (Frost&Sullivan, 2010). At the beginning of the year 2016 there were 1.260.000 people registered compared to 1.040.000 in 2015 (+21.2% equaling 220.000

more registered persons compared to 2014) and 757.000 in 2014 (+37.4% equaling 304.000 more registered persons compared to 2013) for carsharing with the 150 providers on the German carsharing market (Bundesverband Carsharing e.V. (bcs, 2016). The carsharing customers were able to use 15.400 (+10.4%) cars in 2014 compared to 13.950 in 2013 (+24%) and 11.250 in 2012 in 490 (+24.4% to previous year 2013) cities and communities (Bundesverband Carsharing e.V. (bcs, 2015). Regarding a longer timeline the dynamic development of the distribution of carsharing can be seen in the following table 13, subdivided into a consideration of classic or station-based concepts in comparison to the free-floating concepts in the timeline of 2013 to 2016.

All Figures date of January of the specific year	**Classic or station-based carsharing**	**Free-floating carsharing**	**TOTAL**
Registered persons			
2016	430.000 (+13.2%)	830.000 (+25.8%)	1.260.000 (+21.2%)
2015	380.000 (+18.8%)	660.000 (+51%)	1.040.000 (+37.4%)
2014	320.000 (+18.7%)	437.000 (+138.8%)	757.000 (+67.1%)
2013	270.000 (+22.7%)	183.000 (+394.6%)	453.000 (+176.3%)
Number of vehicles			
2016	9.100 (+1.1%)	7.000 (+9.4%)	16.100 (+4.5%)
2015	9.000 (+16.9%)	6.400 (+2.4%)	15.400 (+10.4%)
2014	7.700 (+14.9%)	6.250 (+37.4%)	13.950 (+24%)
2013	6.700 (+19.6%)	4.550 (+250%)	11.250 (+162.3%)
Number of carsharing stations			
2016	4.600 (+/- 0%)	Not applicable as no stations are needed.	See figures on the left.
2015	4.600 (+17.9%)		
2014	3.900 (+20%)		
2013	3.250 (+22.6%)		

Number of registered person per vehicle available	Classic or station-based carsharing	Free-floating carsharing	TOTAL
2016	45.2	125.6	See figures on the left.
2015	41.8	102.9	
2014	41.6	69.9	

Table 13: Development of carsharing concepts (2013-2016), source: Bundesverband Carsharing e.V. (bcs), 2017

While the beginning years of carsharing in Germany were marked by a continuous but undynamic growth, the development took a more dynamic turn since the year 2006. This dynamic turn was even enforced from 2012 on with the introduction of the free-floating carsharing concept. This model was a completely new approach compared to the until then existing only model of station-based carsharing. The free-floating model basically revolutionized the carsharing market as it proved to be extremely popular, especially for people living in cities with the permanent problem of limited parking space (Trares, 2014, pp. 2-6). Therefore, the following charts display the dynamic growth in the carsharing field, explaining the continuously increasing relevance for German motor insurers to deal with the question, whether or not to get strategically involved in this business field. This question becomes even more important if one puts the above presented developments and implications into the context of the socio-demographic developments.

In figure 37 the term "registered persons" is chosen deliberately instead of registered users, as the difference between simply being registered and being a user is important. A registered person is not necessarily a user, or maybe a one off user. This means that the registered user could be a member who exists only on paper, after he or she was registered. Even upon request, the carsharing companies do not disclose details about the user behaviour of their registered members, but instead only publish average figures. This parallel use of the word user and registered person applies for this whole study, always having the same meaning of

a person being registered to drive with a carsharing car, not stating anything whether the person uses the car actively and to what extent the person does so. In the following figure 37, the development of registered persons of station-based concepts is compared with the development of registered persons of free-floating concepts in the timeline of 2006 to 2016. The ordinate- (Y-) axis displays the number of registered persons in thousand, while the abscissa- (X-) axis marks the timeline from 2006 until 2016.

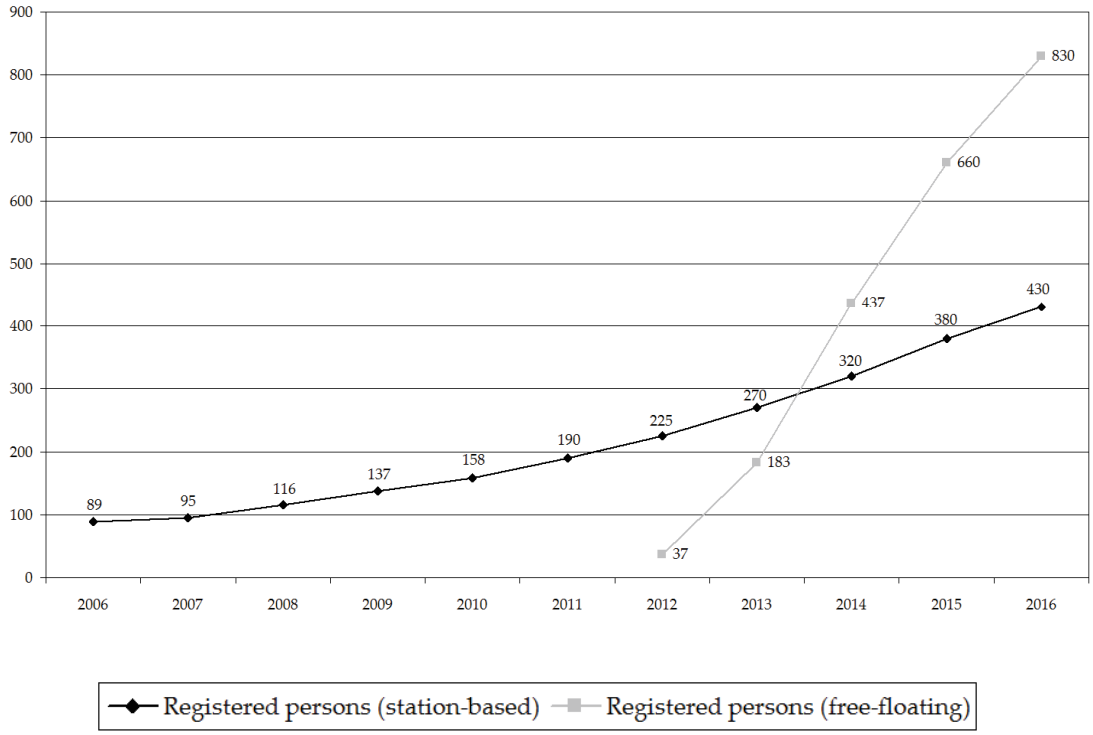


Figure 37: Registered persons station-based and free-floating concepts (2006-2016), author`s graph, source: Bundesverband Carsharing e.V. (bcs), 2017

In the following figure 38 the comparison is expanded to the number of cars available. The ordinate- (Y-) axis displays the number of cars available, while the abscissa- (X-) axis marks the timeline from 2006 until 2016.

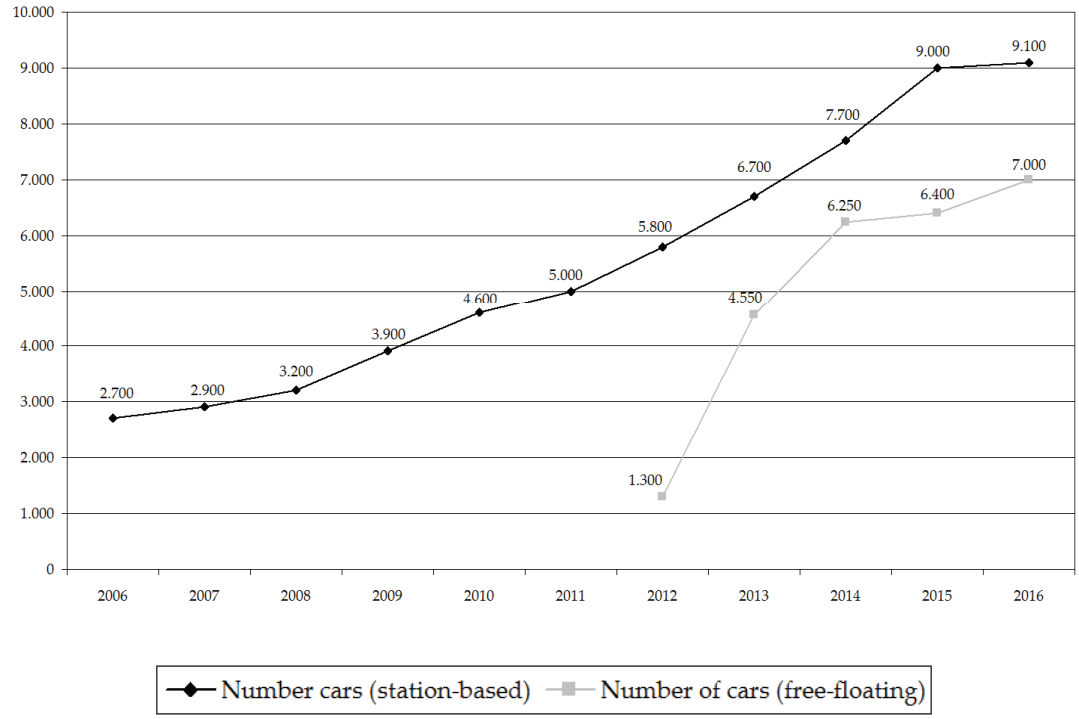


Figure 38: Cars available in station-based and free-floating concepts (2006-2016), author`s graph, source: Bundesverband Carsharing e.V. (bcs), 2017

The majority of people (33.4 million) have access to the station-based concepts, while 9.3 million people have access to the free-floating concepts. With the growing urbanization it can be stated that a car needs on average three parking spots: One at home, one at work and one for shopping or leisure time, which is an extreme challenge in the time of lacking space in growing cities. Another side effect is that carsharing reduces the driven kilometers per person by one third and the use of public transport reduces them by even 50% more (Bittlingmayer, 2000, p. 68).

Besides that the trend for using carsharing vehicles in general, it was found that mainly the younger generation accepts this concept. Looking at the distribution of users it showed that 60% of the carsharing customers are between 18 to 35 years old and grew up with computers and smartphones (Kowalski, 2014,

p. 21). This facilitates the use of carsharing, as most of the processes for booking are handled online. The system of free-floating carsharing is the one with the highest dynamic in terms of growth. Considering the year 2012, roughly 1.300 cars with about 37.000 users developed by the end of 2016 into about 7.000 vehicles with 830.000 registered persons. Considering the relation of registered persons and cars per carsharing provider as of September 2015 the German carsharing market is subdivided as follows:

	Number of vehicles	Number of users
Flinkster	3.600	300.000
Car2go	3.500	230.000
DriveNow	2.370	300.000
stadtmobil	1.900	50.000
Cambio	1.000	48.000
CiteeCar	800	5.000
book-n-drive	650	22.000
teilAuto	500	20.000
Stadtauto München	400	12.000
Multicity	350	10.000
Greenwheels	300	10.000
E-Wald	200	3.000
Quicar	160	12.000
Scouter	100	4.500

Table 14: Vehicles and registered persons per carsharing provider, source: author`s data according to the research of carsharing provider websites

Analyzing and comparing the costs for carsharing in table 15 the following picture of representative providers (as presented in table 14) can be drawn. In this table 15 the regular costs were considered without reference to special offers, giving an overview over the cost blocks of the major carsharing providers, in terms of members and cars available on the German market.

Type of costs	Free-floating providers		Station-based providers	
Provider	DriveNow	Car2go	Flinkster	Stadtmobil
Membership fee	29 EUR	19 EUR	0 – 50 EUR (1)	19 - 29 EUR
Monthly fee	None	None	None	2 EUR
Deposit	None	None	None	0 – 600 EUR
30 Min., 5 km (2)	8.10 EUR (3)	7.20 EUR (4)	3.20 EUR (4)	3.60 Euro (5)
1 hour, 10 km (2)	16.00 EUR (3)	14.40 Euro	4.10 EUR	4.70 EUR (5)
5 hours, 40 km (2)	54.00 EUR	72.00 EUR	18.70 EUR	17.30 EUR (5)
Weekend	218.00 EUR (6)	158.00 EUR (6)	158.00 EUR (7)	136.00 EUR (5),(7)
Period of notice for contract termination	6 weeks until the end of the quarter	2 weeks until the end of the month	6 weeks until the end of the quarter	6 weeks until the end of the quarter

Table 15: Cost comparison of free-floating and station-based providers, source: author`s data according to the research of carsharing provider websites

(1) = With a Bahncard the membership fee is 0 EUR. The so called Bahncard is an identification card, issued by the German railway, which entitles the owner of the card to buy train tickets at a reduced price and also participate in reduced carsharing rates for its own carsharing company Flinkster.

(2) = For low mileage drivers on weekdays after 9 o`clock

(3) = Package saving price

(4) = For times of parking a reduced tariff is calculated

(5) = For Berlin

(6) = Twice the for one full day, maximum 500 kilometers

(7) = Weekend including 500 kilometers

6.2.1 Advantages and disadvantages of carsharing

The economic and non-economic criteria whether carsharing is of an advantage for a user or not are listed below. This summary is based on the analysis and comparison of online offers of different carsharing companies in the German market and the data was collected by field research in January 2017. The result of this field research was, that the advantages of using a carsharing car can be summarized as follows: (1) No purchase costs for a car are necessary, (2) flexible choice of a carsharing vehicle is given according to the current need, (3) the vehicle is up to the modern standard and (4) it represents a contribution to the protection of the environment.

The disadvantage of using a carsharing car that became evident in the field research can be summarized as: (1) The user has no influence on how the car was used, how it was driven and how well it was serviced, (2) the model of carsharing is unsuited for commuters because of possible non-availability, (3) there is a low availability in rural areas , (4) the search for a parking spot is still there as most are taken or there are only few parking spots exclusively reserved for carsharing cars and (5) the car may not meet the own demands for a car in terms of cleanness, or handling behaviour, etc..

In table 16 an example calculation was carried out, comparing the costs per kilometer of owning a car in comparison to using a carsharing car, in order to shed light onto the question whether owning has an advantage over using a carsharing car or not. The buying of an own car is compared with an averaged pricing model consisting of values from free-floating as well as station-based providers joined together for this calculation. The assumptions of this example calculation, which was carried out on September 24th 2016, are based on sources of the Volkswagen internet-website, as well as the internet-website of the ADAC (Allgemeiner Deutscher Automobil-Club) and the free-floating carsharing provider car2go. The reference model for this calculation is a Volkswagen Polo 1.0 BMT Comfort Line, that was chosen as a used car with a consideration over 4 years, broken down to a yearly cost comparison and the kilometers driven per year were assumed to be 15.000 km p.a..

	Own car	Carsharing
Driven Kilometers per year	15.000	15.000
Acquisition costs at the beginning	14.575 EUR	0 EUR
Registration Fee (Deposit 500 EUR over 4 years distributed, Registration 50 EUR, monthly fee 7 EUR)	0 EUR	221,50 EUR
Price per Kilometer (0,27 EUR)	0 EUR	4.050 EUR
Fix costs per month 83 EUR (motor third party liability insurance, a comprehensive coverage with 500 EUR deductible, motor vehicle tax, as well as a lump sum of 200 EUR p.a. for parking and general inspection)	996 EUR	0 EUR
Garage costs per month 37 EUR (includes oil changes and inspections, tires, wear-and-tear repairs)	444 EUR	0 EUR
Operating Costs (include costs for gasoline at 1.30 EUR per liter, motor oils as well as a lump sum of 250 EUR p.a. for washing and car care)	1.164 EUR	0 EUR
Loss of value 181 EUR per month	2.172 EUR	0 EUR
Resale price for the car	+ 12.403 EUR	0 EUR
Refund of the fee of 500 EUR (considered for 1 year of 4 years)		+125 EUR
Sum of costs	**4.776 EUR**	**4.146.50 EUR**
Cost per kilometer	**31.84 Cents**	**27.64 Cents**

Table 16: Cost comparison of own car with carsharing, source: ADAC, 2016, p.40 and https://www.car2go.com/DE/de/, accessed October 2016

This example calculation shows that generally carsharing is an attractive alternative to owning a car. Yet this calculation is influenced by the key assumptions that are reflected in the prices above, underlying this approach. It can be criticized that the result would change for example, when assuming that the acquisition of a low fuel consuming used car in a good state for a low price is possible. Then this model would shift towards owning a car. Not considered are also costs that can derive for having to park the car every night in a garage, which would produce extra costs. Another point for criticism is that opportunity costs for lacking availability of a car at every moment when needed were not priced in, as well as higher setup costs for a carsharing car, as one needs to search for a free vehicle first (Belz, 2001, p. 188). Therefore the setup costs exist in the form of a loss in time as apps (mobile applications) are available, yet it takes time to search for a car available, walk to it, check the car for damages, open it with a code and set it up to drive. This applies for a free-floating model, but also for a station-based model that the investment of time for the use of a carsharing car is higher than for an own car, as many of the previously mentioned points still apply. Another point to be criticized is the state of coverage, hinting at the necessity for a proper motor insurance for carsharing cars. The owner of car can decide himself about the insurance coverage, while in the carsharing car the driver is usually covered with a comprehensive coverage, yet the deductibles are usually very high (Scherler, 2016). Referring back to the costs for parking that were neglected in this example calculation, it can be proven that they have a sizeable influence on the total costs for a motor vehicle. Especially in big cities the parking fees are very high in Germany, as a ranking of the most expensive cities for 30 minute average parking fees from 2015 reveals (Statista, 2015):

(1) Stuttgart: => 1.70 EUR

(2) Frankfurt, Cologne, Berlin: => 1.50 EUR

(3) Munich: => 1.25 EUR

(4) Hamburg: => 1 EUR

(5) Düsseldorf: => 0.95 EUR

(6) Bremen: => 0.70 EUR

To increase this importance, Düsseldorf for example has already increased the rate still in 2015 to 1.45 EUR following the trend of other bigger cities. This shows that even smaller cities and communities discover parking fees as a reliable source of income, thus increasing the attractiveness of carsharing models as parking is there already included in the price.

Another advantage, especially in the free-floating concept, is that if one sees a free car by chance parked somewhere, one can get access by chip and just use this car spontaneously and drive. A reservation is not a necessary precondition. Alternatively one can search by internet or smartphone-app where a car is available close to where one is located at the moment. This is the latest development in the carsharing market started in 2011 by offers of car producers. Closer observations of this concept of free-floating show though, that the terms and conditions of the providers are frequently updated in the sense that the business areas are more and more limited to the centers of big cities (Sonnberger et al., 2013, p. 190). At Car2go in Cologne for example, in the last two years the business areas were three times adapted and limited, taking out lower populated areas such as the Cologne Poll district. Less population means less chances of turnover and a risk of having to recuperate the car and bring it to a more frequented area, such as the city center, for the carsharing provider.

6.2.2 Environmental effects of carsharing

Considering the increasing trend to live in cities or mega cities makes it obvious that it is necessary to improve conditions in terms of pollution and reduction of traffic in order to make life in big cities livable. According to Witzke (2016, pp. 40-42) carsharing has a significant effect in terms of reducing pollution and reducing traffic congestions as (1) the cars used in carsharing are changed frequently and thus are modern with a high technical standard and low motor power compared to the average motor fleet of a private household, (2) the design of tariffs of the carsharing providers enhance the use of a car just when needed if the ways or opportunities to use another means of transportation are not available or less attractive, (3) carsharing reduces the number of vehicles owned by a household, and (4) every carsharing user is estimated to produce 290 kg CO2 less (Schlumberger, 2013, p. 30) than a non-carsharing user.

6.3 IMPLICATIONS OF CARSHARING FOR MOTOR INSURERS

Examining the development of the young and dynamic concept of carsharing, it becomes obvious that the development is so vigorous that one can already speak of a classic system of station-based carsharing besides the also older system of private carsharing, which is confronted since 2012 with the even more flexible variation of a free-floating concept. Free-floating carsharing is, as shown in subsection 6.2, growing at an exponential rate. However, this new concept is not necessarily so different from the classic station-based concept of carsharing. It is rather related. It can be considered as a demanded completion of the whole concept for big cities. The high demand for free-floating solutions has sparked first experiments to start with a mixed form of the classic station-based carsharing. Stadtmobil for example reacted immediately and started in June 2012 to offer a limited number of their station-based cars as free-floating cars. This move was followed by Stadtmobil Rhein Neckar and Rhein Ruhr in Mannheim and Essen (Stadtmobil, 2017). It was possible to expand the offer and adapt to the needs of the customers, thus winning also these mostly young, IT-interested users where it was not possible to establish a fixed station due to the lack of opportunity to rent private parking space for the stations. As it was just a pilot project, it is currently analyzed and evaluated, if this combined model of station-based and free-floating should be expanded and possibly represents the model for the future of their business concept or carsharing in general.

As shown the demand for carsharing from private individuals is strong and growing steadily. One also has to consider the potential of carsharing for business customers though. In literature, the common opinion is that carsharing for business customers is not intended to replace a company fleet, but to add flexibility to such a fleet by reducing the total number of owned or leased vehicles by carsharing vehicles. In Germany already an estimated 23% of the total of carsharing customers are business customers (Loose, 2009, p. 1). Especially for commercial customers, the use of carsharing cars can have advantages as their use can be implemented fast and in a cost-efficient way. Sonnberger and Carrera (Sonnberger et al., 2013, pp. 22-24) summarize the advantages of carsharing for commercial customers as follows:

(1) Replacement of one or more underused company pool vehicles.

(2) Bridging of a peak time of unusually high demand of trips, so that employees do not have to use their private vehicles for business trips.

(3) Special vehicles like vans to move certain goods can be flexibly used when needed, without having to buy the car by the company.

(4) Parking problems when visiting customers can be avoided, as carsharing vehicles can be parked in all allowed public parking spots and simultaneously the costs for parking tickets are saved.

(5) Parking space on the company property can be redefined as visitor parking space.

(6) Image boost (positive publicity) for the company as it can benefit from the ecologically friendly image of carsharing.

The use of carsharing cars in companies could also be encouraged and promoted not only by an intrinsic motivation to save costs by the companies, but also by local communities or the government. If communities or the government offer incentives, such as tax exemptions or exclusively reserved public parking space for carsharing cars, it would be a strong motivation for companies to use this form of mobility to a larger extent.

One of the biggest providers of free-floating models for carsharing in Germany is DriveNow, a joint venture of the BMW group as a car producer and the car rental company Sixt. This joint venture already has 17% of their customers as business customers in the year 2015 (Carsharing-blog, 2016). It is a win-win situation for the carsharers and the customers, as private and business customers complement each other very well in their times of when they use a carsharing car. Business customers usually rent a car during the week on working hours, while private customers have their rental peak time in the evening, during weekends or national holidays (Schmidt-Bleek et al., 2004, p. 168). Consequently fewer vehicles are on the road, creating more space for other cars as parking space or other purposes.

To illustrate one can give the example of Deutsche Bahn. The DB Rent GmbH acts as an umbrella company managing on the one hand the fleet of all company

vehicles of the Deutsche Bahn (German Rail), as well as the cars offered in carsharing by their daughter company Flinkster. In Cologne, in the district of Deutz, there were 20 vehicles of the DB Services and the DB Project Construction GmbH, which were stationed there. Under the management of the DB Rent GmbH, these 20 stationed cars were replaced by 10 cars as carsharing cars, which can be used during business hours providing a more efficient use of the vehicles.

Another development that can be observed is the trend towards multimodality, in which carsharing plays a strong part. Multimodality describes the concept of connecting more than one form of mobility with other forms of mobility (e.g. a trip by public transport for one part of the route with a following use of a carsharing car to complete the trip). That is concept of multimodality is considered to be of interest is expressed by mutual marketing measures taken by the association of public transport and carsharing providers for example in 2013. This campaign in 2013 focused on the linking of public transport and carsharing and emphasized the benefits the customers could receive out of the combined offers, taking into account that public transport users are more easily attracted to carsharing than the normal car user (Sonnberger et al., 2013, p. 19). The key message was to choose for each way the appropriate means of transportation, which is considered to be a modern approach and to be environmentally friendly. Research has shown that the public transport as well as the carsharing providers benefit from such a collaboration (Instititut für Mobilitätsforschung, ifmo, 2006, p. 95). Therefore package deals were developed. An example for such a package program for customers was an offer by the Cologne public transport company KVB (KVB, Kölner Verkehrs Betrieb AG, 2017). Furthermore Cambio, a carsharing provider, offers holders of public transport season tickets strongly reduced carsharing rates as a reward.

The following table 17 was compiled by the researcher`s study of the websites of the leading carsharing companies in Germany, as well as the websites of the public transport companies of the 10 biggest cities in Germany. The research was carried out between November 23rd until December 12th in 2016. Table 17 gives an overview over the advantages of a collaboration between carsharing companies and public transport companies.

Advantages for Carsharing	Advantages for Public Transport
Enables mobility by car without stimulation to drive.	Customer loyalty: Provides a new means to retain customers.
Influences modal split for the benefit of public transport.	Multiple advertising channels.
Overcomes the disconnection between public transport and the private car	Gain in corporate image: Benefitting from the fresh, innovative image that carsharing offers
Advantages for customers by offering package pricing.	
Possibility to share parking space for carsharing cars on the property of the public transport operator.	
Intermodality departments can be set up at a public transport company to orchestrate the actions (e.g. done already in Belgium by the Brussels public transport operator and the carsharing company Cambio Brussels (STIB/MIVB). Mutual capital involvement was made to confirm the seriousness (STIB/MIVB holds 49.5% of Cambio Brussels)	
Joint use of offices / joint operations reduce costs.	

Table 17: Advantages of carsharing and public transport collaborations, source: author`s data according to the research of carsharing provider websites of the 10 biggest cities in Germany

Carsharing is not only an issue for big cities. The first experiments in rural areas especially in the German state of Bavaria show that there is a strong demand and acceptance also for carsharing in country like areas (Englmüller, 2014). The problem for carsharing companies is though, that the turnover is too low in country like areas and thus the business model would not be profitable. Free-floating concepts are hardly possible due to the wide distances of where cars are parked and station-based carsharing would require a long an uncomfortable journey for the customer to get to the station and back from the station in country like areas.

The political debate is currently about whether to actively promote carsharing within the cities by assigning designated parking spots exclusively for carsharing vehicles or not. Such a plan was announced at the beginning of 2013 by the ministry of traffic, building and city development, but it has until now only been a political draft paper, which was not put into practice. The arguments of the ministry against it are that the two key demands of the carsharers cannot be fulfilled. These two key demands, that were considered not to be possible to fulfil according to the ministry of traffic, building and city development were that (1) fixed parking spots could not be assigned to only one specific carsharing provider and (2) no effective means against the abuse by non-carsharers of these parking spots are available, leading to a dysfunction of the concept of carsharing in cities where parking space is extremely scarce. Given such a background, the association of carsharers approached in April 2014 the representatives of the German government. Also simultaneously the government itself was approached by the Bundesrat (German federal council) through a resolution dated of July 5th 2013. This resolution demanded an examination and solution for the simplification and strengthening of the use of carsharing in cities and communities and the providence of separate marked parking space on public roads with the possibility of establishing fixed parking spaces exclusively for certain carsharers, so that each provider may have their own reserved parking spaces. The implementation was rejected by the government though out of the above explained reasons.

Analyzing the available data on mobility, which was discussed in subsection 5.3.5, it can be seen that the automobile remains the most important means of transportation. The table 18 below displays, that for the overall task of bridging distances, the automobile is still the dominant means of transportation. On the other hand public transport and non-motorized mobility, such as to move around by bike or by foot, increase slightly. This implicates that a change in the trend of use of means for transportation can be regarded as possible. To illustrate this better, table 18 shows the modal split and the accordingly chosen means of transportation for trips in their length in kilometers in percent. This table separates the length of the trip on the one hand and the means of transportation, with which the journey can be made, on the other hand.

Kilometers of trip	Car	Train	Bus	Aircraft	Ship	Other	Total
below 250	73%	22%	2%	0%	1%	2%	100%
250 until below 500	71%	22%	4%	1%	1%	1%	100%
500 until below 750	56%	26%	6%	10%	1%	1%	100%
750 until below 1.000	53%	15%	9%	20%	2%	1%	100%
1.000 until below 2.000	31%	7%	7%	49%	5%	1%	100%
2.000 and more	3%	1%	1%	92%	2%	1%	100%

Table 18: Modal split according to length of trips, source: Bundesministerium für Verkehr, Bau und Stadtentwicklung, 2010, p.150

6.4 CONCLUSION

Even though the concept of carsharing already exists since the 1980s, in the form of station-based models with the formation of the first carsharing company in Berlin, Germany in 1988 by Stattauto, the dynamic of this concept has dramatically increased with the introduction of a new form of carsharing, the free-floating concept in 2012. The classic carsharing concept until then only knew fixed stations, also in the form of private carsharing, from where a carsharing car could be picked up and to which it had to be brought back. With the ongoing trend of a decreasing number of population in rural areas and the trend of people moving into big cities, the situation formed that a car had started to become a burden in cities, as parking space is a scarce and the car becomes a cost and time factor in the search for parking. With a still time of privately owned cars of about 23 hours per day, a car is in constant need for a parking space. This additional cost factor parking added to the regular maintenance costs of a car, combined with a change in the value system of especially young people and the trend to share rather than to own, has sparked the development of the free-floating concept. In this concept a car can be picked up, if it is not taken, from the point where it is parked and can be left at the point of destination within a predefined area, without having to pay any parking fee on public grounds, even if parking in this location is normally not free of charge for privately owned vehicles. Finally the technological developments, such as detailed

car tracking through telematics and the development of applications for mobile devices brought the breakthrough for this concept of mobility. Furthermore, with the ongoing progression of digitalization, the carsharing companies can track their cars, their status and also the driving behaviour of the carsharing customer. Additionally the concept of carsharing is facilitated with technical improvements, as the customer can see in real time via an application on a PC or a mobile device, where to find a carsharing car for immediate use and what the status that car is in terms of price and gas status. The continuously and significantly growing numbers of registered carsharing users confirm the growing acceptance of this concept. The trend for carsharing is further supported by the fact that local communities and municipalities have realized the ecological advantages and see it as an answer to master the growing problem of traffic congestion in cities. This development consequently poses a significant challenge for the strategy of motor insurers, as it is assumed that one carsharing car replaces up to 10 private vehicles. The demographics indicate that in the future less cars are needed, the mobility behaviour of individuals changes towards a multimodality approach and with the ever faster turning cycle of technological improvements, the motor insurers are asked to find an answer of how to align their strategy to these developments. Engaging into the field of carsharing is an option for motor insurers in order to at least benefit from this trend, but it needs to be considered carefully as it can have a significant positive or negative effect on the business model.

7. SYSTEMATICS OF EXPERT INTERVIEWS FOR THE THEORETICAL AND PRACTICAL IMPLICATIONS AND THEIR ASSUMPTIONS AND EXPECTATIONS

The term expert interview remains imprecise in literature, which derives mainly from the fact that the term expert itself is defined in differing ways. In general, the expert interview is a method of data gathering within the empirical qualitative social research. In expert interviews the interviewees act with their specialized know-how as representatives of organisations or institutions (Meuser et al., 1991, p. 468 and 444). The main characteristic of expert interviews, which sets it apart from other qualitative, often biographically oriented interviews, can be according to Meuser and Nagel (2000, p. 57) described as that the interviewee, the expert, stays with his or her biographical background out of the center of attention. Instead the focus is on the functional context of why this person is integrated in the interview. The group of experts that is being referred to in this study are all very experienced individuals in their field and are characterized by a strong reflexivity and eloquence. Therefore the leeway between dialogical and narrative techniques of the expert interview were used, following Witzel (1982, p. 100 et seqq.) in that way that a more dialogue-discursive form of interview was conducted, for example by the implementation of specific soundings such as the reflection of just said statements by the experts, clarifying questions or confrontations.

7.1 DEFINITION OF EXPERTS

In difference to specialists, experts are persons with a privileged access to information, who are responsible for a design or implementation of a solution for a problem and / or the control of it (Trinczek et al., 2002, p. 38). The expert has in contrast to the specialized amateur a knowledge that is always available, at any time (Schütz, 1972, p. 87). Therefore, not the general intellectual quality is decisive for being categorized as an expert, but his or her acquired competence in a certain field or privileged knowledge is of importance. According to Meuser and Nagel

(Meuser et al., 2000, p. 73 et seqq.) two criteria need to be given, that the status for being an expert is fulfilled:

(1) The expert has in some way the responsibility for the design, the implementation or the control over or for the solution of a problem.

(2) The expert has privileged access to information, to groups of persons who are knowledge carriers or to decision processes.

Generally literature divides between three types of expert knowledge: (1) Technical knowledge, which is characterized by knowledge about operations and rule sequences, bureaucratic competences and discipline-specific implementation routines. (2) Process knowledge, which is marked by knowledge and information of action processes, interaction routines, organizational constellations, which refer to past or present actions or incidents. Due to his work the expert is directly involved or he has, because of his closeness to the field of action or decision takers, a deep knowledge. (3) Knowledge for interpretation describes the subjective point of view and interpretation an expert can take in regard to the research object or question, because of his deep knowledge.

The subdivision into the three fields of knowledge for a definition of experts shows that the selection of an expert depends on the subject of the research and the implemented methods (Götze, 1991, p. 238 et seqq.). Meuser and Nagel criticized the job related narrowing down of the term expert, as well as its reflexivity (Meuser et al., 2005, pp. 71-93).

A special form of experts is the elite. The term elite is used in the context with experts and represents, despite all convergences between elite and experts, a good example for the specialities of an expert (Hartmann, 2004, p. 55). Elites are defined by the quality of their contacts, their networks and their power or influence. Therefore the distinction between experts and elites is made more on a social than on a cognitive level (Hartmann, 2004, p. 123). While the definition of experts is a more meritocratic one, as their aspect of knowledge is decisive, it is not so in the case of elites. Overlapses in their definition can be observed though, as experts can be found in high management levels and therefore be regarded as part of the functionary elites.

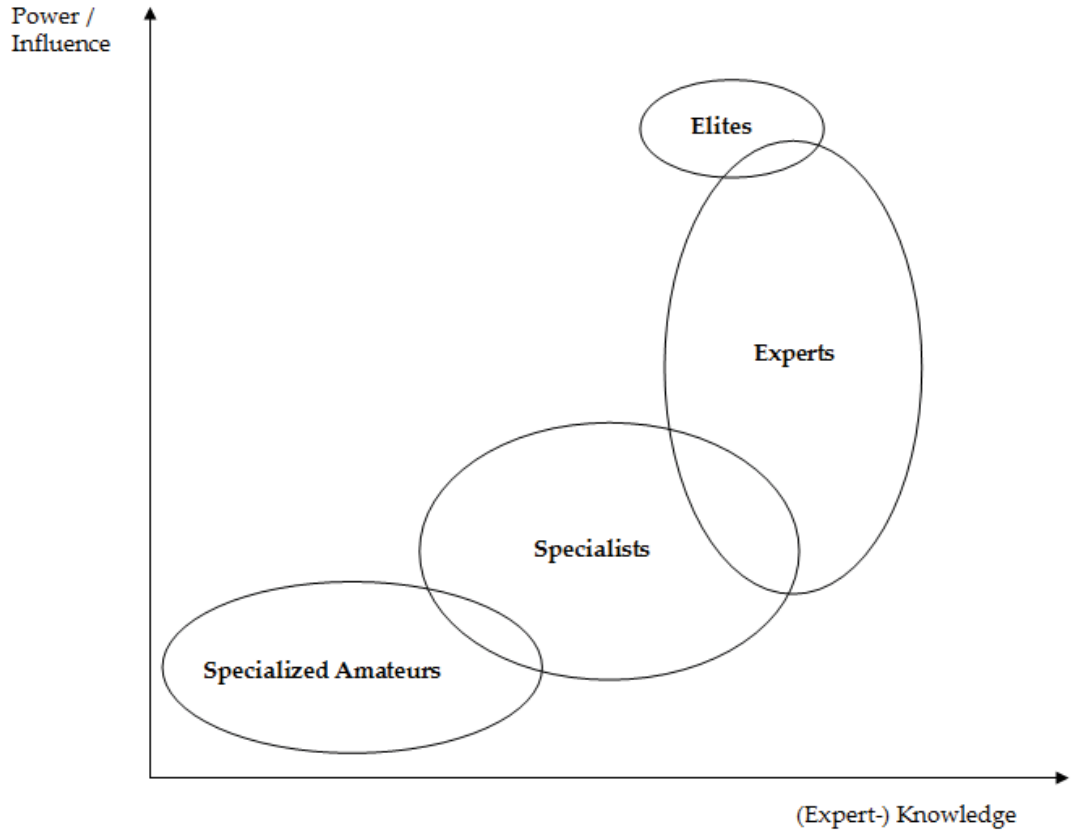


Figure 39: Types of experts, source: Littig, 2008, pp. 1-17

Figure 39 above displays the discussed role that experts have as forming partially part of the experts, yet exceeding them in power and influence. The implicit and explicit assumption is that experts have through their distinct and precise knowledge a form of power, which makes them very interesting for an interview. They represent a high degree of expertise in their field, which gives them a lot of decision power, only exceeded by elites.

7.2 DEFINITION OF EXPERT INTERVIEWS

The expert interview can be defined as an interview carried out with one person, who is being interrogated with reference to his or her status as an expert, therefore as a person with specialized knowledge and decision-making competence (Bogner et al., 2005, pp.33-70). The interest of knowledge in an expert interview is directed to a clearly defined excerpt of the reality of the broad expertise of the expert. The expert is not with his whole personality and his or her orientations or values in the focus, but as an important link in an organizational and institutional context of relevance. It can therefore be concluded that experts are not only interviewed because of certain knowledge they have, but this knowledge is especially interesting as it is to a high degree relevant for the operational work. These experts or elites are interviewed, because of their activity orientation, their knowledge and their assessments, which influence significantly the possibilities for actions of the majority of individuals (Abels et al., 2005, p. 175). In other words, the expert interview has a relevance in regard to social effectiveness. The speciality of expert knowledge lies not only in its particular reflexivity, coherence or certainty, but in the fact that this knowledge is directive for others for the actions they will take (Hitzler, 1994, pp. 268-284). This aspect of power or influence to take decisions with an impact on others is not only related to the enterprise or governmental body where the expert works, but it is seen in the whole context of his or her profession. The power of the expert can therefore expand onto other business fields (e.g. through consulting committees) with impact on other fields than his or her own professional one. Elites on the other hand function more as informants about special and otherwise not accessible fields of knowledge. The knowledge generated from expert interviews aims at a preferably objective reconstruction of facts, problem situations, decision processes, networks, etc., that become more precise with the number and quality of interviewees (Welch et al., 2002, p. 613).

The experts chosen for this study are characterized by their profile being rather congruent with the characteristics of the form of elites in order to increase the quality of the interviews and therefore the reliability of the results generated from the conduction. Elites are very difficult to reach and to get them involved in an interview, but the exactness of the data generated from them is considered to be more precise than from experts (Wasner, 2004, pp. 30-41). That is why for this

research the approach of expert interviews in the form of elite interviews was made. Nevertheless, this subject is also criticized, as elite interviews are also not considered to be a precise research instrument. It can be criticized that the sampling can be regarded as not being representative, the statements of the persons interviewed can be distorted due to lacks in memory and different interviewees can make differing statements concerning the same question asked (Richards, 1996, pp. 199-204).

7.2.1 Methodology of expert interviews

Expert interviews are a distinct form of the method of interviewing individuals, widely used and accepted in social research. The expert interview enables the researcher at an early stage of the research process to generate an incomparably more reliable quantity and quality of data than other methods provide. The qualitative, guideline supported interview has the advantage to also include soft facts in the evaluation. Nevertheless, in literature, the expert interview is only seen as a complementary and not unique method, which can be used next to other sources of information. This is considered in this study, as the expert interviews complete the research of literature.

The criticism of the methodology of expert interviews lies in the specialty of the guided interview. The criticism is directed not so much towards the type of data collection, but towards the person being interviewed, the expert. The main problem of explorative research is to have a non-representative sample (Kepper, 1994, p. 130). Besides the problem of having a non-representative-sample, during the interview other problems can occur. Vogel (1995, pp. 78-82) identified four negative interaction effects that could occur in expert interviews. He mentions that a so called (1) iceberg-effect could occur with the interviewee, blocking him or her to give all available information. Another negative effect that he sees and that could occur during the interview is the (2) paternalism-effect. This effect describes the situation, that one participant of the interview, the interviewee, has a dominant position towards the interviewer, which could exist due to significant age- or status differences. A third negative effect can be seen, if (3) feedback-effects occur. This effect describes the situation, that the interviewee could use the interview to

ask own questions instead of just being asked. A fourth negative effect that could occur is the (4) catharsis-effect. This effect occurs, if the interviewee addresses own problems or grievances that he or she sees. The success of the expert interview depends therefore on the issue, if the expertise of the interviewee has really been validated.

Consequently, the results of expert interviews can only be seen as a statement showing a trend or tendency and possible validation of the findings of the literature research. These results do not have the character of a generally representative and valid survey. A big gap is seen between the methodological approach on the one hand and the empirical practice on the other hand (Bogner et al., 2001, pp. 477-500). A distinct characteristic of guided interviews is the explorative way of data gathering in regard to the research object or question. The form of communication that was carried out throughout the expert interview (that is the style of communication) in this study was soft and harmonic. An interview can be characterized as soft and harmonic, when the interviewer attempts to establish an atmosphere of trust by demonstrating his sympathy to the interviewee (Grunow, 1978, p. 786). By this a relaxed and open atmosphere is created to collect as much information as possible from the interviewee, without influencing him or her. Even if no confidential issues are addressed, some interviewees can be at first be mistrusting or remain critical. Solely the fact that the interview is being recorded leads some interviewees to a remark such as: *"I am not sure if I can express my thoughts well or precisely enough."* Such doubts, or the above described first feeling of dissonance, can be resolved by a comforting introduction and soft course of the interview. To strengthen the positive impression of the interviewee and increase his or her willingness to cooperate, the level of speech, the way of expression or dialect of the interviewee was taken up by the interviewer to send this as a message showing solidarity. The selection of the experts was done in a way to filter out a broadly diversified array of experts who are the leading heads in their field in order to achieve the highest possible quality in the answers (Lamnek, 2005, p. 384).

7.2.2 The interview guide

In social science a variety of different forms of interviews has evolved throughout time, due to the multitude of different research objects. The different

forms of expert interviews that can be identified are the forms of open interviews, focused interviews, half-standardized interviews, expert interviews and ethnographic interviews (Esser, 1999, p. 354). The main characteristic feature of an expert interview is that it ensures an open and at the same time structured composition of the interview (Meuser et al., 1991, p. 448). The guideline of the interview has a vital role as a steering function in the upfront exclusion of irrelevant topics (Flick, 2002, p. 139). The guided interview is especially suited for exploration, as well as for systematization of a pre-scientific understanding and represents therefore a suitable method for the elaboration of a solution for the research question (Scheuch, 1973, p. 123).

In this study, for the guided interview a set of open questions was selected fitting best the discussion of the subresearch and the research questions, as well as the testing of the hypotheses. This set of open questions was asked to every expert in the interview, even though the order of the questions could vary, depending on the course of the interview. The design of open questions in an interview guide enables the researcher to better capture more complex issues. Furthermore it allows the gathering of information concerning boundary conditions and aspects that were not considered beforehand by the researcher. The questions for the expert interviews for this study were designed in such a way, that they represent a mix of questions that are used to gather preliminary information and in-depth questions that were the key-questions for this interview (Brosius et al., 2001, p. 108). Depending on the course of the interview, either the lighter or the in-depth questions were asked (Esser, 1999, p. 355). With the use of the lighter or more general questions an intended deviation from the interview guideline occurred, which led to the gain of knowledge of further findings, which were important for this research project. The guided interview of this study follows the steps suggested by Mayring, who proposes the following ideal-typical proceeding (Mayring, 1996, p. 53): (1) Analysis of the problem, (2) design of the interview guide, (3) testing of the interview guide, (4) conduct of the expert interview and (4) the recording of the interview.

The interview guide was constructed in that way, that the length of the interview was set to approximately 30 minutes per expert interview. The expert

interviews were recorded with a digital voice recorder, of the model Olympus WS-853 and later transcribed into Microsoft Word for further analysis with a software program (MAXQDA).

7.2.3 Selection of the experts

Götze (1991, p. 238 et seqq.) recommends four techniques in order to select the appropriate expert for an interview. His preferred method is a test of the knowledge of the expert in regard to the basic correlations of the research field. Furthermore Götze suggests as an additional selection method, tests that are targeted to test the problem solution ability of the candidate for an expert interview in regard to similar problems, to have the experts make a self-assessment or to have a third party with competence evaluate the aptitude of the candidates (Götze, 1991, p. 238 et seqq.). For this study a two-stage procedure was chosen and completed with the method of snowball sampling. At first the actual contributions in the form of classic literature, articles and conference papers of the potential experts was reviewed. Deducted from the reflection of the importance of their remarks by specialists of the motor insurance industry in other articles or according to talks with the German association of insurers, the most prominent (elite) experts were chosen to carry out the talks with. All of the contacted elites were so kind to consent to an expert interview. They all received the guarantee that at any stage of this research, their remarks would be kept private and handled in such a way, that the remarks could not be traced back and matched to any of the specific experts. A validation of the correctness of the captured and transcribed information was ensured by the method of member-checking.

In general the evaluation and selection of appropriate experts by the means of an appraisal system is desirable, but difficult in research practice. The danger of an erroneous selection of an expert can be reduced by a short telephone or personal interview before the final selection of the candidates is made (Bogner et al., 2014, p. 41). This method was applied in this study, as the candidates were contacted during the research phase and asked either in written or oral form if they were willing to participate in the interview. This talk or written conversation included a complete briefing of the research subject and about which field exactly the questions would be addressed during the interview. The feedback of these pre-

talks or conversations was in all cases that the candidates felt willing and prepared for an interview (self-evaluation). As mentioned, this technique was completed by the implementation of the element of snowball snowball sampling (Littig, 2009, p. 103), which means that an interviewee was asked if he or she can recommend another expert to ask to be interviewed to the researcher.

In addition to a screening of the possible interviewees, a preliminary interview guide can be sent out before an interview, so that the expert can decide before hand, if he or she is able to answer all the foreseen questions (Healy, 1993, p. 345). This was not done in this research in order to preserve the spontaneity of the experts and to ensure that the answers were not based upon research made before the conduct of the interview by the experts, otherwise just reflecting common literature or conference papers. The selection of experts in this research oriented itself mainly according to the industry or sector where the person gathered his or her experiences, the reputation and the position of relevant actors and persons and the potential power of influence and / or participation in essential decisions or actions that these people can take. The appropriate experts cannot exclusively be found in the top level of a hierarchy, but also on the second or third level, as there the specific knowledge is sometimes even deeper on this level (Waters, 2006, p. 83). On the second and third level in a hierarchy the decisions are being prepared and therefore it can be assumed that a very detailed knowledge is available. The choice of experts was enriched by the selection of persons from outside fields of the insurance industry, but still with a strong correlation towards the research question, such as a psychologist. This was done in order to not limit the view upon the research object to one field, but to also use a form of implicit triangulation. An overview of the industry affiliation and the specific range of knowledge that each expert covers is given in the list in subsection 7.4, when the experts in the form of elites are introduced.

7.3 DATA ANALYSIS OF EXPERT INTERVIEWS

For the data analysis the main postulate of the qualitative analysis that needs to be considered by the researcher is that the analysis follows at every point of the process pre-set and standardized rules, so that every decision in the analysis

process can be attributed to these rules and reliability in the results is created, so that any third person can carry out the research in the same form and reach the same results (Mayring, 2010, p. 49). The analysis of the data is carried out mainly along the data model of the summarizing content analysis of Mayring, as the base for the interpretation is created by the formation of an abstract of the data. Aim of the analysis is therefore to compress the material in such a way that the significant content is obtained and to create by abstraction a corpus of the text which still resembles the base material (Mayring, 2010, p. 48). All of this is done in order to design a category system with which the analysis is carried out, or as Mayring himself (2010, p. 59) put it: *"In the center of all the analysis work is the development of a category system."*

This indicates that strict theoretical guidelines, or in other words a robust theoretical framework is required instead of technical ambiguities. Mayring (2010, p. 57) postulates that for the execution of a content analysis, as a minimum requirement, there must be a text in written or transcribed form, that serves as a data base. As a first step for the analysis, rules on how the transcription of the colloquial language is done must be formed.

7.3.1 Steps of the data analysis

The data that is being analyzed is generated from the content analysis of the expert interviews. The core principal of the proceeding is that the written text is not as a whole subject to the analysis, but it is divided up into segments to which the formed categories are and matched later. The principal of categorization is explained in subsection 7.3.2. This research follows a deductive-inductive-deductive approach (Lehr, 2006, p.7). It is based on existing theories out of which hypotheses are formed and cause and effect relations are deduced. That is the first deductive step. These hypotheses are then evaluated in an inductive way along the expert interviews, representing the second step, which is an inductive step. By this proceeding the hypotheses are empirically justified, but not yet statistically representatively reviewed (Chmielewicz, 1994, p. 87 et seqq.). In a following step recommendations for actions are deduced on the basis of the in an explorative way collected data, thus representing the third step, a deductive step. The proceeding will be explained in more detail in this subsection. The following list shows the

exact steps that were taken in a clearer overview, with a focus and the steps 2 and 3, the inductive and deductive phases. Therefore, the following steps have been applied in the data analysis of the expert interviews in this research, following the approach of Mayring (2014, pp. 93-98):

(1) In a first step, the raw material, the transcribed expert interviews were aggregated by paraphrasing, selection / discarding, bundling, selection / discarding and bundling again.

(2) Categories were selected and defined, representing the core element of the analysis.

(3) Coding rules were defined in order to differentiate between overlapping categories. This step is important to take before a segment of text is associated with a particular category.

(4) Codes were defined in an inductive approach.

(5) A deductive comparison was conducted of defined codes with the aggregated material of the expert interviews and also raw material for validation, if the defined categories and codes are suited to answer the formed subresearch and research questions.

(6) Adaptation of codes, where necessary and formation of the final coding list.

(7) The coding list includes all the main- and subcategories that were found to be useful to answer the research questions.

(8) Setting the defined codes and subcodes in relation to the subresearch questions and ticking each relevant field of a code or subcode for a subresearch question with an x in an excel sheet to create an overview for the relevances. Thus a code and subresearch question matrix was formed (see figure 4).

(9) Execution of the analysis: The frequency of the comments of the experts in regard to the defined codes that correlate with the specific subresearch questions was analyzed with the Code Matrix Browser (CMB) of the software for computer-aided qualitative data and text analysis MAXQDA in the version 12.3.1 (dated of February 24th 2017) for Windows.

7.3.2 Differentiation between codes and categories

In the following, the term code and category will be used, but it is important to differentiate between the terms, as the categories for the expert interviews derive from the codes that are formed. After the transcription of the expert interviews the transcripts are summarized in order to compress the raw texts and form the essence of the comments as a preparation for the definition of the relevant categories. According to Krippendorff (1980, p. 76) it is the most difficult task of the research as he stated: *"How categories are defined … is an art. Little is written about it."*

When speaking of coding, it is generally meant that relevant text passages, or rather the classification of text characteristics, get assigned to certain categories. Glaser (1978, p. 55 et seqq.) explains that by coding a text passage, an indicator (phenomena that can be directly observed and that allows a conclusion on a fact that cannot be directly observed) gets assigned a single code or several codes (terms, keywords, concepts). Generally in the context of the grounded theory, this mechanism is used in order to form generic terms for the development of a theory. As long as the relevance of the generic terms (categories) is uncertain for the theory one speaks of codes. Codes are regarded as preliminary or small forms of categories, which reflect certain aspects of the data in an interpretative way (Kuckartz, 2010, p. 75). Strauss and Corbin (1996, p. 75) differentiate between:

- Open coding: Single phenomena are aggregated to codes and the codes are then aggregated to categories.
- Axial coding: It is designed to refine and differentiate between already existing codes and categories.
- Selective coding: One specific category is isolated as the key category and analyzed with its relations and interdependencies towards the other categories and codes.

In this research open coding was used, as the researcher uses background knowledge to develop as a result an interpretation text and the aim is to develop a set of codes and categories from the raw text, to analyze with these codes and categories the impact of the NIE-theories. The described mechanism therefore serves the purpose to form key words that relate to the essence of the expert interviews in order to analyze the comments of the experts in regard to the selected

NIE-theories and evaluate their contributions for the solution of agency problems. Furthermore it serves to draw conclusions and give recommendations for the motor insurers in Germany in regard to carsharing.

7.3.3 Inductive versus deductive approach for coding

The principle of inductive awareness or coding is to conclude from the single occurrence to the whole logic of occurrences (Westermann et al., 1994, pp. 428-472). The principle of induction represented for a long time the scientific-theoretical basis of empirical research. Induction was for long known to be the only strategy for generating new findings (Westermann, 1987, pp. 5-42). The concept of deductive awareness or coding on the other hand describes the process of conclusion in the opposite direction as induction does. The deductive concept concludes from the whole onto the single occurrence. Deduction does not create new knowledge, but is considered to be truth preserving (Lamnek, 2005, p. 117).

The gaining of new knowledge by induction is unfortunately connected with a severe flaw. Following Lumer (1990, p. 2), inductive conclusions are always uncertain conclusions. To avoid the flaws of the inductive approach in this study, the researcher first of all compressed the expert interviews and deduced from the single occurrences categories for the whole content. These categories were transferred into specific codes which represent the core essence of the content or categories. These codes were then cross checked in a deductive approach with the whole content of the interviews, to verify the formed codes. In this deductional verification process the codes were adapted where necessary in order to have a higher validity in the findings. In the following, the focus is specifically on the inductive and deductive coding process.

The fundamental idea of the inductive generation of categories in the qualitative content analysis is to generate from the research and subresearch questions structured and theoretically well-founded criteria which decide, which aspects of the data material has to be considered and to analyze the material according to this defined criteria. The so generated criteria are tested and revised in a loop (with a deductive approach) according to their reliability and can be later

on clustered to a meta category (Ballstaedt et al., 1981, p. 45,). Mayring sees this form as a vital component in the form of creating an abstract of the given information. The fundamental model of a summarizing qualitative content analysis can be applied for an inductive formation of categories, which is based on the techniques of content summarization (Rost, 2014, p. 192). That is why in the first step a content summarization is carried out.

The deductive definition of categories takes a reciprocal approach to the inductive process, to bring a fixed theoretically reasoned analysis criterion to the data material. The centerpiece is the precise definition of categories and the fixation of analytical rules of when a text body can be referenced to these set rules (Mayring, 2000). Therefore the deductive definition of categories determines the instrument of analysis by theoretical considerations. The categories are not generated from the raw text material as in the inductive way, but instead from preliminary investigations in a following step, from the current state of research, from newly developed theories, or theoretical concepts which develop the categories in a process of operationalization towards the raw text material.

7.3.4 Process of content summarization for the coding

In order to generate findings in regard to the research questions, the suggestion of Mayring (2010, p. 65) was applied to summarize and abstract the key statements and content of the expert interviews and thus find the common and brief categories, by compressing the previous texts and reduce it as well as the starting categories to the briefest but most substantial essence. This is done with two consecutive steps of reduction. The aim of the summarization is the preparation of the creation of a compressed system of categories.

This fulfills the above stated prerequisite of only considering selected components (abstracts) of the text bodies according to pre-defined definition criteria, which describes the first step, the inductive definition of categories. In this first step, the raw text material is taken without any preconditions of the categories. This method strives to take the most naturalistic approach to depict the text without biases deriving from presuppositions of the researcher. It can be referred to as an open coding approach (Strauss et al., 1996, p. 75). The steps of this approach are explained in the following paragraph.

(1) The paraphrasing represents the first step of the summarization of the raw text and creates an abstract of the expert interviews. It is the rewording of a text in the specific coding units, which is condensed only to the central points of the content, reflecting the central meaning in an abbreviated form for greater clearness (Schreier, 2012, p. 107). The rules for this are according to Mayring (2010, p. 69 et seqq.):

- Irrelevant or little content relevant text components, such as elaborations or repetitions, are removed from the text.
- Transmission of the content relevant parts of the text body into a standardized language level.
- Conversion into an abbreviated grammatical form.

(2) The generalization is the second step, in which the paraphrases are generalized to a common level of abstraction. This means that the paraphrases are to be generalized in such a way that a direct reference can be made towards the research questions, which needs to be analyzed (Bongartz et al., 2006, p. 330). The following rules apply for the generalization according to Mayring (2010, p. 69 et seqq.):

- Generalization of the content of the paraphrases to such an abstraction level, that the central meaning is preserved in the new wording.
- Paraphrases which are above the desired level of abstraction are left unchanged.
- In case of doubt theoretical presuppositions are used.

The two sentences for example: "I do believe that in the future driving assistant systems will have a great effect on the way that people drive and their safety. I am sure that this will lead to fewer accidents which can be very well implemented also for carsharing cars" becomes: "driving assistant systems offer greater safety".

(3) First reduction: With the implementation of the first two steps described above, paraphrases which are identical or similar in regard to their content are put through a third step. It is described by Mayring as the step of the first reduction. The following rules apply for the first reduction (Mayring, 2010, p. 69 et seqq.):

- Paraphrases which are identical in their content are summarized to one and the others are stricken.
- Paraphrases with low content relevance are stricken.
- Only paraphrases are kept, which seem centrally important.
- In case of doubt theoretical presuppositions are used.

Following Luckmann (1981, p. 522), at the end of this step as also of the second reduction, it must be reviewed and ensured that the new statements which are summarized in the category system still reflect the statements of the original text. All initial paraphrases must be matched to one of the defined categories.

(4) Second reduction: The so shortened or compressed text is then put to a second reduction. The result of the first reduction is taken and once again put through a generalization to reach the second reduction. The following rules apply for the second reduction (Mayring, 2010, p. 69 et seqq.):

- Paraphrases with identical or similar content and similar statement are condensed to one.
- Paraphrases with diverse meanings are condensed to one specific meaning.
- Paraphrases dealing with the same or similar research question, but differing meaning are condensed to one.
- In case of doubt theoretical presuppositions are used

The by this procedure generated compressed statements can be understood as a category system. It is important though to review, if all statements of the first paraphrasing are included in the newly constructed paraphrases. If that is not the case, the above described steps must be run through again. If that is the case though, then the analysis in regard to creating an abstract is completed. The in that way generated category system can now be used in connection with the interpretation of the research question and the individual expert interviews can be compared with each other.

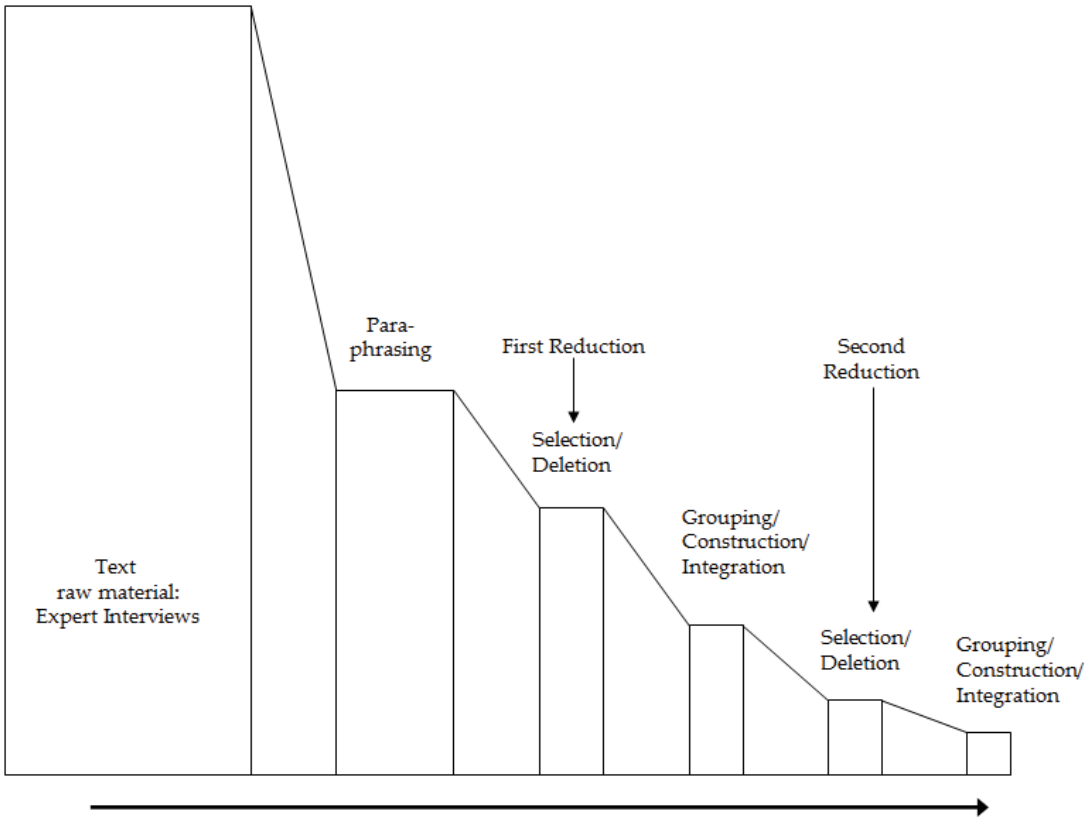


Figure 40: Steps of open coding, author`s graph, source: Mayring, 2010, pp. 67-84

To illustrate the above depicted procedure, the result for the creation of a second reduction is presented in the following table 19.

Interview	Content of Interview	Generalization	Reduction for categorizing
A	Personal contact is mandatory, because: - trust can then be built - one can talk about insurance specifications	Personal contact is vital to: - create trust to talk freely about insurance specifications	Trust is an important element and needs to be created to: - get knowledge of insurance specifications - help avoid accidents by making people more morally responsible and drive more carefully
B	It is important to set incentives by trust to: - avoid that people treat or drive the carsharing car in a reckless way - to make people drive more carefully - to create a higher moral responsibility to drive in a careful way	Trust is important to: - make people act more carefully with the car and avoid accidents - increase moral responsibility	
C	Without an incentive for careful driving, accidents with the carsharing cars are more likely to happen	Incentives make users drive more carefully	

Table 19: Example for a second reduction, source: Mayring, 2010, p. 81

The subsequent challenge for the researcher is, after having categorized the text, to define the codes that are most helpful for the analysis of the subresearch and research questions in their implications for the selected NIE-theories.

7.3.5 Computer aided qualitative data analysis

The researcher used the MAXQDA software for the deductive part of the analysis to work with the codes and thus categories. As described, in a first run the raw text material was compressed and thus in an inductive way pre-codes were formed. To verify the pre-codes the researcher went back again to the raw expert interview texts and coded the sentences in the interview with the MAXQDA software, that matched the pre-codes to increase the reliability of the codes (Friedrichs, 1973, p. 102). During this process the codes were constantly reviewed and adapted. The software of MAXQDA was especially suited for this research, as it supports the researcher in the analysis of texts and interviews. It assists to get insight into the data material without anticipating the content interpretation. Following Kuckartz (2010, pp. 13-14) it allows the researcher in the process of a qualitative analysis of a text to do the following steps with the data, without a loss of the actual data complexity:

- Search
- Categorize
- Classify
- Code
- Weight
- Classify

This complies with the postulation of Mayring (2010, pp. 110-115) that the content analysis is especially suited for a computer aided proceeding. The basic idea is that the coding, the assignment of a category of analysis to a passage in the text, is not done automatically, but by an interpretative performance of the researcher, suited for a computer aided proceeding according to the latest approaches in qualitative analysis. In this research the most recent software version of MAQDA, in the version 12.3.1 for Windows was used.

7.3.6 Code Matrix Browser

The Code Matrix Browser (CMB) is a visualization instrument within the MAXQDA software. It visualizes the codes per document. By looking at the graphic display within the CMB, one can at one glance see in which document, for which category how many or how few segments can be found. The construction of the CMB is made up in the way that in the columns of the table, the documents are shown, while in the rows the codes are displayed. The symbols on the individual intersecting points show how many codings in the respective document exist. The larger the symbol (in this research a circle) is the higher is the number of comments that refer to this specific code in the respective document. In this study no weight filter was set, as the statements were all regarded of equal importance.

7.3.7 Creation of a code system for the analysis of the expert interviews

According to the logic of content analysis, the subject of the category must be theory based. The formation of codes and categories is a central point for the qualitative content analysis (Kuckartz, 2010, p. 26). The theories that are examined in this research are the described theories of the NIE in the form of the principal agent, the transaction cost and the property rights theory. The key points of these theories determine the starting point for the definition of the categories. By this it is ensured that nothing insignificant or straying from the subject is considered (Strübing, 2014, p. 53). It needs to be defined though from the very beginning, how abstract or concrete the category should be. After the analysis of about 50% of the text material, a review was carried out to examine whether the formed categories serve the purpose of the analysis and if the criteria of selection and the level of abstraction are well chosen (Medjedović, 2014, p. 90). The result of this is a system of categories for a certain topic, formed by codes in a first step by an inductive approach and in a second verification step by a deductive approach (revision of the category and coding system), which ensures to make the research reliable (Mayring, 2010, p. 83). In a final step of the analysis the whole category system is interpreted in reference to the specific research questions.

The definition of the code system is the key point as it represents the strength of the qualitative analysis in comparison to other interpretation methods, as the analysis is disassembled into single and separated steps of interpretation to reach a

result in the end (Mayring, 2010, p. 59). By applying this method, the research gets comprehensible, can be intersubjectively reviewed and transferred upon other research questions as a scientific method of analysis. Following Mayring (2010, p. 69) it has to be ensured that at the end of the deductive part, all comments from the transcribed expert interview match the formed coding and category system.

In the following figure 41, the algorithm is presented that he researcher developed and implemented for the coding and categorizing in this research:

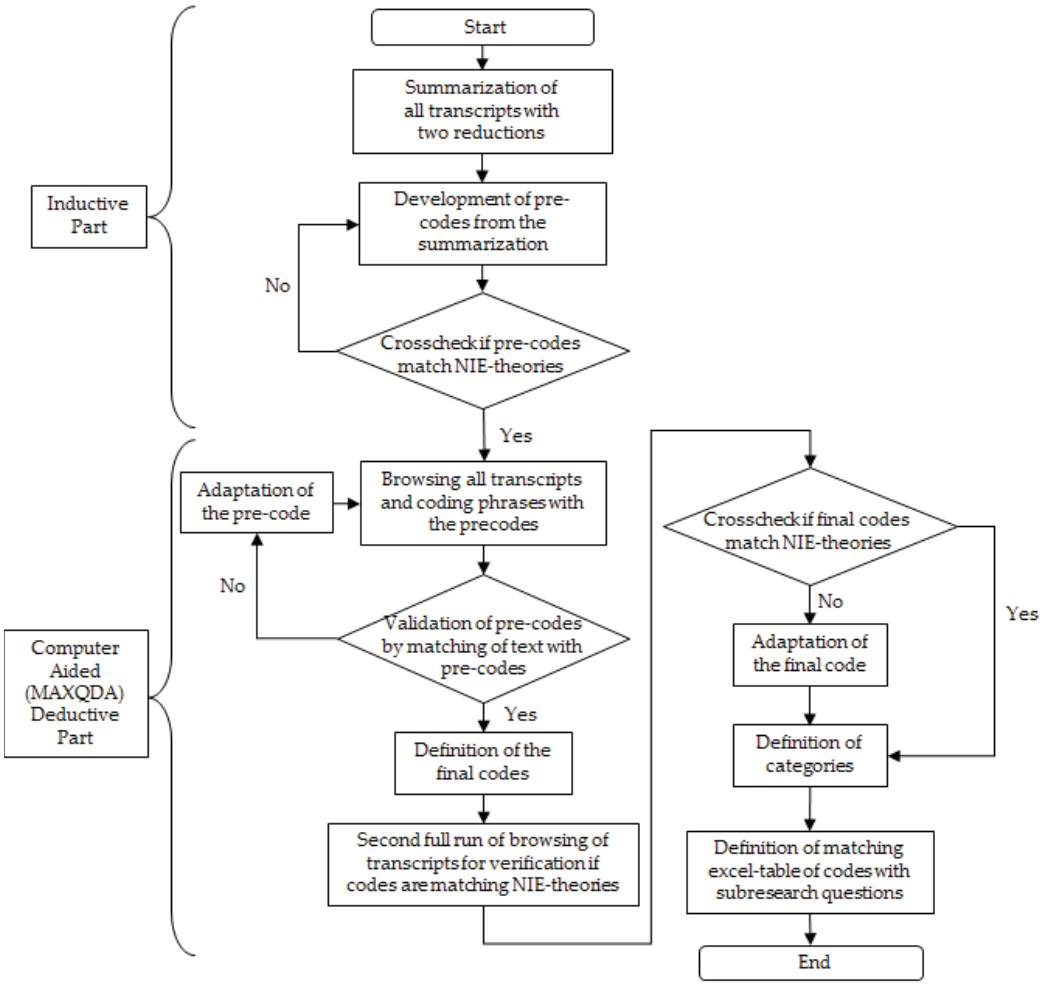


Figure 41: Algorithm for the coding, author`s graph

7.3.8 Matching matrix for the analysis of the expert interviews

The formation of codes and the revision of the codes ensured that the key points of the NIE-theories in the form of the principal agent, transaction cost and property rights theory found their reflection in the results of the expert interviews. The precision of these codes is of high importance that is why the approach of a combination of an inductive and deductive approach was chosen to create the highest possible reliability in the findings of this research.

In order to analyze the contributions of the NIE-theories and to answer what recommendation can be given for strategic options for motor insurers on the German market, the codes were set in relation with the subresearch questions. By this a matrix was created (see subsection 1.3, figure 4) that documents where touch points of codes with the specific subresearch questions were found. In the end every subresearch question is covered by a respective combination of the formed codes. This is the key for the analysis for the expert interviews. Along this matching matrix of codes to subresearch questions, the analysis was conducted of which the findings are presented in chapter VI. This matrix is the blueprint for the process of analysis.

7.4 INTRODUCTION OF THE INTERVIEWED EXPERTS

The interviews with the 15 participants (elites) were carried out face to face (n=12) as well as by telephone (n=3). The average time of the interview lasted 30 minutes and was conducted during a time of three and a half months from the beginning of April 2016 until mid-July 2016, with a total word count of 59.224 words. The following table lists the expert interviews that were held in chronological order of conduct:

	Name of expert	**Date in 2016**	**Type of interview**	**Word count**	**Length in minutes**
1.	Dr. Wolff Graulich	April 6th	Face to Face	3.760	33:01
2.	Dr. Norbert Rollinger	April 9th	Face to Face	3.732	30:11

3.	Rainer Brune	April 13th	Face to Face	3.900	32:49
4.	Bettina Zahnd	May 19th	Face to Face	3.159	28:23
5.	Dr. Andreas Reinhold	May 19th	Face to Face	3.518	29:32
6.	Dr. Frank Keuper	May 19th	Telephone	3.559	27:34
7.	Uwe Flüshöh	May 20th	Face to Face	4.419	37:45
8.	Prof. Dr. Horst Müller-Peters	May 20th	Face to Face	4.283	33:22
9.	Andreas Nelskamp	May 26th	Telephone	3.822	37:01
10.	Jörn Dickmann	June 2nd	Face to Face	3.327	26:56
11.	Rüdiger Ehrsam	June 13th	Face to Face	3.906	31:39
12.	Dr. Johanna Kopp	June 17th	Telephone	3.551	29:13
13.	Marco Morawetz	June 22nd	Face to Face	6.632	46:11
14.	Klaus-Dieter Läßker	July 6th	Face to Face	4.316	35:39
15.	Dr. Moritz Finkelnburg	July 12th	Face to Face	3.340	27:36
				Total of: 59.224	Total of: 486:52 = 8 hours, 6 minutes, 52 seconds

Table 20: Overview of experts and interview data, source: author`s data

The experts interviewed are introduced in alphabetical order by last name:

Rainer Brune is CEO of the Roland Rechtsschutz insurance and former executive board member of the AXA Insurance Group Germany for the property and casualty business. He has extensive experience in the field of the motor insurance, as he was in his previous position at the AXA Insurance Group Germany for many years responsible for the business line of the motor insurance.

Jörn Dickmann is managing director of the motor retail insurance business of the AXA Insurance Germany. He is an acknowledged expert for the motor insurance business having gathered his experience through many years in different positions such as in regional director in the sales line for insurance products. In his current function he is responsible for the entire operative retail motor business of AXA Germany amounting to a premium income of 1.2 billion EUR per annum in 2015. The total amount of 1.2 billion EUR results from the addition of motor third party liability 763 million EUR and other motor insurance of 442 million EUR (AXA Versicherung AG, 2016, p. 9).

Rüdiger Ehrsam is business analyst at the department of market intelligence in the strategic development division of the AXA Insurance Group Germany. He has among other projects the task to monitor the motor insurance market in Germany and deduce trends in order to formulate advisory papers for the board of directors in regard to how to set up the future strategy for the market segment of the motor insurance.

Dr. Moritz Finkelnburg is Academic Director for Insurance at the Goethe Business School. After his studies of law at the University Berlin, Heidelberg and Barcelona, he acquired a post-doctoral degree at the Ruprechts-Karl-University in Heidelberg. He gathered 20 years of management and executive board member experience, last at the Helvetia Insurance. His key competence is the property-casualty insurance.

Uwe Flüshöh is certified psychologist and managing director of the management consultancy Flüshöh & Geyer in Cologne, Germany. He has gathered extensive experience in the insurance field in his time from 1992 until 1997 in the Human Resources field at the Allianz Group in Germany. His main areas of

competence are trend recognition and management consultancy of executives in the German insurance industry.

Dr. Wolff Graulich is executive director and business unit manager for the SME- (Small and Medium Enterprises) business line in the Industrial business segment of the AXA Insurance Group Germany. The AXA Insurance Germany is part of the largest insurance group worldwide (Bajpai, 2016), the AXA S.A., with a premium income in Germany in 2015 of 10.6 billion EUR, of which 1.3 billion are generated with the motor business, the largest field of the private and commercial business (AXA Versicherung AG, 2016, p. 8). He is a former consultant of the Boston Consulting Group and had various stations in different insurance companies, thus being able to gather a broad knowledge of this business field.

Dr. Frank Keuper is administrative board member of the Swiss Life Group and in several supervisory boards of insurance companies. In 2007 until 2012 he was the former CEO of AXA Insurance Group Germany and member of the executive committee of AXA Group in Paris, France. Before this, he had the responsibility for the motor business of AXA Germany, as largest part of the property and casualty business of AXA Germany.

Dr. Johanna Kopp is researcher at the Institut für Mobilitätsforschung (Institute for mobility research) in Munich, Germany. She is the leading researcher in the field of carsharing and has just recently published a path-breaking study, projecting the current status of carsharing into the year 2025 (Kopp, 2016).

Klaus-Dieter Läßker is the former CEO of the AXA Colonia Insurance and founder of the online insurance portal Onsecure, which was launched in the year 2000. He has formerly gathered extensive experience in the field of motor insurance as head of the insurance division at BMW in Munich, before taking over the responsibility as CEO of the AXA Colonia Insurance, which he held from 1994 until 1999.

Marco Morawetz is financial mathematician and head of the Gen Re Consulting unit (non-life). He is a key note speaker on selected public conferences regarding motor insurance and a recognized expert in the field of motor insurance. His division supplies consulting for other insurance companies in regard to motor

tariffs with the focus on portfolio analysis, product development and software tools.

Prof. Dr. Horst Müller-Peters is professor at the Technical University of Cologne having the chair for the institute of insurance business. In his function he is responsible for the research center insurance market, publisher of the sector portal of market research "marktforschung.de", as well as the portal "consulting.de". Furthermore, he is head of the research center of professional qualification in the insurance field.

Andreas Nelskamp is managing director of the viaMAXI mobility limited company. His main objective with this company is to develop new mobility concepts with reference to the new trend of sharing. He has gathered an extensive knowledge of the carsharing market in his former functions as founder and managing director of an automotive start-up, business developer at Car2go from Daimler, as well as commercial director of CiteeCar.

Dr. Andreas Reinhold is head of the product development department at the AXA Insurance Group Germany for the SME- (Small and Medium Enterprises) business segment. The former McKinsey consultant gathered an extensive knowledge in the motor insurance not only through his former consulting experience, but also with his responsibility for the commercial motor fleet tariffs at the AXA Insurance Group Germany.

Dr. Norbert Rollinger is CEO of the R+V insurance group, heading the 5th biggest insurance company in Germany measured by premium income in 2015 (Statista, 2017). The former McKinsey consultant gathered extensive experience in the insurance field not only through his work as a consultant but in positions as executive board member of the AXA Insurance Germany, as well as the Generali insurance Group, before changing in 2010 to the R+V insurance.

Bettina Zahnd is head of accidental research at AXA Winterthur in Switzerland. She is responsible for the product development for motor tariffs of the Swiss branch of the AXA Group. For her extensive work, especially with the focus on accident avoidance in motor, she was awarded in 2015 with the Joseph-Ströbl-Price by the Technical University of Munich, Germany (Ratmoko, 2015).

7.5 ASSUMPTIONS AND EXPECTATIONS OF THE EXPERT INTERVIEWS

In this subsection the researcher presents the assumptions and expectations that he expects to be reflected in the expert interviews. The interviewer and the interviewees (experts in the form of elite) are elements of the interview situation and are therefore involved in how reality is displayed during the interviews. The fact that the researcher is integrated in the process of the survey results in him being an integral and constitutive part of the research process and makes him a part of the research result (Lamnek, 1995, p. 63). Therefore it is important to examine the assumptions and expectations the interviewer has before carrying out an analysis of the expert interviews.

The in this chapter formulated assumptions and expectations were derived from the methodological approach to research the relevance of the results of the expert interviews in regard to the theories of the NIE in an inverted way. In other words the here examined topics reflect a condensate of the of the subresearch and research questions, which were deduced from the chosen theories of the NIE. These assumptions and expectations will be matched in subsection 8 with the main findings of the results of the expert interviews and literature. This follows an approach of Mayring (2010, p. 67) to bring light into the research questions in order to examine the theories. The assumptions and expectations referred to in this section have been drawn from the researcher`s 18 years of experience in this business field, conference papers and information from insurance press and publications of the German association of insurers. The specific expectation is always formulated at the end of every subsection within this chapter.

7.5.1 Willingness of carsharing customers for data monitoring

Digitalization is especially in these days an important issue, not only for German society and companies, but also for institutions. With the rapid development and improvement of tracking devices it is now possible to collect a large amount of different data. That is why it is important to point out that the discussion is not only about collecting specific data from carsharing customers for the motor insurance, but the ability to connect this data with other data and get a

deeper insight into the risk structure of a potential or existing carsharing customer. It is not an issue of a segmented data collection and data monitoring, but an issue on a meta-level, a big data issue. King (2014, pp. 34-35) defines big data as data which exceeds the data processing capacity of conventional data bases due to their quantity, high and fast rate of change or incompatible structure. The characterization of big data can be done by the criteria of its volume, its velocity and its veracity.

For motor insurers the issue of data gathering and data monitoring is of high importance, as it is a vital contribution for a more precise risk profiling and thus adequate pricing (Schmeiser et al., 2015, p. 41). Against the backdrop of digital interlinking, currently a profound change in the consumer behaviour of insurance customers can be observed. The use of online media during decision processes becomes the norm. Always online due to mobile internet technology has become everyday reality. More than in any other business line in the insurance industry changes the digitalized customer behaviour as fast as in the business line of the motor insurance. The reason for this is that motor insurance contracts in general are rather short term and can be changed to another provider very easily, the premium amount is usually in a moderate range and the product is very comparable and therefore not considered as problematic and thus involving a rather short decision process. To make this situation more transparent, the focus onto carsharing makes this problem of high customer fluctuation due to interchangeability of contracts and insurers even clearer. Already for several years the insurance industry observes a trend of a rapidly and until today consistently rising proportion of online closed contracts (Hergenhahn, 2015, pp. 8-10). This shows that the consumer is confronted every day with more and more digital contacts and thus also data gathering contact points and interfaces. The question that arises is, how willing the customer is to share this information with the companies or institutions that gather that data and if he or she do it willingly and for free to help create the basis for a transparent pricing in carsharing. Not only positive consequences could be the result, if certain new information can be considered in an ex ante or ex post phase for a potential or an existing carsharing customer (Witzke, 2016, p.42).

Germany has very strict data protection laws, therefore the mentality to share data is not very strong as society is very informed about the dangers of data abuse. The ability to gather data or to be able to monitor data in carsharing depends very much on the willingness of the customers to do so. It is important to consider the point of view of the carsharing customer and not only the one of the carsharing company, in order to achieve acceptance among the customers to share data. According to a Towers Watsson study (Sommerfeld, 2014, p. 28) only 49% of the German car drivers would consent to data recording while they drive, the core element for motor insurers in carsharing. Cramer (2014, p. 5) identifies the three drivers for a low engagement of motor insurers in the field of carsharing as a (1) general restraint of the motor insurers to engage in this field, (2) uncertainties regarding the profitability and (3) data protection concerns. Sommerfeld (2015, pp. 28-30) elaborates on the decisive point on data protection law concerns and also sees three major concerns, but offers at the same time solutions:

(1) 51% of the German drivers do not wish that their driving performance is being recorded. Possible solutions are:

- Offers without GPS or an anonymous mode.
- Additional GPS-services which can be selected by the driver.
- Limited use of these systems only for an initial driver-evaluation.
- Targeting only data sharing willing customer segments.
- Secluded calculation and consideration within the device.

(2) The data could be provided by the carsharers or their motor insurers to third parties. Possible solutions are:

- The unwanted passing on of data can be excluded in the contract or marked as an option that the carsharing customer can choose, but he is not obliged to consent to a passing on of data.

(3) 42% of the German population believe that the motor insurer will use the data in case of an accident against them. Possible solutions are:

- Agreement in the contract that the data can only be used for defense against third parties.

When examining the willingness of people to pass on data of their driving, one must also consider that there is a differentiated view upon who is receiving the data. If it was a social media company or search engine who is receiving the data, the willingness to pass on data would be very low in the German population. Here the insurer has an advantage, as he is mentioned as number three in a survey about with whom someone feels comfortable sharing the data with (Mair et al., 2016, p. 9). The insurance companies are only exceeded by banks on rank one and the employer on rank two.

Expectation 1: The above discussed concerns lead to the expectation of the researcher, that there will be a very limited acceptance and therefore willingness among carsharing customers for the gathering of data by the carsharer and consideration for the motor insurer, or even the data monitoring. The carsharing customers are also not expected to consent to sharing this data for storing or monitoring for free, but expect some form of compensation for that. 50% of the customers are said to be willing to share their driving data only in exchange for additional services (Mair et al., 2016, p. 3).

7.5.2 Incentive and punishment systems in carsharing

The implementation of incentive or punishment systems can have a great impact on the discipline of the driver in carsharing to motivate him to behave in a risk seeking or risk averse way. It is important for a motor insurer to get some control mechanism in order to keep the claims frequency and claims ratio in this segment low. Only if the claims ratio, the ratio between the amount paid for claims in the numerator and the earned premium in the denominator, multiplied with 100 in order to get the percentage value, is low it is an interesting business field for the motor insurer to engage in (Radtke, 1994, p. 12). The carsharing customer is caught in a dilemma though, because he or she has with the carsharing vehicle (1) a car that he or she is not so acquainted with, (2) may not have extensive practice as frequent drivers usually have with their own car, (3) may not know the area or destination very well and is therefore distracted in his or her attention, (4) as it is not his or her car the feeling of responsibility for it and caring that nothing gets damaged is subsumed to be lower and he or she is finally (5) under time pressure

as every delay or being slower costs time and thus money, as most carsharing billing systems are based on the time spent in the car. Especially the last point is significant for the carsharing customer as he tries to keep the costs of hiring the car as low as possible (Gericke et al., p. 37).

The motor insurance companies are therefore seeking for a mechanism in order to influence the behaviour of the driver in terms of making him or her more cautious to avoid accidents and therefore keep the claims costs down. Incentive systems are like bonus-systems where the customers get a reward for good performance, while punishment systems put a burden onto the customer in case the performance is not as desired. Here the intrinsic conflict between carsharing companies and the motor insurer must be considered, as they have an overlapping, but not a completely congruent interest. Naturally the carsharing company wants to have as few accidents or damages as possible to keep the cars running and generate turnover as long as possible, because otherwise they are in repair shops and cannot be used by customers during that time. That would mean a loss of earnings for the carsharing company. The motor insurer though is interested in having a fixed risk profile and to be strict on procedures in order to make having an accident as deterrent as possible. That goes against the interest of the carsharer to design his business in a way that it is as convenient or easy for the customer as possible, because requirements for more risk-securing measures from the side of the motor insurer could drive away potential customers from the carsharing companies. This is a conflict between carsharing companies and motor insurers that needs to be resolved.

The above addressed problem to try to have a good risk profile of customers in carsharing on the one hand and have easy processes for the use of carsharing on the other hand bears the danger to encourage an opportunistic behaviour on the side of the carsharing customer, which is presumed to be existent per se on the side of every individual, but which should be kept under control as much as possible in order to keep costs down. Incentive or punishment systems offer an important approach to counteract opportunistic tendencies (Saam, 2002, p. 189). Examples for incentive and punishment measures are listed in the table 21 below:

Incentive measures in carsharing	Punishment measures in carsharing
Reduction in price for insurance or driving for accident free kilometer blocks	Deductibles in case of accidents
Vouchers for upgrades for next drive	Price differentiating depending on driving performance
Vouchers for other, third party, benefits	Exclusion from carsharing
Upgrade on a better model of a car for the same price	Sending of warning letter in case of bad driving
	Probation period if driver shows conspicuous behaviour

Table 21: Incentive and punishment measures in carsharing, source: Based on Saam, 2002, p. 189

The relevant question for the motor insurer is, which type of measure is more efficient, a reward system for good performance or a punishment system in case of bad driving or parking? The experience in the motor insurance shows that customers are more satisfied with bonus-systems. In such a bonus / malus model a contractual agreement is made with the customer of the motor insurance that he or she gets a payment if the claims ratio is below a certain value (e.g. below 60% as a ratio between claims costs and paid premium). A payment has to be made by the insured person though, if the claims ratio is above a certain value (e.g. above 80%). Long-term practical experience with hundreds of customers showed that customers gladly and without any further comment accept the bonus payments, but a lot of customers try everything to avoid the malus payment and complain. They quite often get angry and try to argue that it is not justified to take this measure and they give many reasons why it should not be collected. Consequently the insurer has a lot more work with a malus-system as the need to argue is unequally higher compared to regular models. During these arguments it is up to the insurer to prove that the customer is responsible for the damage. In theory that

seems not to be difficult, but in practice, when also emotions are involved, it is a very difficult issue for an insurer. Here again comes a conflicting interest of the carsharing company into play. The carsharing company does not necessarily want to lose the customer; therefore he wants claims handling processes to be as slim and uncomplicated for the customer as possible. The customer should feel well and not bad, even when an accident occurs, because everything is taken care of. The motor insurer needs to be sure though to collect deductibles where possible for any claim. Every deductible not collected represents a loss of earning for the motor insurer.

In case of large accidents it is simple to prove with the support of telematics that the driver is responsible for this accident. Yet most accidents are minor accidents (e.g. parking bumps, scratches, stains or glass break). These small damages are difficult to prove and it is not desired by the carsharing company to go after that much, in order not to irritate the customer for minor claims. It is out of scope to conduct in this study a thorough psychological consideration of the issue, if incentive or punishment systems are better suited, but the general opinion is in accordance with literature, that bonus systems are more effective than punishment systems (Trimmel, 2015, p. 119).

Expectation 2: The expectation for this research is that the experts will find that carsharing customers gladly accept an incentive system, while they see malus systems as problematic. Therefore it is expected that the recommendation for motor insurers is that they should work mainly with incentive systems and stay away from malus systems.

7.5.3 Trust as an element in carsharing

Naturally, insurance companies focus strongly on the point of risk assessment for their pricing. The right price has to be set for a specific risk in order to have a situation that the premium minus claims costs, minus administrative costs equals a positive amount, i.e. a profit. Trust is a diametrically opposed approach to what actuaries do in the motor insurance. The standard approach in insurance is to try to acquire as much information about the customer in a

contractual ex ante phase and as much information about his driving behaviour and accident frequency in an ex post phase in order to set the right pricing (Nießen, 2012, p. 1414). In the best case it is even an individual pricing which can be achieved through new technical systems such as telematics. As the carsharing companies depend on the ability to track the location of their cars on a constant basis, the preconditions for a tracking by telematic systems are already fulfilled. In the German motor insurance market for private customers, the acceptance of telematic is moderately high (Cramer, 2014, p.14), but not yet standard as many people have problems with the fact that their driving data is tracked and recorded.

The regular approach to get data about the customer is by asking many questions to the driver in the ex ante phase in the form of hard fact questions (e.g. how many kilometers per year do you drive?; Is the car parked overnight in a garage?) and soft fact questions (e.g. are you married?; Do children live in your household?) to create a risk profile of the potential customer, which is as complete as possible, with as few questions as necessary. Yet questionnaires of German motor insurers contain on average 25.8 tariff criteria (on average in Europe 23.7) of which 22.2 are used (on average in Europe 18.6), demonstrating that Germany is at the top end of relying on data for pricing in motor insurance (Schmeiser, 2015, p. 56). This system of questions is completed by a no-claims-bonus system, where every driver moves up one level for every year that he drives without a damage (SFR-system). The respective level that a person has reached is transferred in case of a change from one motor insurer to another. Consequently every driver has a claims history in case he is an in Germany registered person and has a motor insurance. This information is not used in carsharing and is therefore a contradiction to the regular approach that a motor insurer has, when insuring a risk.

Trust is not common to be used in the German motor insurance as it cannot be set as an actuarial variable in the calculation of a price for a risk. First approaches are made to derive a value for how much a person can be trusted in an ex ante phase from big data. But as of today the element of trust can be neglected in every day motor insurance business. This applies even more for the ex post contractual phase. Claims that occurred are checked by the insurance companies if they really have to pay for them. Most motor insurers also work with fraud

detection software in order to conclude for example from the names of the in the accident involved persons (maybe known in the past for fraud), or the constellations in the damage, if a suspicious momentum can be found. If this is the case, these claims are extracted and checked separately by a fraud detection team.

In carsharing it is, as in every business line in insurance, about being able to make a profit with the concept of the cooperation with the carsharer. Using trust in carsharing means for the motor insurance to have an undefined variable with great possible negative impact on the calculation. This makes it very difficult to predict the prospect of profitability for such a collaboration. Combined with the fact that carsharing customers are under pressure to reach where they need to go in the shortest time possible, as every minute costs money, it makes this situation even more incalculable for the motor insurer. Out of own experiences, talks with competitors on various conferences and talks with actuaries, the researcher can describe the pricing models for the motor insurers in Germany in general as a three level model, not containing a single element of trust in the setup. The three levels that are built upon each other are as follows:

(1) Level 1: Fundamental level of resources

- Capacities and skills for calculation have to be available.
- Internal or external data basis from where to draw the data for the analysis needs to exist.
- Tools have to be available with which the calculations can be conducted.
- Processes and the organization have to be there so that all interfaces can work together in the pricing process.

(2) Level 2: Pricing elements

- Actuarial need to determine a sufficient premium. This describes the prospective claims expectations including a risk surcharge based upon historic data.
- Distribution of the fixed and the variable costs to be added onto the risk premium. This process is called loading.
- Market surcharges or reductions, as the internal view upon the claims needs are since the deregulation of the German insurance market not

sufficient anymore. It needs to be expanded by a market review, reflecting the data of the most important competitors.

- Customer surcharges or reductions, as the pricing in regard to the market or major competitors follow an alignment with reference to specific customer segments, target groups or sales channels.
- Calculation of the underwriting or sales discount leeway, which can be given either by sales directly or central underwriting.

(3) Level 3: Pricing strategy

- Pricing basics include all the necessary frameworks (e.g. growth or profitability targets) that need to be considered.
- Market positioning comprises the distribution of the portfolio, the definition of growth segments, the design of the products (premium or discount products), as well as the sales channel and customer access strategy in sales.
- Company-wide coordination of the pricing strategy is as a final corner stone necessary in order to be most efficient, therefore it needs to be formed in accordance with the company, marketing- and sales strategy.

Expectation 3: The expectation is that trust will not be used at all in carsharing for motor insurers and that it will be turned down as a means to be used, neither for the ex ante contractual phase, nor for the ex post phase when the carsharing customer is using the motor vehicle.

7.5.4 Customer selection process for carsharers

Which customers the carsharing companies select is of major importance for the motor insurer, which operates in the background. Choosing the wrong customers could mean an increased number of accidents or damages resulting in higher claims and higher expenses for the motor insurer, thus endangering his business case. Yet the issue comes up again, that it needs to be considered that the carsharing company and the motor insurance are not fully congruent in their objectives concerning the client. This has an impact on the selection process and the criteria for the selection. For the carsharing company the motor insurer is a

partner who provides financial and processual security for the risks that can happen while customers use the carsharing vehicles. The following overview has been compiled by the researcher from his long-term experience in the motor insurance and contact with carsharing customers. This overview shows in which aspects the carsharing companies and motor insurers follow a common goal (1) and in which aspects, (2) and (3), these goals deviate from each other.

(1) Congruence of interests:

- Growth: A growing number of customers ensure an increase in turnover, which is the basis for internal cost distribution and a strengthening of the market position.
- Accident avoidance: Includes all types of damages that can occur to the vehicle, driver or passengers.
- Profitability: Both companies want to be profitable.

(2) Specific interests of carsharer:

- Property of customer data: The carsharing company is not interested in passing on collected customer data, as it needs the consent of the customer and that poses a risk for accepting the carsharing contract.
- Easy acceptance process: The process for taking on new customers should be as easy as possible.
- Fixed premium regardless of driver: The driver is expected to always want to pay the same price, therefore demanding a fixed price for everybody means high customer acceptance and an easy calculation basis.
- No extra investments for data transfer: Carsharing companies want to keep the costs low in order to maximize the profit. Extra investments needed by the motor insurer would be considered inconvenient.
- As little motor insurance premium as possible: The price for the motor insurance is a cost factor for the carsharer, therefore it will try to negotiate the premium as low as possible.
- No punishment mechanisms for customers: If customers of the carsharing companies are addressed in case of an accident and feel negative

consequences, the carsharer fears a negative kickback reaction from the end customer towards the carsharing company.

(3) Specific interests of motor insurer:

- Detailed driver information: In order to price the sum of risks correctly, the motor insurer needs as much information as possible.
- Validation of driver information: What the potential carsharing customer states in a questionnaire and what his real life values are can differ profoundly from each other. That poses a risk for the motor insurer. The more information the insurer has about the customer, the better. Possibly even a separate short driving test would be desired.
- Performance data for price adaptions: The performance information completes the information about the conglomerate of drivers collected ex ante.
- Split in pricing for customers: For fair pricing the individual risk would need to be considered and individual insurance prices for drivers would need to be set. Limitations must be seen in practicability and customer acceptance, as well as legal regulations. Since December 21st 2012 unisex tariffs in the insurance business in Germany are for example compulsory and need to be obeyed by the motor insurers (Gondring, 2015, p. 567).

Figure 42 summarizes the above described congruent and conflicting interests of carsharing companies and motor insurers and displays the result in a graphic way, to make the situation of interests more transparent.

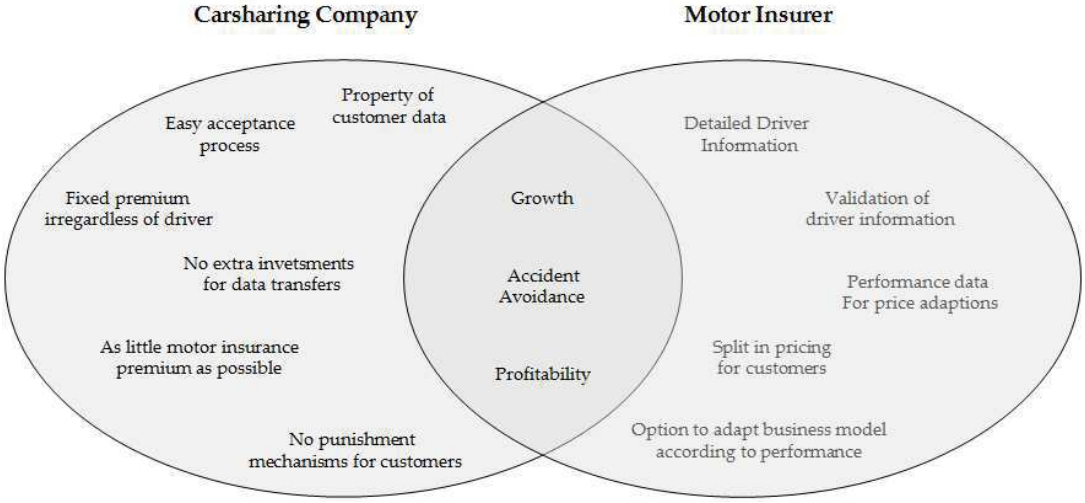


Figure 42: Interests of carsharing companies and motor insurers, author´s graph

Expectation 4: As there are differences in the interests towards data collection and the connected risk assessment between carsharers and motor insurers, the researcher expects to find a strong tendency towards a more detailed and elaborated process of customer selection.

7.5.5 Complexity of contracts

Complex contracts offer on the one hand clarity for the contracting parties, on the other hand they need to be able to be read in a reasonable time and understandable for the customer. Kunkel (2016, pp. 165-168) suggests a summary of the four main challenges in design of contracts as follows:

(1) Completeness: Contracts must be complete. This means that the arrangements made between the contracting parties must be reflected in the most correct form possible. Furthermore they should have a legal status so that the most typically happening constellations are regulated by particular clauses.

(2) Standardization: The contracts should be the same for all users so that no extra effort or costs are generated, neither in the contract signing phase, nor in case

of a damage, as the carsharing company can always refer to the standard versions. No extra considerations or specific negotiations should be necessary.

(3) Clarity: All contract issues should be as transparent and easy to understand for the consumer as possible.

(4) Validity: Contracts in use always need to comply with the latest standards. This means that for new customers always the most recent contracts have to be used and existing contracts have to be updated in order to still be legally binding.

The overall experience generated in practice shows that if only a low level of factor specificity exists and uncertainty about the frequency of transactions, then detailed contracts are not needed, which results in lower contractual costs. As the motor insurance is a cost factor for the carsharing company the general rule applies, the less detailed the contracts are, the more customers are satisfied with the straightforward contractual situation and sign up as a customer. For the motor insurer less specificity in the contracts means most likely a loss in earnings, as the situation for claims is not clearly enough regulated and can therefore be subject to complaint by the customer. Hence, more detailed contracts are desirable for motor insurers in terms of risk assessment and claims settlement.

Expectation 5: The level of detail in contracts is of major importance for motor insurers in case of claims situations. The more situations are defined, the less trouble is expected in the claims handling process. It is expected that complex contracts will be demanded by the motor insurers and therefore by the carsharers.

7.6 CONCLUSION

Expert interviews are an important supplement in the methodology of qualitative research. With this method the researcher has the opportunity to gather in a short time an incomparably extensive amount of data. Yet this method is also subject to criticism as not the data itself is subject of this criticism, but the expert who gets interviewed. Apart from the fact that the danger exists to have a non-representational result, the expert him- or herself could be under the influence of a

variety of external or internal effects, which has an impact on the information given during the interviews. As the expert interview, which was carried out in the form of an elite interview, is part of a triangulation process in this research to ensure the validity of the findings, the danger of false results can be regarded as low. In order not to follow a too rigid pattern in the interview and to rather create a soft and harmonic atmosphere to achieve the best results, the researcher used the form of a guided interview. In contrast to a questionnaire the guided interview has the advantage that the researcher has defined key questions, which are addressed during the course of the interview, but there has not been set a specific order or point in time for this. This increases the flexibility to create an unhampered flow of information during the course of the interview and opens the possibility to gather new unforeseen knowledge, as the expert decides for him- or herself how much he or she elaborates on a certain topic, or makes reference to a new and other point or topic, which was not foreseen but expands the knowledge that can be gathered. The experts, or rather elites, were selected by a scan for possible interviewees by publications or conference papers on the one hand and by screening for elites in the German motor insurance. This two-step selection mechanism was completed by snowball sampling to get qualified recommendations from other interviewees for further qualified experts to interview. The interviews were recorded with a digital recorder and afterwards transcribed not to lose any vital information. After the transcription the content was coded and categorized for the following analysis process. A code and subresearch question matrix was formed in order to determine for the analysis exactly which code is relevant for which subresearch question. On the basis of this code and subresearch question matrix the following analysis was conducted. The coding process was carried out in the form of open coding, which means that single phenomena were aggregated to codes and codes and then to categories. In order to achieve the highest degree of validity possible for the codings, an inductive approach was carried out in a first step compressing the generated data from the expert interviews in such a way that codes were formed. These codes were then crosschecked and modified where necessary for validation purposes in a second step, representing a deductive approach. The analysis itself was carried out in the form of a computer aided qualitative data analysis, using the

software of MAXQDA in the latest version. Before the researcher analyzed the findings he lay down in this chapter what his expectations are in regard to the key points of this analysis in order to be sure to be as unbiased in the process of analysis and display of the findings as neutral as possible. Like this deviations can be made transparent to demonstrate that the findings are incoherent to the expectations and assumptions that the researcher had at the beginning of the expert interviews.

8. MAIN FINDINGS OF EXPERT INTERVIEWS WITH REFERENCE TO SELECTED NEW INSTITUTIONAL ECONOMICS THEORIES

In order to answer the main research question, the researcher has applied the method of a quantitative descriptive analysis (QDA) in regard to the new institutional economics (NIE). The analysis followed the in subsection 7.3.4 displayed two-step proceeding of a first inductive step, followed by a second, for verification of the codings conducted, second deductive step. The analysis starts with the smallest granularity of questions, which are manifested in the subresearch questions, in order to obtain knowledge about the relevant evaluations (Mayring, 2010, pp. 85-86). These findings will then be set in relation with the research questions in order to prepare a test of the hypotheses within the subsection 9 of the conclusions and recommendations.

8.1 DESIGN AND CONCEPT OF DATA ANALYSIS AND INTERPRETATION

This subsection of the main findings aims to provide the basis for the conclusions and recommendations for the decisions regarding the strategic alignment for German motor insurers in regard to carsharing. Not part of this analysis is a quantitative exploration on the basis of this conceptual and practice-oriented analysis of qualitative data, as this is considered to be a possible subject for a separate study for another research project.

The presentation of the main findings in this chapter is comprised of the findings of the expert interviews, the comparison with the assumptions and expectations of the expert interviews, as well as with literature. The proceeding is thus complying with the demands of Yin (2016, p. 311) for a deeper understanding of the examined questions and for the addition of more accuracy and broadness. The interconnection with the selected theories of the new institutional economics is made within the examination of each subresearch question. Each subresearch and research question aims, as explained earlier, at a specific theory of the NIE. Therefore after the issues are found and discussed in every one of these theories, they are set in perspective to the findings of the expert interviews. This completes

the triangulation view upon the analysis of the research question (Mäkelä et al., 2007, p. 135). It is important to point out that the examination is always carried out with a clear focus on one specific theory and its related problems of the NIE. This serves to get a clearer view on each problem field addressed within each theory and the question in how far a solution is possible with reference to the expert interviews and literature. The results of the main findings are then aggregated in the following subsection 9 within the conclusions and recommendations and the formulated theories are there tested in regard to their validity, resulting in answering the main research question and the ability to give recommendations for strategic options for the motor insurers on the German market in regard to carsharing. The following steps were taken in the process of analysis:

(1) Data gathering by the conduct of expert interviews and the following transcription of the interviews.

(2) Member validation to ensure that the content was understood and transcribed in the correct way.

(3) A first code system was developed with reference to the NIE theories in regard to the expert interviews in an inductive way by content compression (reduction) of the interviews. Therefore the content of the expert interviews was reduced in two phases to its core statements and compared with the NIE to form this first code system (Mayring, 2010, pp. 67-83).

(4) A following deductive step was introduced in order to review the inductively set first code system. This first code system was compared to the content of the NIE-theories and cross checked for their precision to reflect the key statements of the respective NIE-theory. Adaptions in the code system were made where necessary, to have a more exact fit in the system and therefore more precise results in the analysis. The exactness of the revised code system is reflected in its high value of 93% of the coverage of the code matrix browser. That is why it can therefore be considered to be reliable.

(5) A data base for the coding of the expert interviews was created by using a computer based software for qualitative data- and text analysis (MAXQDA). This software is designed to give the researcher insight into the data material, without him risking to anticipate results. For that purpose the transcripts of the expert

interviews, were imported into the MAXQDA data base and converted from Microsoft Word into RTF-files.

(6) The revised code system was applied for the coding of the transcripts of the expert interview. An overview of the complete code system used in this analysis can be found in appendix 1 and in detail in appendix 2 from 2.1 to 2.10.8. The text passages that reflect the codes were marked as complete sentences. As some sentences were not just containing important information for one, but also for other codes, some sentences were coded twice, i.e. with the different and relevant codes. No sentence has more than two codes. Sentences with the same statement were coded only once, as the sentence with the clearest formulation was chosen and coded (Mayring, 2010, p. 92). Only if that same issue was taken up later in another context, it was put in the same code. That is why in one code in some cases a coding of more than one can be found in the database of that same expert in the specific interview. This method ensured that no distortion of the results was risked by an increased number of one specific code, simply generated by the expert elaborating extensively and more than others on one issue. In some cases one statement was categorized as positive and negative at the same time, but under different codes. If there was a clear statement for example, that the interviewee said to only work with partial trust, then partial trust was coded as positive, while complete trust was coded as negative. Another example is, if it was explicitly said that incentive systems were considered positive and punishment systems were found ineffective, then this sentence was coded in the incentive part as positive and in the punishment system part as negative.

Remarks that showed an indifferent view upon an issue were not coded. Basis for the coding was an interview guide that contained the same block of content for the questions and every content block was covered, even though the flow of the interview was free. The researcher checked during the interview if every one of the content blocks was covered, as it represents a subresearch question and if it was not the case he guided the interviewee back to the content and asked a question about that issue to be answered by the expert. This was done with empathy by the interviewer, not to irritate the expert and disturb the flow of the interview.

(7) To comply with the explained ethical considerations no direct quotes from the experts are published that could be referred back to one of the persons interviewed. The quotes, codes and subcodes were anonymized, aggregated and freed of any indicators that would relate to a specific expert. The order of the names of the experts was changed randomly for every CMB-result in the following analysis, so that no conclusions about who said which comment can be traced from the chart of the coverage degree of answers and the codesystem, containing the names of the experts, displayed in figure below.

(8) The results of the codings were then used to answer any of the formed subresearch questions. In the display of the findings of the expert interviews towards the specific subresearch question, a comparison to literature is made. In a further step these findings are then compared to the assumptions and expectations that were made by the researcher prior to the expert interviews, followed by a reference to the specific NIE theories. The consideration of the elements of the NIE-theories was conducted with the code and subreserach question matching matrix, to be found in figure 4 of subsection 1.3.

(9) After the analysis the relevance of the findings of the subresearch questions were put in perspective with the respective research question. This was done in order to have a structured analysis for every research question.

(10) At this point the part of the analysis of the main findings is completed and the results of the chapter VI are basis for the following chapter VII, where the hypotheses are tested and finally conclusions and recommendations are given to what strategic options motor insurers have, by the example of carsharing.

The core aspect of reliability of the expert interviews is fulfilled, as the coverage degree of all answers of all interviewees (n=15) and the codesystem is 93%.

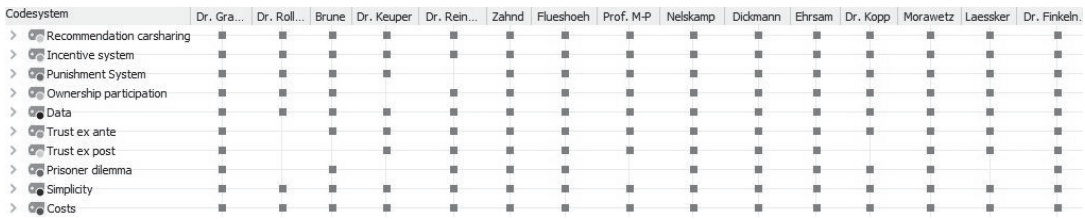


Figure 43: Coverage degree of interviewee answers and codesystem is 93%

The research question 1 was deduced from the NIE with the focus on the principal agent theory, therefore it directly relates to the hypothesis formulated in subsection 4.2 under the principal agent theory. In the same way research questions 2 and 3 also focus on issues of the principal agent theory.

The research question 1 (PA RQ1) is: Is there a way that motor insurers can draw reliable conclusions about the behaviour and driving performance of a carsharing customer? This research question makes transparent that the asymmetric level of information between the principal (motor insurer) and the agent (carsharing customer) leads to a danger for the principal. The motor insurer is risking to take on a carsharing customer that could produce an increased claims ratio and thus make him suffer from previously demonstrated agency problems. In order to solve the agency problems, approaches can be taken that are reflected in the following two subresearch question. Their relevance was defined within the process of the definition of categories as shown above and they are analyzed in the following.

8.2.1 Data monitoring of carsharing customers

The subresearch question that enquired this issue was the question SRQ 1.1: Is the carsharing customer is willing to have his driving data monitored and how deeply? The relevant category to analyze this subresearch question is data with the subcodes of data gathering and data monitoring. The code matrix browser delivers the following result from the expert interviews:

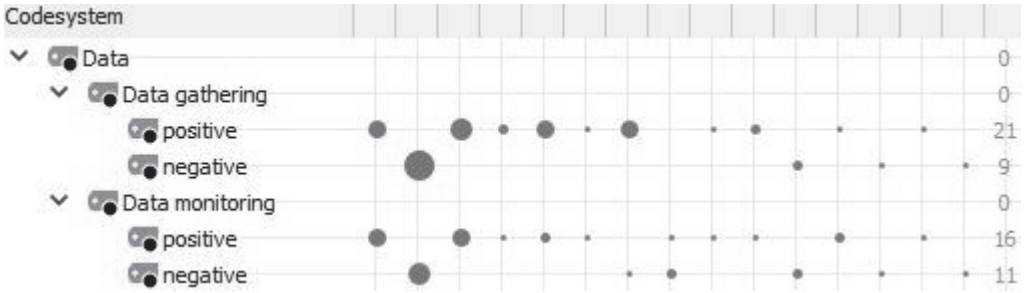


Figure 44: CMB result for data gathering and monitoring

It has been found that n=10 experts thought the process of data gathering would be seen positive by the carsharing users, while n=4 saw that carsharing customers could see the process of gathering data as negative. The data gathering process includes all the forms of data collection, be it by questions asked to the carsharing customer or by technical systems implemented during the drive, such as telematic systems. The focus is on the data gathering though, not the evaluation process of the data. This finding is backed by the fact that 21 statements that were made were positive, while only 9 were negative. Moreover the negative remarks were strongly influenced by one interviewee, as that person elaborated very much on this issue and made several remarks regarding the different facets of data gathering. Literature backs this finding as it is agreeing that the average user of carsharing offers is male, a bit younger than the average of the society, has a higher level of education and level of income than the average person in Germany and is used to use the internet and pass on data in order to use platforms or other services (Böhler et al., 2007; Kopp et al. 2015, pp. 449-469). The experts who have made positive remarks go even one step further than literature, as they point out that the carsharer who agrees to pass on data has to fully understand why he or she needs to pass on this data and usually expects something in return.

The process of data monitoring is also seen as not critical by n=10, only slightly more negative (n=5) than the process of data gathering. One expert was a bit indecisive, but made more points on the negative side, that is why these remarks were considered mainly negative and form part of the n=5. The restraint that the experts have in regard to the monitoring point is reflected in the relation of 16 positive remarks in comparison to 11 negative remarks. Was in the previous point a gap of 12 between positive and negative remarks, has it now narrowed down to 5. Literature sees it more critical. It differentiates if the monitoring has a clear and understandable purpose or benefit for the driver, then it is more accepted (Jaekel et al., 2013, p. 25). YouGov, a market and opinion research institute based in Cologne, Germany, researched about the willingness to pass on driving data and to be monitored by a motor insurer (YouGov, 2016). The essence is, that in context with an insurer telematics is there accepted where it serves claims prevention. Is telematics seen though in the context of control of the own behaviour, then the customers react significantly more critical. Therefore it can be concluded that the

aspect of perceived control of behaviour in carsharing plays a negative role (Witzke, 2015, p.85).

8.2.2 Possible data exchange between carsharers and motor insurers

The subresearch question that enquired this issue was the question SRQ 1.2: Should there be an exchange of data between carsharing companies and motor insurers? The exchange of data between a carsharer and a motor insurer offers the possibility to have a more precise risk profile of the drivers and it can also serve to provide data about a driver and therefore potential customer to the carsharing company. It could help both sides to bridge the situation of asymmetric information, as both are in the role of the principal lacking information for the assessment of the agent, the carsharing customer (Jorge et al., 2015. pp. 461-482).

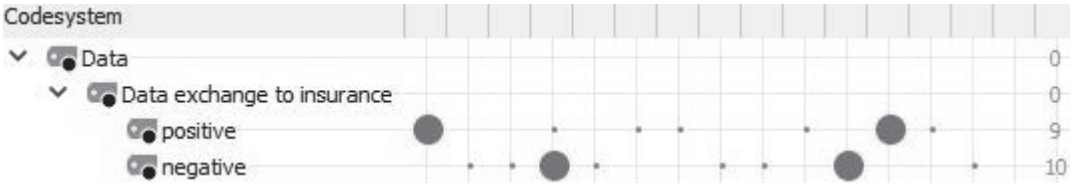


Figure 45: CMB result for data exchange to insurance

The data exchange to a motor insurer was seen with concern by the experts. It was a close majority of them (n=8) with 10 remarks that were negative compared to n=7 experts with 9 remarks, who see a data exchange with a motor insurer positive. The background of that question was to enquire, whether the experts see a possibility to positively influence the way of driving of carsharing customers by passing on the data generated during driving to the motor insurer. This data could then be used for positive or negative consequences on the own insurance, if the driver has one, or it could be used for new drivers to build up a bonus system that they can refer to when they want to get their own motor insurance. This is a very new consideration that is why literature is severely scarce about this issue. In a study carried out by the University of Applied Sciences in Cologne, the result was more negative. In this study 62% of the population agrees that one cannot trust insurance companies and even 89% confirmed that insurance companies are in

their opinion greedy when it comes to taking premium and stingy when it comes to paying for a claim (Müller-Peters, 2017, p. 9). In general about 50% of drivers can imagine to have their data shared with the motor insurer, but only if there is a positive consequence (Harloff, 2014).

The researcher expected that the negative opinion about data gathering, data monitoring and the transfer to the motor insurer would have been stronger. A general refusal by the experts cannot be seen neither can a negative opinion of that scale be found in literature. A careful data monitoring seems to be acceptable for the carsharing customers.

8.2.3 Implications for research question 1

To remind the reader, the research question 1 was: Is there a way that motor insurers can draw reliable conclusions about the behaviour and driving performance of a carsharing customer? The subresearch questions 1 (see 8.2.1) and 2 (see 8.2.2) are directed towards the asymmetric information between the motor insurer as the principal and the carsharing customer as the agent. In the following the main findings are referred to agency problems of hidden characteristics, hidden intention, hidden action and hidden information. The findings of the subresearch questions set the basis for an enquiry what the findings are in regard to the NIE. The findings in regard to the subresearch questions 1 and 2 are:

- Data gathering was mainly seen positive if the carsharing customers see a connected benefit for them in it.
- Data monitoring was seen as accepted for carsharing customers under the precondition that they understand why it is carried out.
- The data exchange to the motor insurer was seen mixed with a tendency towards a negative opinion.

(1) Hidden characteristics: The biggest challenge that the motor insurers face is that the wrong customers could be selected (adverse selection), because the principal does not know of any attributes of the customer before the contract closing. To counteract this risk, data gathering is an option in order to know more about the customer. The finding showed that data gathering is generally seen

acceptable and positive. Therefore the method of screening could be applied by the carsharing company to gather data at the start of the contractual relationship. Signalling would also be a feasible option, so that the customer proves to the carsharing company that he is fully capable of driving responsibly.

(2) Hidden intention: As it has been found that it is seen as an option to work with data monitoring and that this is expected to be accepted by the customers, the option is therefore existent to counteract a hold-up situation. The carsharing customer thus does not have the option to force the motor insurer to simply believe what he says, for example in case of an accident. Due to the data monitoring, the insurer has an exact picture about the driving behaviour of the customer and can prove the opposite. Once the contract has been made with the carsharer, the contract can also be dissolved again in case the data monitoring shows a malicious behaviour of the carsharing customer. This can serve to counteract a hold-up situation and the finding confirms that it can be applied.

(3) Hidden action: With the accepted approach of data gathering clarity can be made about the carsharing customer and therefore the agent cannot use the discretionary leeway of unobserved actions to hide his real behaviour. The findings show that the use of data for monitoring purposes is accepted and will be applied so that these margins do not exist anymore. The ex post problem of shirking cannot be fully excluded as data gathering cannot be assumed to be complete. Yet the findings indicate that by the application of data gathering and monitoring, or transfer of data to motor insurers, this risk can be minimized. If the agent deliberately holds back information it would show sooner or later. Equally with the general acceptance of a data handling that allows an ex ante and ex post transmission of generated data to the carsharing company, as well as to the motor insurer, this would serve to counteract a moral hazard problem. The bad intention for car use would be reflected in the data. That is why the finding, as acceptance for data monitoring is shown, provides a main solution for the moral hazard problem, which lies in monitoring, next to approaches of incentive and information systems.

(4) Hidden information: The main driver to reduce the risk of hidden information is to try to accomplish a situation of harmonized interests. The principal agent theory supposes that the principal has a risk neutral attitude, while

the agent has a risk averse profile. This shows that a harmonized interest can be created with the finding that through monitoring or a data transfer to a motor insurer the agent has the chance to prove his good driving behaviour and his risk averse attitude can be rewarded in a lower pricing or another form.

It has been found that data gathering is considered positive, with the restriction that the carsharing users have to understand why the data is gathered and it leads in the best case to an advantage for the carsharing user. The data monitoring is seen mainly uncritical, yet literature indicates that customers would see it rather problematic when it comes to a control of the individual behaviour. The data exchange to insurers is seen with a minor tendency negative, more so in literature. Therefore data handling can be executed in the displayed dimensions and this offers solutions for agency problems. The finding is that through data gathering, monitoring and exchange of data to motor insurers, reliable conclusions about the behaviour and driving performance of a carsharing customer can be drawn.

8.3 ANALYSIS OF RESEARCH QUESTION 2: INCENTIVE AND PUNISHMENT SYSTEMS

The research question 2 was equally deduced from the NIE with the focus on the principal agent theory and also relates to the hypothesis formulated in subsection 4.2.5 under the principal agent theory. Research question 2 (PA RQ2) is: "Is there an efficient system to avoid an opportunistic intent of a carsharing customer towards the provider and thus motor insurer ex post of the contractual phase?"

A major agency problem lies in the assumption that every person acts per se opportunistically. Research question 1 (PA RQ1) already had the focus on an ex ante phase and research question 3 (PA RQ3) will also put the focus on the ex ante agency problems and possible solutions found in the expert interviews. In research question 2 the focus lies on what a motor insurer can possibly do in order to counteract the ex post agency problems with new approaches that can until now, not be found on the market and were researched by the following subresearch questions SRQ 2.1 and SRQ 2.2.

8.3.1 Reward versus punishment system

The subresearch question that enquires this issue of whether a reward system is more efficient than a punishment system is the question SRQ 2.1: Is an individualized or group reward system better suited to enhance driving performance versus a punishment system? In order to thoroughly examine this question, the researcher split the components up into different codes in order to investigate the different variations and their effects. The code matrix browser shows the relevant codes that were selected according to the table of relevance for this subresearch questions, as displayed in figure 46.

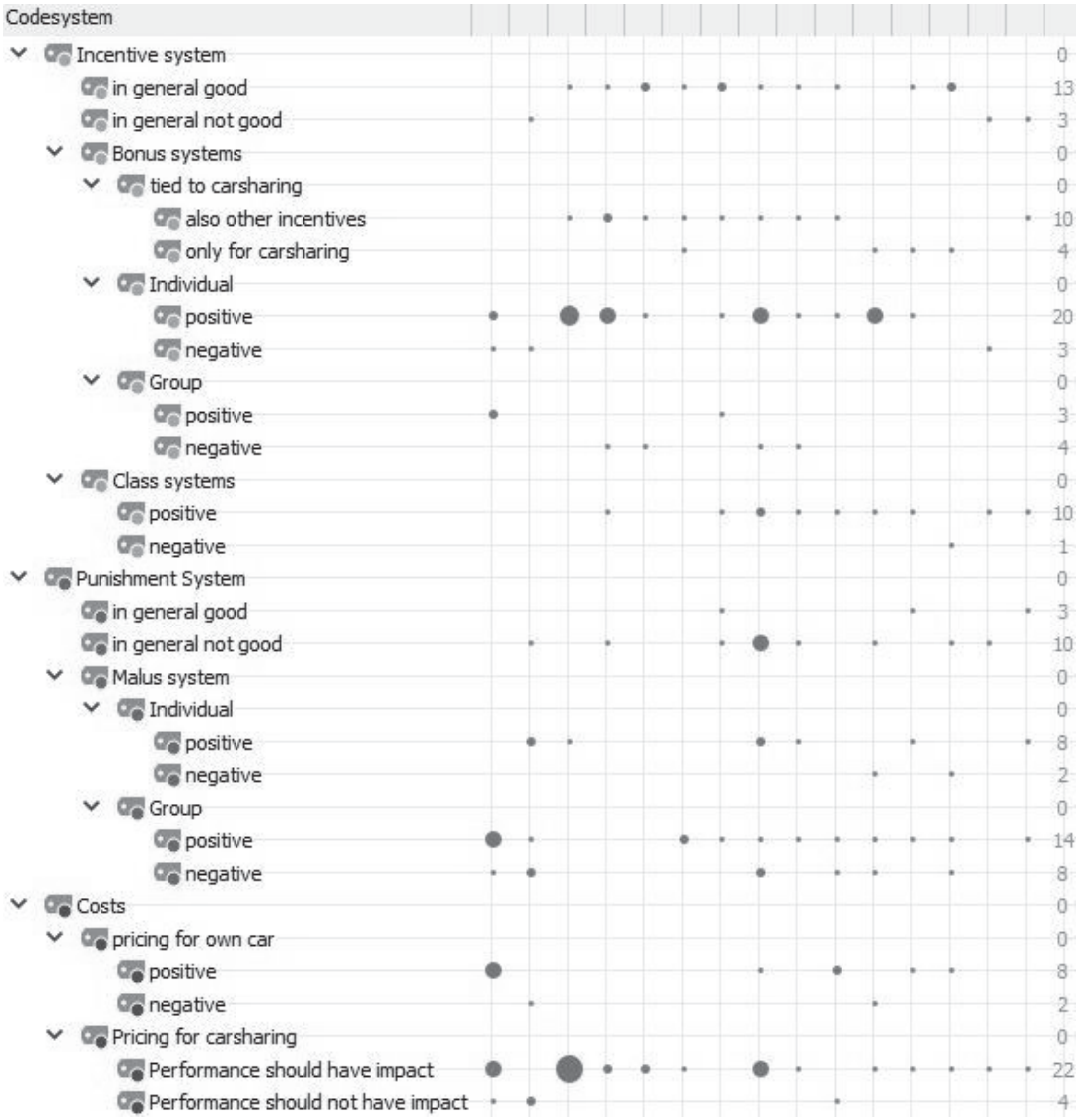


Figure 46: CMB result for incentive versus punishment system

It has been found that the experts in general favour an incentive system over a punishment system. It was n=10 with 13 comments that favoured an incentive system over n=3 with 3 comments that found that an incentive system is not favourable. The cross check with the remarks towards the punishment system

confirms this finding. It was here n=8 who clearly spoke out against a punishment system in contrast to n=3 who believe that a punishment system is rather suited to positively influence the driving behaviour and avoid opportunism. The main argument that was used was that good news or incentives are seen positive and accepted by the customer. It can even create a win-win situation between the carsharing company and the motor insurer, as incentives can be used as a customer retention measure. At the same time the findings brought up, that the precondition for a successful incentive system is the ability of the individual to influence the reception of an incentive and not be part of a random incentive system. The status quo in carsharing is that there is no incentive or punishment system implemented. Some experts reported about a notification system that has been introduced, which indicates to the driver if his driving is ecological or unecological, calm or racy. Yet this is a mere display system without consequences for the driver. Even in case of an accident the driver does not have to pay more insurance costs or face increased costs per drive. The literature coincides with this finding (Hoffmann, 2017, p. 37) that the motivational aspect for a certain behaviour is seen as being triggered rather by a reward than a punishment system (Heckhausen, 1989, p. 465).

Another finding was that in general individual bonus systems are seen better than bonus systems that are directed towards a group. It was n=10 with 20 comments that favoured this system over n=3, who voiced concerns towards such a system. The n=3 even needs to be revised to n=2, because it was an undecided remark with a tendency towards the bonus systems. The group bonus system was only favoured by n=2 over n=4 who opposed it. The essence of the remarks by the experts was that the carsharing driver would not have an interest to share his good performance with others and could see this approach otherwise as counterproductive for his driving, maybe even motivating him to drive more carelessly. It is the point that the driver needs to be able to influence the results and benefit from them directly. The examination of the malus system brings the finding that n=6 favour an individual malus system over n=2, who are critical of an individual malus system. The group malus system on the other hand was seen by n=11 positive opposed to n=6 who see critical points. In these group considerations though are all of them who oppose this system and who are also seeing positive elements in it. Two of the n=6 tend more towards the negative consideration, while

one of them is more in favour of the group malus system. In a net consideration that leaves n=6 compared to n=2 who are clearly in favour or against a group malus system. This finding is also reflected in the amount of comments, as 14 are in favour and 8 against a group malus system. This concludes the finding that if there was a malus system to be introduced it should be a group malus system, rather than an individual one. The main reason for this lies in the element of social control. As mentioned above, the important precondition is that the individual has influence on the performance, therefore it was postulated by the experts, that this principle prevails in a group malus system. If the group is not anonymous and not an amorphous mass, the driver feels the pressure that his own misbehaviour could upset the others in the group and he fears negative consequences from their side. It is not so much the thought of what measures the carsharer or the motor insurer could take, but his image in the group is endangered and that is the element of social control which is considered strong as a regulatory component within a malus system for a group. Literature sees also an interdependency among the group members (Birbaumer et al., 2004, p. 162) and the members of the group must see a strong connection between the performance of the group and the received reward or bonus. A reward which is too individual can weaken the cooperation process within the group and cause confrontations (Hackmann, 1987, pp. 315-342). The element of social control in groups is considered to be positive (Scheerer, 2000, p. 163), yet it is found that the recommendation is rather to have smaller than larger groups, as the transparency is higher and control and influence mechanisms take better effect. Additionally it is assumed that the individuals, that is in this case the customers of the carsharers, have internalized norms which make a solidary acting and behaviour out of reasons of fairness more likely (Komorita et al., 1995, pp. 183-207). Literature shows that empirical findings do not confirm a rampant free-rider-mentality. Especially if members of a group communicate often with each other, it is considered to counteract opportunistic behaviour of the individual (Messick et al., 1983, pp. 11-44). As the own advantage is more important to the individual compared to an abstract partial reward depending on the group, the individual will behave the more opportunistically, the greater the anonymity is (De Dreu et al. 1997, pp. 1093-1106). Therefore small groups in malus systems are seen positive.

Regarding the bonus systems, the question is if bonuses should be strictly related to carsharing (e.g. free minutes, upgrade of car for the same price) or if there should also be other forms, such as vouchers for a coffee for example or stores, that should be used? It was found that the majority of experts n=9 also sees other forms as plausible, opposed to n=4 opposing opinions. As one expert was indifferent, the net result is that n=8 favour other forms in contrast to n=3. Literature says that customer satisfaction is the most important issue and recommends to base a bonus system upon a survey made with customers to meet their wishes (Dünzl et al., 1997, p. 442). Then it also serves best as a customer retention measure (Musiol et al., 2009, p. 6).

Another approach that was investigated was the question if the introduction of a status level system (coded as class system), similar to a system that airlines have with different status levels of their customers, such as normal traveller, frequent traveller, senator or honorary circle, would be of advantage to positively influence the driving performances and even generate customer retention. It was found that n=9 think that it is positive to do so, while only one expert n=1 is against this thought, while the other experts remained indifferent in that regard. The research showed that a status level system is expected to be accepted by the customers. Literature also shows that these status level systems are accepted. It is just difficult for companies to adapt these systems towards less service if so necessary (Wilkoszewski, 2007, p. 67).

If consequences for the individual carsharing customer or the group are implemented, the experts are with n=5 of the opinion that a good performance in the carsharing drives should also have a positive impact on the own motor insurance, opposed to n=2, who have a negative view on this approach. Also the number of elaborations and different viewpoint is with 8 comments more positive towards positive consequences for the own insurance, opposed to 2 comments that regard this negative.

Considering whether the driving performance in carsharing should have an impact on following carsharing trips for the customer, this thought is welcomed by n=12 and seen negative by n=2 experts. One expert commented in favour of both sides, but saw more positive aspects after all when looking at it from different angles. Therefore the experts made more positive remarks, that is why this

comment is counted within the n=12 of experts in favour of this approach. This finding stresses the importance of contingency within a reward and punishment system, as the reward or punishment follows immediately in the form of a reduced or augmented price for the next use of the carsharing vehicle (Hautzinger et al., 2009, p. 287).

It was expected by the researcher that the experts are, with a large majority, in favour of incentive systems and would largely reject punishment systems. This expectation could not be confirmed, considering the research results. Incentive systems were seen in general as good and malus systems as not so desirable, but notably the latter not to a significant degree. Especially the finding that the factor for order by social control in a group has a strong impact was not expected, but emphasized that punishment systems can also work, when this element of social control is applied effectively.

8.3.2 Competition system to counteract risky driving

The subresearch question that enquired this issue was the question SRQ 2.2: Is a system of competition helpful to counteract egoistic and risky behaviour? The thought of having a gaming element of friendly competition within carsharing is new. The idea is to have a competition among the drivers, either on an individual or on the level of a group of people, in regard to who is the safest driver.

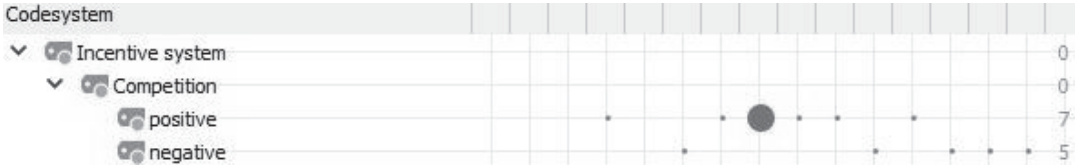


Figure 47: CMB result for the element of competition in carsharing

It has been found that n=6 were in favour of such a system while n=5 were against it. One expert elaborated enthusiastically about the positive side and saw two different perspectives, but his comments were reduced in the analysis to one positive vote. It shows a mixed view upon the introduction of a gaming element in

the form of competition. The greatest concerns were seen in an addition of complexity to the model of carsharing and to secure that the performance of the carsharing customer was handled in such a way that he could influence the selection of the members of the group and to arrange the group in such a way, that the members know and accept each other instead of having random groups. Random groups were seen as counterproductive, as the customer would fall victim to a performance of a group that he did not choose from the very beginning. A negative impression of the carsharing customer regarding such a gamification element could also have negative effects on the perception of the carsharing company, which would drive away potential customers. Literature also sees the gamification element critical, as the question cannot be clearly answered in what relationship the members of a group stand. The finding is, that groups which stand in competition to each other instead of working together cooperatively, have a lower level of performance (Rosenstiel, 1975, p. 243). If a competition element is to be used, literature favours to employ rather a group competition, giving the top teams a number of advantages, than a competition on an individual level (Düllo, 2011). The advantage of the group competition over the individual competition is seen in the building of common support to jointly reach a set goal and therefore also benefit from the element of social control (Sailer, 2016, p. 38).

It was expected by the researcher that gamification in the sense of competition would be equally accepted and thought to be positive by the experts. The finding showed though, that an element of competition was seen critical by the experts.

8.3.3 Implications for research question 2

The research question if there is an efficient system to avoid an opportunistic intent of a carsharing customer towards the provider and thus motor insurer mainly ex post of the contractual phase, is directed towards the examination of principal agent or agency problems. The findings of the subresearch questions 2.1 and 2.2 shed light into this as it was found:

- Reward is seen in general more effective than punishment.
- Individual reward is preferred over group reward.

- If a punishment system is to be implemented, then a group punishment system is preferred, due to the factor of social control.
- Reward does not have to be tied to carsharing products.
- Driving performance in carsharing should have an impact on the own car insurance.
- Driving performance in carsharing should have an impact on the pricing of kilometers and / or insurance costs for following carsharing trips.
- Status level (class) systems are accepted.
- Gamification in the sense of competition elements is seen critical.

In the following, the findings are considered in detail in regard to the specific agency problems of hidden characteristics, hidden intention, hidden action and hidden information:

(1) Hidden characteristics: As the focus of the first and second subresearch question (SRQ 1.1 and SRQ 1.2) lay on the ex ante contractual phase, the focus is here on the ex post phase which mainly bears the risk of adverse selection. To counteract this situation and avoid an opportunistic behaviour, the finding revealed that incentive or punishment systems can be implemented (Laffont et al., 2002, p. 267). By screening the principal can see the real performance of the agent and reward the good behaviour in order to encourage it or punish the bad behaviour. The system of reward and also punishment to a lesser degree touches the intrinsic motivation of the carsharing driver and helps prevent opportunistic behaviour (Picot et al., 2008, p. 49). As individual incentive systems were found superior in comparison to group incentive systems, a form of self-selection model seems thinkable. The carsharing customer can be given the choice, whether to stay or not in such a reward and punishment system (Ben-Ner et al., 1993, pp. 207-242). This element of self-selection would also give an indication of his risk profile.

(2) Hidden intention: After the closure of the contract the carsharer and consequently the motor insurer can find themselves in a hold-up situation with the carsharing customer, who did not reveal his true intention of what he wants to do with the vehicle during the use (Schreyögg, 2003, p. 2). He could want to transport garbage for example and leave the car constantly dirty and in a bad state. An

incentive system and punishment system is found to be an appropriate means to liberate the motor insurer from such a hold-up situation (Ewerhart, 1997, pp. 360-363).

(3) Hidden action: The main driver for the reduction of the use of discretionary leeway that the driver has for opportunistic behaviour is seen in a contract design that contains a harmonization of interests (Wolf, 2009, p. 146). It was found in the research, that the participation of the carsharing customer in the good or bad performance via an incentive or punishment system is suited to counteract the risk of the customer trying to exploit the situation on the expenses of the community of drivers. Thus the problem of moral hazard is diminished (Laffont et al., 2002, p. 287). It is incentive systems, next to monitoring and information systems that are recommended to be best suited to face the moral hazard problem (Picot et al., 2002, p. 92) that the customer registers with a bad intention rather to abuse than to use the carsharing vehicle properly. Furthermore the incentive and punishment system serves to reduce shirking, that is that the carsharing customer may hold back information (Alessi, 1987, p. 51 et seqq.). This is especially in a malus system with a group of relevance, as the member of the group must fear to face not only consequences from the motor insurer, but also from the whole group, which adds social pressure (Young, 1985, p. 832).

(4) Hidden information: In this context the main agency problem that could arise is the problem of moral hazard (Arnott et al., 1988, p. 383). Next to monitoring and information systems, the approach of incentives is found to be effective in the struggle to find measures against opportunistic behaviour, especially in the form, of moral hazard (Picot et al., 2002, p. 92). The problem of moral hazard is of high relevance for the insurance business, as it is very difficult to prove in case of a damage, if the driver fulfilled his duty of care completely (Krapp, M., 2000, p. 3). An incentive system represents an option to heal the moral hazard problem, by letting the driver participate in the good or bad performance of the driving. The general rule is therefore, the higher the participation is that the driver can have in a bonus or malus way, the higher is the motivation for the agent to consider the interests of the principal, the motor insurer (Eisenhardt, 1989, p. 60). Therefore the incentive system is suited to harmonize the interests of the principal and the agent and lower the conflict of interests (Alparslan, 2006, p. 32).

It has been found that incentive and malus systems are suited and accepted to counteract agency problems and opportunistic behaviour of carsharing customers, mainly in the ex post contractual phase. They should be applied on a more individual basis in the form of a bonus system and if a malus system is applied, it should be more directed towards a group rather than the individual, as benefits from the effect of social control of the group can then be collected. Status level (class) elements should also be included, while gamification elements, such as competitions, are found not to be effective.

8.4 ANALYSIS OF RESEARCH QUESTION 3: CUSTOMER SELECTION

The research question 3 was equally deduced from the NIE with the focus on the principal agent theory and also relates to the hypothesis formulated in subsection 4.2.5 under the principal agent theory. It can be regarded as a deepening of the research question 1 (PA RQ1). The researcher chose to examine the aspect of customer selection separately, as this process is of upmost importance for a motor insurer. It is of upmost importance, as it is much more difficult to terminate contracts from the side of the carsharer in contrast to not making them in the first place. Research question 3 (PA RQ3) is: "How can it be assured that the right customers for carsharing companies are selected, as only the customer has full knowledge of his driving performance?"

8.4.1 Level of detail of questionnaire for new carsharing customers

The subresearch question that enquired this issue was the question SRQ 3.1: Is a brief questionnaire sufficient in the selection phase of carsharing customers, or should it be more detailed? It has been found that the majority of the experts find that the process of customer selection must be very simple n=6, compared to n=4 who saw that simplicity cannot be afforded as it is too much loss of information at the beginning with too much of a risk to select the wrong customers. The greater majority though sees the right approach in a moderate simplicity n=9 taking into account to possibly still have the risk of selecting wrong customers, but presuming it to be under control then.

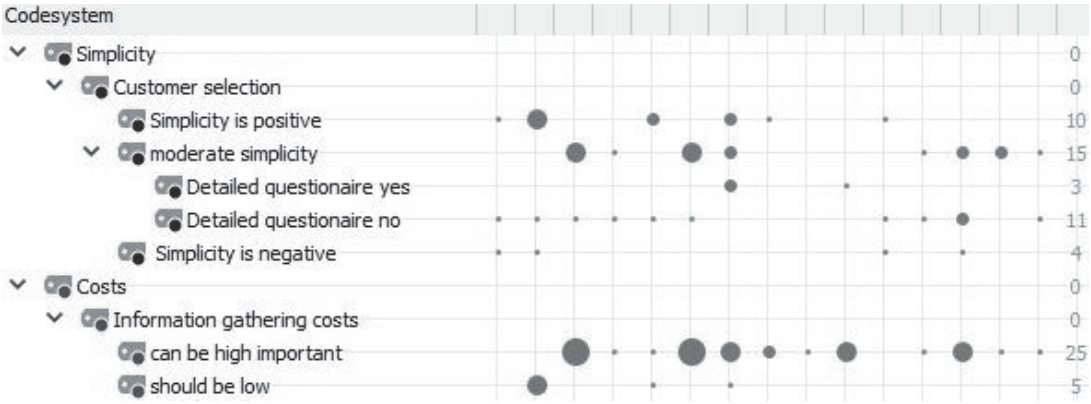


Figure 48: CMB result for simplicity and questionnaires in customer selection

Especially in this question a close review of the answers given by the experts in the interviews is necessary, as remarks could be discovered having validity for several points at the same time. Two expert comments must be neutralized as they remained indifferent by finding arguments for the three different categories at the same time and were not sure which system was the better one. One expert also saw arguments for all three categories, yet this expert was clearly more in favour of a strong form of simplicity. One more expert`s comment must be neutralized in the analysis, as that person judged complete simplicity equally important as moderate simplicity. Therefore 3 comments had to be neutralized, 1 was without an opinion on this issue, totalling 4 comments to be neutralized.

In a net consideration, the result is that with n=8 the preference for a moderate form of simplicity in customer selection prevails among the experts, compared to n=3 who believe the selection process should be kept very simple, while n=0 think that a form of simplicity would be negative. Considering the moderate simplicity, it is n=6 who do not believe that the questionnaires should be more detailed opposed to n=1 who believed that the questionnaires should be more detailed. One expert was sure that a system of moderate simplicity for the customer selection should be implemented, but was not sure in which form.

The need for information and thus the version of moderate simplicity is backed by the finding that n=11 experts are in favour of an information gathering about the clients and believe that costs for that need to be taken into account. Only n=1 opposes this thought. Two experts were without comment on that issue and 1 comment had to be neutralized, as it was indifferent between how important information gathering is, measured by the degree of cost acceptance for this activity.

Literature finds that questionnaires should not be constructed too long and too complex, as otherwise the willingness of the customer to give the answers decreases and thus the chance to win him as a new customer also (Noelle-Neumann et al., 1998, p. 120-128). Especially in Germany the desire for motor insurers to ask questions is high with in average 25.8 different tariff criteria, compared to 17 in Austria and 23.7 in Europe. Considering only the large insurers, they are the ones who would be primarily involved in the carsharing, this number goes up to even 28.9 tariff criteria that are demanded on average (Schmeiser et al., 2015, p. 56). If these questions were added to the questions of the carsharing company, the questionnaire would get long and complex. The finding in literature is that these questionnaires have the highest acceptance that are the least detailed ones, containing motivating and a most likely "yes"-question at the beginning and the more difficult or personal questions, which require a certain degree of trust, in the middle or at the end part of the questionnaire (Möhring, 2003, p. 121). In general the need for information gathering in the motor insurance is considered high, in order to execute a more precise risk assessment and consequently pricing (Schmalen, 1993, pp. 391-404).

It was expected that the experts would have a tendency towards a very simple form of customer selection, as the willingness of customers to give their data was assumed to be low by the researcher. The finding is though, that a moderate simplicity is considered to be necessary and the need for information and thus willingness to accept costs for this is considered of significant importance.

8.4.2 Mandatory driving test for new carsharing customers

The subresearch question that enquired this issue was the question SRQ 3.2: Should carsharing companies demand an extra driving test? The focus in this

examination lies on the question if a necessity for an increased form of information gathering about the customer is seen as necessary or not. The values about simplicity in general remain the same, as well as about information gathering costs.

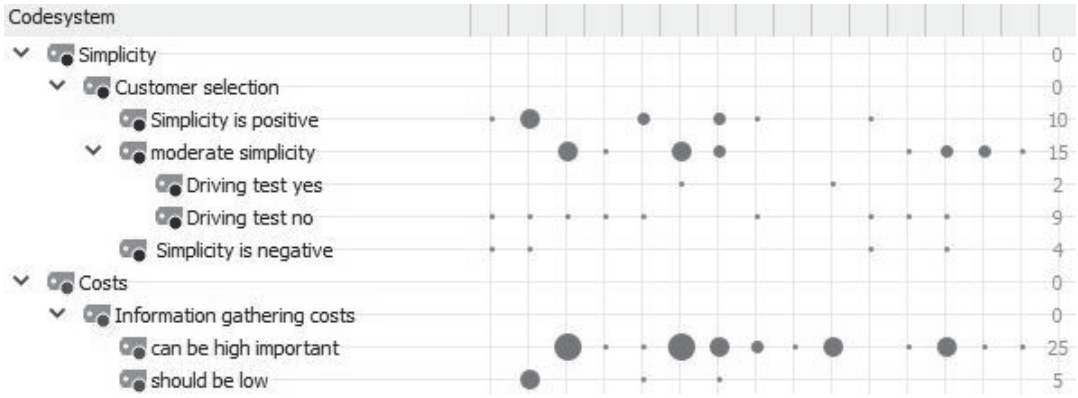


Figure 49: CMB result for simplicity and driving tests in customer selection

It has been found that as the need for a moderate simplicity in the process of customer selection was seen as sufficient by the experts. An increased form of risk covering in the process of customer selection was not seen as necessary. Positive about a need for a driving test were n=2 experts, while n=9 were negative about it. It was n=4 experts who did not have an opinion about that issue. Literature confirms this point of view, as easy processes are demanded in order to convince new customers to join a carsharing provider (Winkelmann, 2012, p. 203). The new carsharing customers understand why it is necessary to prove that they have a valid driver`s license, but to prove to have a certain driving skill would go too far for the customer in general (Sommer, et al., 2013, p. 508).

The expectation was that the willingness of carsharing customers would be very limited to provide data and consequently engage into a driving test. This expectation was confirmed by the findings of the expert interviews, as well as in the literature.

8.4.3 Implications for research question 3

The research question (PA RQ3) how it can be assured that the right customers for carsharing are selected and if the information should be expanded by more detailed questionnaires or even short driving tests is also directed towards the examination of principal agent theory or rather agency problems. It dives deeper into the problematics raised in research question 1 (PA RQ1) and focuses on the ex ante contractual part, when new customers should be taken on. The findings of the subresearch questions about the complexity of questionnaires and potential driving tests were:

- Customer selection should be conducted in the form of moderate simplicity, rather than complete simplicity due to a necessary limitation of the risk situation.
- Full complexity in the selection process was rejected.
- Information gathering is considered important and the willingness to take on costs for this process is given.
- Questionnaires should be used, but should be held as brief and simple as possible.
- Short driving tests as coverage to be sure about the driving skills of new carsharing customers are rejected.

In the following, the findings are considered in detail in regard to the specific agency problems of hidden characteristics, hidden intention, hidden action and hidden information:

(1) Hidden characteristics: With the help of a questionnaire, the ex post problem of having made an adverse selection can be solved already at the ex ante stage and thus reduce the status of asymmetric information between the principal (motor insurer) and the agent (carsharing customer). It can be regarded as a form of screening (Pleier, 2008, p. 107). The carrying out of a driving test would contribute to a large extent to the reduction of the danger of hidden characteristics, yet it was found not to be accepted by potential carsharing customers, as a means of risk protection to be used. A consideration if a driving test could be offered on a free will basis as an instrument for self-selection (Kiener, 1990, p. 151) could be

done. A driving test combined with further elements of signalling by the agent would clearly show that the agent has nothing to hide.

(2) Hidden intention: A deeper enquiry allows to identify misfits of a potential customer with the carsharing company and the motor insurer. Therefore the means of a questionnaire is suited in order to avoid a hold-up situation for the motor insurer, where he cannot get out of the contract easily (Maurer et al., 2010, p. 256). A hold-up situation in this context means that the motor insurer gets to insure a carsharing customer and cannot easily get rid of this person anymore.

(3) Hidden action: The problem that the principal cannot asses the actions, or the driving skill of the carsharing customer or agent properly (Saam, 2002, p. 132) could be faced with a control system in the form a short driving test. A questionnaire is found to be rather suited to counteract the problem of moral hazard (Alparslan, 2005, p. 34). Also the risk of shirking is reduced with the questionnaire as it can be proven afterwards if the customer has made false statements in the questionnaire and thus can be held responsible for this (Göbel, 2002, p. 102).

(4) Hidden information: In order to bridge the problem that the principal can observe the actions of the agent, i.e. the carsharing customer, but cannot evaluate the actions properly, the method of having an expert evaluate them ex ante in the form of a driving examination would be theoretically suited (Bitz et al., 2005, p. 137). The main agency problem that could arise from hidden information is moral hazard (Saam, 2002, p. 28). By the application of questionnaires, the principal can improve his level of information about the possible performance of the agent or exogenous disturbing influences and consequently reduce the asymmetric distribution of information between principal and agent (Alparslan, 2005, p. 34). From a theoretical standpoint the rule applies that the more information the motor insurer has, the better is it for his risk assessment. Yet it was demonstrated by the findings that the complexity of the questionnaires should be limited and yield to a higher customer acceptance.

8.5 ANALYSIS OF RESEARCH QUESTION 4: TRUST AND TRANSACTION COSTS

The research question 4 was deduced from the NIE with the focus on the transaction cost theory and relates to a hypothesis formulated in subsection 4.3.4 under the transaction cost theory. The findings of the following two subresearch questions (SRQ 4.1 and SRQ 4.2) bring understanding for the question, in how far trust is suited to counteract opportunistic behaviour and could be used in carsharing. After all transaction costs are only generated due to deficits in trust, which are incurred by a lack of a common moral concept and the asymmetric distribution of information (Welker, 1993, p. 59). The introduction of trust is a new approach for the considerations within the transaction cost theory, as well as for the business model of carsharing. Trust is not used so far in carsharing as of today. In the transaction cost theory trust has not been considered much, as the assumed behavioural pattern of an individual in the transaction cost theory, as part of the NIE, is assumed to be marked by (1) bounded rationality (Simon, 1976, pp. 39-41) and (2) opportunistic behaviour and (3) asymmetric information (Williamson, 1990a, p. 54).

In the process of analyzing the findings the researcher considered the postulation of Williamson (1985, p. 52 et seqq.) to regard the determinants of transaction costs, i.e. the characteristics of a transaction, which marks the transaction costs and the optimal form of the allocation of resources. These determinants are (1) asset specificity (indicating a hold-up problem), (2) uncertainty and (3) frequency of transactions (Williamson, 1985, p. 52 et seqq.).

A last criterion that needs to be considered when analyzing the findings is the underlying assumption that transaction costs occur ex ante (before closing a contract) and ex post (Matthes, 2007, p. 18). According to Williamson (1985, p. 20 et seqq.) the classification is as follows:

Ex ante transaction costs:

- Initiation costs: Information search costs
- Costs for agreements (negotiation)

Ex post transaction costs:

- Execution costs

- Control costs
- Adaptation costs

The discourse above represents the guidelines for the interpretation of the findings. The key task for the motor insurer, according to the principle of Williamson (1990b, p. 36), is to organize transactions in such a way that bounded rationality comes into play as little as possible and to be at the same time protected against opportunism.

Research question 4 (TAC RQ4) is: "Does the introduction of trust effectively counteract opportunistic behaviour, lead to a more responsible way of driving and to what extent should it be used ex ante and ex post?" This research question will be examined with the findings of the two subresearch questions SRQ 4.1 and SRQ 4.2.

8.5.1 Effects of trust ex ante in carsharing

The subresearch question that enquired the issue of the effects of using trust ex ante of the contractual phase is the subresearch question SRQ 4.1: Is trust ex ante in carsharing an appropriate means to lower transaction costs? It has been found that the majority of the experts see complete trust in a pre-contract closing phase as not suited.

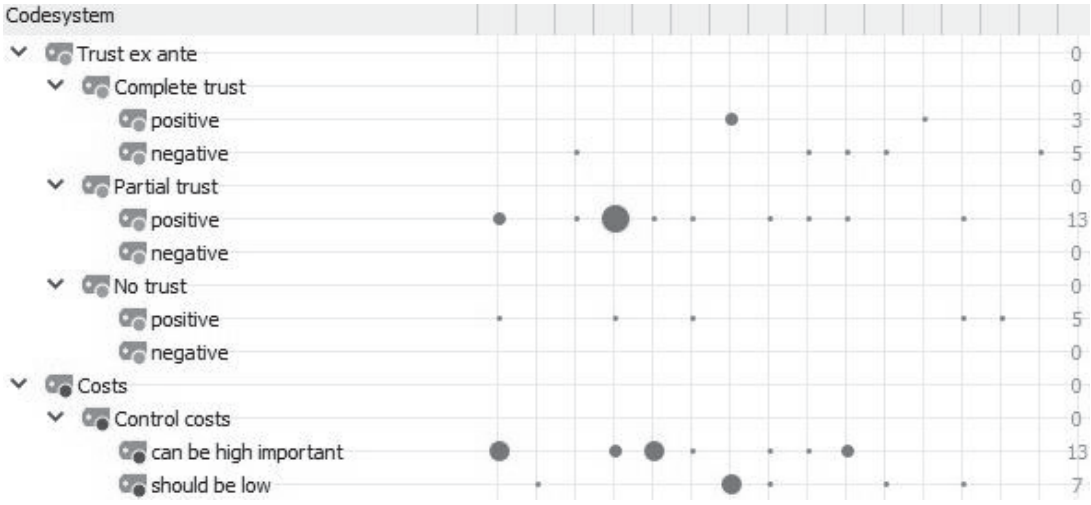


Figure 50: CMB result for trust ex ante and control costs

It is n=2 experts opposed to n=5, who see complete trust positive. On the other hand it is n=9 experts who see partial trust as an appropriate means for the ex ante phase, in contrast to n=0. For this aspect an adjustment has to be made though, as n=4 experts tend between no trust and partial trust. It is in total n=5 who believe that no trust towards carsharing customers should be executed in this phase. In a net consideration n=2 experts remained clearly indifferent between no trust and partial trust, which leaves n=2 experts with a tendency towards partial trust. After all n=2 comments of experts have to be neutralized due to their indifference, which leaves n=7 experts for partial trust and n=1 expert for no trust at all in an ex ante phase. The result for information gathering costs has been displayed earlier, explaining a willingness to accept costs for information gathering and considering this activity as important. Regarding the willingness to pay for measures that can be used in order to reduce the risk by implementing control systems, n=7 experts regard this as important, while n=5 believe that a low cost approach would be sufficient. The tendency of the experts to accept rather higher control costs to secure the risk situation is manifested by the finding that also the majority of comments and elaborations in regard to the need for a larger extent of

control mechanisms with 13 comments was dominant opposed to 7 comments on lower control costs.

Literature goes along with the attitude to use trust only partially in an ex ante phase. It was found that if partners were employed in symmetrical investments, the relationship between asset investment and trust was positively influenced, while it was negatively influenced if the partners were involved in asymmetrical investments (Kwon et al., 2012, p. 112). In a thorough comparison of literature and empirical research in regard to the effects of trust, Gilbert (2010, p. 182) sums up that he found a positive correlation between trust and an increase of economic performance. The criticism is though, that an empirical measurement on the effect of trust was found to be difficult, as besides trust always other variables influence the perception, attitude and behaviour of the actors and the economic result (Gilbert, 2010, p. 184). Trust is in literature considered to function as a secondary code in social subsystems and is never alone regarded to be responsible for economic cause-effect-relations. Depending on the specific context, other means of coordination, i.e. formal contracts for example, can have stronger influences (Malhotra et al., 2002, pp. 534-559).

The researcher expected that trust would not be used at all in an ex ante phase. The finding shows that trust is recommended to be used on a partial basis in the phase before the contractual closure.

8.5.2 Effects of trust ex post in carsharing

The subresearch question that enquired the issue of the effects of using trust ex post of the contractual phase is the subresearch question SRQ 4.2: Is trust ex post in carsharing an appropriate means to lower transaction costs? It has been found that similar to the situation of the use of trust ex ante, the majority of the experts favour a partial use of trust in the ex post contractual situation.

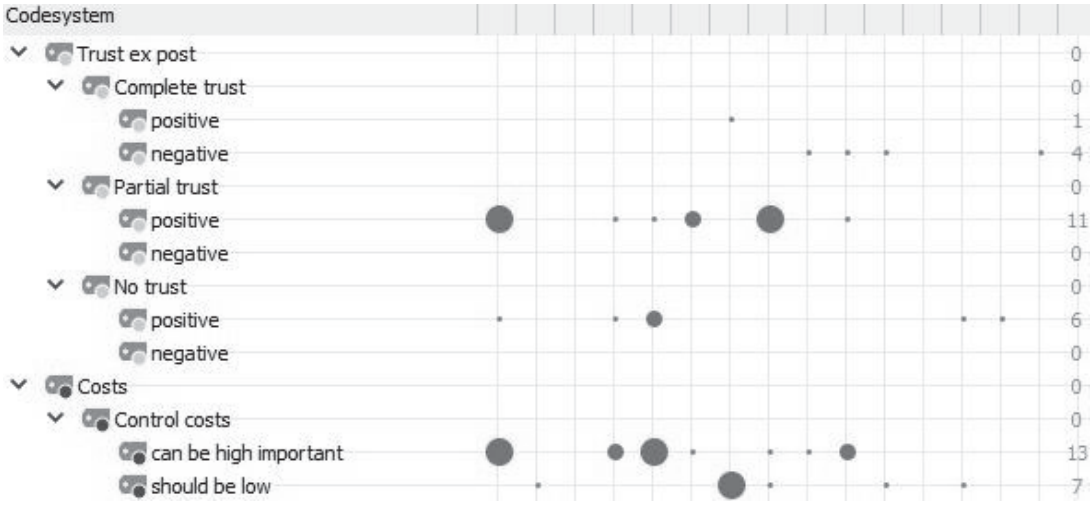


Figure 51: CMB result for trust ex post and control costs

It showed that n=1 expert was for the use of complete trust opposed to n=4 who are generally against the use of complete trust. The expert who opposes complete trust and equally favours partial trust is considered to be fully in the opposition of complete trust, but equally in the lot of supporters for the use of partial trust. This is a non-contradictory finding and therefore that result does not have to be neutralized. In the latter segment of partial trust, it has been found that n=6 experts support the use of partial trust and even saw it with 11 comments from different angles as favourable. One opinion of the n=6 experts has to be deducted though, as this specific expert remained indifferent between the use of partial trust and no trust at all. Another vote has to be shifted towards no trust at all, because the expert saw more favourable points in the use of no trust at all, than in the use of partial trust. That diminishes the total count or net consideration for experts in favour of partial trust to n=4. There was n=0 experts who opposed this thought. The seemingly contradictory formulation of no trust and the attribute positive means, that the experts are in favour of using no trust at all. It showed that n=4 experts were in favour of using no trust at all in the ex post phase, yet one opinion has to be counted rather in the lot of experts being in favour of a partial use of trust as this experts saw more arguments for that point. Therefore in a net consideration it is n=3 experts who are in favour of no trust and n=0 who oppose no trust.

To sum up, the finding in regard to a net consideration of the opinions of the experts is that n=1 expert is for complete trust and n=4 oppose it, while n=4 are in favour of partial trust and n=0 oppose it. Furthermore, n=3 are in favour of no trust and n=0 are against it. This concludes the finding that the experts mainly reject the use of complete trust and are slightly in favour of using partial trust than no trust, yet it is a very close result. Nevertheless the experts also see in the ex post phase a clear need to gather information and are with n=11 opposed to n=1 in favour of this. One opinion had to be neutralized due to indifference in the aspect of the willingness to accept costs for the information gathering.

The finding in literature is that trust and transaction costs are two phenomena which are currently under discussion and are repeatedly brought into connection, yet their interdependency has not yet been fully empirically validated (Zaheer, et al., 1998, pp. 141-159). Trust is seen to have a positive and thus transaction cost reducing effect in the phase of negotiation and it reduces conflicts (Shrum et al., 2001, p. 681; Zaheer et al., 1998, p. 141). Following Dyer and Chu (2003, p. 57), the element of trust is most effective in an ex post execution phase to lower transaction costs. Due to trust that is built, the principal can limit the implementation of costly monitoring systems. An evaluation of the present research on trust reveals that the majority of reports point out the positive effects that trust can have. Negative sides were mostly not mentioned (McEvily et al., 2003, p. 100; Zaheer et al., 1998, p. 156). Yet by the exploitation of trust, especially in the ex post phase, negative consequences for the motor insurer can arise (Langfred, 2004, p. 385). Gargiulo and Ertug (2006, p. 175) postulate that there should be an optimum of trust that is to be used to lower ex post transaction costs and they call a disproportionately high degree of trust excessive. Beyond the optimal point, excessive trust leads to specific disadvantages, which negate the mentioned advantages. Literature research shows, that these negative effects, caused by excessive or complete trust, in combination with lacking control- or monitoring mechanisms, can even encourage opportunistic behaviour on the side of the agent or carsharing customer (Lewicki et al., 1998, p. 438). Shapiro (1987, p. 623) concludes that obviously for the development of positive effects for trust as well as the limitation of potential risks for the reduction of transaction costs in an

ex post phase, a balanced level of distrust is required. Therefore literature is more on the side to use partial trust in an ex post phase.

The researcher expected that trust would not be used at all in an ex post phase. The finding shows that trust is recommended to be used on a partial basis in the ex post phase, after the contractual closure. This recommendation is predominant in literature though, as the experts only show a minor preference of partial trust over using no trust at all.

8.5.3 Implications for research question 4

The research question 4 (TAC RQ4) asks if trust in an ex ante and / or ex post phase can counteract opportunistic behaviour and contribute to a reduction of transaction costs. This issue was analyzed by two subresearch questions (SRQ 4.1 and SRQ 4.2), which focused on the respective phase and brought the following findings:

- Ex ante phase: Partial trust should be implemented.
- Ex post phase: The experts show a minor tendency towards using partial trust over no trust at all. In this almost undecided point of view of the experts between using partial trust and no trust, literature sees the use of partial trust as favourable. The tendency for full trust can be neglected.
- Control is considered to be important in an ex ante and ex post phase and the willingness to pay for it is there.

The analysis of the implications of the research question TAC RQ4 is carried out along the determinants of the transaction cost theory of specificity, uncertainty and frequency, subdivided into an ex ante and an ex post consideration.

Ex ante consideration:

In an ex ante consideration trust can have an impact on two different forms of transaction costs. These are the initiation costs, like information search costs, as well as costs for agreements or negotiation (Picot, 1982, p. 270). In how far behavioural leeway can be used depends on the interdependent determinants of the transaction costs.

(1) Asset specificity (indicating a hold-up problem): In a cooperation with a carsharer the motor insurer has to invest into information gathering, as it is of vital importance for the insurer to know what risk is taken on. Considering the previous findings in this evaluation, the willingness to invest into this part is given. The strategic implication of asset specificity depends on the question if any partner has to make investments in the pre-contractual phase with the carsharing customer and to what extent (Jost, 2001b, p. 11). In the ex ante phase the investments that the motor insurer needs to make are not that extensive. He has to ensure that the information that he receives about the potential customer is integrated in the questionnaire that has to be filled out by the applicant in order to be able to assess the risks. He will need to rely much more on the ex post phase though, as customers are a heterogeneous group that is difficult to assess with a small number of selected questions. The insurer intends to put more questions into the questionnaire (Schmeiser, et al., 2015, p. 56), but is held back by the findings about the extensiveness of questionnaires or other more detailed preconditional measures, such as driving tests. Partial trust can be implemented and thus the inclusion of a minimum of risk assessment questions in the questionnaire in order to protect the motor insurer from opportunistic behaviour of the carsharing customer is accepted (Williamson, 1990b, p. 36). Trust reduces the information gathering costs significantly and simultaneously has a positive impact on the reduction of negotiation costs (Wagner, 2004, p. 81) with the carsharing customer, as no extensive information gathering has to be carried out by the motor insurer. Due to the small amount of information gathering or negotiation costs for the motor insurer, the risk of getting into a hold-up situation where he would get back only a fraction of his investment is therefore low.

(2) Uncertainty: In the pre-contractual ex ante phase, the motor insurer is in a situation of uncertainty if the carsharing customer, that is to be taken on, will produce a lot of damages or not. The insurer has incomplete information about the situational framework and thus parametric uncertainty as well as the tendency of the transaction partner for opportunistic behaviour persists (Weichselbaumer, 1998, p. 67). This situation of uncertainty is a direct consequence of the assumption for behaviour of bounded rationality (Leibbrand, 1996, p. 206). Partial trust can be regarded a suited control mechanism in order to achieve an optimal transaction

cost allocation, as it offers the opportunity to gather information in a cost efficient way and keep negotiation costs down by equally reducing the uncertainty. It is important for the motor insurer to reduce this uncertainty as far as possible and still be accepted by the carsharing customer. The higher the uncertainty of a transaction is ex ante, the higher is the need for adaptations ex post (Ebers et al., 2006, p. 284).

(3) Frequency of transactions: The frequency of transactions equally influences the level of transaction costs. With an increase in the frequency of the same or similar transactions, i.e. carsharing rental operations per customer, economies of scale can be realized (Joskow, 1985, p. 39). In an ex ante phase it is difficult to establish a process in carsharing that is repetitive for the motor insurer. It is rather about how to engage into the contractual relation, as the process of renting or using the vehicle will be regarded in the ex post consideration. Problems in the execution phase can be anticipated ex ante by the introduction of a general clause in the contracts that covers the most common damages that can occur (Ebers et al., 1999; Williamson, 1990b). The fundamental significance of the term trust is reflected in the trustworthiness of the interacting partners. A rationally acting individual would gather in an ex ante phase all the information possible from the contractual partner, who would provide this in an equally perfect quality. As bounded rationality is assumed, the approach, to get a higher frequency of customers is to work with partial trust to counteract opportunistic behaviour. The attempt to gather all the possible information would be negative as it would rather hamper than promote the occurrence of a mutual establishment of trust (Preisendörfer, 1995, p. 268).

Ex post consideration:

In an ex post consideration trust can have an impact on execution, control and adaptation costs.

(1) Asset specificity (indicating a hold-up problem): In order to be able to cooperate with the carsharer, the motor insurer has to invest and set up a technical infrastructure to exchange data for claims handling and possibly a service hotline where exclusively carsharing customers can call in case of an accident. Such a helpline needs to be separate from the regular service hotline in order to provide

customized help for this special group of clients. In the asset specificity lies the biggest lever of the determinants of the transaction costs ex post (Jost, 2001b, p. 11). This necessary investment needs to be secured, as otherwise a hold-up situation could arise for the motor insurer (Lindstädt et al., 2004, p. 59). If the cooperation is stopped, the motor insurer has invested into the setup and maintenance of an information, monitoring and technical infrastructure system with the carsharing provider that would make him loose a significant amount of money. This lock-in effect would make it very difficult for the motor insurer to change the partner of a carsharing cooperation (Williamson, 1990b, pp. 60-61). As partial trust means an ease in the amount of information that needs to be exchanged and an ease in the execution of the carsharing cooperation, as claims handling can be facilitated in the processes, it also has a positive effect on the adaptation costs (Matthes, 2007, pp. 187-188). The systems that are to be set up and implemented can be set at a lower degree of complexity, simplifying processes with the effect that partial trust shows advantages for both sides, the carsharing provider and the customer. After all the market participants are assumed to have a bounded rationality, giving leeway for possible abuse (Suematsu, 2014, p. 193). Partial trust though is found to be suited to operate effectively against opportunistic behaviour from either the carsharing customer or the carsharing provider towards the motor insurer, because trust builds up a moral obligation for the participants to act according to the contractual agreements (Noorderhaven, 1996, pp. 107-108). Partial trust acts as a form of social glue that keeps the contractual partners closer together, gives them a chance to build up a reputation that acts as a safeguarding measure and helps to reduce execution, control and adaptation costs, but still allowing a minimum information gathering processes for a risk assessment for the insurer. (Macy et al., 2002, p. 128).

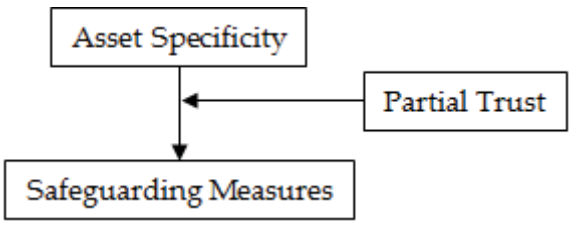


Figure 52: Trust as social glue to lower transaction costs, source: Macy et al., 2002, p. 128

(2) Uncertainty: The motor insurer has incomplete information about the carsharing partners and due to the assumption of bounded rationality cannot be completely certain that the customers do not show an opportunistic behaviour. The parametric uncertainty about the real pattern of behaviour remains fragmented for the motor insurer, as the group of carsharing customers is very heterogeneous (Weichselbaumer, 1998; Jost, 2001b). This is why it was found that the motor insurer has to implement some forms of control mechanisms (Scherm et al., 2007, p. 51) to incentivize the carsharing customers to comply with the rules and drive carefully in the ex post contractual phase. Partial trust helps to reduce the uncertainty and thus transaction costs. It has a socio-cultural effect, as it creates an aspect of partnership, reputation or cultural norm, which limits the danger of carsharing customers behaving in an opportunistic way (Picot, 1999, p. 121). This effect of rising transaction costs in an ex post situation due to uncertainty is boosted by the fact that the motor insurer needs to make investments in advance and it is assumed that the contractual partners have with this given situation a stronger urge to specify the contractual situation or rather renegotiate (Voigt, 2002, p. 23). Therefore partial trust is helping to reduce transaction costs.

(3) Frequency of transactions: With every increase in the frequency of transactions of the same or similar transactions, the degression of fixed costs, learning effects and economies of scale show their cost reducing effect (Picot, 1982, p. 272). The finding confirms that partial trust simplifies the process for renting vehicles and thus contributes to an increase in the number of vehicles rented. This increased frequency of transactions, or number of cars rented per day, reduces execution, control and adaption costs. A multiple use of carsharing by one customer has the effect, that the erected infrastructure for execution and monitoring is used and the carsharing customer builds up trust towards the carsharing company, while the motor insurer can show his trustworthiness in the handling of claims cases so that among all interacting parties trust is strengthened and execution and monitoring mechanisms can be lowered, incurring less transaction costs as a result. Additionally it is of specific advantage if the cooperation between the motor insurer and the carsharing company is set up and intended to last long-term. Long-term contractual relations substantiate the

effectiveness of partial trust and have again a positive implication on the mentioned execution, control and adaptation costs (Rupprecht-Däullary, 1994, p. 51).

8.6 ANALYSIS OF RESEARCH QUESTION 5: COMPLEXITY OF CONTRACTS

The research question 5 (PR RQ5) was deduced from the NIE with the focus on the property rights theory and relates to the hypothesis formulated in subsection 4.4.5 under the property rights theory. The property rights theory defines the type and distribution of rights a person has over the use of a resource, while the transaction cost theory focuses on the costs that result from the definition, transfer and enforcement of the property rights (Richter, 1990, pp. 571-591). Here again the interdependency of the chosen theories becomes obvious. Therefore the research question (PR RQ5) focuses onto the main enquiries of the property rights theory, which is in how far the different forms and distributions of property rights have an impact on the acting of the economically involved parties and the factor allocation, as well as the emergence of property rights, their distribution and adaptation (Ebers et al., 1995, p. 186). Therefore the parties involved will, in a given framework, choose forms for the use of resources and establish structures for the property rights that maximize their net-benefit. The specific form of the property rights influences the resulting transaction costs, which express the efficiency of the chosen solution and determines the design of the structure of the property rights.

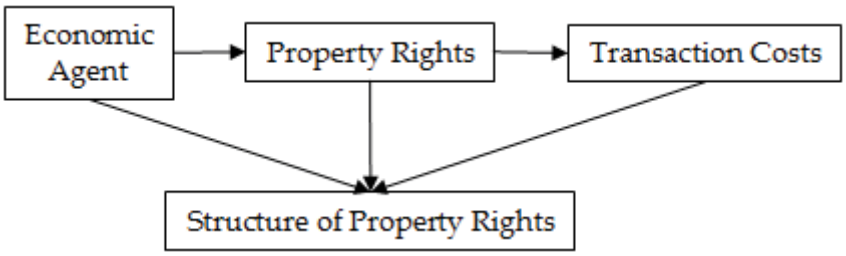


Figure 53: Influencing factors for the structure of property rights, author´s graph

The findings of the following two subresearch questions (SRQ 5.1 and SRQ 5.2) bring understanding for the research question 5 (PR RQ5), which is: "To what level should contractual agreements be detailed and is an element of ownership a suited self-regulating means to counteract opportunistic behaviour?"

8.6.1 Level of complexity of contracts in carsharing

The subresearch question that enquired this issue is the question SRQ 5.1: How complex should contracts between carsharing companies and their customers be? The complexity of contracts decides about how much room for own decisions is given to the carsharing company and also the carsharing customer and thus how high the transaction costs get that are generated. A very clear and detailed contractual agreement gives fewer options for room for manoeuvre, which could be used opportunistically (Kressin, 2003, p. 40).

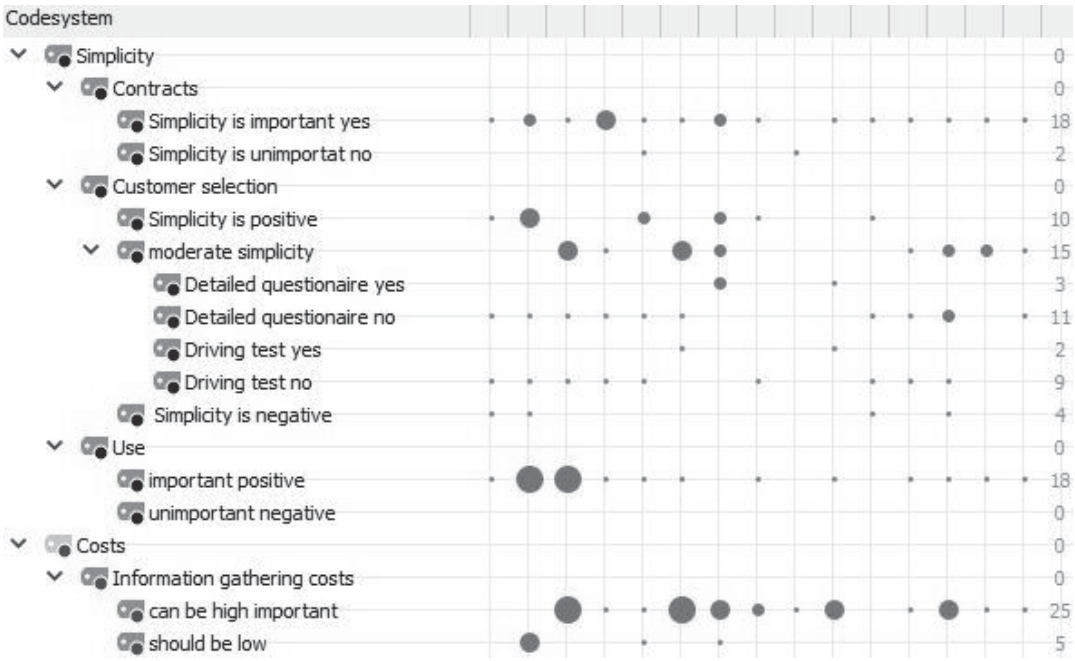


Figure 54: CMB result for simplicity in carsharing

It has been found that the majority of experts n=14 is of the opinion that contracts should be kept simple, while n=1 expert favours a complexity in contracts to have a more secured risk situation for the motor insurer. One comment has to be neutralized though, as this specific expert remained indifferent between complex or simple contracts. In a net consideration this equals to n=13 experts who are for simple contracts versus n=1 expert in favour of elaborated contracts. The findings of the simplicity in customer selection has been described in the previous subsection, therefore it is not further commented. In direct connection with the simplicity of contracts stands the simplicity for the use of the carsharing vehicles. Simplicity in use describes the efforts the carsharing customer has to make in order to be able to apply for being a carsharing customer and getting the permission to take part in the pool of carsharing customers. No expert spoke out against simplicity in the use of a carsharing vehicle. The finding was that n=12 experts versus n=0 spoke out in favour of simplicity in the use. Complex processes provide more protection for the motor insurer, but less commodity for the carsharing customer. The importance in the opinion of the experts of information gathering and the willingness to accept connected costs with it was also previously explained, therefore it is also not further commented.

Literature regards the trade-off between completeness and complexity in contracts versus simplicity in contracts as a heterogeneous concept. The advantage of complete contracts lies in the full coverage and regulation of all specifications of obligations, promises and responsibilities of the individuals involved (Hendrikse, 2011, p. 16). A meanwhile extensive amount of literature concludes that simple incomplete contracts lead under certain preconditions to an acceptable solution (Erlei at al., 1999; Erlei 1998, Schweizer 1999). Carsharing is seen not as a product, but a bundle of rights (Alchian et al., 1973, pp. 16-27) that is being traded between the motor insurer, the carsharing customer and the carsharer. The contract with the carsharing customer needs to cover the right of use (usus), while the contract between the motor insurer and the carsharing company needs to also include the regulation of the rights of change of modification on the vehicle, for example when technical systems are installed, or the vehicle has to be repaired in a certain way (abusus), as well as the regulation over rights of benefits, be it positive or negative, that result from the good or carsharing vehicle. The above described finding in the

trade-off reflects the customer`s desire to have a short and easy contract over having to read many legal clauses, which is especially for the end customer a burden (Dutta et al., 2010, p. 100). Yet it stands in conflict with the need of the motor insurer to secure himself from opportunistic behaviour that could endanger his business model. An increased complexity in contracts also increases the resulting transaction costs, as the negotiation time increases (Behrens, 2006, p. 109).

The researcher expected a demand for a complexity of contracts, especially driven by the motivation of the motor insurer for risk protection. Yet the findings of the expert interviews and literature show that there is a demand for low complexity to make the use of carsharing accepted by the end customer. When it comes to taking on new carsharing customers though, the simplicity of contracts is put into a more limited perspective. At that point the necessity for risk protection becomes more dominant and steers contracting towards a moderate form of simplicity, that requires investments for data gathering and masters the trade-off between customer convenience and the motor insurer`s interest of protecting himself from the risks that the assumed bounded rationality and potentially opportunistic behaviour of carsharing customers bear.

8.6.2 Common property and double prisoner's dilemma

The subresearch question that enquired this issue is the question SRQ 5.2: Does a concept of common property help to overcome a double prisoner's dilemma in carsharing? In the field of carsharing a special, but for the motor insurer decisive situation occurs that needs to be considered, as the carsharing customer finds himself in the situation of a double prisoner`s dilemma. If that is not solved or considered by the motor insurer, the situation would encourage opportunistic behaviour on the side of the carsharing customer, resulting in an augmented claims ratio for the motor insurer. According to Erlai et al. (1999, p. 307) the double prisoner`s dilemma means that:

(1) For the collective or group of carsharing customers it is more beneficial if all persons respect the given distribution of property rights, while for the individual it is more advantageous not to respect the given distribution of property rights and make the collective or group pay for his or her damages.

(2) For the collective or group of carsharing customers it is more beneficial to punish the individuals who broke the rules or created damage, in order to enforce the given distribution of property rights, while it is more advantageous for the individual not to participate in the costs of punishment or enforcement of consequences.

The question for the motor insurer that arises in this context is how he can shield himself from harm, given the assumption of bounded rationality and possible opportunistic behaviour of the individual carsharing customer. A key finding of Demsetz (1967, pp. 351-359) suggests that the community (i.e. the customers of a carsharing company) can expect an increase of their welfare, if the negative effects from the double prisoner`s dielmma are internalized by a change of the distribution of property rights, meaning a change in the ownership structure.

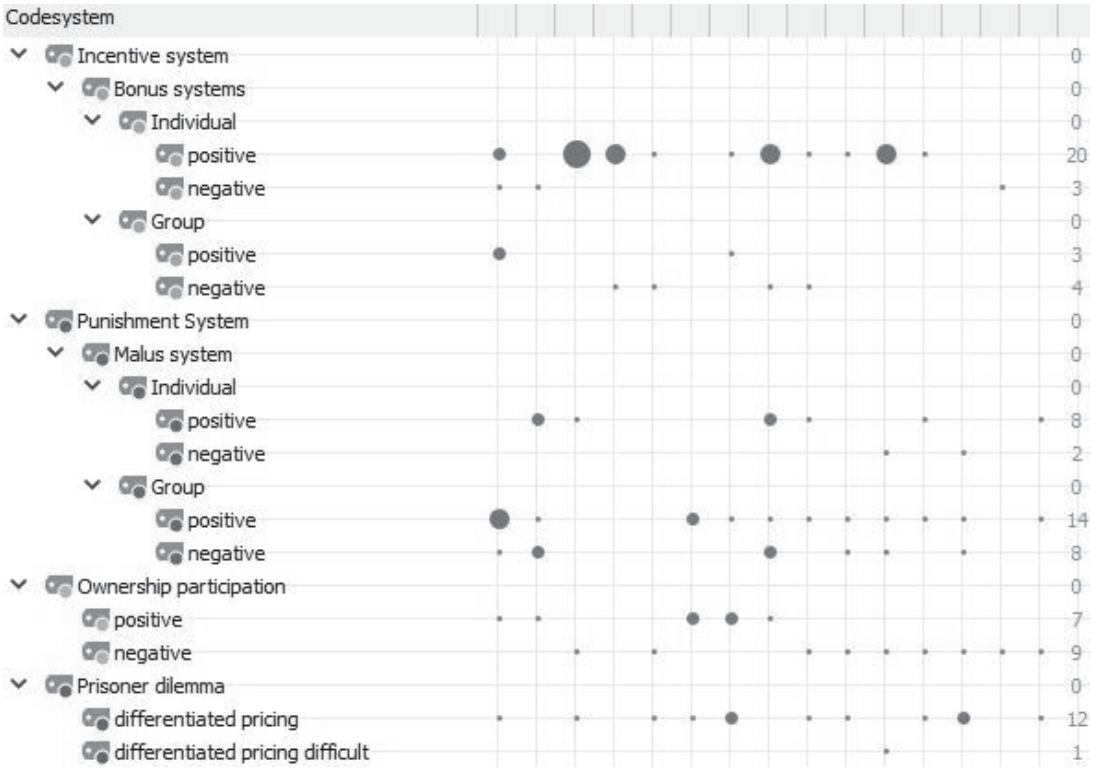


Figure 55: CMB result for ownership participation

It has been found that n=5 experts see an ownership participation of carsharing customers in the carsharing company as positive, while n=9 oppose this thought. In order to counteract opportunistic behaviour n=10 experts see a change in the pricing structure for carsharing as a suited means in order not to be exploited by the customers, compared to n=1 expert, who does not share this point of view. Regarding the already commented results of the incentive systems, the finding is that a participation in the negative effects should be implemented on a group level, meaning an increase of prices for everyone if the loss situation on the side of the motor insurer calls for action. On the other hand, incentives should rather have effects on the individual and not the group, as it can be seen in the results, that positive driving performance can be promoted and a double prisoner`s effect, which cushions individual misbehaviour by the community, is reduced. The expert interviews showed though, that ownership participations are considered to be too complex in carsharing and are not expected to be accepted by the carsharing customers. If a measure is seen to be effective, then it is to punish the group, so that the individual is not incentivized to have a negative effect on the profitability of the group and the group is incentivized to make the individual participate in the punishment measures, such as price increases that the individual cannot get out of.

In literature Demsetz (1967, p. 347) relativizes the thought that private property is the ubiquitous answer to possible institutional responses in regard to growing external costs. Krier and Montgomery (Krier et al., 1977, p. 86) postulate that private property cannot be the only response to rule out opportunistic behaviour of the carsharing customer. Changes in the existing structures of contracts would be connected with investments in terms of time and possibly money, therefore it has to be decided under the consideration of the benefits of keeping the existing property rights structure versus the expected transaction costs that incur for a change and along with a change for the existing property rights distribution the expected additional benefit (Ridder-Aab, 1980, p. 61).

The researcher expected that for the solution of the double prisoner's dilemma strict and elaborated contractual regulations would be demanded, which could include a regulation of a participation within the carsharing company. The findings showed though that a participation is not a desired element, due to an

increased complexity and the thereof resulting increased transaction costs, as well as a low customer acceptance, which could endanger the whole business model of carsharing for the motor insurer.

8.6.3 Implications for research question 5

The research question 5 asks if complex contracts or elements of private property are suited to counteract the risks that lie in the assumed bounded rationality and opportunistic behaviour of individuals. The following findings can be summarized:

- Contracts should be held simple and short.
- The use of carsharing vehicles should be simple with easy processes.
- Moderate simplicity should be applied when it comes to selecting new carsharing customers.
- Information gathering is important and costs connected with the gathering process need to be accepted.
- Private participation or ownership of carsharing customers in the carsharing companies is not considered to be beneficial for both parties and therefore regarded not to be advantageous for neither the motor insurer nor the carsharing customer.
- An increase in prices for carsharing is considered more effective than a private property approach.
- For the solution of a double prisoner`s dilemma the punishment should be directed towards the group, while a reward system should be directed towards the individual.

Contracts are regarded not to be able to contain all possible eventualities and are therefore always considered to be incomplete. Complete contracts could only be made in a world without transaction costs (Hart, 1991, p. 141). Overall the property rights and the transaction cost approach correlate to a high degree, as the contractual framework is decisive for the resulting transaction costs (Kräkel, 2007, p. 59). It was shown that a trade-off must be found by the motor insurer in order to

reduce the complexity of contracts on the one hand and find a balance for his need to secure himself against possibly unnecessary claims on the other hand. If so achieved, this trade-off results in a reduction of transaction costs (Barzel, 1997, p. 140). Simplicity in the design of contracts is a vital element for the acceptance of the whole concept for the carsharing customer and needs to be considered by the motor insurer. Equally the motor insurer needs to set risk limits in order not to engage into a long-term contractual binding situation with the carsharing company that could generate a high loss for the motor insurance company. A redistribution of property rights in terms of an ownership participation of carsharing customers is not suited to internalize the externality of the risk of opportunistic behaviour. The point where the marginal benefits exceed the necessary marginal transaction costs is decisive if such a model should be implemented (Demsetz, 1964, p. 11).

8.7 CONCLUSION

It has been found, that all the experts agree on the assessment that carsharing is a growing business field, which is more and more accepted in the population of Germany and used by individuals, especially in cities and by the younger generation, thus enforcing an effect of growth. Looking at the question if and in how far the motor insurers should engage in this field the opinion of the experts is very clear. When asked if motor insurers should engage in this field without limits, then this includes also the thought to possibly form their own carsharing company and offer this service on the market as an adaptation to the new challenges of digitalization and the need for changes in business models for motor insurers in order to stay ahead of the competition. Engagement with limits on the other hand describes a form of commitment that does not include the full range of services, but the approach to insure carsharing vehicles as a service provider to deliver coverage and claims handling. This is done with limitations to the extent of coverage and measures in the ex ante and ex post phase to exclude unnecessary risk taking. Finally, no engagement at all means to stay out of the field of ensuring carsharing vehicles entirely. An overview over the general opinion of the experts is provided in the following figure 56.

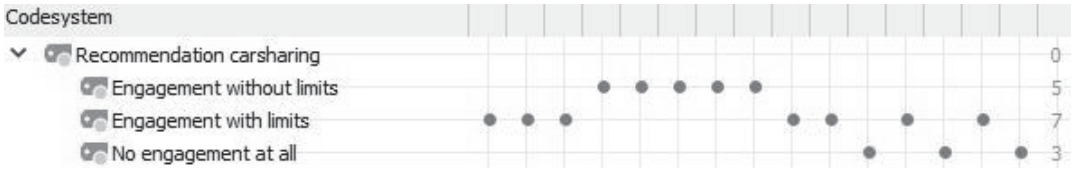


Figure 56: CMB result for recommendations for carsharing

It has been found that a significant number of experts is with either no restrictions or certain limitations in favour of carsharing and believes that the motor insurers should get involved in this business field. It is n=12 of the experts who are in favour of that, while n=5 experts believe that there should be an engagement without limits and n=7 believe that there should be an involvement of motor insurers, but with restrictions to the risk taking. It is n=3 experts who have a critical view on the carsharing perspectives in regard to motor insurers and believe that the motor insurers should stay out of this field. The main concerns that were voiced in this respect was the fact that the cars are used by sporadic users who are under time pressure to pay as little as possible for the renting of that car and tend to be negligent with it, as it is not their own car. Measures against that deriving from the NIE were found to be ineffective, mainly because it was thought to be a very bothersome and laborious process to report a claim, combined with the obligation of the carsharing company to clearly prove that the damage was produced by this one specific carsharing user.

The data gathering and monitoring process was not seen as remarkably problematic, yet a possible exchange of data to the motor insurer was seen critical as it is not exactly clear for which advantages or disadvantages for the carsharing user the motor insurer could use this data for. Incentive systems to counteract opportunistic behaviour were found to be effective, especially in the form of a bonus system. An incentive does not have to be tied to carsharing and status level systems should also be introduced, while gaming elements, such as a competition, were found not to be widely accepted by customers. If a malus system was to be used it is considered to be best to use it for a group, rather than the individual in order to benefit from the effect of social control. Simplicity was also considered to

be of high importance in the selection process for customers, as well as for the design of the contracts. Yet limitations for the simplicity are considered to be necessary. Trust ex ante and ex post is considered to be a suited and good element to lower the overall transaction costs, yet it should only be implemented ex ante and ex post in a limited form and not as complete trust without any monitoring systems accompanying it. Ownership on the other hand is found to be ineffective to work against opportunistic behaviour. It was considered instead to be more effective to work with differentiated pricing for carsharing, depending on the individual performance of the carsharing customer.

9. CONCLUSION AND RECOMMENDATIONS FOR THE MOTOR INSURERS IN REGARD TO CARSHARING

The subsection 9 summarizes the results and findings that have been gathered and analyzed in subsection 8 by literature review, own experience and expectations, as well as the findings of the expert interviews. On the basis of these results, conclusions are drawn in order to give recommendations for the motor insurance in regard to how to face the challenges of socio-demographic and technical changes with reference to the NIE by the example of carsharing. This subsection contains the testing of the hypotheses as the last step towards the, in the research methodology outlined, process of reaching conclusions. With these findings, the in subsection 1.3 defined hypotheses are tested with reference to the research questions in order to generate knowledge for answering the main research question. Conclusions are drawn based on the findings and testing of the hypotheses. Recommendations are deduced thereof. Furthermore the limitations of this study are outlined, as well as the possibilities for further research.

9.1 IMPLICATIONS OF MAIN FINDINGS FOR MOTOR INSURERS IN CARSHARING

The carsharing market has grown very dynamically in the last years. Some see in this the beginning of a trend towards a sharing economy, with a new and completely changed motor vehicle ownership structure and ownership culture at its end. Others see in this development only a new diversity for mobility offers, which does not make a difference and that the carsharing market would remain a niche market. The challenges for the motor insurers are dramatic though, as the socio-demographic changes have a fundamental impact on the user structure and habits for motor vehicles, while digitalization and along with it the technical changes are occurring at an ever faster speed. One expected consequence is the expectation towards new mobility concepts that has grown substantially in the last years, not at least because of still unresolved traffic problems, mostly in cities. An increased attention is therefore directed towards possible solutions, which are

being discussed in connection with the shared economy. In the center of this development is the carsharing, especially in the form of free-floating models. Furthermore, it is also the shift in the use of mobile devices and more internet platforms that changes the behaviour of people fundamentally. Moreover, it serves ecological aspects if carsharing vehicles are used. It is an approach to solve the problem of ever more congested traffic in cities and the with driving related parking problems. The motor insurers need to find a way to adapt to the fundamental changes in the mobility behaviour, as they are in competition with other insurers. In order to stay in the business, strategic answers must be found. Carsharing is therefore a suited example, as it reflects in all aspects the socio-demographic, as well as the technical changes and challenges that the motor insurers are facing in this time.

In the following subsections the three hypotheses are compared with the findings and tested in order to assess which strategic recommendations can be given after the analysis.

9.1.1 Implications for hypothesis 1: Ex ante and ex post information in regard to opportunistic behaviour

Hypothesis 1 aims towards a testing of the contribution of the principal agent theory in regard to possibilities to resolve agency problems. Hypothesis 1 stated that the information acquired about carsharing customers ex ante and ex post is sufficient to dissolve the fundamental problems of asymmetric information and to counteract opportunistic behaviour. The following analysis was carried out in an ex ante and ex post consideration for the key findings in regard to data handling, incentive and punishment systems, as well as customer selection. These are the three core aspects that were defined to be analyzed within the three research question PA RQ1, PA RQ2 and PA RQ3 that focus on the principal agent theory.

(1) Data handling: In Germany data handling is subject to strict regulations by public institutions. It is considered a sensitive matter, yet the handling needs reform as the technical developments outrun the existing regulations and give large room for interpretation and enforcement by the government and also enterprises (Roßnagel et al., 2016, pp. 25-29).

Ex ante phase: The ex ante phase is the phase, when new customers are to be accepted by the carsharing company and it has a significant impact for the motor insurers, as that determines the risk potential for future damages or claims. The motor insurers mainly face the danger of moral hazard as the carsharing customer could have hidden characteristics that the principal is not aware of, or hidden intentions that could result in hidden actions or hidden information by the carsharing customer. In the end, that would mean higher claims costs and therefore an endangerment of the business model for the motor insurer. It is therefore of high importance for the motor insurer to exclude this risk before it arises and before such risks become part of the portfolio that the motor insurer has to deal with in a mid- to long-term commitment with the carsharing company. Following Greutter (2003, pp. 189-190), to solve this problem ex post resulting from adverse selection is many times more difficult for the insurer than to solve it ex ante. The reason for this is that when the customer has already entered the portfolio and needs to be pruned, i.e. to be considered with measures to become profitable again for the motor insurer, it is much harder to make these measures understandable for the customer than to reject the contract in the first place. To select the customers ex ante in a more rigid way would require that (1) the carsharing company goes along with this, as the motor insurer is a service provider for them and covers the claims, while they want to have a customer base as large as possible, (2) the individual carsharing customer would need to be targeted, so far only the entire portfolio of the carsharing provider can be targeted, (3) cases need to be proven, especially that hidden intention and hidden information was involved, creating the agency problem of moral hazard and (4) it is a process that needs time as legal regulations need to be respected and such a pruning of the portfolio takes time, effort and therefore costs for the motor insurer with an uncertain chance of success.

This concludes that to avoid the consequences of bounded rationality and opportunistic behaviour of a carsharing customer, the motor insurers need to avoid an adverse selection already in the ex ante contractual phase, not to find themselves in a hold-up position they cannot get out of, as investments have been made and the pruning or the exit of the portfolio or business model would take time, with an uncertain result, thus posing a threat to the profitability of the motor

insurer. To avoid such a hold-up situation, it is therefore important for the motor insurer to be able to get out of such a contract with short notice.

Based on the main findings the conclusion can be drawn that mainly the means of signalling can be implemented to avoid an adverse selection and a slight form of screening, as the latter was considered critical by the carsharing customers when applied. As the finding was that data gathering is mainly accepted, it could be changed by the motor insurer into such a form that the carsharing applicant is requested to present data of his previous driving performance. Yet as the data transfer to or from a motor insurance company by the carsharing provider was considered to be critical, the process could find its limitations there. If a driving record exists with previous motor insurers, the applicant could be asked to provide this data. That could be already a mechanism for selection. If the applicant has data but refuses to pass it on, it could be considered an indication for hidden characteristics or hidden intention. The applicant would signal with his willingness to provide data that he has nothing to hide and thus to be a potentially good customer. By signalling the potential carsharing customer could show trustworthiness and consequently build up a reputation. The aspiration of the motor insurer is that the customer, once he has become one, does not want to destroy this social capital of reputation and will drive accordingly, meaning having almost zero claims or damages.

Ex post phase: For an ex post phase the conclusion is that screening can be implemented as the findings showed that not only the data gathering, but also the data monitoring process is widely accepted. The carsharer has per se the technical infrastructure to expand the telematics use and gather as much data as possible about the driving performance of a specific customer. This can be used as a basis for a control- or monitoring system. It could give warnings during the driving to the customer, or it could be used for the purpose of customer segmentation and possibly the introduction of a spread in pricing among the differently performing carsharing customers. The fact that the customer knows that he or she is monitored during his or her drive is expected to influence the way of driving positively. Especially if consequences are connected with the monitoring process, it is assumed to be an effective process. As the aspect of a possible data exchange to the insurance was not completely discarded but mainly seen critical, the conclusion is

that it still remains an option to expand the range of a monitoring system to link the exchange of data to insurers to the carsharing process in order to create a more comprehensive monitoring. This would create the basis for a possibility to connect the performance of the driving as a carsharing customer with consequences for the own motor insurance. This also offers the opportunity to connect this with the ex ante situation again, by giving the applicant for a carsharing provider the opportunity to choose such a contractual model which includes a data exchange with the own motor insurance, to determine by self-selection if the person is willing to agree to such an exchange or not. Depending on the respective decision of the carsharing customer a conclusion can be drawn about what intention or self-expectation such an applicant has in regard to driving performance, potential damages or accidents during his time as a carsharing customer. In case the carsharing customer does not have a motor insurance contract, the collected data could also be used by the motor insurers to build up a shadow profile for that person, which could be used for a future classification in case that person wants to have a proper motor insurance contract for him- or herself.

(2) Incentive and punishment systems: In general, incentive and punishment systems were found to be a suitable means in order to positively influence the driving performance of the carsharing customers.

Ex ante phase: The conclusion is that grounds for an effective incentive or punishment system are set in the ex ante contractual phase. Based on the main findings, such a system is seen to be effective. Besides a control and information system, an incentive system offers the opportunity to successfully face the problem of moral hazard (Takao et al., 2001, pp. 291-301). Bearing in mind that the problem of adverse selection and the ex post resulting problem of moral hazard derive from the insurance theory (Arnott et al., 1988, p. 383), it becomes obvious what importance the reliability of customers has in the ex ante phase for a motor insurer. An incentive system can be implemented, but rather in the form of a reward system on an individual level without necessarily a reference to carsharing in the rewards given to the customers. A punishment system should be implemented in contrast to an incentive system, not on an individual, but on a group level of carsharing users, in order to benefit from the effect of social control. Furthermore, a

performance related impact on the prices of the own car insurance, as well as the pricing in carsharing itself is accepted and can be introduced. Positive effects on the behaviour of the drivers could possibly be achieved by the introduction of a status level (class) system, analog to the card system in the flight business, which can be negotiated in advance with the potential customers. This system would incentivize the driver to make more miles on the one hand, but also to drive more carefully in order to reach the next status level sooner and benefit from the rewards connected with this higher status. Combined with an agreement to data monitoring, these options create the opportunity to harmonize the interests of the carsharing user, the carsharing provider and the motor insurer in advance. By negotiating ex ante a specific incentive and punishment system, the motor insurer has the chance to motivate the customer to drive carefully and thus act in the interest of the principal. Such a system helps to avoid an adverse selection, as the applicant for carsharing has to consent to these rules and knows in advance that he or she will either benefit from acting in the interest of the principal, or be held responsible in a way via a punishment system for acting against the interests of the principal. This consequently reduces the risk of moral hazard.

Ex post phase: A correct execution of an incentive and punishment system allows this measure to unfold its biggest effect and thus a contribution for the success, which is to harmonize the interests of the parties involved, i.e. the carsharing customer, the carsharing provider and the motor insurer. It can be concluded that by far the biggest effect is seen in the implementation of a reward system for the individual carsharing customer. As the reward is not seen to be necessarily tied to carsharing itself, the motor insurers can consider joining existing reward systems such as the payback system, which exists in Germany. According to such a logic, points can be collected for a performance that is in the interest of the principal and these points can then be cashed in at participating organizations or enterprises by the carsharing customer. This motivates the individual driver to refrain from reckless driving or negligent treatment of the carsharing vehicle. Keeping such a system related to driving, a credit system could be built up, that could be used either for the driver for his next carsharing trips, or for his own motor insurance. A new aspect that is seen as possible is to implement in the ex post phase is the introduction of a status level (class) system. Following the concept of bonus cards used by flight companies, it could be arranged that the

driver generates after a certain number of kilometers within a certain time span for example a gold status, which would entitle him to use higher level carsharing cars for the same price that lower level carsharing car cost per minute for the normal customer. Alternatively such a gold customer could have an extra insurance included in the next trip for no extra costs for example. Similar to flight companies, the consideration could be to extend this status level system to other carsharing providers, as a carsharing user is in many cases not only customer of one provider, but of more than one, as he wants to increase his chance of finding a vehicle in case of need. This is a very new approach and the analysis in this research has shown that such a system is considered to be effective. A complementary element was thought to be the introduction of gamification in the form of a competition among carsharing users of who is the better driver. The conclusion deriving from the findings is though, that such a system is considered to be too laborious to implement and also not accepted by the users. It offers the chance to be combined with a group system, but here it can be concluded that a group competition would only be effective if the participants themselves have a significant influence on the results of the group. That requires that each participant is not only part of an amorphous group, which is subject to ever changing group members thus making it impossible to understand why a certain bonus or punishment is received. This problem would only be healed by effective social control that can alone come into effect if the participants of a group can determine the composition of the group, i.e. the group members, themselves.

(3) Customer selection: An effective mechanism for the selection of the right customers is the basis for the success of the business model, not only for the motor insurer, but also for the carsharing provider.

Ex ante phase: As described in this subsection 9.1.1 under (2) incentive and punishment systems, the term moral hazard, as well as adverse selection with the possible consequence of moral hazard derives from the insurance theory (Arnott et al., 1988, p. 383), pointing out the high importance for the motor insurer to take countermeasures against these risks. With the help of a detailed questionnaire the motor insurer would be able to use the instruments of screening and signalling in a parallel way. On the one hand the carsharing applicant could be asked an

extensive variety of hard and soft fact questions (Heimbücher, 2006, p. 25) to generate ex ante a detailed view on the risk profile of this specific potential customer. Hard fact questions are questions that aim at steady facts such as age, sex, address, type of vehicle or age of vehicle. Soft fact questions are questions that cannot be verified in an easy way and orientate themselves along a rather psychological guideline, trying to reveal possible future behavioural patterns. A soft fact question is for example the question of how many kilometers a person drives per year, or if the person has children, thus trying to deduce from this information how much risk this person is expected to take. This is a technique which is used in questionnaires in the regular motor insurance. In the regular motor insurance, these indicators are used for hard and soft tariff ratings. The conclusion is, that with reference to a low complexity in processes and a higher acceptance of the questionnaires by the carsharing customers, questionnaires in general are considered a necessary measure to acquire risk information and should be used, but with as few questions as possible and as many questions as necessary for a risk evaluation. Besides hard and soft fact questions, motor insurers also use an approach of objective and subjective risk characteristics (Lammers, 2006, p. 233) that can be included into the questionnaires according to the findings. This enables the motor insurers to follow a risk reduction oriented concept of pricing that could also be implemented in the field of carsharing, as the pricing is always executed on the basis of expected future claims (Stadler et al., 2015, p. 65). The findings enable the motor insurers to integrate their questions that are directed to enquire as many as possible characteristics of the vehicle and the driver and to combine these. The intention of doing so is to achieve the best possible fairness in the premium and to achieve a best possible selection of risks. By accepting and answering such questions, the carsharing applicant can signal that he is willing to give transparency about his background, to have this documented and to be held responsible for his statements. Like this he has the chance to build up his reputation and work with social capital in order to reduce the concerns of the motor insurer to reject him. Naturally these questions are to be integrated in the general application form of the carsharing company, but they need to be reflected there in order to dissolve the situation of asymmetric information between the carsharing customer and the motor insurer as a service provider for the carsharing company. It can also be concluded that with this form of signalling the motor

insurer must make sure that the benefit of signalling is positive for wanted agents (carsharing customers) and negative for unwanted agents (Varian, 1991, p. 314).

Furthermore, it can be concluded that the motor insurers should keep their efforts to acquire risk information about the carsharing users in balance with the demand for simplicity in the processes. Therefore, the option of driving tests in short or extended forms is ruled out and should not be implemented. Brief driving tests would give the motor insurer the option to execute a form of screening, but here again the acceptance on the side of potential carsharing customers is low for this. The advantage would be that the real performance could be observed by an expert and the risk could be assessed in a standardized way. Problematic is though that this method is, as mentioned, not accepted by the customers as it lacks a consistent comparability and a partial subjective judgement cannot be fully excluded. Additionally such a process is costly and time consuming, which would challenge a cost benefit consideration. Even though the expert interviews revealed that it is considered to be very significant to gather information and that costs for this are accepted, the motor insurance company has to weigh the additional gain of knowledge against the costs generated for the acquisition of the extra information. An additional benefit of a driving test would be that the danger of shirking can be excluded to a large extent. If the carsharing customer held back information about his real driving abilities it would show at the time of the driving test. In order to use an element of self-selection and test the carsharing customer which model he prefers, it could be considered to offer a driving test as an optional element.

Ex post phase: It can be concluded that the general use of a questionnaire offers the motor insurer the possibility not only to gather as much information as possible in an accepted way, but also to verify this given information after the signature of the contract. The information that was given in the questionnaires, at least the hard fact questions, can be verified afterwards by the motor insurer. Alternatively these questions can be screened after a damage has occurred. Like this it can be assured that the statements made in the questionnaires correspond to the truth and if not, the motor insurer has a possibility to reject the settlement of the specific claim and in return address the carsharing customer and to take recourse against him for having made false statements. In this case the proof is simple for the motor insurer, as the questions were answered, signed by the

customer and the completed questionnaires are archived by the carsharing provider. Brief driving tests can also be implemented after the signature of the contract, offering the possibility to counteract hidden action. The discretional leeway that the agent has and that the principal cannot fully observe can be reduced by these driving tests. The same applies to the problem of hidden intention for the principal, i.e. the motor insurer. With the help of an expert who assesses the driving skill of the carsharing customer, the motor insurer can solve the problem of being able to observe the actions of the agent by an analysis of the telematic data, but not to be able to evaluate the quality of the observation.

It can be concluded that the hypothesis 1, which states that the information acquired about carsharing customers ex ante and ex post is sufficient to dissolve the fundamental problems of asymmetric information and counteract opportunistic behaviour can be falsified. The information proves due to the reasoning above not to be sufficient and needs to be optimized. Following the concept of abduction for the testing of the hypothesis, the second step in the abduction now follows, the development of the new rules, which are the recommendations for the strategy of motor insurers in regard to carsharing on the basis of the NIE-theories, here the principal agent theory. This aspect is discussed in the following subsection 9.1.2.

9.1.2 Strategic recommendation for motor insurers from hypothesis 1

The analysis carried out in this research has revealed that the motor insurer has a substantial need for information, especially in the ex ante phase of the contractual agreement with a carsharing applicant in order to be able to conduct a qualified risk selection. The gravest problem that needs to be avoided by the motor insurer is the one of adverse selection, as it is extremely difficult to fix problems resulting from adverse selection in the ex ante phase later in the ex post phase, as from adverse selection would result the danger of moral hazard in the ex post phase. This chain of cause and effect needs to be broken by an effective selection mechanism. The motor insurer must close the gap of asymmetric information between him as principal and the customer as an agent, by agreeing with the carsharing provider to include enough questions in the questionnaire that give sufficient grounds for a risk assessment of the pool of carsharing customers.

Furthermore, the motor insurer needs to negotiate criteria for a rejection of a new customer or an exclusion for an existing customer to be manifested in the contract, which is agreed between the customer and the carsharing provider. This is the crucial point where the success of the business plan for the motor insurer is decided. Moreover, it is advisable for the motor insurer to include in the internal contract, i.e. between the insurer and the carsharer, an exit clause in order to avoid to get into a hold-up situation. With an exit clause the maximum loss of already executed investments is at least minimized. Nevertheless it is important for the insurer to consider the demand of the carsharing customer for simplicity in the selection process. Even though brief driving tests seem advisable from the point of view of the motor insurer in order to complete the data with an expert opinion and bridge the possibility of discretional leeway for the agent, as the insurer can observe, but not fully judge him (risk of hidden action), the motor insurer should not implement it generally. A general implementation would drive away potential customers and would be counterproductive for the carsharing provider as well as the insurer. It can be considered though, that a brief driving test could be an optional element if certain indications are detected ex ante or a certain driving performance has been observed ex post. Such a brief driving test would give the motor insurer the chance to conduct a form of screening and it gives the carsharing customer the chance to signal to the principal that he is a good driver after all and thus restore or build up his reputation. This social capital of reputation could commit the customer to behave morally correct in order to prove that he is worthy to remain a customer. This is why it is important to implement a monitoring system in the ex post phase. Only with a functioning monitoring system will the motor insurer be sure not to become a victim of moral hazard. Furthermore, for the ex post phase, a monitoring system can be combined with an incentive and punishment system for the carsharing customer. The concept of an incentive and punishment system is an effective means to create a harmonization of goals in order to heal the agency problems that can arise. In regard to the implementation of such an incentive and punishment system, the incentive system is generally more effective than the punishment system. Therefore, a bonus system should be implemented which gives the individual customer a specific advantage for a good, i.e. claims free, driving performance. This bonus does not necessarily have to be

connected to carsharing, such as free kilometers or time in carsharing rides, but it can range from vouchers for free coffee, over points for a general bonus system such as payback, or an additional free coverage of the motor insurer for future rides. Another thinkable alternative would be that the carsharing customer does not have a deductible anymore for example. Normally the customer has to pay in case of an accident or damage a deductible to participate in claims payments in case the accident or damage was caused by him. It can also be considered to have a bonus system that builds up more and more individual advantages and makes the carsharing customer fall back to a certain beginner level in case of a claim, in order to motivate him to drive carefully. This system would effectively counteract hidden characteristics. The motor insurer should carefully consider though whether he wants to introduce a punishment system. A punishment system offers the possibility to make the carsharing customer feel the consequence of a negative driving performance directly and thus work against the danger of moral hazard. Negative results would not be compensated by the anonymous group of drivers, but they would be felt by the driver directly. Yet if a punishment system is chosen, then it should be installed in the form of a group punishment system in contrast to a bonus system, where an individual system is more advisable. The group punishment system has the advantage of having the factor of social control that ensures the success of that system. This requires though, that the formation of the group can be influenced by the customer. Only if he knows the other participants or if he could influence the composition of the group, then he feels morally bound to the others. Else the group becomes just an amorphous mass for him, which does not trigger an intrinsic feeling of moral obligation on the side of the carsharing customer. On the good as well as on the bad side, the driving performance should have effects on the price for carsharing. Therefore there should be a direct impact on how much the carsharing customer has to pay per minute as a result of his driving performance or the performance of the group. An impact for the pricing on the own motor insurance can be considered, but should be considered carefully as it is not well accepted by the carsharing customers. That also has its reason in the fact that data monitoring per se is considered acceptable, but the exchange of data between the carsharing company and the motor insurer is seen critical. This critical view upon a data exchange between the carsharing companies and the motor insurers limits the option to build up a system for until then non-motor insurance

customers, to have their driving performance recorded and transferred to the insurers to use this data for the future case, that this person wants to get an own motor insurance contract. A very new approach should also be considered by the motor insurers in conjunction with the carsharing providers, which is the introduction of a status level (class) system. Such a status level system would counteract the danger of shirking and is another element of harmonization of goals between the carsharing provider and the carsharing customer. The customer would work against his own interest or advantage if he holds back his real performance, as he would not achieve a higher status level that quickly. Such a system could consist in becoming a gold customer after a certain number of claims-free rides for example. This gold card would entitle the customer to further benefits such as renting higher rated models for the same price as the basic models. That system could be introduced as an analogy to existing programs in the flight business. It is advisable to expand such a system onto as many as possible existing carsharing providers, as that increases the attractiveness of such a program, opposed to a single system linked to only one specific provider, as most carsharing customers are not just customers of one provider, but of others as well, to increase their possibilities of finding a car for use in case it is needed. Gamification on the other hand is not advisable to be introduced. That would consist of an element of competition, either on an individual level of carsharing customers or on a group level. The efforts and costs on the one side and the lacking acceptance by carsharing customers on the other side speak against such a system, even though it offers a chance to work against hidden action and hidden information. The acceptance by the carsharing customers for such a system though is a mandatory prerequisite.

9.1.3 Implications for hypothesis 2: Trust as a potential to lower transaction costs

Hypothesis 2 aims at a testing of the contribution of the transaction cost theory in regard to possibilities to resolve agency problems. Hypothesis 2 stated that the introduction of trust as a new element will lower the transaction costs in carsharing. The following analysis is carried out in an ex ante and ex post consideration for the key finding. This follows the definition of the core aspect

within research question 4 (TAC RQ4) to examine the implications of trust being able to lower transaction costs.

Ex ante phase: At a first glance trust and the new institutional economics do not fit together, as bounded rationality and opportunistic behaviour of the individual, as well as asymmetric information is assumed. Opportunistic behaviour even includes lying (Ebers et al., 1995, p.213) in order to achieve ones advantage and poses a severe risk for the motor insurer to engage into a business model characterized by fraud and high losses, possibly putting the motor insurer in a hold-up situation. The effort of bonding, i.e. having invested into the business model by the motor insurer to prove his seriousness and willingness for long-term commitment, would have failed. It can be concluded though, that contract constellations, as well as monitoring systems always have imperfections and are never complete or perfectly safe. The same applies for incentive or punishment systems, as every of these systems offers the opportunity to be bypassed (Göbel, 2002, p.119). Therefore the finding is that trust is very well suited to smoothen the openings left by residual uncertainties or imperfect controlling systems. Trust is not seen though as an alternative to monitoring mechanisms, but as a complementary element that is to be used in combination with monitoring mechanisms (Ripperger, 1999, pp. 67-99). Transaction costs are incurred, as the use of the market is not for free. The degree of trust used for specific transactions has an impact on how elaborated and therefore costly a monitoring system must be and thus the potential to act not only as smoothening imperfect openings of such systems that cannot be closed, but also to reduce the costs for such a system by the degree of trust that is applied. Therefore it can be concluded that neither complete trust, nor no trust at all is the right choice for the motor insurer, but that it should be a form of partial trust that is considered to be most effective. Yet simultaneously a flanking control system is found to be necessary and even though such a system incurs costs, it is considered to be worth it and indispensable, as otherwise the option for the abuse of trust is too high. An abuse of trust would mean for the motor insurer an incalculable risk for a loss potential in his business model, posing the threat of possibly resulting in a ruinous outcome. In the ex ante phase the steps of search, evaluation, negotiation and finally the contractual agreement are compulsory steps to go through in order to create the frame conditions that transactions can take place (Albach, 1988, p.1160). In this pre-phase, i.e. ex ante

phase of a transaction, the conclusion is that the principal can use forms of screening such as demanding reports from credit worthiness agencies concerning the credibility of the carsharing customer to lower his risk situation. This result of such a credibility test can then be used by the principal as an indicator for the trustworthiness of the agent. On the other hand, the agent can use the element of signalling to improve his standing with the principal, indicate that he is a potentially good customer and thus influence his trustworthiness in a positive way. This can be achieved if the agent passes for example his driving record on to the motor insurer. By creating transparency towards the principal, the agent sends a clear signal about his truthfulness. He builds up a reputation that he will be expected to live up to and consequently creates the impression on the side of the principal that he can be trusted. The costs that can be reduced in the ex ante phase by the implementation of trust consist in costs for information search and procurement, as well as costs for negotiation.

Ex post phase: In the ex post phase it can be concluded that a necessary prerequisite is that the actions of the agent must be observable. Only like this the principal can be sure that the trust given to the agent is justified. The principal can replace costly control mechanisms with trust, depending on the experiences that he makes with this element. In other words, the motor insurer can decide in how far he trusts the statements concerning a damage, or if he wants to have an elaborated control system which not only tracks every move of the car and driver, but also delivers crash data. The good experiences that are made can be projected into the future and transferred onto carsharing customers with a similar profile. This is the leap of faith that the agent or carsharing customer could get from the motor insurer and which would reduce monitoring costs for the insurer. The carsharing customer on the other hand can use trust to show, during his time as customer, that he in fact does live up to his reputation and even though he has the possibility to abuse the trust given to him, he proves by his actions that he does not act in an opportunistic way, but in the interest of the motor insurer. Thus the agent signals ex post that he is and remains trustworthy and that the system of trust can be kept, which also means for him lower costs that are passed on to him.

It can be concluded that hypothesis 2, which states that the introduction of trust as a new element will lower transaction costs, cannot be falsified. The

hypothesis can therefore be generally accepted, but it leaves open in what form and to what extent trust should be implemented. This recommendation is important for the motor insurer though, not to suffer excess burden and negative effects due to the residual loss. Following the concept of abduction in the testing of the hypothesis 2, as it was done for hypothesis 1, the second step in the abduction now follows, the development of the new rules, which are the recommendations for the strategy of motor insurers in regard to carsharing on the basis of the NIE-theories, here the transaction cost theory. This is step is covered in the following subsection 9.1.4.

9.1.4 Strategic recommendation for motor insurers from hypothesis 2

Trust proves to be an important and effective element for the motor insurer to heal imperfections of contract or monitoring systems. Therefore trust should be implemented. The motor insurer must find the right form and degree though in which trust should be used. The implementation of total trust would contradict the assumption of bounded rationality and opportunistic behaviour. Therefore trust should be used in the form of partial trust, in the ex ante, as well as in the ex post phase. Trust is a very powerful and efficient element, which has the main advantage that it appeals to moral values. Moral values make the carsharing customer build up a reputation and give him an intrinsic commitment to act in the interest of the principal and not in an opportunistic way, even when he is not being observed. It would take the motor insurer an indefinite price to create a monitoring system that would allow a complete control of all actions of the customer and yet it would still not be complete. Such a system would turn the business plan of the motor insurer negative and not pass a cost benefit test.

Before the signature of the carsharing contract, the motor insurer needs to ensure that the trustworthiness of future customers is given. In order to have a perfect system, it would require to carry out an extensive screening of the applicant. The motor insurer could ask for a credit worthiness check by an agency for every new customer to be sure that no financial problems could arise. Equally or even additionally the insurer could ask for a recent statement from the German central traffic register in order to verify if the potential driver has a negative record. The findings and conclusions showed that this is not recommended to the

motor insurer to carry out such an extensive inquiry about a potential carsharing customer. This would mean extensive costs for the acquisition of information, which would not only result in high expenses for the insurer, but also in laborious and hampering processes. The motor insurer and carsharing provider would risk a rejection of the applicant as he would have to face this process. The degree of trustworthiness would certainly also be increased by an extensive signalling from the side of the customer, but as for the screening process by the principal, the motor insurer has to find a cost efficient way to operate the business and therefore consider in how far he integrates signalling processes. This is why the "glue" of partial trust is a suited means to compromise between an extensive search for information and simplicity and practicability in the processes. The savings achieved by the introduction of trust already represent a potential to pay for damages that occur, because some customers exploited this system by their opportunistic actions. The intrinsic motivation for the carsharing customer to behave in the interest of the motor insurer should be kept up not only in the ex ante, but also in the ex post phase, when the car is used. That saves the motor insurer expensive additional monitoring systems and instead he can use the technical infrastructure and data that is generated with these systems of the motor insurer. Trusting him or her sends on the one hand a signal to the customer that he is regarded as trustworthy and no further control mechanisms are considered necessary and on the other hand additional investments are saved. Here the same principle applies as in the ex ante phase. The savings of extra investments into additional monitoring systems and mechanisms can be used to compensate for a certain opportunistic and exploiting behaviour of some customers. Nevertheless, the motor insurer must create a system where he keeps an overview over the claims development to see whether the implementation of trust should be handled in a stricter or looser way. Like this the insurer can calibrate the degree of trust and in how far the experience can be used in order to predict future claims developments.

9.1.5 Implications for hypothesis 3: Contractual design for carsharing companies in regard to simplicity

Hypothesis 3 aims towards a testing of the contribution of the property rights theory towards possibilities to resolve agency problems. Hypothesis 3 stated that the contractual agreement between the carsharing companies and customers must be detailed to achieve a better risk distribution and encourage safe driving. This follows the definition of the core aspect within research question 5 (PR RQ5) to examine the need for complex contracts.

It can be concluded, that the design of the contract has a decisive impact on the way the carsharing customer can be held responsible for his actions during the use of the car and consequently the possibilities for the motor insurer to reject claims or draw deductibles from the customer where necessary. The contractual agreement regulates the bundle of rights that is exchanged as a transaction between the motor insurer and the carsharing customer against the background of in the NIE assumed bounded rationality and opportunistic behaviour of the customer. The carsharing provider has the role of an intermediary, therefore this is the second contractual situation that the motor insurer needs to regulate. This concludes that the motor insurer needs to close a contract with the carsharing provider determining internal agreements for their collaboration and that the insurance parts of the bundles of rights concerning the carsharing customer need to be included in the general contract of the carsharing provider with the end customer. While the latter contract, the contract with the end customer, covers the part of the use of the carsharing car (usus), the contract of the collaboration between the carsharing provider and the motor insurer goes much further, as it needs to cover the whole aspects of contractual constellations. Therefore it needs to include regulations about the usus, possible abusus, the usus fructus, ius abutendi, as well as the right to excludes others from the use. The negotiation of the contracts is a cascading process, as at first the regulations between the motor insurer and the carsharing provider need to be agreed on. In this process the implications for the end customers are defined, agreed and integrated in the contract with the customer. Only when this process is completed an exchange of the bundle of rights can take place. These contracts concern the relative property rights, as absolute property rights would have an effect on anyone, such as public regulations have.

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The conclusion of the findings is furthermore, that simplicity has to be considered in the design of the contracts, to make the use of the carsharing vehicles as simple as possible. The general rule is to keep the contracts internally and externally as long and elaborated as necessary and as short and simple as possible. This facilitates the use in practice and aids to enable a higher acceptance of the business model of carsharing. Yet simplicity should not be given the highest priority, as a moderate form of it is the suited level of simplicity. The moderate form provides the acceptance on the one hand, but allows a clear settlement of issues when they occur, such as claims for example. The conducted research concluded that even though the form of ownership has the effect of creating an economic incentive to treat the resource, or here the carsharing vehicle, with more care, it proved not to be advisable to implement the element of ownership in carsharing. The theoretical opportunity to internalize unwanted external effects of damages due to negligence by creating an ownership structure would increase the transaction costs significantly in the handling process and would not be accepted by the users. The solution for solving the situation of a double prisoner`s dilemma, consisting in the problem that individual misconduct is compensated by the group and even though the interest of the group is to punish the claims creating members, it is not in the interest of the individual to participate in these punishment or execution costs, is rather seen in the approach of an incentive and punishment system than private ownership. It is that a form of incentives and punishment, consisting in the described form of directing a punishment towards the group, while the reward should be directed towards the individual, should be used instead of ownership.

It can be concluded that the hypothesis 3, which states that the contractual agreement between the carsharing companies and customers must be detailed to achieve a better risk distribution and encourage safe driving can be falsified. The gathered findings prove, due to the reasoning above, that a moderate form for the degree of details for the contract is the most effective one. Following the concept of abduction in the testing of the hypothesis 3, as it was done for hypothesis 1 and 2, the second step in the abduction now follows, the development of the new rules, which are the recommendations for the strategy of motor insurers in regard to

carsharing on the basis of the NIE-theories, here the property rights theory. This step is covered in the following subsection 9.1.6.

9.1.6 Strategic recommendation for motor insurers from hypothesis 3

Summing up the conclusions of this subsection, it proves to be advisable for motor insurers to have a clean cascading negotiation phase with the carsharing provider, where all the relevant points for the risk evaluation are included, so that the business can be conducted on secured grounds. A hold-up situation can be avoided by an exit clause for the motor insurer and should therefore be included in the contract between the carsharing provider and the motor insurer. Not to over challenge the end carsharing customer, as well as the carsharing provider, the design of the contracts should be conducted along the guideline of as detailed as necessary and as simple as possible. A too detailed level in the contracts would act counterproductive, as it would have a deterrent effect. An ownership structure where the carsharing users participate from the driving performance, in the positive as well as in the negative sense, should not be introduced, but instead the motor insurer should offer a reward or bonus system directed towards the individual user and a punishment system directed towards the group of carsharing customers.

9.2 GENERAL CONCLUSION AND STRATEGIC IMPLICATION FOR MOTOR INSURERS

The findings of this study gave answers to all subresearch and research questions that were raised and therefore the main research question. It gave a detailed insight into the current developments of the motor insurance market in regard to carsharing in the light of the selected NIE-theories, as well as the existing external effects of socio-demographic and technical changes with reference to experts and literature. Furthermore, it revealed the interdependencies of theoretical and practical aspects drew an authentic picture of the current strategic challenges for the motor insurance and developed on this basis conclusions and recommendations.

The main objective of this study has been to research the implication of the NIE-theories onto the current pressing question for motor insurers of how to align

themselves strategically in a rapidly changing more and more digital market, with values and structures of its participants changing at an equally fast rate. Besides the research of the causes and effects, it was also the aim to provide guidance for the senior management of motor insurers on secured grounds of the findings of the economic theories, as well as the empirical study that was conducted for decisions regarding whether or not, or in how far and how to be strategically involved in the business field of carsharing. Furthermore, the study is set to provide a blueprint for strategic decisions for insurance business fields with similar parameters, as the result can be transferred onto comparable segments. The essence is, that these results can be transferred onto mobility in general and therefore to consider in how far mobility in general can be insured in a similar way and if the insurance solutions for each mobility segment can be connected on a meta level, transforming the motor insurer to a mobility insurer. This step could give the motor insurer a competitive edge over the competition, rather than strictly focussing on one still dominant pattern of mobility on the German market. That is why for this study the amendment was made that the examinations are to be conducted by the example of carsharing. This emphasizes that the focus is on the one hand on one significant means of transportation in these days, the car, and on the other hand on the new trend for mobility combining digitals aspects, as well as new values, trends of the sharing economy and exogenous factors. Additionally the aim of this study was to provide a sound preliminary work for a further research, a quantitative investigation of the results that were found.

The main conclusions of this study can be summarized as: Signalling and screening have a great impact on the reliability of risk information about the carsharing customer and the risk assessment of the portfolio of customers for a pricing approach for the motor insurers. This has primary relevance in the ex ante contractual phase, as in this phase the decision is taken whether or not to take a customer into the portfolio. If the motor insurers do not focus enough on a risk calibrated selection of customers, they can suffer from the negative consequences of adverse selection. The impact of the negative consequences can be severe and even lead to a complete failure of the business model for carsharing for the motor insurer, or even its ruin, if not enough reinsurance is available. In the quantitative approach this probability of ruin could be assessed with a statistical approach.

Therefore motor insurers have to pay very much attention to their selection mechanisms of new customers. Moreover it proved to be advisable to work with trust. A second result of this study is that trust is to be used cautiously though, ex ante and ex post. Here also caution must prevail in the ex ante phase, as once a customer is in the carsharing portfolio of the motor insurer, it is very hard to put pruning measures onto this customer. This is especially the case for the concept of carsharing, as the carsharing company acts as an intermediary between end customer and motor insurer and has its own targets. An example for this is the target of growth, which is not entirely congruent with the targets of the motor insurer, who also wants to grow but must consistently regard the aspect of profitability. Profitability is also the aim of the carsharer, but as the losses are paid by the motor insurer, it does not concern him directly. Consequently trust has been found to be exceedingly efficient in the possibilities to lower transaction costs, as elaborate and costly signalling or monitoring systems can be reduced to their minimum. Until now trust was always considered to be contradictory in an environment of bounded rationality and opportunistic behaviour of agents. Yet this research revealed the potential trust has to act as "glue" between the motor insurer and the carsharing customer. Trust builds up social capital and creates an intrinsic motivation within the carsharing customer to live up to this reputation. Opportunistic behaviour would destroy this reputation. Therefore trust acts with its effect in an inexpensive way towards a harmonization of goals, enabling a sustainable business model for all parties involved. This leads to a third important result of this study, the finding that simplicity is of high importance for the success of the collaboration between carsharing customers, carsharing companies and the motor insurer. The crucial point is the customer and how he experiences carsharing. The demand for simplicity must be brought inline by the motor insurers with an adequate balance of risk acceptance. It was found that the solution lies in the implementation of moderate simplicity. That applies for the contractual situation as well as for the customer selection process and for the use of the service of carsharing. The contracts should be as short as possible and as long as necessary, while also the questions asked in the application form of the carsharer should be limited to the most important points for an acceptable risk assessment. This gap of knowledge leakage can be compensated by the first two points mentioned, signalling and screening mechanisms, as well as trust, in order to provide a service

of carsharing that is accepted and welcomed by the customer. A fourth major conclusion is that incentive and punishment systems are well suited in order to counteract opportunistic behaviour. If the incentive systems target the individuals with benefits that do not necessarily have to be tied to carsharing (e.g. vouchers usable in stores, etc.), a further step towards a harmonization of goals between the carsharing customer and the motor insurer has been made, leading to less claims and a better profit situation for the motor insurer. Regarding the individual reward system, it is recommended to introduce a status level (class) system which gives, analog to status level schemes of flight operators, the chance to make the individual benefit from good performance and at the same time stimulate growth, as the carsharing customer is expected to strive to reach a new preferred level as soon as possible in order to benefit from the connected advantages of this level and this drives more. If a punishment system is implemented it should aim for the involvement of a whole, clearly defined group of carsharing customers to create a system of social control and obligation for the individual towards the group. The precondition for such a system is though, that the members of the group must be able to influence the composition of the group and the performance, as such a system is ineffective if the members of the group are subject to a random group formation process, having to take the consequences of unknown other participants. The fifth major finding opens the possibilities not only for screening mechanisms, but also for a further development of the carsharing model. It is the willingness of participants to provide data ex ante and ex post of the decision to join the carsharer. It enables a better risk assessment and monitoring of the driving performance in order to secure that hidden characteristics are revealed and that there is as little room as possible for hidden action or hidden information. A possible data exchange of carsharing data with motor insurers is conceivable as a shadow no-claims bonus systems could be set up, allowing a more complete set of data about the driver that could be considered in order to reach a more balanced pricing for that specific customer in carsharing, or even for his private motor insurance. Consequently this data could also be referred to if the person does not have an own vehicle for future references when this becomes an issue.

9.2.1 Limitations

The research conducted relied as much as possible on securing the main principles of objectivity, reliability and validity in the collection and analysis of data (Lienert et al., 1998, p. 7), implementing the principle of triangulation and combining an inductive and deductive approach to secure the validity of the findings as much as possible. Nevertheless, the researcher may not have been completely free from bias in the construction of the interview guide or during the questions of the interview. The extensive job experience may have led to a marginally bias in the process of the expert interview. This is completely unintended, but cannot be fully excluded. Another possible imperfection can be found in the number of experts interviewed. It was n=15 of in terms of quality very high ranked experts with extensive experience in their professional field. That is why the number of experts was limited to 15, as they are an elite form of experts, thus requiring a smaller number of interviewees. Yet a larger number of experts, also of elites, could have secured an even more reliable result of the answers given. This refers to the fact that the research data gathered must be representational. Unlike with random sampling here an a priori selection of high quality interview partners took place by own screening of possible interview partners within the insurance industry and related fields that could give vital information for the research. Even though this focus on high quality experts was applied, combined with a snowball sampling method (Rubin et al., 2010, p. 149), which means asking one expert to recommend one or more other experts for further interviews as an additional element for safeguarding the validity of the responses, also here a bias cannot be fully excluded. This bias could exist with the expert recommending another expert, or with the researcher selecting an expert from the recommendations received. A further limitation of the study can be seen in the fact that 12 out of the 15 selected experts are, or were, in very senior positions in the insurance industry, while only 3 experts come from fields outside of the insurance. This could indicate that the focus in the results of the expert interviews is a very condensed point of view from within the insurance industry. On the other hand it can also be considered that in these experts the market and also market environment knowledge, including the implicit and explicit influencing factors, is present on a high level and could be included in the answers in its purest form.

Furthermore, all of the interviews were held in German, therefore all the relevant excerpts of the interview in the appendix 2 can only be presented in German, while the study is in English. It was decided not to translate the excerpts into English, as this would bring changes in the statements of the experts, simply by the natural course of translation. The key messages in the interviews were meant to be kept as clear and as original as possible and therefore left in German.

After the coding had been conducted it was also not given to a second coder in order to compare the results and thus increase through an additional review the reliability of the coding. This step of intercoderreliability (the carrying out of the analysis or relevant excerpts of it by more than one person and comparison of the results) can be regarded as a measure to improve the reliability of the coding, but even Mayring states that this supplementary step is not always possible (Mayring, 2010, p. 117). It is a trade-off between the complexity of a coding or category system and the reliability of the results that needs to be balanced. According to Ritsert (1972, p. 70) it is more difficult to achieve a reliability in the results, the more differentiated and extensive a coding or category system is, although it can at the same time increase the content-related validity of the research. The researcher followed the postulation of Mayring (2010, p. 51), who states that in qualitative content analysis the content arguments should always have priority over process arguments, therefore validity is to be set above reliability, which was done in this research.

The scarcity of literature especially in regard to carsharing and motor insurance in connection with carsharing is seen by the researcher as another limiting factor. As this business field is very new, there are only few studies and there is very little literature available in this regard. The researcher had to introduce a special selection process, which meant the evaluation of the sources, before using these sources for the research. This selection process was necessary in order to rule out biased literature or contributions which may have been driven or influenced by the authors` own interests. If a certain motor insurer publishes a paper for example, it was necessary to analyze if the content is objective and if it fulfils the standards for reliable literature. This goes in accordance with Yin (2016, p. 72) who demands not to carry out a comprehensive, but a selective literature review.

9.2.2 Implications for further research

Despite the limitations and restrictions of this study, this research has for the first time carried out a joint analysis of literature, expert experience and scientific theories, bringing new results for the strategic setup of motor insurers for the future. Nevertheless, there are still open issues that can be subject for further research. There is on the one hand room for further research, as additionally to the qualitative approach a quantitative approach can be taken in regard to the same research subject in order to support or correct, where necessary, the findings and conclusions of this research with mathematical statistical approaches.

(1) The approach in this research was a qualitative approach. Even though the underlying hypotheses have been tested in an abductional way, a quantitative analysis can be subject for another research paper. As referred to in subsection 2.1.1, a qualitative approach is advisable when the research subject is new. A quantitative examination of this research question would give grounds to a statistical approach of hypothesis testing. Therefore statistical hypotheses need falsification criteria (Popper, 1989, p. 208). The quantitative investigation of this research question represents to be a coherent consequence of the qualitative analysis in order to secure the validity of the findings and regard the hypothesis with appropriate numerical approaches. Consequently test mechanisms of the multivariate analysis methods could be used in terms of structure examining and structure finding.

(2) The role and effect of trust was discussed thoroughly in this study, yet it became obvious that the element of trust offers more potential for research in this context. First of all it is a very new approach that has been discarded so far in the NIE, given the general assumptions of bounded rationality, opportunistic behaviour and asymmetric information. There seems to be no room in practice for such a model. However, it was shown in the expert interviews that trust appears to be an effective means in order to reduce transaction costs, as a social reputation is built up in an inexpensive way, as long as the customers have an interest and motive to build up such a social capital. A further examination on the various applications and effects of trust could be carried out. More drastic models of an implementation of a higher degree of trusts can be tested empirically and especially these results can then be assessed in a quantitative way. This would

open the possibility for a whole new approach in the motor insurance to deal with its customers.

(3) Another content related implication for further research can be seen in a more detailed examination of the effects of incentive and punishment systems. This would ensure a higher degree of goal harmonization between the motor insurers and the carsharing customers. If the carsharing customer does not only understand why his data is monitored, or why regulations in the contracts are made like they are, but if the obedience of these rules becomes his own intrinsic desire, then the customer will act very much like the principal would act by himself and the gap of residual loss can be closed to a higher degree. A further examination could find out what is exactly the major drive for carsharing customers to make them act like the principal himself and define a set of most optimal measures. That an incentive and punishment system is effective has been shown in this research, the following question is now to what extent and exactly in which fields that is the case.

(4) As it was shown that the socio-demographic and technical changes have a fundamental effect on society and therefore also on behavioural patterns, further research can take the results of this study and test if the findings and conclusions that were made in regard to carsharing can also be transferred onto mobility in general. The question for motor insurers is how fast this business field will change. A test of transferring the results of this research onto other fields of mobility could open the chance for insurers to become not only strong motor insurers, but mobility insurers. Therefore a further research could examine in how far a multimodality trip for a customer can be insured. An example for this would be that a customer enters in a computer application, either a mobile or a static one, where he is located and where he wants to go. Given that the program can sort the optimal way and optimal means of transportation and combine them, the customer could be offered to insure his whole trip. This would take the findings and conclusions of this research to a further level and provide vital understanding for insurers in order to set up a holistic strategy in regard to their customers and mobility to possibly become mobility insurers.

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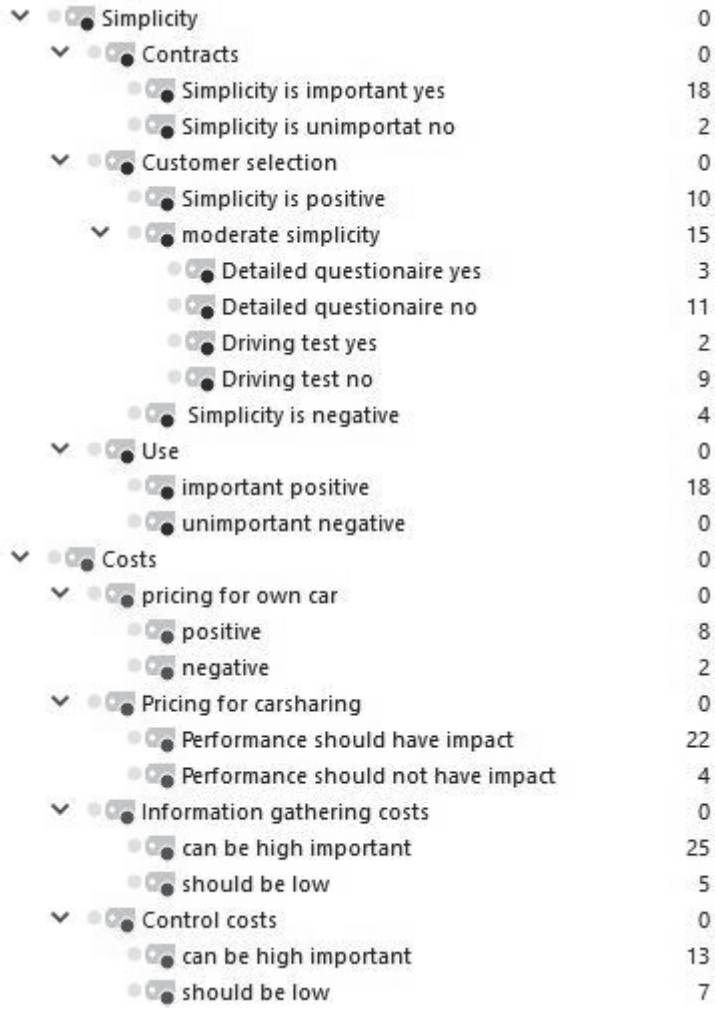
APPENDIX

APPENDIX 1: CODESYSTEM WITH SUBCODES

Codesystem	**477**
Recommendation carsharing	0
Engagement without limits	6
Engagement with limits	9
No engagement at all	3
Incentive system	0
in general good	13
in general not good	3
Bonus systems	0
tied to carsharing	0
also other incentives	10
only for carsharing	4
Individual	0
positive	20
negative	3
Group	0
positive	3
negative	4
Class systems	0
positive	10
negative	1
Competition	0
positive	7
negative	5
Punishment System	0
in general good	3
in general not good	10
Malus system	0
Individual	0
positive	8
negative	2
Group	0
positive	14
negative	8
Ownership participation	0
positive	7
negative	9

Data	0
Data gathering	0
positive	21
negative	9
Data monitoring	0
positive	16
negative	11
Data exchange to insurance	0
positive	9
negative	10
Trust ex ante	0
Complete trust	0
positive	3
negative	5
Partial trust	0
positive	13
negative	0
No trust	0
positive	5
negative	0
Trust ex post	0
Complete trust	0
positive	1
negative	4
Partial trust	0
positive	11
negative	0
No trust	0
positive	6
negative	0
Prisoner dilemma	0
differentiated pricing	12
differentiated pricing difficult	1


Simplicity 0
Contracts 0
Simplicity is important yes 18
Simplicity is unimportat no 2
Customer selection 0
Simplicity is positive 10
moderate simplicity 15
Detailed questionaire yes 3
Detailed questionaire no 11
Driving test yes 2
Driving test no 9
Simplicity is negative 4
Use 0
important positive 18
unimportant negative 0
Costs 0
pricing for own car 0
positive 8
negative 2
Pricing for carsharing 0
Performance should have impact 22
Performance should not have impact 4
Information gathering costs 0
can be high important 25
should be low 5
Control costs 0
can be high important 13
should be low 7

APPENDIX 2: CATEGORIZED EXCERPTS OF THE EXPERT INTERVIEWS

Herewith the complete set of codes and subcodes is presented with the related text segments and their number (count) from the transcripts of the expert interviews after the coding with the MAXQDA software was conducted:

Key Facts of QDA Analysis	
Interview Persons	n=15
Interview Time (recorded)	8h 06min 52sec
Transcription Time	63h 17min
Word Count (RTF-File)	59.224 words

Table x: Key Facts of QDA Analysis

2.1 RECOMMENDATION CARSHARING

Here the relevant codes and subcodes are presented for this category.

2.1.1 Recommendation carsharing – Engagement without limits

Theme	**Subresearch Questions**
Code	**Recommendation carsharing**
Sub Code	**Engagement without limits**
Segments	**06**

1. Aktiv, innovativ, vorauseilend sich damit zu beschäftigen. Es wird das Thema der Zukunft sein.
2. Nichts ist wichtiger als in dieser Zeit und in diesem breiten Geschäft, bei diesen Veränderungen zum Thema Digitalisierung, zum Thema Selbststeuerndes Autofahren jede Entwicklung aktiv zu begleiten. Das ist

meine feste Überzeugung, sonst sind Sie schneller weg als Kfz-Versicherer, als Sie überhaupt glauben können.

3. Carsharing ist ein Zukunftsmarkt. Das wird immer weiter zunehmen. Ich würde versuchen reinzugehen.
4. Ich denke es ist wichtig als starker Partner für diese Carsharingunternehmen da zu sein.
5. Selber machen. Ich habe gerade gedacht, wozu ist das nicht ein Produktmerkmal eines Versicherers, also dass er nicht wirklich früher in die Prozesskette des Geschäfts einsteigt.
6. Als eine Allianz oder eine HUK würde ich da richtig reingehen. Und zwar selber als Mitveranstalter so zu sagen.

2.1.2 Recommendation Carsharing – Engagement with Limits

Theme	Subresearch Questions
Code	**Recommendation carsharing**
Sub Code	**Engagement with limits**
Segments	**09**

1. Das heißt natürlich, das Geschäftspotential für die Kraftfahrtversicherer wird sich natürlich an den Geschäftsmodellen bzw. dem Erfolg der Geschäftsmodelle der Carsharingunternehmen festhangeln.
2. Carsharing wird das Autofahren auch im Privatbesitz mit Sicherheit als Carsharing alleine nicht ablösen. Es ist jetzt eine Sache die sich insbesondere in den Städtischen Ballungsräumen etabliert, die aber bei weitem noch nicht so geeignet ist, das private Auto, oder auch andere Verkehrsmittel wirklich zu ersetzen.
3. Meines Erachtens ist Carsharing eine sehr gute Ergänzung der Mobilität. Es ist ein Baustein in der persönlichen Mobilität, aber es wird niemals alleiniger Mobilitätsfaktor der nachher dominierend auf dem Mobilitätsmarkt sein wird.
4. Wenn wir jetzt unterstellen, dass das Thema Carsharing über die Jahre an Bedeutung gewinnen wird, zumindest in dem städtischen Bereich ist das

glaube ich auf jeden Fall so, dann wird ja jeder Versicherer versuchen sich ein möglichst großes Stück da raus zu schneiden.

5. Das heißt der Versicherer hat ja einen unmittelbaren Zugriff auf diesen ganzen Schadenprozess und das gibt natürlich Chancen um in einigen Bereichen deutlich großzügiger vorzugehen als das in dem herkömmlichen Bereich der Fall ist.
6. Ad hoc um etwas zu machen sollte er kurzfristig mit allen aktuellen Carsharinganbietern sprechen und gucken wie deren aktuelles Carsharinggeschäft abgewickelt werden kann. Es geht ja um Haftpflicht, Teilkasko, Vollkasko, da ist ja schon ein relativ großes Geschäft vorhanden.
7. Also ist es glaube ich, daß es schon sehr sehr clever ist im Sinne von Testfeldern zu schauen, daß man die Möglichkeit bekommt aus Versicherersicht mit Carsharinganbietern zusammenzuarbeiten.
8. Ich würde ihm empfehlen über Versicherungen für private Carsharingangebote nachzudenken.
9. Ich würde das genauso machen wie bei den Mietwagenflotten, oder wie bei großen Firmenflotten. Das heißt, ich habe über die Zeit Erfahrungswerte was die Schadenbelastung angeht und ich muß gucken, daß ich genügend Geld kriege um diese Schäden zu bezahlen und auch noch etwas übrig habe.

2.1.3 Recommendation Carsharing – No engagement at all

Theme	Subresearch Questions
Code	Recommendation carsharing
Sub Code	No engagement at all
Segments	03

1. Ich sehe es fast sinnvoller, es klingt zwar schön es zu haben, aber im Moment wäre es wohl sinnvoller auch eine Alternativstrategie zu fahren und nicht in das Thema rein zu gehen, weil wie gesagt die Betriebsorte wo das Crasharing läuft sind nicht unbedingt die Orte wo man viel mit dem Auto fahren sollte. Solange es dieses Carsharingangebot nur in größeren Maßen in stark urbanen Zonen gibt macht es keinen Sinn glaube ich da rein zugehen.

2. Wenn wir auf Risikosteuerung und so weiter hingehen und wer verursacht welchen Schaden, was eigentlich sinnvoll ist, weil wir auch aus Paralleluntersuchungen schon gehört haben, daß die Segmente risikotechnisch ein Fiasko auf Deutsch gesagt sind. Die lassen sich im Augenblick versicherungstechnisch kaum darstellen, je nachdem wo die Flotte, Stichwort Daimler Car2go und so weiter, gerade mal wieder unter Schutz ist.
3. Eine einfache Empfehlung ist schwierig weil es sehr stark von seiner Strategie abhängt. Wenn ich ein Kraftfahrtversicherer bin, der sehr stark auf Ertrag aus ist und das kann im Moment durchaus sein, wenn ich die Niedrigzinsphase sehe und den Druck der daraus resultiert auf das operative versicherungstechnische Ergebnis, dann würde ich an seiner Stelle die Finger vom Carsharinggeschäft lassen, und zwar komplett.

2.2 INCENTIVE SYSTEM

Here the relevant codes and subcodes are presented for this category.

2.2.1 Incentive System – In general good

Theme	Subresearch Questions
Code	**Incentive system**
Sub Code	**in general good**
Segments	**13**

1. Glaube ich auf jeden Fall.
2. Ich glaube im positiven Sinne.
3. Würde ich sicherlich mal ausprobieren. Aber das ist auch ein Thema das sicherlich eher durch den Carsharinganbieter vorangetrieben werden muß.
4. Ich würde sagen das macht total viel Sinn für den Carsharinganbieter Kunden stärker zu incentivieren vernünftig zu fahren, defensiv zu fahren, risikoarm zu fahren.
5. Ein Belohnungssystem müßte je nach Sharingmodell gemeinsam mit demjenigen, der das Auto besitzt irgendwie etwas sinnvolles gemacht werden.

6. Und dies wie es auch in einer Rabattstaffel üblich ist mit bestimmten Bonus- / Maluspunkten zu belegen.
7. Ich wäre da her so ein Belohnungsfan, als ein Bestrafungsfan, oder eine Bestrafung durch Nichterhalt einer Belohnung.
8. Zum Beispiel, ich kann ja sagen Du kriegst eine Belohnung, wenn Du schonend fährst. Hat eine viel höhere Akzeptanz als wenn es so klingt Du wirst bestraft wenn Du nicht schonend fährst.
9. Meine persönlich Meinung ist, da ich eher ein Mensch bin der dafür ist positive Incentives zu geben, aber es gibt halt auch gewisse Kunden, denen ist das egal, da würde ich dann schon mal sagen, knallhart bestrafen, wenn da wirklich verkehrswidriges Verhalten vorliegt.
10. Belohnung! Das Belohnungsthema.
11. Ich glaube daß es immer eine Kombination sein muß.
12. Aus Kundensicht ist sicherlich das letztgenannte zu präferieren, denn der Kunde will wahrscheinlich gar nichts. Aber ich glaube wir tun momentan noch viel zu wenig.
13. Wir sind bei dem Thema von eben, dieser Bonusmodelle wo man den Kunden definitiv, wenn er ein Stammkunde ist, da kann man sicherlich eine Menge an Kundenbindung tätigen.

2.2.2 Incentive System – In general not good

Theme	Subresearch Questions
Code	**Incentive system**
Sub Codes	**in general not good**
Segments	**03**

1. Die Möglichkeiten sind beim Carsharing meines Erachtens nach sehr begrenzt einsetzbar, vergleichbar mit dem Mietwagengeschäft.
2. Ich halte das für sehr schwierig das sinnvoll zu gestalten, denn der Carsharingnutzer wird schon häufig mit dem Gefühl die Fahrt antreten, „das ist ja nicht mein Auto“.
3. Wenn Du Belohnung oder Bestrafung ansprichst ist empirisch gesehen Bestrafung immer effektiver und nachhaltiger. Das haben eine ganze Menge Studien auch bewiesen.

2.2.3 Incentive system – Bonus systems – tied to carsharing – also other incentives

Theme	Subresearch Questions
Code	**Incentive system**
Sub Codes	**Bonus systems**
Sub Codes	**tied to carsharing**
Sub Codes	**also other incentives**
Segments	**10**

1. Das könnte ja zum Beispiel so sein, dass ähnlich wie in so einem Bonussystem wie Miles & More, ich mir durch besonders gutes Fahren und besonders häufiger Inanspruchnahme des Providers andere Goodies erwirtschaften kann.
2. Nicht Bestrafungssysteme, sondern Bonussysteme, so eine Art Miles and More System,
3. Stellen Sie sich mal vor, das ist ja gar nicht schlecht die Idee, wenn die dadurch Preisvorteile erlangen, oder irgendwelche Servicevorteile erlangen, weil sie ein bestimmtes Fahrverhalten als Gruppe haben.
4. Würde ich sicherlich mal ausprobieren. Aber das ist auch ein Thema das sicherlich eher durch den Carsharinganbieter vorangetrieben werden muß.
5. Da denke ich da gibt es genau die gleichen Unterschiede wie wir es beim Kraftfahrtbusiness auch kennen. Da wird es diejenigen geben, die sagen, ja ich bin Fan und hier meine Daten und bitte beurteilt mich nach meinen Daten, denn ich fahre ja sowieso viel besser als jeder Andere und kriege dann die meisten Punkte und kann mir dann irgendwie etwas schönes aussuchen aus einem Katalog, oder ich kriege Geld zurück.
6. Die Teilnahme an Maßnahmen, wie sie die Versicherer auch diskutieren, diese Box einzubauen, wenn ich mir jetzt vorstelle das zu tun wäre das für mich eine sehr proaktive Goodwill Aktion gegenüber meinem Partnerversicherer und dafür belohnt zu werden mit einem entsprechenden preislichen Nachlass, oder mit einem Bonussystem wie Teilnahme an einem Gutscheinprogramm oder einem Programmwert, wo ich auf einer anderen Seite einen Vorteil habe, der nicht direkt über den Preis gehen muß, weil das ist dann vielleicht im direkten Vergleich mit anderen Teilnehmern im Programm schwierig, aber ich werde belohnt.

7. Einerseits, was Sie sagen, Gutscheine für gutes Benehmen, man kann ja auch in so einer Art Beitragssätzen denken, ich erreiche dann sozusagen Freiheitsschadenrabatte, vielleicht auch im Carsharing, daß ich nur noch 90% oder 80% der Gebühr bezahle, oder Punkte gutgeschrieben kriege bei zum Beispiel verschiedenen Systemen wie Payback oder sonstwo einfliessen können.
8. Das könnte glaube ich eher spannend sein, das so zu machen, weil die Kunden wiederum auch so incentiviert werden das Fahrzeug weiter zu nutzen und deswegen am Ball zu bleiben. Das wäre glaube ich eine recht smarte Lösung um die Kunden bei der Stange zu halten.
9. Solche Dinge könnte man sich glaube ich vorstellen und, oder aber in Kooperation auch mit Tankstellen, daß man so etwas zum Punktesystem macht wie Payback zum Beispiel, das gibt es ja auch auf Tankstellen bezogen, in Kooperation mit Versicherungen, wo man dann so Punktegutschriften gibt, die der Kunde dann am Ende bei der Tankstelle zum Tanken, zum Waschen, zum Reparieren, und, oder aber bei der Versicherung einlösen kann um dann einmalig zum Beispiel bei einer Versicherung 20 Euro Prämiennachlass oder so etwas zu bekommen.
10. Das macht es vielleicht sogar noch attraktiver, wenn man über diese klassischen Bonifikationssysteme die sich nur auf das Auto beziehen hinausgeht.

2.2.4 Incentive system – Bonus systems – tied to carsharing – only for carsharing

Theme	Subresearch Questions
Code	**Incentive system**
Sub Codes	**Bonus systems**
Sub Codes	**tied to carsharing**
Sub Codes	**only for carsharing**
Segments	**04**

1. Also je mehr Kilometer desto besser, dann kriege ich wieder irgendwelche Goodies, dann kommt der Versicherer auch noch und hat irgendeine andere Sammelkarte wo ich auch noch Punkte sammeln kann. Ich glaube da wäre ich ganz persönlich etwas genervt.

2. Also auf jeden Fall keine Incentivierung die außerhalb des Systems steht. Ich fände es zum Beispiel total unbrauchbar wenn Reisegutscheine, oder Einkaufsgutscheine in irgendeinem Supermarkt anzubieten, weil durch die hohe Bandbreite der Nutzer nicht gegeben ist, daß die unbedingt da einkaufen gehen.
3. Ich glaube was nichts bringt ist, ich kriege bei Segafredo einen Kaffee umsonst, das glaube ich jetzt weniger. Aber diese direkt auf die Fahrt bezogenen, unmittelbar spürbaren Vorteile, wobei ich glaube, daß einen Parkplatz zu bekommen, wenn ich sparsam fahre, der größere Hebel ist, als es ist, daß man bei der nächsten Fahrt einen Vorteil hat.
4. Ich steuere dann irgendwo etwas rein, wenn ich einen Kaffee bei Aral gratis darüber kriege. Aber der Kunde ist ja auch nicht doof. Der versteht, ich soll zu Aral gehen, ich denke das Rabattsysteme, die in das eigene System hinein agieren, also den Kunden an die eigene Flotte binden, definitiv die sinnvolleren sind. Stichwort Freiminuten, ich kann zu vergünstigten Konditionen zukünftig etwas haben, vielleicht habe ich auch irgendwo einen priority Zugriff oder irgend so etwas, auf begehrte Fahrzeuge, oder ich sage ich mache einen Upgrade umsonst. Lieber in die eigene Kette rein.

2.2.5 Incentive system – Bonus system – Individual - positive

Theme	Subresearch Questions
Code	**Incentive system**
Sub Codes	**Bonus systems**
Sub Codes	**Individual**
Sub Codes	**positive**
Segments	**20**

1. Die nutzen das Carsharingauto nicht als Zweitwagen, sondern die nutzen das Carsharingauto als Erstwagen, dass ich dann eine Dokumentation eventuell über mein Fahrverhalten, dass ich dann beispielsweise, wenn ich mir wieder ein Auto hole die Möglichkeit habe mit einem gewissen Schadenfreiheitsrabatt einzusteigen.
2. Ich kann mir auch leicht Konstrukte ausmalen, wo das sogar für mich ein Asset ist, wenn ich die Möglichkeit habe, während des Carsharings zu dokumentieren, dass ich hinterher wenn ich mir dann ein Familienauto

kaufe wenn mein Studium zuende ist, ich auf einen gewissen Schadenfreiheitsrabatt einsteigen kann, weil während meiner Carsharingphase dokumentiert wurde, ich bin unfallfrei gewesen.

3. Glaube ich auf jeden Fall.
4. Also muß ich mit dem anders umgehen, und insofern fahre ich ja mal grundsätzlich vorsichtig, und wenn das vorsichtige Fahren auch noch belohnt wird, warum soll sich das nicht in einem solchen Preis- / Leistungsangebot abbilden?
5. Wie ich eben schon gesagt habe, das könnte also heißen zum Beispiel alle 1.000 Kilometer oder alle 5.000 Kilometer wird das Fahrverhalten überprüft und je besser ich mich verhalte als Fahrer, desto höher steige ich in der Hierarchie dieses Angebots und umso weniger muss ich für den Kilometer bezahlen.
6. Richtig funktionieren tut das nur dann, wenn der Kunde auch was davon hat und wenn sich der Markt letztendlich in diese Richtung bewegt, weil wenn man einen Anbieter hat der alles akribisch misst und alle anderen verhalten sich anders, dann ist es natürlich auch schwierig.
7. Doch, das glaube ich schon. Ich glaube im positiven Sinne.
8. Kann man drüber nachdenken, man muß nur an eines immer dabei denken, es muß von ihm beeinflussbar sein. In dem Augenblick in dem ich keinen Einfluss mehr drauf habe wer sonst noch meinen Bonus, mein Ergebnis oder meinen Vorteil beeinflusst, macht das für mich nicht mehr attraktiv.
9. Und nicht als gerecht oder ungerecht, als individuell angemessen in einer immer egomanischen Gesellschaft.
10. Ich würde sagen das macht total viel Sinn für den Carsharinganbieter Kunden stärker zu incentivieren vernünftig zu fahren, defensiv zu fahren, risikoarm zu fahren.
11. Warum nicht so ein Bonussystem nutzen um über ein Lift-system einem Nutzer eines Carsharing Smart Einfachmodells auch zu zeigen, Beetle fahren, Sportwagen fahren ist auch ganz schön.
12. Das Ganze immer als Belohnung, als Plus darstellen, auch wenn am Ende natürlich der gleiche Preis dabei rauskommt, als wenn ich den Grundpreis niedriger ansetzen würde und dann mit Bestrafung arbeite.
13. Auf der anderen Seite kann ich, und das schadet dem Vertrauen auch eigentlich nicht, einen Bonus für die besonders guten machen, den auch jeder erreichen kann.

14. Und ansonsten so eine individuelle, wie bei der Silberkarte tatsächlich, was wir auch aus dem Versicherungsvertrieb stark kennen, ich bin im Senior Club.
15. Ich glaube innerhalb eines Anbieters würde ich mal vermuten, daß Car2Go oder DriveNow schon in der Lage wären eine Belohnung auszustellen.
16. Zum Beispiel Taxijoker könnte man mal als ein Belohnungsbeispiel aufnehmen, daß man dem Kunden sagt, ok, wenn Du das und das positiv erfüllt hast kriegst Du einmal im Monat, oder eine gewisse Anzahl wo Du dann Dein Auto stehen lassen kannst, wenn Du Abends unterwegs warst und ein bischen was getrunken hast, kannst Du dann zum Beispiel mit dem Taxi nach Hause fahren.
17. Und es muß vor allem, wenn es einen Belohnungsmechanismus gibt ein deutlich höherer sein.
18. Von daher, wenn Gutschein überhaupt, dann im Rahmen des Systems. Man könnte sich vorstellen, daß man zum Beispiel Zugang zu anderen Fahrzeugen kriegt, zu einem Cabrio zum Beispiel, das könnte ich mir vorstellen.
19. Ich sehe schon eine Korrelation, daß Menschen die eine Belohnung erwarten eher bereit sind bei so einem Spiel mitzumachen.
20. Aber ich glaube, daß man auf der anderen Seite nach oben auch sehr weiche Kriterien definieren kann und eher mit Belohnungen arbeitet.

2.2.6 Incentive system – Bonus systems – Individual - negative

Theme	Subresearch Questions
Code	**Incentive system**
Sub Codes	**Bonus systems**
Sub Codes	**Individual**
Sub Codes	**negative**
Segments	**03**

1. Differenzierte Spielereien, um es einmal negativ auszudrücken, wie er dann seine Nutzerprämie, der Carsharingnutzer denkt ja nicht in Versicherungen, der denkt ja nur in Carsharingnutzung, seine Carsharingnutzung eventuell noch einmal um 10 oder 20 Euro im Monat zu drücken oder im Jahr indem er relativ differenzierte Gutscheinspielchen

mitmacht oder Verrechnungsspielchen mit seiner privaten Kfz-Versicherung, ich glaube das würden viele Marketingexperten, oder Inhaber auf der Carsharingseite als nicht hilfreich für ihr Produktversprechen sehen.

2. Ich kann mir nicht vorstellen, daß für diese kleinen Anreize der Durchschnittsfahrer sich überhaupt diesen ganzen Prozeduren unterwirft und da auch wenig Vorteile sieht.
3. Ich kann mir garnicht vorstellen, daß da ein großer Einfluss möglich ist auf den einzelnen Fahrer.

2.2.7 Incentive system – Bonus systems – Group - positive

Theme	Subresearch Questions
Code	**Incentive system**
Sub Code	**Bonus systems**
Sub Code	**Group**
Sub Code	**positive**
Segments	**03**

1. Es gibt dafür sicherlich auch einen fachlich besseren Begriff, Laienhaft könnte man sich das ja so vorstellen als Geschäftsmodell, ich würde quasi so eine Art Prozessfrenchise anbieten.
2. Man macht quasi kein Car2go, sondern man schneidet die Kollektive eher mit so einem Frenchiseansatz, obwohl das jetzt juristisch nicht korrekt ausgedrückt ist, kleine.
3. Und dann werde ich upgegraded durch meine Unterstützung des Teams durch bestimmte Creditpoints und kriege dann am Wochenende das Beetle-Cabriolet weil ich vorher gesagt habe, ich verreise gerne am Wochenende und ich mag sportliche Autos.

2.2.8 Incentive system – Bonus systems – Group - negative

Theme	Subresearch Questions

Code	**Incentive system**
Sub Code	**Bonus systems**
Sub Code	**Group**
Sub Code	**negative**
Segments	**04**

1. Wenn ich aber anonym bei einem Unternehmen beteiligt bin habe ich keinen Einfluss darauf.
2. Das hängt glaube ich damit zusammen, dass der Belohnungseffekt, den Du über solche Kollektive hast nicht spürbar genug ist um das Verhalten so nachhaltig zu verändern.
3. Das könnte jetzt natürlich auch einen negativen Effekt haben, wenn ich jetzt zum Beispiel in einer üblen Gruppe bin, dann sage ich vielleicht, jetzt gebe ich mal richtig Gas um mehr Schaden anzurichten. Vielleicht wirkt das nur, solange man auf den aussichtsreichen Plätzen ist und gar nicht bei der Masse.
4. Ich finde die Idee ganz gut, aber wenn ich mir andere Communities anschaue geht es ja darum daß man sich entweder persönlich kennt, oder man hat seine Profile hinterlegt.

2.2.9 Incentive system – Class systems - positive

Theme	Subresearch Questions
Code	**Incentive system**
Sub Code	**Class systems**
Sub Code	**positive**
Segments	**10**

1. Aber es ist vielleicht auch durchaus nicht ausgeschlossen, dass so eine Carsharinggruppe sich auch ähnliche Leute sucht, die ein ähnliches Nutzungsverhalten haben, dann ist das auch nicht ausgeschlossen, dass man sagt, das ist eine privilegierte Gruppe innerhalb eines bundesweiten Carsharingangebots.

2. Du bist unser Triple A Kunde, Du bist jetzt 2 Jahre unfallfrei gefahren, und so weiter. Da könnte man so etwas wie eine Kundenbindungsstory bauen.
3. Nehmen Sie mal einem Vielflieger seine silberne Karte weg, dann verfällt der in tiefste Depressionen, weil er auf einmal abgestuft ist. Nehmen Sie einem DriveNow Fahrer seinen Bonus, die ersten 5 Minuten immer frei, oder keine Ahnung was der da hat weg, da wird der, wenn er einmal schon diese Stufe erreicht hat, sehr motiviert sein in dieser Gruppe zu bleiben.
4. Also diese Goldkarten die funktionieren ja in der Regel ganz gut.
5. Man könnte das natürlich schon aus dem Flugbereich übertragen, da gibt es ja dann auch die Awards Programme nicht nur für eine einzige Airline, sondern immer eingebunden in ein zum Beispiel Miles and More Sytem wo man dann bei mehreren Anbietern Punkte sammeln kann.
6. Das ist am Ende ja der ähnliche Gedanke wie vielleicht jetzt mit so einer Miles and More Karte Carsharing. Also von daher, wenn der Aspekt da mit reinfließt, betrachte ich das genauso wie vorhin gesehen. Das könnte ich mir schon vorstellen.
7. Ich kann mir das gut vorstellen so ein Modell mit diesen Abstufungen zu haben, da es eine Möglichkeit wäre so ein Incentive relativ versteckt einzubauen, damit es nicht so offensichtlich wird.
8. Da haben wir auch schon einmal drüber nachgedacht so etwas zu etablieren. Das ist dann eher eine Frage der Priorisierung. Aber das macht sicher Sinn.
9. Vom Prinzip her sicher. Die Vielfahrer könnten eine eigene Kategorie bilden und auch klar abzugrenzen sein von den gelegentlichen Fahrern.
10. Ich glaube das ist ein ganz guter Gedanke. Auch das mal aus meiner Generationsbrille heraus betrachtet, ich finde das immer spannend und appetitlich, wenn ich davon Vorteile habe.

2.2.10 Incentive system – Class systems - negative

Theme	Subresearch Questions
Code	**Incentive system**
Sub Code	**Class systems**
Sub Code	**negative**
Segments	**01**

1. Das man ihm suggeriert, wenn ich unfallfrei fahre, wenn ich umsichtiger mit dem Fahrzeug umgehe, habe ich nach einer gewissen Zeit gewisse Vorteile. Das wird sicherlich die Zukunft zeigen, aber Karte sehe ich da jetzt nicht so, das ist nur das Symbolische.

2.2.11 Incentive system – Competition - positive

Theme	Subresearch Questions
Code	**Incentive system**
Sub Code	**Competition**
	positive
Segments	**07**

1. Genau, und wenn es dann 1 Jahr oder 2 Jahre, oder 3, oder 4 Jahre, dann hat man 1 Jahr frei oder halbe Kosten, oder was auch immer, das ist doch attraktiv.
2. Das könnte dann ja bedeuten, dass ich eine hohe Attraktivität hinterlege auch aufzusteigen.
3. Sie kriegen dann so eine Rückmeldung, das hat auch so etwas spielerisches, über ihr Fahrverhalten.
4. Wenn ich diese Teams in einer gewissen Form deanonymisiere das wäre gut.
5. Ich finde die Idee ja schon ganz reizvoll. Ein bischen war ja schon die Idee von dem Car2go Eco-Score angesprochen.
6. Ich glaube dieses Teamding könnte funktionieren, wenn sich die Teammitglieder ein Stück weit kennen und auch privat irgendwie zusammen sind.
7. Absolut. Wir haben das auch schon ein paar Mal ausprobiert. Wir haben zum Beispiel Aktionen gemacht. Man konnte auch mal eine Zeit lang Fahrstrecken auf einer Karte mappen und dann irgendwelche Bilder zusammenfahren. Zum Beispiel ein Herz in München fahren, oder so etwas. Das haben die Kunden total gut angenommen.

2.2.12 Incentive system – Competition - negative

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Theme	Subresearch Questions
Code	**Incentive system**
Sub Code	**Competition**
Sub Code	**negative**
Segments	**05**

1. Das ist jetzt eine ganz persönliche Haltung, ich weiß, die Studien gehen in eine andere Richtung, aber ich bin der Meinung, daß allzu viel Gameification nicht zur Versicherung paßt.
2. Bei so einem großen Anbieter wie DriveNow oder Flinkster oder so etwas, wo es sehr viele Nutzer gibt die sich nicht kennen, ist das mit dem Team bilden sehr artifiziell. Wenn man in einem Team dort drin ist kann man gar nicht einschätzen wie die Anderen sich verhalten und ich hänge ein bischen von deren Wollen oder nicht Wollen ab wie ich performe.
3. Sehe ich pessimistisch, weil ja auch immer sehr viel Social Network mit wirtschaftlichen Interessen vermischt werden und ich glaube da machen wir generell einen großen Fehler.
4. Das ist schwer zu beurteilen, dazu müsste man wirklich wissen wie die Kundenstrukturen wirklich aussehen bei den Carsharinganbietern.
5. Das ist schwer zu sagen, wenn Du jemanden hast der fast 50 ist, dem die spielerischen Elemente so ein bischen abgehen. Ich würde instinktiv sagen das funktioniert nicht, obwohl das Eigeninteresse immer wieder das Durchschlagende ist. Was habe ich persönlich als Fahrer eines Carsharinganbieters davon?

2.3 PUNISHMENT SYSTEM

Here the relevant codes and subcodes are presented for this category.

2.3.1 Punishment System – In general good

Theme	Subresearch Questions
Code	Punishment System
Sub Codes	**in general good**

Segments	**03**

1. Und dies wie es auch in einer Rabattstaffel üblich ist mit bestimmten Bonus- / Maluspunkten zu belegen.
2. Es gibt einfach bestimmte Kriterien, die dazu führen, daß jemand vielleicht auch von der Mitgliedschaft ausgeschlossen wird, wenn ein bestimmtes Verhalten regelmäßig auftritt.
3. Wenn Du Belohnung oder Bestrafung ansprichst ist empirisch gesehen Bestrafung immer effektiver und nachhaltiger. Das haben eine ganze Menge Studien auch bewiesen.

2.3.2 Punishment System – In general not good

Theme	**Subresearch Questions**
Code	**Punishment System**
Sub Code	**in general not good**
Segments	**10**

1. Die Möglichkeiten sind beim Carsharing meines Erachtens nach sehr begrenzt einsetzbar, vergleichbar mit dem Mietwagengeschäft.
2. Nicht Bestrafungssysteme, sondern Bonussysteme, so eine Art Miles and More System.
3. Ich wäre da her so ein Belohnungsfan, als ein Bestrafungsfan, oder eine Bestrafung durch Nichterhalt einer Belohnung.
4. Zum Beispiel, ich kann ja sagen Du kriegst eine Belohnung, wenn Du schonend fährst. Hat eine viel höhere Akzeptanz als wenn es so klingt Du wirst bestraft wenn Du nicht schonend fährst.
5. Bestrafung wird gar nicht akzeptiert.
6. Ich darf nur nie sagen, ich stelle Dich jetzt schlechter als vorher und ich darf nie sagen, ich kontrolliere Dich jetzt um Dich zu bestrafen, sondern nur die Belohnungsvariante.
7. Meine persönlich Meinung ist, da ich eher ein Mensch bin der dafür ist positive Incentives zu geben, aber es gibt halt auch gewisse Kunden, denen ist das egal, da würde ich dann schon mal sagen, knallhart bestrafen, wenn da wirklich verkehrswidriges Verhalten vorliegt.

8. Also, ich glaube ein Bestrafungsmechanismus wird bei den Leuten nur dazu führen, dass sie sich vielleicht entweder ganz aus dem Bereich zurückziehen, was vielleicht nicht ganz so unangenehm wäre für die Anbieter von dem Carsharing, daher macht man das ja auch.
9. Ich steuere sie in andere Netze hinein, weil es ja Wettbewerb auf diesem Gebiet gibt, dasist vielleicht auch etwas gewollt als Anbieter, aber im Augenblick möchte man natürlich ungern Kunden verlieren an jemanden, wenn man irgendwie mit Sanktionen auf den Kunden zugeht.
10. Aber, ich kann mir vorstellen, wenn einer statt mit dem eigenen Auto prinzipiell nur solche Dinge macht, daß er sich beim Carsharing ein Auto besorgt um die Strecken zurückzulegen, die er zurücklegen möchte, dann könnte das so sein.

2.3.3 Punishment System – Malus system – Individual - positive

Theme	Subresearch Questions
Code	**Punishment System**
Sub Code	**Malus system**
Sub Code	**Individual**
Sub Code	**positive**
Segments	**08**

1. Ich glaube da werden andere Mechanismen eine Rolle spielen, die sich eher auf die Grundannahme beziehen. Das heißt, daß vielleicht so wie heute die Mietwagenanbieter sagen, ich nehme keine Leute unter einem bestimmten Lebensalter.
2. Da ist auch die Justiz gefragt, diese Leute gehören einfach hart bestraft.
3. Das Auto spiegelt den Kunden zurück wenn er sich anders verhält als sein Profil. Sagen wir mal der Kunde sagt ich fahre gerade wo ich fahre nicht schneller als 80 und er fährt permanent 100, dann meldet das Auto zurück „Achtung lieber Kunde, du hast gesagt Du fährst nicht schneller als 80, Du fährst aber jetzt schon seit 10 Minuten über 100, überprüfe doch mal bitte dein Verhalten. Und wenn Du es nicht tust, dann wird es halt teurer.

4. Es funktioniert immer an das Kollektiv zu denken, wenn ich das Kollektiv, oder die Gesellschaft, oder was auch immer personalisieren kann. Wenn ich die Personen individualisieren kann.
5. Das ist ja genau das System, wer Unfälle macht, daß diese kleinen Bestrafungen dem Kunden unheimlich viel ausmachen.
6. Meine persönlich Meinung ist, da ich eher ein Mensch bin der dafür ist positive Incentives zu geben, aber es gibt halt auch gewisse Kunden, denen ist das egal, da würde ich dann schon mal sagen, knallhart bestrafen, wenn da wirklich verkehrswidriges Verhalten vorliegt.
7. Das ist sicherlich ein probates Mittel bei Bestrafungen die echte Grenzüberschreitungen sind.
8. As wird sicherlich die effizienteste Maßnahme sein. Oder, daß er eine Strafe zahlt oder ähnliche Dinge.

2.3.4 Punishment System – Malus system – Individual - negative

Theme	Subresearch Questions
Code	**Punishment System**
Sub Code	**Malus system**
Sub Code	**Individual**
Sub Code	**negative**
Segments	**02**

1. Bei eher positiv eingestellten Menschen, die werden ihr Fahrverhalten vielleicht nicht sehr anpassen. Ich glaube nicht, dass dort ein Sanktionsmechanismus sehr wirkt.
2. Das Thema Bonus / Malus, das mit dem Malus ist immer so eine problematische Sache, damit steuere ich Kunden letztendlich aus.

2.3.5 Punishment System – Malus system – Group - positive

Theme	Subresearch Questions
Code	**Punishment System**
Sub Code	**Malus system**

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Sub Code	**Group**
Sub Code	**positive**
Segments	**14**

1. Das wäre dann ja auch nicht Telematik gestützt, sondern es wäre immer noch ein Kollektiv, was man über ein Flottenpricing über die Jahre anpassen könnte. Das wären die einzigen Modelle die mir jetzt als Laie spontan einfallen.
2. Es gibt dafür sicherlich auch einen fachlich besseren Begriff, Laienhaft könnte man sich das ja so vorstellen als Geschäftsmodell, ich würde quasi so eine Art Prozessfrenchise anbieten.
3. Man macht quasi kein Car2go, sondern man schneidet die Kollektive eher mit so einem Frenchiseansatz, obwohl das jetzt juristisch nicht korrekt ausgedrückt ist, kleiner.
4. Das ist aber dann natürlich ein Modell, wo man gucken muß, ob das funktionieren kann, in einer Organisation, daß ich sozusagen mit Eigentumsanteilen arbeite um dann Gruppenzwang auszuüben um daran zu arbeiten, daß jeder damit umgeht.
5. Das was früher die Familie war in der man sich ausgeholfen oder sozial kontrolliert hat, werden heute die Netzwerke.
6. Ich könnte mir vorstellen, dass die soziale Kontrolle in genügend kleinen Netzwerken durchaus funktionieren könnte.
7. Ich glaube eine wichtige Rolle beim Thema Vertrauen spielt die Carsharing Community. Also, daß ich auch immer bewerten muß wie ich das Fahrzeug vorgefunden habe und so weiter ist ein Grund daß die Leute sorgfältiger mit den Fahrzeugen umgehen.
8. Ich könnte mir vorstellen, bei einem geschlossenerem System, bei so einem klassischen Modell wie Stattauauto, wo es dieses Genossenschaftsmodell gab die sich einen PKW angeschafft haben, weil da der Zusammenhalt in der Gruppe enger ist und sich teilweise die Mitglieder kennen.
9. Ich glaube dieses Teamding könnte funktionieren, wenn sich die Teammitglieder ein Stück weit kennen und auch privat irgendwie zusammen sind. Wenn die Teams wild zusammen gestellt werden, alle aus einem Ort zum Beispiel, die sich nicht untereinander kennen und am Ende auch nichts miteinander zu tun haben, fehlt glaube ich die Identifikation damit und dann würde eher dieses individuelle Belohnungssystem funktionieren, als das Teamsystem.

10. Im stationsbasierten Carsharing gerade so in Kleinstädten und auf dem Lande wo es Anbieter gibt wie zum Beispiel stadtmobil, ja da kann man das schon einmal eher sehen weil das schon mehr so als eigener Autoersatz angesehen wird und das Auto auch etwas pfleglicher behandelt wird und die Fahrzeuge auch nicht von so vielen unterschiedlichen Kunden benutzt werden.
11. Zumindest einmal, daß die Gruppen ein Mindestmaß an Personalisierung haben. Dann fühle ich mich schon wieder moralisch denen verpflichtet. Selbst wenn ich mich gar nicht ausgetauscht hätte weiß ich, das ist die Manuela aus Darmstadt und die sieht so aus. In dem Moment ist es schon eine Person und ich weiß, wenn ich jetzt hier rase, dann kriegt die da ihre Gutschrift nicht.
12. Dann müsste man wahrscheinlich über so einen Teamgedanken nach unten die negativen Risiken durch entsprechende Preispolitik, oder Selektionsmechanismen einfach ausfiltern.
13. Sie wollen vor allem auch keine ökonomischen Nachteile für das Kollektiv. Es gibt so einen schönen Spruch, bei Geld hört die Freundschaft auf.
14. Das ist schwer zu sagen, wenn man es spielerisch macht, dann ist vielleicht sogar das sich selber eine Gruppe suchen, „komm wir bilden hier ein Team und wir versuchen einen super Preis rauszufahren, wir alle schwören uns, daß wir super fahren und das wir hier aufpassen und wir alle haben vielleicht auch den gleichen Weg für den wir so ein Auto nutzen“, das ist vielleicht dann noch das Erfolgversprechendste.

2.3.6 Punishment System – Malus system – Group - negative

Theme	Subresearch Questions
Code	**Punishment System**
Sub Codes	**Malus system**
Sub Codes	**Group**
Sub Codes	**negative**
Segments	**08**

1. Recycling-Image, der Markt wird entscheiden
2. Zugang zum Kunden ohne Zertifizierungssystems nicht möglich,

3. Zertifizierung ist ein Erfolgsfaktor, Kunden würden sonst nicht bei uns kaufen, ohne Prozesssicherheit und Hygiene keine Verkauf sind so wichtige Herstellungsfaktoren wie ein fehlerfreies Produkt.
4. Ein Verpackungslieferant der Verpackungen in die Food Industrie liefert, der muss sich damit befassen, aber die Herstellung der Verpackung an sich da ist die GMP das wichtigste. Und diese Zertifizierungen beinhaltet schon was, das ist so weit definiert und soweit detailliert dass das Bestehen eines solchen Audits durchaus was über die Abläufe bei dem jeweiligen Hersteller aussagen.
5. Ansonsten die Kontrolle ist ja Teil der GMP jedes Glieds in der Kette. Jemand der Druckfarbe herstellt, stellt die nach GMP her. Jemand er damit eine faserbasierte Verpackung bedruckt, macht das nach GMP. Und die GMP auf jeder einzelnen Stufe beinhaltet ja, dass ich kontrolliere, dass ich entsprechende Kontrollpunkte aufstelle und mir überlege: Will ich einen 100% Eingangskontrolle machen? Wie genau schaue ich welchen Rohstoff an? Wie oft und unter welchen Umständen mache ich Migrationstests? Welche Sorte meiner Verpackungen kann ich zusammenfassen und nur den Worst-Case untersuchen? Solche Überlegungen gehören ja mit zur GMP, so dass die Kontrolle nicht fakultativ ist sondern: Eine Kontrolle muss im Rahmen der GMP stattfinden.
6. Vielleicht in der Größenordnung, das ist ja ein sukzessiver Prozess. Zunächst mal angefangen mit Hygienemanagementsystemen, wenn wir den Fokus richten auf Bedarfsgegenstände.
7. Aber es war ein schrittweiser Prozess hier zu einer Professionalisierung zu kommen, bis hin dann zu den absoluten Top-Zertifizierungen in dem Bereich BRC, IUP oder ISO etc. PackSecure also den IFS-Standard.
8. Ich glaube das die ersten in der Branche die ein neues System adaptieren, einführen natürlich einen gewissen Vorteil am Markt haben, indem sie hier im Sinne des Marketings, der Vermarktung des eigenen Unternehmen ein Signal an Kunden aussenden können.

2.4 OWNERSHIP PARTICIPATION

Here the relevant codes and subcodes are presented for this category.

2.4.1 Ownership participation - positive

Theme	Subresearch Questions
Code	Ownership participation
Sub Codes	positive
Segments	07

1. Es gibt dafür sicherlich auch einen fachlich besseren Begriff, Laienhaft könnte man sich das ja so vorstellen als Geschäftsmodell, ich würde quasi so eine Art Prozessfrenchise anbieten.
2. Das finde ich einen interessanten Ansatz. Das wäre so ein bischen etwas wie Friendsurance, daß man sozusagen versucht kleine Kollektive zusammen zu bringen, das wäre ja eine typische Versicherungseigenschaft, die sehe ich dann aber eher auf lokaler Ebene.
3. Friendsurance. Ich bin eigentlich Fan von der Idee, ich glaube das ist das was in Zukunft mehr und mehr kommen wird.
4. Wenn die Usergruppe dann auch noch das Fahrzeug gemeinsam besitzt, dann denke ich mir ist dieses Modell auch sehr erfolgversprechend.
5. Das ist ein anderes Verständnis von was ist Eigentum, aber ich finde den Eigentumsgedanken beim Carsharing gut, weil Eigentum ja auch verpflichtet zu Achtsamkeit, zu Sorgfalt und es erhöht die Werthaltigkeit des Guts.
6. Das würde wiederum eher dafür sprechen, wie kann man bestimmte Nutzergruppen bündeln um sozusagen diesen Eigentumsgedanken, diesen sich verbunden fühlen Gedanken hochzuziehen.
7. Ich finde ja zum Beispiel diesen Friendsurance Ansatz ganz spannend, die auch einen Kollektivansatz mit gegenseitiger Verantwortung haben.

2.4.2 Ownership participation - negative

Theme	Subresearch Questions
Code	Ownership participation
Sub Codes	negative
Segments	09

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1. Ich sage es mal so, die Frage ist, wiederum was ist die Motivation beim Thema Carsharing aus Kundensicht, und da glaube ich die Motivation ist, dass ich zwei (2) Themen habe, noch mal, Convenience und Preis, und ich hätte jetzt gar nicht die Erwartung, oder ich glaube auch nicht dass die Menschen die das Nutzen die Erwartung haben, daß da noch irgendein übergeordnetes Konzept dahinter steckt.
2. Ich glaube schon, dass sich das dahin entwickeln wird, aber weniger im Sinne von ex post Ausschüttung, Gewinnbeteiligung, sondern eher in einer Spreizung der Preise.
3. Ob da eine Bereitschaft da ist genossenschaftsmäßig mitzuwirken, außer es würden sehr große wirtschaftliche Vorteile im Vordergrund stehen, da könnte das schon noch einmal interessant sein. Aber bei den Kosten die Carsharing aktuell hat oder was an Mobilitätsbudget da ist pro Monat würde ich erst einmal sagen nein.
4. Ich glaube nach meinem jetzigen Eindruck gibt es Kunden die Carsharing ausschließlich und sehr viel benutzen und dann gibt es meines Erachtens welche die das mal situativ einsetzen.
5. Ich kann mir das nicht vorstellen, weil erfahrungsgemäß geteilte Verantwortung ist null Verantwortung.
6. Das halte ich für ziemlich unrealistisch. Früher war das ja auch so. Carsharing gibt es seit den 50-er Jahren, da haben sich Leute gemeinsam ein Auto gekauft.
7. Definitiv nein. Bestes Beispiel dafür sind Versicherungsvereine auf Gegenseitigkeit. Ich glaube kein Kunde fühlt sich irgendwo besser, anders, solidarischer versichert, wenn er Mitglied eines Versicherungsvereins auf Gegenseitigkeit ist, gegenüber ich bin bei der Allianz oder anderen Aktiengesellschaften versichert und habe da meinen Versicherungsschutz.
8. Ich kann mir nicht vorstellen, daß es funktioniert im Carsharingbereich. Das ist ja nicht so, daß sich drei oder sechs Leute entscheiden ein Auto zu kaufen, was sie dann gemeinsam benutzen, das wird ja nie funktionieren.
9. Ich glaube die Generation, die Carsharing nutzt will keine Verpflichtungen haben. Die will kein Eigentum haben, die will auch kein eigenes Auto haben und die sind angezogen von dieser Flexibilität mal in so eine Kiste reinzuhopsen und dann eine halbe Stunde später wieder raus.

2.5 DATA

Here the relevant codes and subcodes are presented for this category.

2.5.1 Data – Data gathering - positive

Theme	Subresearch Questions
Code	**Data**
Sub Code	Data gathering
Sub Code	positive
Segments	**21**

1. Meine Hypothese wäre, dass die Bereitschaft für einen Carsharingnutzer deutlich größer wäre, diese Daten erheben und nutzen zu lassen als im Bereich seines persönlichen Fahrzeugs, weil normalerweise das Thema Carsharing aus einer eher rationalen Sicht im Sinne von, ich kann mir kein Auto leisten, oder ich nutze mein Auto wenig, oder ich lebe in einem Ballungszentrum, wo das Parken teurer ist als das Auto, den Kunden dazu veranlasst wahrscheinlich auch beim Thema Telematik im weitesten Sinne auch eine rationalere Denkwelt anzusetzen, als wenn es um sein persönliches Cabrio geht, wo er dann wahrscheinlich auch eher in der Verfassung ist zu sagen ich möchte jetzt auch an einem schönen Sommertag einfach mal um die Kurven heizen.
2. Ich glaube da gibt es aus Sicht des Carsharinganbieters die entscheidende Sichtweise. Wenn man dem Carsharinganbieter das schmackhaft machen kann, dass das natürlich auch mittelbar für seine potentiellen Kunden lohnen würde, glaube ich, dass sich in der Zukunft, so wie ich Carsharing verstehe und die wenigen Male wie ich es erlebt habe, es schon die Möglichkeit gibt, das war mein Eingangsstatement, im Gegensatz zu einem individuell besessenen Fahrzeug durch die relativ rationale Herangehensweise eines Individuums „ich nehme jetzt an einem Carsharingmodell teil“ aus ihm weitaus mehr Informationen herauspressen

kann, als das wahrscheinlich auf absehbare Zeit eine Kfz-Versicherung bei einem Fahrer von einem im individuellen Besitz befindlichen Fahrzeug tun kann.

3. Ich glaube als Versicherer lohnt es sich dort mehr Transparenz über die Fahrer und deren Verhalten herausholen zu wollen.
4. Also, ich glaube grundsächlich daß die Bereitschaft größer sein wird, als die Bereitschaft Telematik Tarife bei ganz normalen Kfz-Versicherungensverträgen abzuschliessen.
5. Ich glaube aber grundsätzlich ist das Thema Daten und dann die Auswertung der Daten beim Thema Carsharing einfacher, weil man bekommt die Daten einfacher von Kunden und die nachgelagerte Messung ist auch einfacher, als bei den klassischen Telematiksystemen, die die Versicherer momentan ausprobieren, weil ich letztendlich das dem Kunde von vornherein klar und deutlich sagen kann und wahrscheinlich der Kunde gar keine andere Erwartungshaltung hat.
6. Die Frage ist, das zieht sich als roter Faden durch den Dialog, wieviel Aufwand macht diese Auswertung. Ich glaube das wird sich durch die Technik lösen.
7. Und grundsätzlich bin ich der Meinung wird das funktionieren, wenn der Versicherer ganz eng mit dem Hersteller beziehungsweise dem Provider zusammenarbeitet, weil ganz viele Daten einfach aus dem Auto heraus kommen, die dann auch unterschiedliche Tarifierungsmöglichkeiten ermöglichen und die haben mit dem Verhalten oder mit den Daten des Kunden dann eigentlich nur mittelbar zu tun.
8. Also ich sehe tendenziell, dass die Aussage dazu eine höhere Bereitschaft Informationen zum Fahrverhalten zu geben beim Carsharing, bedingt durch die Tatsache, dass die Fahrtzeit bzw. die Einsatzzeit limitierter ist als beim Privatfahrzeug und damit auch nur begrenzt Daten weitergegeben werden.
9. Da haben die kein Problem mit, das ist meine feste Überzeugung.
10. Die Datendichte die kommerzielle Carsharinganbieter wie zum Beispiel DriveNow hat ist sensationell. DriveNow weiß hundertprozentig wann ich in ein Auto einsteige, wann ich den Motor anlasse, wann ich die

Geschwindigkeit übertrete, wann ich ökonomisch fahre, wann ich nicht ökonomisch fahre und hat dadurch eine Datendichte über mich, die sensationell ist.

11. Der Carsharinganbieter ist derjenige der am nächsten dran ist Verhaltens- beziehungsweise Fahrmuster bei den Kunden zu erkennen und der Versicherer ist ja letztlich irgendwo dahinter geschaltet.
12. Insofern glaube ich macht das total viel Sinn für die Carsharinganbieter diese Daten zu sammeln und dann gerne auch mit Versicherern an die Frage heranzugehen wie muß man gegebenenfalls Prämien spreizen, risikogerechter werden, wahrscheinlich auch Minutenpreise spreizen.
13. Das hat natürlich einen gewissen präventiven Effekt, wenn ich davon ausgehe, daß die Daten dann irgendwann auch für mich persönlich wertvoll sein könnten.
14. Ich kann mir das gerade im Carsharing noch am ehesten gut vorstellen.
15. Ich glaube im weiteren Verlauf wird es in einem solchen Modell nie gänzlich ohne ein paar objektive Daten funktionieren.
16. Man kann ja über das Thema Mobilität viele viele vertriebliche Dinge machen, aber dazu braucht man Daten, aber die würde ich im Vorfeld, ganz easy, ganz smart erheben.
17. Ich habe jetzt nicht vom Markt gehört, dass das hier groß sensibel ist aus Sicht der Nutzer.
18. Ich verstehe die Frage jetzt so im Sinne von Telematikähnlichen Aufzeichnungen was das Fahrverhalten angeht. Ich denke das insofern, weil die Carsharingplattformen auch alle Internet- beziehungsweise Onlinebasiert sind.
19. Erst einmal unter der Überschrift je mehr Daten wir bekommen, desto besser können wir glaube ich das Risiko, das für uns alle ja wirklich neu ist am Ende auch einschätzen und davon ableiten was sind risikogerechte Prämien und welcher Versicherungsschutz ist nötig und welcher vielleicht nicht?
20. Die Zielgruppe ist grundsätzlich aufgeschlossener. Wir beobachten aber auch, daß sich diese Zielgruppe sukzessive verändert.
21. In der Hinsicht wird es so sein, wie fast immer wenn Informationen gesammelt werden. Sobald den Leuten klar wird was da gesammelt wird

und wieviel gesammelt wird, werden sie darüber nachdenken für welchen Zweck?

2.5.2 Data – Data gathering - negative

Theme	Subresearch Questions
Code	**Data**
Sub Codes	**Data gathering**
Sub Codes	**negative**
Segments	**09**

1. Ich kann mir schon vorstellen, wenn ich mir angucke wie im Moment Telematiktarife die ja im Moment viele Unternehmen inzwischen auf den Markt gebracht haben, wie relativ wenig Akzeptanz diese Systeme finden.
2. Die Entwicklung in Deutschland in den letzten 12 Monaten was Telematik angeht ist sehr verhalten insofern ist Telematik aus meiner Sicht zunächst einmal eher eine Bremse für das Thema Carsharing.
3. Sie sehen in mir keinen Befürworter dieser ganzen Telematik Dinge, weil wir gerade in Deutschland eher eine Aversionshaltung haben, das zeigt auch das Thema Telematiktarife.
4. Und das ganze Thema ob das aufgezeichnet wird oder nicht, je mehr „hustle“ ich damit habe, je mehr mich das belastet, sehe ich Telematik in Kombination mit Carsharing eher als eine Belastung an, die das Carsharing unattraktiver macht.
5. Das kann ich mir eher als ein Modell vorstellen, als diese telematische Überprüfung von allen.
6. Also ich glaube viele Leute haben nicht Interesse daran sich während des Carsharings kontrollieren zu lassen, weil sie Angst haben, dass kontrolliert wird, wohin sie fahren.
7. Ich sehe es etwas kritisch dahingehend, da die Verkehrssituation ja sehr sehr detailliert aufgenommen werden muß um zu sehen in wieweit die Reaktion des Menschen adequat und bestmöglich war.
8. Das ist sehr schwer da Versicherungsschutz zu kriegen und die Quoten sind horrend, weil wir nämlich eben diese Asymmetrie haben. Jetzt muß

man gucken, wie man diese Asymmetrie beseitigen möchte, aber Fakt ist, daß Vorbehalte des Kunden da sein werden

9. Die Frage ob sich jemand durchleuchten lassen will würde ich tendenziell so beantworten, daß das keiner gerne mag.

2.5.3 Data – Data monitoring - positive

Theme	Subresearch Questions
Code	**Data**
Sub Codes	**Data monitoring**
Sub Codes	**positive**
Segments	**16**

1. Meine persönliche Überzeugung ist, soziale Kontrolle in den meisten Sharing economy Modellen ist gering und deswegen würde an einer Kontrolle, in diesem Falle beispielsweise in technischer Hinsicht, tendenziell kein Weg dran vorbeiführen.
2. Bis in einen sehr hohen Grenzbereich bin ich, glaube ich, als Versicherer besser beraten meine Claims Leakage zu minimieren, dadurch durchaus auch höhere Kosten in Kauf zu nehmen, auf der Verwaltungs- bzw. Kontrollseite.
3. Wenn das eine Gruppe von eher rational gesteuerten Menschen ist, dann werden die natürlich sagen, gib mir ein Maximum an Telematik, daß innerhalb dieses Kollektivs wirklich Disziplinierung erfolgt, mit einem Minimum an Versicherungskosten und Schäden auszukommen.
4. Ich glaube aber grundsätzlich ist das Thema Daten und dann die Auswertung der Daten beim Thema Carsharing einfacher, weil man bekommt die Daten einfacher von Kunden und die nachgelagerte Messung ist auch einfacher, als bei den klassischen Telematiksystemen, die die Versicherer momentan ausprobieren, weil ich letztendlich das dem Kunde von vornherein klar und deutlich sagen kann und wahrscheinlich der Kunde gar keine andere Erwartungshaltung hat.
5. Und das wäre es eine ganz interessante Sache, wo der Kunde auf interaktive Art zurückgespiegelt bekommt was eigentlich erlaubt ist und was nicht.

6. Die Frage ist, das zieht sich als roter Faden durch den Dialog, wieviel Aufwand macht diese Auswertung. Ich glaube das wird sich durch die Technik lösen.
7. Also ich sehe tendenziell, dass die Aussage dazu eine höhere Bereitschaft Informationen zum Fahrverhalten zu geben beim Carsharing, bedingt durch die Tatsache, dass die Fahrtzeit bzw. die Einsatzzeit limitierter ist als beim Privatfahrzeug und damit auch nur begrenzt Daten weitergegeben werden.
8. Die lassen sich kontrollieren. Die haben gar keine andere Möglichkeit.
9. Weil es dann die Hemmschwelle senkt Neukunde zu werden und ab dann Kontrolle, gnadenlose Kontrolle.
10. Ich denke auch das die sich absolut überwachen lassen würden, wenn ich mir einfach die Usergruppe in einer ersten Carsharingphase überlege, aber das wovon wir hier reden ist dass jeder Mann dann Carsharing nutzt.
11. Diese Telematiksysteme geben ja auch zunehmend Rückmeldung über das Fahrverhalten. Wenn ich persönlich Feedback bekomme, wird das bei den allermeisten Menschen dazu führen, daß man sich dessen bewusster ist.
12. Aktuell buchen die meisten über das spezifische Carsharingunternehmen und über deren App und werden kontrollierbar über die Telematik.
13. Wenn ich mir die Zielgruppe angucke, sehe ich die Hauptzielgruppe der Anbieter und Nutzer kann ich mir das insgesamt schon eher gut vorstellen bei der Kundengruppe.
14. Beispielsweise weil er damit günstiger fährt, oder weil er andere Vorteile nutzen kann.
15. Vor allen Dingen das Thema fand ich äußerst interessant, das Fahrverhalten zu beobachten, bevor man einen Versicherungsvertrag abschließt, weil wir schon feststellen, daß Carsharing Kunden hauptsächlich etwas jünger sind. Im späteren Lebensverlauf, wenn sie dann mal vielleicht eine Familie haben und sich dann ein Auto zulegen, daß sie dann auch davon profitieren können.
16. Und wenn der aus ihrer Sicht schlüssig ist, dann haben sie vermutlich keine so großen Probleme.

2.5.4 Data – Data monitoring - negative

Theme	Subresearch Questions
Code	**Data**

Sub Codes	**Data monitoring**
Sub Codes	**negative**
Segments	**11**

1. Die Entwicklung in Deutschland in den letzten 12 Monaten was Telematik angeht ist sehr verhalten insofern ist Telematik aus meiner Sicht zunächst einmal eher eine Bremse für das Thema Carsharing.
2. Was ist nicht verstehe ist diese Mischung aus Carsharing und Telematik. Für Carsharing registriere ich mich und damit ist es das. Eventuell noch Wiederauffinden des Autos über GPS-Signal, aber diese zwingende Kombination aus Carsharing und Telematik, das heißt absolute Kontrolle dieser Fahrten, das ist für mich eher etwas das man machen kann, was ich aber nicht für besonders förderlich für das Carsharing halte.
3. Sie sehen in mir keinen Befürworter dieser ganzen Telematik Dinge, weil wir gerade in Deutschland eher eine Aversionshaltung haben, das zeigt auch das Thema Telematiktarife.
4. Ich muß also schon einen erheblichen Vorteil haben aus diesem Thema, da ist natürlich meines Erachtens der Preis an erster Stelle, daß die Leute die Carsharing nutzen sich ganz genau ausrechnen, was kostet es mich, wenn ich dieses Auto nutze um von A nach B zu kommen und vergleiche das mit den Taxi Kosten, vergleiche das mit einem Mietwagen, je nachdem in welcher Situation ich das brauche.
5. Es gibt bestimmte Laufleistungen des Fahrzeugs, es gibt bestimmte Umlaufzeiten, es gibt bestimmte Schadenereignisse in soweit gibt es da ja immer einen Zugriff auch auf konkrete Daten. Aber alles was das subjektive Empfinden des individuellen Überwachtwerdens, sozusagen ich bin gläsern als Mensch, reduziert und am Point of Sale durch Vertrauensinduzierende Maßnahmen ersetzt wird macht es wahrscheinlich einfacher von der Akzeptanzseite.
6. Das ist eine gute Frage, ich glaube für viele wäre das erst einmal ein echtes Abschreckungskriterium die sie von der Nutzung von Carsharing abhalten würden.
7. Das ist nun mal etwas anderes wenn ich das Gefühl habe mein Fahrverhalten wird auf mich bezogen auf Schritt und Tritt überprüft, dann wäre das eine sehr große Hürde das zu akzeptieren.
8. Wenn kontrolliert wird, wird das generell sehr negativ in Deutschland gesehen, das wird wahrscheinlich beim Carsharingnutzer genauso sein.

9. Es kann ängstliche Menschen geben, die dann zumindest sehr zögerlich reagieren, das kenne ich aus meinem Bekanntenkreis, die dann wahrscheinlich aus Angst dass sie etwas falsch machen könnten bewusst etwas falsch machen.
10. Ich denke schon, daß er da seine Vorbehalte haben wird. Auf ihn prallen ja auch verschiedene Welten die er schon kennt ein.
11. Niemand möchte gerne seine Daten mehr weitergeben und häufiger weitergeben und analysieren lassen, als das erforderlich ist. Höchstens, wenn damit bestimmte Konsequenzen verbunden sind. Positiver oder negativer Art.

2.5.5 Data – Data exchange to insurance - positive

Theme	Subresearch Questions
Code	Data
Sub Codes	Data exchange to insurance
Sub Codes	positive
Segments	**09**

1. Generell möchte ich das nicht verneinen.
2. Das ist jetzt noch keine Telematik, aber es zeigt zumindest schon, dass diese Verschränkung zwischen privater Kfz-Versicherung und Carsharingnutzung und –versicherungsnutzung durchaus sinnvoll ist und man da auch für den Versicherungsnehmer ein Asset draus machen kann.
3. Also ich sehe tendenziell, dass die Aussage dazu eine höhere Bereitschaft Informationen zum Fahrverhalten zu geben beim Carsharing, bedingt durch die Tatsache, dass die Fahrtzeit bzw. die Einsatzzeit limitierter ist als beim Privatfahrzeug und damit auch nur begrenzt Daten weitergegeben werden.
4. Das würde ich gerne mit meinen Verkehrspsychologen Kollegen auswerten. Als Forschungsfrage natürlich absolut spannend
5. Jetzt gehe ich mal davon aus, dass auch beim Carsharing der Versicherer, sofern Vorversichererdaten vorliegen diese auch miterheben würde, also was für eine Unfallbiografie hat ein Mensch?

6. Das ist ein interessanter Gedanke. Ob jetzt eine Anrechnung auf einen Schatten Schadenfreiheitsrabatt richtig ist bin ich mir jetzt unsicher. Spontan würde ich sagen nein, aber man könnte sich durchaus überlegen daß man, vereinfacht gesagt, wenn er bereit ist Daten zu übermitteln, daß er sich ein paar Pluspunkte beziehungsweise Positivpunkte erfahren kann, die gespeichert werden und am Ende, wenn er wirklich, und da kommt es ja dann zum Tragen, ein eigenes Auto oder Motorrad hat und es anmeldet, Voraussetzung ist ja dann auch, daß er zur AXA geht und nicht woanders hin geht, daß es dann ein weiches Tarifmerkmal gibt, also nicht Schadenfreiheitsrabatt, also weiches Tarifmerkmal, das einen Scoringwert hinterlegt hat, den er dann positiv beeinflussen kann.
7. Von demher könnte ich mir vorstellen, daß diese Zielgruppe vielleicht besonders aufgeschlossen dafür ist und auch bereit ist entsprechende Informationen, beispielsweise an Versicherer oder ähnliche zur Verfügung zu stellen, wenn der Nutzer auch selbst davon profitieren kann.
8. Ich glaube man könnte das tun und es gibt eine gewisse Chance auch Kunden anzusprechen für die das einen Mehrwert bietet.
9. Dann kann es nicht sein, daß mein Versicherungsschutz, wenn ich durch die Mobilität hoppel, immer wieder woanders versichert ist, weil dann habe ich als Kunde vielleicht die Vorstellung, daß ich mit dem Wechsel meiner Mobilität auch meinen Versicherungsschutz mitnehme. Damit wären alle Fragen im Hinblick auf Austausch eigentlich geklärt auf dieser Welt, weil dann gäbe es eine Fahrerbezogene Versicherung, die irgendwo hinterlegt ist und wo natürlich auch der Carsharer drauf Zugriff hat, wenn die Verantwortung dann auch beim Fahrer liegt, egal welches Objekt ich fahre, meine Versicherung tritt immer für die Schäden ein, braucht der Carsharer diese Information individuell nicht, dann haben wir das datenschutzproblem nicht, weil dann bleiben die Daten bei mir.

2.5.6 Data – Data exchange to insurance - negative

Theme	Subresearch Questions
Code	Data
Sub Codes	Data exchange to insurance
Sub Codes	negative
Segments	**10**

403 APPENDIX 2: CATEGORIZED EXCERPTS OF THE EXPERT INTERVIEWS

1. Also, wenn ich bei einer Prämie von zwei bis dreihundert Euro 5 oder 10% einsparen kann, dann sind die Anreize bei so einem aufwändigen Kontrollverfahren das Sie hier ansprechen einfach viel zu gering. Ich kann mir nicht vorstellen, daß für diese kleinen Anreize der Durchschnittsfahrer sich überhaupt diesen ganzen Prozeduren unterwirft und da auch wenig Vorteile sieht.
2. Ich gehe mal davon aus dass es erhebliche Datenschutzhürden geben würde, wenn man so etwas realisieren will.
3. Was ich gesagt habe ist, damit unterscheide ich die Bereitschaft die verschiedenen Risikoinformationen zur Verfügung zu stellen, inklusive telematischer Informationsübermittlung, in Abhängigkeit von der Nutzung, wofür das Carsharingsystem gedacht ist.
4. Ich würde die Komplexität nicht betreiben muß ich ganz ehrlich sagen. Ich würde die beiden Dinge trennen wollen.
5. Also zunächst einmal haben wir da sicherlich eine Akzeptanzhürde, weil Datenübertragung wird von Konsumenten grundsätzlich erst einmal sehr kritisch beäugt.
6. Ich glaube ein automatischer Datenaustausch ist kritisch.
7. Könnte glaube ich eher schwierig werden, denn wieviel kann der Carsharingkunde überhaupt sparen um so viele Daten freizugeben?
8. Ich sehe es in zwei Fällen nicht für sinnvoll.
9. Wenn wir einen Schatten Schadenfreiheitsrabatt aufbauen, das würde sich dann lohnen wenn der Abschluß relativ zeitnah danach erfolgt.
10. Ich glaube, daß bei diesem Dattenaustausch spezifische Daten für eine Person relativ schlecht erhältlich sein werden, das hat ja auch mit dem Datenschutz zu tun.

2.6 TRUST EX ANTE

Here the relevant codes and subcodes are presented for this category.

2.6.1 Trust ex ante – Complete trust - positive

Theme	Subresearch Questions
Code	Trust ex ante

Sub Codes	Complete trust
Sub Codes	positive
Segments	03

1. Die Aussage wir setzen auf Vertrauen, Carsharing plus, Vertrauen fährt Vertrauen führt könnte ich mir gut vorstellen erzeugt erst einmal einen Wow-Effekt.
2. Aber wenn die Basis Misstrauen ist, oder meine Annahme ist, der der handelt ist primär opportunistisch bestrebt den maximalen Vorteil zu nutzen oder mich zu betrügen, so halte ich das für ein völlig untaugliches Menschenbild und auch untaugliches Marktbild so zu denken. Das ist irgendwie 100 Jahr alt.
3. Wir haben festgestellt, daß es nie jemand versucht hat, weil einfach in den Nutzungsbedingungen überall festgelegt war, die Tankkarte gehört zum Auto und ich weiß gar nicht ob Strafen angedroht wurden.

2.6.2 Trust ex ante – Complete trust - negative

Theme	**Subresearch Questions**
Code	Trust ex ante
Sub Codes	Complete trust
Sub Codes	negative
Segments	**05**

1. Da hört das Vertrauen wahrscheinlich auf.
2. Vertrauen bei den großen Freefloatern nein, würde ich nicht machen.
3. Vertrauen ist natürlich gut, Kontrolle ist besser.
4. Man hat ja gesehen in Köln was rausgekommen ist, da hat man ja ein relativ starkes Vertrauensmodell bei DriveNow gehabt und da sind auch Nutzer eingestiegen, die die Autos für Banküberfälle genutzt haben, oder die Fahrzeuge benutzt haben um zum Beispiel Rennen damit zu veranstalten.
5. Gar nicht.

2.6.3 Trust ex ante – Partial trust - positive

Theme	Subresearch Questions
Code	Trust ex ante
Sub Codes	Partial trust
Sub Codes	positive
Segments	**13**

1. Als Kfz-Versicherer kann man eher dort auf einer Vertrauensbasis arbeiten, wo man weiß, dass eine soziale Kontrolle greift.
2. Bin ich in einem sehr definierten Geschäftsmodell in der Lage wie man das im Pricing im Versicherungsbereich häufig macht zu sagen, ich gehe lieber aus der Differenzierung raus, was man mit einem Vertrauensansatz ja tut, und baue dadurch überproportional Kosten ab um, jetzt sind wir allerdings auf der Schadenseite, zu sagen, mir schlagen die Schadenkosten in der Spitze nicht durch.
3. Sind Sie ein besonderes vorsichtiger Fahrer, ein nicht vorsichtiger Fahrer, ein rücksichtsloser Fahrer, oder was auch immer, dann glaube ich dass die Wahrscheinlichkeit hoch ist, dass der Kunde sagt, ich bin eigentlich immer ein guter Fahrer, weil ich weiß dass damit ein Preisvorteil verbunden ist. Da hört das Vertrauen wahrscheinlich auf.
4. Ansonsten würde ich das Wort Vertrauen oder den Einsatz von Vertrauen sehr begrenzt, sehr sehr dosiert einsetzen, und in der heutigen Zeit noch viel mehr als früher.
5. Ja, ich sehe eine Basis für Vertrauen, für vorausschauendes oder vorausbringendes Vertrauen sehe ich dort wo ich Kunden, und das wissen wir ja aus der Vergangenheit überall, Kunden die wir länger im Bestand haben oder die mehr Verträge haben, von denen wissen wir, dass sie eine höhere Loyalität aufbringen und häufig deutlich bessere Schadenverläufe haben.
6. Und wenn ich sehe aus meinem Bestand heraus, und da sind natürlich große Versicherer klar im Vorteil zu allen anderen, wenn ich sehe welche Kunden haben wie viele Verträge und sind wie lange bei uns und haben welches Schadenverhalten, denen kann ich Vertrauen im Voraus entgegen bringen. Was übrigens ganz nebenbei einen enormen Effekt hätte zur

Stabilisierung meiner Kundenbestände, ein Thema was in Zukunft immer wichtiger wird, immer wichtiger wird.

7. Und da könnte ich mir das Thema Vertrauen immer dann vorstellen, auch das explizit vorauseilende Vertrauen, Sie sind bei uns schon seit so und soviel Jahren Kunde und deshalb machen wir das.
8. Vertrauen, nur in der Neukundenakquisition..
9. Ich denke da hat sich gezeigt, dass es für ganz viele Zwecke sinnvoll und gut ist, dass es dort natürlich auch Leute gibt die nicht ehrlich sind, aber damit muß man rechnen.
10. Ich glaube, daß bei den meisten Menschen das über die Vertrauensschiene schon ganz gut funktioniert.
11. In einer gewissen Anfangsphase oder in neuen Städten kann man so etwas durchaus machen.
12. Ich verstehe die Frage so, daß wir erst einmal ein grundsätzliches Vertrauen in den Kunden haben, oder das was er uns preisgibt in der Akquisitionsphase und der Kunde dann im Grunde, wenn er bei uns ist beweisen muß ob das Vertrauen gerechtfertigt ist oder nicht. Dann würde ich es eher in der Akquisitionsphase sehen.
13. Wenn wir über Risikosteuerung nachdenken, dann machen wir das an objektiven Merkmalen fest. Jeder Kunde an sich sagt, vertrau mir, ich bin ein guter Fahrer und versichere mich für 100 Euro und mit hoher Wahrscheinlichkeit werde ich keinen Schaden haben.

2.6.4 Trust ex ante – No trust - positive

Theme	**Subresearch Questions**
Code	Trust ex ante
Sub Codes	No trust
Sub Codes	positive
Segments	**05**

1. Mit anderen Worten Vertrauen kann man glaube ich nirgendwo schenken.
2. Vertrauen und auch unsere Erfahrungen aus der Vergangenheit, denken Sie an die Aktivitäten Datenwahrheit, Datenklarheit, also da sage ich sehr limitiert in der heutigen Zeit damit umgehen. Limitiert ist höflich ausgedrückt, Vertrauen im Zusammenhang mit dem Thema Risiko können

Sie nur einsetzen bei langfristig bekannten und langfristig im Bestand vorhandenen Kunden, von denen Sie große Erfahrungswerte aus der Vergangenheit da haben und wo es auch eine Affinität zu dem Haus gib.

3. Ich denke, dass man da mit technischen Hilfsmitteln schon relativ weit kommt, um diese Fehlverhalten von Beginn weg nicht zu verunmöglichen, aber zumindest die Konsequenzen ein bischen schärfer aufzeigen zu können.
4. Schwierige Frage, ich will das Vertrauen der Menschen jetzt nicht abklassifizieren, oder absprechen.
5. Ich glaube Vertrauen kann man da nicht.

2.7 TRUST EX POST

Here the relevant codes and subcodes are presented for this category.

2.7.1 Trust ex post – Complete trust - positive

Theme	Subresearch Questions
Code	Trust ex post
Sub Codes	Complete trust
Sub Codes	positive
Segments	**01**

1. Aber wenn die Basis Misstrauen ist, oder meine Annahme ist, der der handelt ist primär opportunistisch bestrebt den maximalen Vorteil zu nutzen oder mich zu betrügen, so halte ich das für ein völlig untaugliches Menschenbild und auch untaugliches Marktbild so zu denken. Das ist irgendwie 100 Jahr alt.

2.7.2 Trust ex post – Complete trust - negative

Theme	Subresearch Questions
Code	Trust ex post
Sub Codes	**Complete trust**

Sub Codes	**negative**
Segments	**04**

1. Mit der zunehmend starken Verbreitung und auch der Nutzung würde ich da nicht mehr auf Vertrauen setzen, auch deshalb weil die großen Betreiber wie Car2go nicht nur auf dem deutschen Markt aktiv sind, sondern auch in Italien und Spanien wo eh auch eine andere Mentalität vorhanden ist.
2. Vertrauen ist natürlich gut, Kontrolle ist besser.
3. Man hat ja gesehen in Köln was rausgekommen ist, da hat man ja ein relativ starkes Vertrauensmodell bei DriveNow gehabt und da sind auch Nutzer eingestiegen, die die Autos für Banküberfälle genutzt haben, oder die Fahrzeuge benutzt haben um zum Beispiel Rennen damit zu veranstalten.
4. Ich glaube der Mensch ist da sehr sanktionsgesteuert. Gäbe es keine Sanktionen würde er das gnadenlos ausnutzen.

2.7.3 Trust ex post – Partial trust - positive

Theme	**Subresearch Questions**
Code	Trust ex post
Sub Codes	Partial trust
Sub Codes	positive
Segments	**11**

1. Dann würde ich überlegen, ob ich damit Vertrauen steuern kann, oder eher mit Kontrolle.
2. Als Kfz-Versicherer kann man eher dort auf einer Vertrauensbasis arbeiten, wo man weiß, dass eine soziale Kontrolle greift.
3. Bin ich in einem sehr definierten Geschäftsmodell in der Lage wie man das im Pricing im Versicherungsbereich häufig macht zu sagen, ich gehe lieber aus der Differenzierung raus, was man mit einem Vertrauensansatz ja tut, und baue dadurch überproportional Kosten ab um, jetzt sind wir allerdings auf der Schadenseite, zu sagen, mir schlagen die Schadenkosten in der Spitze nicht durch.
4. Ansonsten würde ich das Wort Vertrauen oder den Einsatz von Vertrauen sehr begrenzt, sehr sehr dosiert einsetzen, und in der heutigen Zeit noch viel mehr als früher.

5. Wenn Vertrauen eine Zahlungsbereitschaft auslöst, dann sollte man dem Kunden Vertrauen entgegen bringen.
6. Ich denke, je etablierter das System Carsharing ist, desto eher wirkt das normale Pricing wie im Kraftfahrtbereich auch, weil eben die Usergruppe viel breiter ist und diese Einzelfälle genauso vorkommen, wie in anderen Fällen in der Normal Kfz-Branche auch, daher in dem Sinne ja, eher ja.
7. Das könnte zum Beispiel heißen, daß ich von einem Carsharinganbieter so eine Art Zertifikat bekomme und ich dies vielleicht dem nächsten Carsharinganbieter zeigen kann und dann gleich in eine entsprechende Klasse eingeteilt würde und sich da irgendein System etablieren könnte und dann auch die Carsharingfirmen Daten untereinander austauschen könnten.
8. Ich glaube, daß bei den meisten Menschen das über die Vertrauensschiene schon ganz gut funktioniert.
9. Im Nutzungsprozess würde ich einschätzen, daß Vertrauen in den meisten Fällen funktioniert und daß man nach unten und nach oben eine Spanne macht.
10. Ich sage Vertrauen ja, aber innerhalb von Korridiren.
11. Ich verstehe die Frage so, daß wir erst einmal ein grundsätzliches Vertrauen in den Kunden haben, oder das was er uns preisgibt in der Akquisitionsphase und der Kunde dann im Grunde, wenn er bei uns ist beweisen muß ob das Vertrauen gerechtfertigt ist oder nicht.

2.7.4 Trust ex post – No trust - positive

Theme	Subresearch Questions
Code	Trust ex post
Sub Codes	No trust
Sub Codes	positive
Segments	**06**

1. Mit anderen Worten Vertrauen kann man glaube ich nirgendwo schenken.
2. Vertrauen und auch unsere Erfahrungen aus der Vergangenheit, denken Sie an die Aktivitäten Datenwahrheit, Datenklarheit, also da sage ich sehr limitiert in der heutigen Zeit damit umgehen. Limitiert ist höflich ausgedrückt, Vertrauen im Zusammenhang mit dem Thema Risiko können

Sie nur einsetzen bei langfristig bekannten und langfristig im Bestand vorhandenen Kunden, von denen Sie große Erfahrungswerte aus der Vergangenheit da haben und wo es auch eine Affinität zu dem Haus gibt.
3. Erst einmal: Vertrauen ist gut, Kontrolle ist besser.
4. Weil es dann die Hemmschwelle senkt Neukunde zu werden und ab dann Kontrolle, gnadenlose Kontrolle.
5. Rein Versicherungstechnisch sind wir mit diesem Gedanken nicht gut in der Vergangenheit gefahren.
6. Worauf Sie vertrauen können ist, daß die Leute immer versuchen zu schummeln.

2.8 PRIONER DILEMMA

Here the relevant codes and subcodes are presented for this category.

2.8.1 Prisoner dilemma – differentiated pricing

Theme	Subresearch Questions
Code	Prisoner dilemma
Sub Codes	differentiated pricing
Segments	**12**

1. Das ist jetzt Prozessmäßig sicherlich ein Verfahren, das wäre theoretisch möglich, jetzt kommen wir wieder auf die Fragestellung, wieweit bin ich als Carsharinganbieter in der Lage abzuschätzen was ist für den Kunden attraktiver, die Möglichkeit dadurch ein gewisses differenziertes Pricing durchzusetzen, oder schiesse ich damit meinem Geschäftsmodell ins Knie, weil natürlich trotzdem auch in einem Carsharingbereich der Carsharingnutzer eine gewisse individuelle Freiheit und Anonymität nicht wird aufgeben wollen.
2. Ich glaube Du wirst nicht erfolgreich so ein System betreiben können, wenn Du den Kunden nicht in irgendeiner Weise beteiligst.
3. Ich glaube der Minutenpreis wäre das Wirksamste, weil Du damit unmittelbar regulierst.
4. Die Individualisierung und der Wunsch nach einem Risikotarif der genau auf mich zugeschnitten ist.

5. Was ich mir vorstellen könnte ist zu sagen, dass man vielleicht Nutzergruppen poolt und auch für Nutzergruppen unterschiedliche Carsharingvarianten vielleicht in Kooperation mit Herstellern anbietet.
6. Dann müsste man wahrscheinlich über so einen Teamgedanken nach unten die negativen Risiken durch entsprechende Preispolitik, oder Selektionsmechanismen einfach ausfiltern.
7. Sie bieten gegen Aufpreis an diese Selbstbeteiligung zu reduzieren, oder auf null zu setzen pro Fahrt, oder auch mit einem Monatstarif.
8. Also wenn mein Ansatz richtig ist, daß die Meisten nicht bevorzugt nur einen Carsharinganbieter nutzen, sondern mehrere, so glaube ich nicht, daß das ein Weg ist, dann werden sie den womöglich erst einmal meiden, weil er am Ende höhere Kosten bedeutet.
9. Vor allen Dinge im Sinne der Selbstbeteiligung. Bei DriveNow gibt es ja die Möglichkeit für einen geringen Aufpreis für diese Fahrt die Selbstbeteiligung komplett zu streichen. Das kann man zu Beginn der Fahrt wählen, ich meine das kostet dann 1 Euro. Mit diesem Euro pro Fahrt wird die Selbstbeteiligung auf 0 heruntergesetzt und das machen äußerst viele Kunden. Ich kann Ihnen da jetzt keine Zahlen nennen, aber das ist äußerst beliebt.
10. Ich glaube man muß definitiv bei den Risiken stärker differenzieren, sobald es ein gewisses Volumen überschreitet.
11. Wenn man letzteren Gedanken vertieft, dann sind wir automatisch in einer Welt, wo ein Kunde, der natürlich eine Versicherung hat für sich selbst eine abschließt, die er dann für so ein geshartes Fahrzeug übernehmen würde. Wo die Betriebsgefahr und gewisse Grundrisiken wie Hagel oder so dann von dem Betreiber der Carsharingflotte dann noch abgesichert werden müssen.
12. Wenn jemand zu schnell fährt, weil er gehetzt ist und Geld sparen will, dadurch höhere Unfallzahlen produziert, werden die Versicherungsprämien teurer.

2.8.2 Prisoner dilemma – differentiated pricing difficult

Theme	**Subresearch Questions**
Code	Prisoner dilemma
Sub Codes	**differentiated pricing difficult**

Segments	**01**

1. Da sehe ich eine große Problematik drin. Bezüglich des Fahrverhaltens, da kann ich mir nur Exzesse vorstellen, die sanktioniert werden. Ich habe immer das Problem, daß es gibt in den Städten ja teilweise Autobahnähnliche Abschnitte, dann kann es natürlich auch sein, wenn ich in städtischen Zonen unterwegs bin und da vielleicht sogar noch gefährlicher unterwegs bin, die Gefahr, daß ich mit dem Auto einen Unfall verursache höher ist als in anderen Zonen. Ich glaube es ist extrem schwierig das einzuschätzen um da sauber etwas hinzukriegen.

2.9 SIMPLICITY

Here the relevant codes and subcodes are presented for this category.

2.9.1 Simplicity – Contracts – Simplicity is important yes

Theme	**Subresearch Questions**
Code	Simplicity
Sub Codes	**Contracts**
Sub Codes	**Simplicity is important yes**
Segments	**18**

1. Sogar die Versicherer sind auf dem Weg zu sagen, wir müssen von der Komplexifizierung unserer Produkte weg und müssen zumindest am vorderen Ende dem Kunden ein einfacheres Kauferlebnis bescheren.
2. Das ist also aus Kundensicht, einer der Carsharing nutzt, der interessiert sich relativ wenig für das Thema Versicherung, außer das er fragt, ich möchte daß das Auto versichert ist und ich möchte wissen, welchen Selbstbehalt ich trage.
3. Das ganze Thema wer da fährt und irgendwelche Ausschlüsse oder bitte keine über 70-jährigen, oder keiner unter 25 das ist ein Thema das das Verhältnis des Carsharinganbieters und der Versicherung berührt, weil je mehr die Versicherung einschränkt, umso weniger Geschäfte kann der machen.

4. Ich glaube es ist eher eine Thematik, dass Du in diesem Prozess die wesentlichen Spielregeln dem Kunden transparent und einfach darstellst.
5. Die Leute wollen nicht mehr Seitenweise lesen und wollen sich da auch nicht mehr durchquälen, sondern die Leute wollen das einfach verständlich und transparent haben.
6. Auch Carsharing und solche dynamischen Pricing-Systeme müssen immer auch praktisch, quadratisch gut sein.
7. Die hohe Kunst ist auch immer, dass wir auch lernen dem intuitiven Verhalten normaler Menschen zu entsprechen und denen nicht irgendetwas von unserer versicherungstechnischen Vorgehensweise oder vom risikoadequaten Pricing zu erzählen. Das ist so abstrakt, dass das kein Mensch versteht
8. Daß man da am Anfang bei der Neukundengewinnung mit einem gewissen Vertrauen rangeht, Haken dran, das ist glaub ich zwingend erforderlich, da es ansonsten viel zu kompliziert wird für die Neukundengewinnung.
9. Keep it straight and simple. Ich bin davon überzeugt, und das nicht nur beim Sharing, das der Versicherungsnehmer zunehmend nicht daran interessiert ist was da im Detail in den AGBs steht.
10. Wenn das jemand ist der Carsharing in seinem Produktportfolio einsetzt, sei es als Versicherer über einen Zusatzbaustein in die Produktpolitik über einen Baustein zu integrieren, kann ich mir sehr gut vorstellen, dass mit qualifizierten Vertriebspartnern in einem multimodalen Setup, einem Crossselling Setup das am Kontaktpunkt zwischen Vermittler und Kunde, also da wo der Vertrag geschlossen wird, Vertrauen gut funktioniert.
11. Damit es marktgängig wird darf das nicht aufwendiger sein als ein Mietvertrag mit einem Leihwagen bei Sixt oder Avis, wo ich in 10 Minuten den Schlüssel für einen 5-er BMW kriege. Also smart und einfach.
12. Wenn ich jetzt zu komplexe Vertragswerke mache dann liest es entweder keiner, oder ich nehme wieder ein deutliches Stück von dem Commodity Gedanken.
13. Damit das Zielgruppengerecht ist und auch daß das so ein Stück weit wiederspiegelt, auf der einen Seite die Zielrichtung so locker wie möglich zu halten, auf der anderen Seite, es gibt eben auch ein paar rechtliche Rahmenbedingungen die wir dabei beachten müssen, eben die rechtlichen Rahmenbedingungen im Mindesttstandard auf jeden Fall alle einzuhalten.
14. Von daher glaube ich das man wahrscheinlich schon einen Mittelweg wählen muß, aber schon mit einer möglichst einfachen Formulierung der Vertragsbedingungen, daß die Leute verstehen, was sie gerade abschließen.

15. Da gibt es doch so einen Spruch. So viel wie nötig, so wenig wie möglich.
16. Der Verbraucher will natürlich klar verständliche Wordings, kurz, eigentlich eher Bierdeckelcharakter, aber wenn natürlich etwas ist, dann muß das geklärt sein.
17. Ich würde das eher lockerer machen. Das hilft einem nicht wirklich weiter. Mit Kleinigkeiten zu streiten, dann womöglich noch im Dreieck, weil ja nicht nur der Carsharer, sondern auch der Kunde involviert wäre macht nur sehr viel Aufwand und wir wissen alle, daß eine Diskussion über Schäden unterhalb einer gewissen Größenordnung, da kostet die Diskussion schon immer mehr als der Schaden ausmacht. Das halte ich eher für nicht so sinnvoll.
18. Wenn ich aus der Kundensicht komme und die Position nehme ich jetzt mal schnell ein, ist es völlig klar, daß man es anders betrachten muß und daß ein Carsharingvertrag der innerhalb einer Minute abgeschlossen wird natürlich unendlich spannender und schöner ist als einer bei dem Du zwei Tage brauchst, oder mehrere Stunden brauchst und tausende von Dinge nachweisen musst.

2.9.2 Simplicity – Contracts – Simplicity is unimportant no

Theme	**Subresearch Questions**
Code	Simplicity
Sub Codes	**Contracts**
Sub Codes	Simplicity is unimportat no
Segments	**02**

1. Ich glaube, dass es ein sehr präzise geregeltes Vertragswerk sein muß, was klar spezifiziert, wie mit Schäden umgegangen wird.
2. Ich würde dazu tendieren es sehr genau zu fassen, da wo es auch sinnvoll ist.

2.9.3 Simplicity – Customer selection – Simplicity is positive

Theme	**Subresearch Questions**
Code	Simplicity

Sub Codes	**Customer selection**
Sub Codes	Simplicity is positive
Segments	**10**

1. Wie einfach muß ich es meinem Kunden machen, weil er ansonsten schlichtweg mein Produkt nicht kauft, und wie sehr muß ich ihn dann über einen Kamm scheren, was z.B. den Preispunkt anbelangt.
2. Der kann jetzt keine meiner Carsharingautos mehr nehmen. Ich glaube, daß das wesentlich einfachere Systeme sind, bei denen die schlimmsten Finger rauskommen und solche Themen wie diese Autorennen, die lassen sich meines Erachtens nicht über ein sehr kompliziertes telematisches Prüfungsverfahren ausschliessen.
3. Das ist nun mal eher Flottengeschäft zum Stückpreis und da wissen wir alle, da ist das ganze Thema Steuerung, da ist das ganze Thema Einschränkungen auf bestimmte Fahrer ganz schwierig.
4. Ich glaube alle diese Sachen sind nicht zielführend. Wir haben sie nicht gesehen bei dem Thema Mietwagen wo wir schon seit Jahrzehnten eigentlich dieses Phänomen haben und ich glaube nicht, daß sich das bei Carsharing durchsetzen wird, weil einfach ansonsten dieses Thema tot gemacht wird.
5. Sprich, wenn der Kunde Reinhold bei DriveNow seine ersten 100 Kilometer gefahren hat, dann habe ich ein sehr gutes Bild wie der Kunde Reinhold fährt. Dann kann ich die Versicherungsprämie spreizen zwischen guten Fahrern und schlechten Fahrern.
6. Es gibt durchaus viele Kundensegmente, die sagen, wenn ich wenig Informationen preisgeben muß und wenn es für mich einfach ist, dann bin ich bereit auch noch einmal einen Schnaps mehr zu bezahlen.
7. Das könnte ein ziemlich pfiffiger Wettbewerbsvorteil sein.
8. Die Aussage wir setzen auf Vertrauen, Carsharing plus, Vertrauen fährt Vertrauen führt könnte ich mir gut vorstellen erzeugt erst einmal einen Wow-Effekt.
9. Also nicht ich beobachte Dich auf Schritt und Tritt, was man ja jetzt quasi schon mit den Daten machen kann, sondern wenn es eine ganz grobe Einschätzung gibt und wenn Du hier eine Grenze überschreitest, dann eskalieren wir das.
10. Bei Generierung der Kunden glaube ich wenn man Masse erzielen will muss man Vertrauen einfach haben, ansonsten wenn man sehr viele Leute

sehr rigide untersucht werden sie allein durch den Untersuchungsprozess ausgeschlossen werden, weil sie sich ausgeschlossen fühlen, oder sie wollen nicht mitmachen.

2.9.4 Simplicity – Customer selection – moderate simplicity

Theme	Subresearch Questions
Code	Simplicity
Sub Codes	**Customer selection**
Sub Codes	moderate simplicity
Segments	**15**

1. Das ist einmal gut für den Provider und auch am Ende gut für den Kunden und gleichzeitig kann ich natürlich direkt beim Einstieg, wenn ich intelligent Daten abfrage bestimmte Risikogruppen möglicherweise ausgrenzen.
2. Und dann gibt es mit Sicherheit Daten Modelle, die man anzapfen kann, auch externe Daten, die praktisch den Kreis dann automatisch kleiner machen.
3. Also, was ich mir vorstellen könnte ist, daß es so eine Art Einstufung gibt, die kann ja auf einer Datenanalyse der Information basieren, die der Kunde am Anfang macht wenn er zum ersten Mal den Vertrag abschließt. Plus beispielsweise so einer Art, sage ich mal, die ersten 250 Kilometer und was ich da rauslesen kann und das nimmt man dann einfach als gegeben hin und vertraut darauf, daß sich dieser Fahrer in Zukunft genau so verhält.
4. Lieber ein paar einfache und klare Regelungen, da hängt es dann davon ab, dass Sie die richtigen Leute kriegen und relativ schnell die rausfinden können, die die Spielregeln nicht einhalten.
5. Eine positive Risikoselektion ist bereits ein Datenaufzeichnungsgerät im Auto.
6. Was ich häufig von Fahrlehrern höre ist, dass man relativ schnell jemanden einordnen kann.
7. Also, das zu verwenden kann ich mir durchaus vorstellen. Im Sinne von Risikoselektion garantiert.
8. Die könnte man ja als Selektionsfilter davor schalten, im Sinne einer Risikoselektion.

9. Ein Vertragswerk, das ich mir komplex und aufwändiger vorstellen kann sind dann eher die im Kundengewinnungsprozess zu erhebenden Daten und Verzweigungsmodelle.
10. Vor allen Dingen das Thema fand ich äußerst interessant, das Fahrverhalten zu beobachten, bevor man einen Versicherungsvertrag abschließt, weil wir schon feststellen, daß Carsharing Kunden hauptsächlich etwas jünger sind. Im späteren Lebensverlauf, wenn sie dann mal vielleicht eine Familie haben und sich dann ein Auto zulegen, daß sie dann auch davon profitieren können.
11. Fakt ist einfach und transparent ist glaube ich wichtig und bei der Ausgestaltung von Risikodiffrenzierenden Mechanismen muß man einfach gucken in der Tiefe in welche Richtung geht das? Kann man nicht so pauschal mit ja oder nein beantworten.
12. Der Anbieter selber hat ja das Thema Risikosteuerung so gar nicht auf dem Radar. Es sei denn, er ist in der Deckung selbst drin. Das müssen wir erst einmal differenzieren.
13. Das Underwriting einer solchen Carsharingflotte muß meiner Ansicht nach genauso funktionieren, wie bei den normalen Flotten von irgendwelchen Unternehmen. Da hat man ja auch bestimmte Anhaltspunkte nach denen da vorgegangen wird und Kriterien und die müssen Sie halt herausarbeiten.
14. Das heißt Sie kriegen also 2 risikotechnisch eher problematische Gruppen. Ich kann es nicht so genau beurteilen, aber ich würde schon glauben, daß sich gewisse Schwerpunkte unten und oben in der Altersskala ergeben und das ist nicht gerade vorteilhaft risikotechnisch betrachtet.
15. Aus Sicht des Versicherers ist natürlich die Nutzung von weichen Tarifierungsmerkmalen klar.

2.9.5 Simplicity – Customer selection – moderate simplicity – Detailed questionnaire yes

Theme	Subresearch Questions
Code	Simplicity
Sub Codes	**Customer selection**
Sub Codes	moderate simplicity
Sub Codes	Detailed questionaire yes

Segments	**03**

1. Weiche Kriterien ganz sicher, also so etwas wie soziodemografische personenbezogene Daten. Das junge männliche Fahrer mit hoher Wahrscheinlichkeit, wenn sie einen bestimmten soziokulturellen Hintergrund haben, höher wahrscheinlich in Unfälle verwickelt werden weiß man ja aus den generellen Unfallstatistiken.
2. Das fände ich extrem sinnvoll. In der Tat, der Gedanke den Du gerade ansprichst, dem würde ich aus psychologischer Sicht auch zustimmen, wenn ein Mensch seine Zustimmung gibt zu Transparenz ist die Wahrscheinlichkeit a priori höher, dass er ein hohes Risikobewußtsein hat und auch ein hohes Gerechtigkeitsempfinden.
3. Ich glaube im ersten Schritt wird es in dem Lernprozess insbesondere für den Versicherer glaube ich eher umsetzbar sein anhand subjektiver Merkmale, das kann anhand eines Fragebogens sein, also Alter, verheiratet, nicht verheiratet, wo wohnst Du, wie viele Schäden hast Du in der letzten Zeit gehabt, welches Auto fährst Du?

2.9.6 Simplicity – Customer selection – moderate simplicity – Detailed questionnaire no

Theme	Subresearch Questions
Code	Simplicity
Sub Codes	**Customer selection**
Sub Codes	moderate simplicity
Sub Codes	Detailed questionaire no
Segments	**11**

1. Ich glaube das ist eine Frage erstmal, die hat der Versicherer gar nicht in der Hand.
2. Ich glaube alle diese Sachen sind nicht zielführend.
3. Ich würde noch einmal die Idee von eben aufnehmen.
4. Das ist auch eine Art Sharing Modell, da Sie mehr Flexibilität kriegen, was das Thema bedarfsgerechtes Nutzen des Autos betrifft.

5. Das kann man völlig entspannt auf sich zukommen lassen, ich glaube das die Steuerung von dieser ganzen Thematik viel stärker auch über den Carsharinganbieter erfolgt.
6. Im Vergleich zur Lösung mit einem Telematikgerät dauert das natürlich relativ lange.
7. Ich könnte mir eventuell vorstellen, daß man bei denen am Anfang sagt, in der ersten Zeit gibt es für die Fälle wo kein Schadenfreiheitsrabatt in irgendeiner Form greifbar ist ein Überwachungssystem dann einführt und sagt, wir werden Dich einschätzen und danach wirst Du in irgendeine Kategorie eingestuft.
8. Eine gute Frage. Ich glaube, daß man da nicht differenzieren sollte und nicht bestimmte Gruppen bevorteilen sollte.
9. Ich will nicht sagen, daß da im Hintergrund einiges laufen kann, aber wenn man den Kunden allzu sehr mit solchen Fragen konfrontiert um ihn gläsern zu machen, dann wird das glaube ich noch komplizierter diese Konzepte einzusetzen.
10. Wir werden immer mehr in allen Debatten haben nicht den Kunden mehr fragen, da sagt keiner er findet das gut, und auch der Anbieter wird dem Kunde nicht 3 Seiten mit 40 Fragen vor die Nase legen wollen um sich dafür zu qualifizieren.
11. Aber alles was an weichen Tarifmerkmalen denkbar ist, und man abfordern kann ohne den gesamten Prozess zu verkomplizieren sollte abgeholt werden.

2.9.7 Simplicity – Customer selection – moderate simplicity – Driving test yes

Theme	Subresearch Questions
Code	Simplicity
Sub Codes	**Customer selection**
Sub Codes	moderate simplicity
Sub Codes	Driving test yes
Segments	**02**

1. Was ich häufig von Fahrlehrern höre ist, dass man relativ schnell jemanden einordnen kann. In einer relativ kurzen Fahrt mit einem lockeren Gespräch nebenbei, dass der Fahrlehrer dann ein sehr gutes Gespür hat wie

risikoreich fährt diese Person. Wenn ich jetzt so kaskadenmäßig durchgehe wäre das wahrscheinlich das Wunschprogramm.
2. Ob das umsetzbar ist erst einmal so eine Art Fahrstunde zu machen weiß ich nicht. Das ist aber ein interessanter Gedanke.

2.9.8 Simplicity – Customer selection – moderate simplicity – Driving test no

Theme	Subresearch Questions
Code	Simplicity
Sub Codes	**Customer selection**
Sub Codes	moderate simplicity
Sub Codes	Driving test no
Segments	**09**

1. Die Frage die ja eben schon auftauchte ist, will ich eigentlich auch als nicht regelmäßiger Carsharingfahrer in der Lage sein, und will das Carsharingunternehmen das anbieten, dass ich in das Auto steige, irgendwo digital einen Vertrag unterzeichene und dann losfahre.
2. Wir haben sie nicht gesehen bei dem Thema Mietwagen wo wir schon seit Jahrzehnten eigentlich dieses Phänomen haben und ich glaube nicht, daß sich das bei Carsharing durchsetzen wird, weil einfach ansonsten dieses Thema tot gemacht wird.
3. Ich bin Einsteiger und gebe nur rudimentäre Daten zu Verfügung, dann zahle ich einen verhältnismäßigen hohen Preis.
4. Das wird auch eine Entwicklung sein, die wird kommen, da bin ich ganz sicher, weil sie dem Kunden mehr Flexibilität gibt.
5. Das kann man völlig entspannt auf sich zukommen lassen, ich glaube das die Steuerung von dieser ganzen Thematik viel stärker auch über den Carsharinganbieter erfolgt.
6. Ich meine es gibt ja schon ansatzweise Auswahl durch Ausschluß von besonders jungen Fahrern, außer wenn sie zum Beispiel beim ADAC ein Sicherheitstraining gemacht haben. Dann glaube ich, daß es nachvollziehbar für die Kunden ist, wenn ich eine gewisse Prüfung im Auto mache.

7. Das Fahrlehrermodell halte ich für extrem aufwendig in der Durchführung. Ob der Fahrlehrer das alles richtig einschätzen kann, da bin ich mir auch nicht ganz sicher.
8. Im Gegenteil, es ist ja eher so, was im Geschäftsmodell wohl auch mit eingerechnet ist, daß die die sich gut verhalten und rücksichtsvoll fahren belohnt werden, da es ja auch am Ende die Schadenquote senkt.
9. Was er am allerwenigsten will ist wahrscheinlich eine Fahrlehrerrunde wo sich einer hinsetzt und dann gescored wird wie er fährt. Ich glaube das ist auch nicht praktikabel.

2.9.9 Simplicity – Customer selection – Simplicity is negative

Theme	**Subresearch Questions**
Code	Simplicity
Sub Codes	**Customer selection**
Sub Codes	Simplicity is negative
Segments	**04**

1. Ich glaube als Versicherer lohnt es sich dort mehr Transparenz über die Fahrer und deren Verhalten herausholen zu wollen.
2. Ich glaube da werden andere Mechanismen eine Rolle spielen, die sich eher auf die Grundannahme beziehen. Das heißt, daß vielleicht so wie heute die Mietwagenanbieter sagen, ich nehme keine Leute unter einem bestimmten Lebensalter.
3. Bei einem reinen Vertrauensmodell spart man natürlich ganz viel Zeit und Geld, aber die große Gefahr ist dann halt immer gegeben, daß diejenigen die man gerade nicht haben will dadurch besonders angelockt werden.
4. Damit wären definitiv auch sehr viel Information im Hintergrund sehr wichtig.

2.9.10 Simplicity – Use – important positive

Theme	**Subresearch Questions**
Code	Simplicity

Sub Codes	**Use**
Sub Codes	**important positive**
Segments	**18**

1. Ich glaube er wird sehr genau differenzieren und meiner Meinung nach das Ganze nicht in eine ewige Komplexität reintreiben wollen was er dem Carsharingnutzer für ein Produktversprechen macht.
2. Für Carsharing registriere ich mich und damit ist es das.
3. Die bauen Zug mit öffentlichen Verkehrsmitteln und Carsharing zusammen und sagen, ok, ich muß ja zum Bahnhof, und anstatt ein Taxi zu rufen nehme ich mir zum Beispiel ein Carsharingauto und fahre dann dahin.
4. Carsharing steht wie gesagt im Wettbewerb zu anderen Verkehrsmitteln die ich nutzen kann.
5. Und das ganze Thema ob das aufgezeichnet wird oder nicht, je mehr „hustle“ ich damit habe, je mehr mich das belastet, sehe ich Telematik in Kombination mit Carsharing eher als eine Belastung an, die das Carsharing unattraktiver macht.
6. Das muss man ja noch mal unterscheiden, der Carsharingsprovider hat ein originäres Interesse daran Kunden zu binden, den Kunden attraktive Angebote zu machen, und möglichst die Laufzeit seiner Fahrzeuge zu optimieren.
7. Ich denke mal dass beim Carsharing stehen ja zwei (2) Themen im Vordergrund für den Nutzer. Ich glaube das eine ist convenience und das andere ist das Thema Preis.
8. Deshalb glaube ich muss man aufpassen das nicht überfrachtet, weil der Kunde ja sagt, das Thema ist einfach.
9. Ich habe ja eben gesagt, ich glaube fest daran, dass sich das Carsharing weiterentwickeln wird. Ich glaube fest daran dass man die ganze Thematik vom Kunden her entwickeln muss, weil das das Thema von Convenience und Preis ist, daher darf man das nicht zu kompliziert machen.
10. Die Komplexität darf nicht zu weit getrieben werden.
11. De facto, ich mache das so, ich steige in den Wagen ein und kriege dann die Frage gestellt, sind außer den 13 gemeldeten Schäden noch irgendwelche weiteren vorhanden? Ich klicke da nein. Was soll ich denn machen, ich kann doch da jetzt nicht 13 gemeldete Einzelschäden verifizieren.
12. Carsharing hat ja vor allem den Nutzen, auf dem Handy schnell schauen wo das nächste Fahrzeug ist, das gleich reservieren, dann mit dem Handy

die Tür öffnen, den Schlüssel aus dem Handschuhfach nehmen, da sist natürlich der Vorteil, dass es sehr schnell ist und unbürokratisch und so weiter.

13. Carsharing lebt ja auch so ein bischen von der Simplizität.
14. Der entscheidende Punkt ist aber, der Nutzer entscheidet sich ja nicht für das Carsharinfmodell nach dem Versicherer der dahinter steht. Der entscheidet ja aus anderen Aspekten heraus und ein Punkt ist neben der Verfügbarkeit und so weiter, daß das einfach ist für den Nutzer.
15. Es ist ein Grund warum das Carsharing erst in den letzten Jahren an Nutzern so stark zugelegt hat, einfach weil die Systeme DriveNow, Car2go, etcetera, die auf den Markt gekommen sind eben dieses Prinzip der Einfachheit ganz oben auf der Liste stehen haben.
16. Ich denke das ist auch immer das was wir so hören, im Hinblick auf Ansätze. Es muß schon sehr pauschal und einfach sein für den Kunden, damit er sich auf das Modell überhaupt einlässt.
17. Das kriegen Sie mit keinem Taxi der Welt gefahren von Köln bis Düsseldorf und da ist das schon attraktiv.
18. Der primär jemand, glaube ich, der sagt ich möchte Mobilität haben, ich möchte Flexibilität haben und möchte keine Kosten für ein eigenes Auto haben, der wird seinen eigenen Versicherungsschutz nicht so sehr im Fokus haben. Der will günstig und unkompliziert fahren können

2.10 COSTS

Here the relevant codes and subcodes are presented for this category.

2.10.1 Costs – pricing for own car - positive

Theme	Subresearch Questions
Code	Costs
Sub Codes	**pricing for own car**
Sub Codes	positive
Segments	**08**

1. Generell möchte ich das nicht verneinen.

2. Die nutzen das Carsharingauto nicht als Zweitwagen, sondern die nutzen das Carsharingauto als Erstwagen, dass ich dann eine Dokumentation eventuell über mein Fahrverhalten, dass ich dann beispielsweise, wenn ich mir wieder ein Auto hole die Möglichkeit habe mit einem gewissen Schadenfreiheitsrabatt einzusteigen.
3. Das ist jetzt noch keine Telematik, aber es zeigt zumindest schon, dass diese Verschränkung zwischen privater Kfz-Versicherung und Carsharingnutzung und –versicherungsnutzung durchaus sinnvoll ist und man da auch für den Versicherungsnehmer ein Asset draus machen kann.
4. Ich bin zum Beispiel intensiver DriveNow-Nutzer, und wenn jetzt mein Kfz-Versicherer von DriveNow Daten bekäme würde ich wohl sehr stark abblocken. Die Idee der Schatten SF-Klasse ist natürlich sehr charmant, insbesondere dann, wenn der Kunde selber entscheiden kann ob das weitergegeben werden soll oder nicht.
5. Solche Dinge könnte man sich glaube ich vorstellen und, oder aber in Kooperation auch mit Tankstellen, daß man so etwas zum Punktesystem macht wie Payback zum Beispiel, das gibt es ja auch auf Tankstellen bezogen, in Kooperation mit Versicherungen, wo man dann so Punktegutschriften gibt, die der Kunde dann am Ende bei der Tankstelle zum Tanken, zum Waschen, zum Reparieren, und, oder aber bei der Versicherung einlösen kann um dann einmalig zum Beispiel bei einer Versicherung 20 Euro Prämiennachlass oder so etwas zu bekommen.
6. Spontan würde ich sagen nein, aber man könnte sich durchaus überlegen daß man, vereinfacht gesagt, wenn er bereit ist Daten zu übermitteln, daß er sich ein paar Pluspunkte beziehungsweise Positivpunkte erfahren kann, die gespeichert werden und am Ende, wenn er wirklich, und da kommt es ja dann zum Tragen, ein eigenes Auto oder Motorrad hat und es anmeldet, Voraussetzung ist ja dann auch, daß er zur AXA geht und nicht woanders hin geht, daß es dann ein weiches Tarifmerkmal gibt, also nicht Schadenfreiheitsrabatt, also weiches Tarifmerkmal, das einen Scoringwert hinterlegt hat, den er dann positiv beeinflussen kann.
7. Beispielsweise weil er damit günstiger fährt, oder weil er andere Vorteile nutzen kann. Die Zielgruppe ist grundsätzlich aufgeschlossener.
8. Das war für die Versicherer auch schwierig, das passt nicht in die Denke der Fahrzeugbezogenen Versicherung rein, da kommen zusätzliche Risiken, die haben auch zusätzliche Exposures, das ist klar, aber ich denke wir müssen generell darüber nachdenken, wenn Mobilität wirklich so aussieht, daß der Besitz wirklich in den Hintergrund tritt, was ich allerdings mit einem Fragezeichen versehen möchte, dann müssen wir auch

den Versicherungsschutz definitiv von den Objekten auf die Personen überführen.

2.10.2 Costs – pricing for own car - negative

Theme	Subresearch Questions
Code	Costs
Sub Codes	**pricing for own car**
Sub Codes	negative
Segments	**02**

1. Aber das ist meines Erachtens ein zu geringer Anreiz und da ist auch der Anreiz zu sagen, wir nehmen jetzt auch die 2.000 Kilometer die jemand noch mit Carsharing gemacht hat in einem aufwendigen Datenaustausch und versuchen das dann anzurechnen auch bei der eigenen Kfz-Versicherung um dann noch eine SFR-Klasse, oder irgendeinen Rabatt zu geben, ich glaube das ist noch so weit weg, und ich bin nicht davon überzeugt, daß das Thema Carsharing nach vorne bringt.
2. Zum einen, daß die Person mit dem Auto nicht so sehr vertraut ist, das heißt es gibt Bedienungs- und Nutzungsfehler die vielleicht nicht passieren würden, wenn einfach mehr Fahrpraxis mit dem PKW bestünde. Zum Anderen haben wir auch einen Effekt, daß wenn es ein Fahrer eines mittel motorisierten PKW ist oder vielleicht auch gut motorisierten PKW ist und er hat im Rahmen eines Ausleihesystems, wo es in Zukunft drauf hinlaufen wird, eher vielleicht ein Elektroauto das nicht unbedingt auf Dauer diese schnelle Fahrweise ermöglicht, dann hat er ein anderes Profil, allein aufgrund des PKW.

2.10.3 Costs – Pricing for carsharing – Performance should have impact

Theme	Subresearch Questions
Code	Costs
Sub Codes	**Pricing for carsharing**
Sub Codes	Performance should have impact

Segments 22

1. Also, der vermietet ein gewisses Autokontingent an eine Dorfgemeinschaft. Ob man dann innerhalb dieser Gruppe, ähnlich wie das ja auch bei Friendsurance ein Modell ist, dann sozusagen Subpricings einbaut, wäre eine Option.
2. Wahrscheinlich werden die Carsharinganbieter jederzeit in der Lage sein, z.B. machen sie das heute schon, differenzierte Pakete für den Spaßwochenendfahrer, für den Familienvater und für den konservativen Beamten vorzusehen, in aufsteigender Reihenfolge was die Möglichkeit anbelangt, Geld zu sparen, durch vorbildliche Fahrweise bzw. vorbildliche Nutzung des Fahrzeugs.
3. Das Kauferlebnis selbst wird wahrscheinlich dann auf einfache Packages herauslaufen. Also so, wie ich das eben ein bischen Klischeehaft gesagt habe, wenn man da einsteigt möchte man natürlich am liebsten in der Endausbaustufe mit dem Daumenabdruck seinen Kaufvertrag besiegeln und drückt dann die Knöpfe 1 für Versicherungsprämie all in und es wird nicht getrackt wie man fährt. Knopf 2 oder meinetwegen 3 wo dann gesagt wird, die Versicherungsprämie wird im Nachgang anhand einer Telematikauswertung berechnet.
4. Also muß ich mit dem anders umgehen, und insofern fahre ich ja mal grundsätzlich vorsichtig, und wenn das vorsichtige Fahren auch noch belohnt wird, warum soll sich das nicht in einem solchen Preis- / Leistungsangebot abbilden?
5. Das heißt der Kunde, erarbeitet sich praktisch so ein Nutzerkonto, das heißt durch die gefahrenen Kilometer, je öfter er sozusagen den Anbieter nutzt und je länger die Strecke ist die er zurücklegt, desto niedriger ist dann der Preis pro Kilometer vielleicht.
6. Ich glaube dass man sogar die Möglichkeit hat ein Tarifsystem dahinter zu legen relativ einfach. Sagen wir mal drei stufiges System.
7. Das ist ja nicht anders als in dem Fall wo Du dein eigenes Auto auch hast, Du musst nur vertraglich regeln willst Du den Kunde mitbeteiligen oder nicht.
8. Für bestimmte Schäden und da bin der feste Überzeugung das ist heute schon den Fall, und die Daten haben die Carsharing Unternehmen auch schon, musst Du den Kunde einfach beteiligen.

9. Da kann ich mir wirklich vorstellen, dass jemand der kurzfristig nutzt, aber immer wieder nutzt und der sich dann einmal einen Vorteil erarbeitet hat durch ein bestimmtes Fahrverhalten den so leicht nicht mehr gefährdet.
10. Und dann lieber Möglichkeiten finden Leute sofort auszusortieren, bei denen ich sehr schnell merke aus dem Fahrverhalten, oder aus dem generellen Verhalten, dass sie sich an die impliziten Spielregeln nicht halten.
11. Das kann ich nach 100 Kilometern machen, das kann ich nach 1.000 Kilometern machen, das kann ich nach 10.000 Kilometern machen. Ob man da schon vorher spreizen kann ist sicherlich möglich, das muß man sich dann mal überlegen.
12. Wenn Drive Now mitkriegt, dass bestimmte Leute wie die Sau fahren, dann sollten die denen die Minutenpreise hochziehen.
13. Ich könnte mir sehr gut vorstellen, dass so ein Netzwerk, auf der einen Seite natürlich mit Selbstbehalt und so weiter auf der anderen Seite auch mit der sozialen Kontrolle, also wenn ich dann einen Unfall baue schade ich nicht nur mir, sondern auch meinem ganzen Netzwerk, dass das durchaus ein Erfolgsfaktor sein könnte.
14. Was auf jeden Fall gut ist wäre solche Bonifikationssysteme zu machen für unfallfreies Fahren.
15. Es wäre ja zum Beispiel denkbar, daß man sagt ein Teil des Carsharings ist die Versicherungsgebühr und anteilig zu meiner Nutzung kriege ich eine Rückerstattung am Jahresende, die aber wahrscheinlich für einen Wenignutzer relativ überschaubar ausfällt.
16. Eher so, wenn ich mal weiß, das ist ein guter Kunde, dann befördere ich ihn hoch.
17. Es ist schon noch ein Punkt den man durchaus schon mit anbieten kann und deswegen tendieren viele Carsharer auch dazu eine Selbstbeteiligung zur Abschreckung zu haben.
18. Man kann sich eventuell vorstellen, daß man ganz große Exzesse bestraft. Das heißt, wenn jemand in der Innenstadt, wobei die Frage ist in wiweit das stark kontrolliert wird, mit einer bestimmten Geschwindigkeit fährt, dann massiv bestraft wird.
19. Umgekehrt werden die Nutzer belohnt, wenn sie besonders sparsam fahren, wenn sie das Auto besonders gut behandeln und sich auch sonst anständig verhalten.
20. Aber Modelle sind notwendig, sobald wir ein volkswirtschaftlich bedeutsameres Volumen zusammen getragen haben weil ich glaube, jeder

kann da einsteigen und machen was er will und egal wie ich in der Vergangenheit agiert habe, auch wenn ich da so ein Poweruser bin und so weiter, kann ich mir schon vorstellen, wenn ich zigtausend Kilometer schadenfrei mit einer Flotte gefahren bin, daß es natürlich ganz positiv ist, wenn ich dem Kunden dann signalisiere, Du hast jetzt schon so und so viele Kilometer unfallfrei mit unseren Fahrzeugen vollbracht, wir geben jetzt mal einen Rabatt, das geht immer einfach.

21. Dieses Selbstbehaltsprinzip würde ich bei denen auch einführen.
22. Sonstige Sanktionierung ist dann angefangen von einer Nichtzulassung als Fahrer bis zu der Frage, er muß eine weitere Person beim Fahren dabei haben der fahren kann bis zu der Frage, daß er einen erhöhten Preis zahlt.

2.10.4 Costs – pricing for carsharing – Performance should not have impact

Theme	**Subresearch Questions**
Code	Costs
Sub Codes	**Pricing for carsharing**
Sub Codes	Performance should not have impact
Segments	**04**

1. Die Pricing Konzepte werden sich wiederum einerseits aus dem normalen Mietwagengeschäft heraus annähern, wo es generell auch höchstens Varianten in den Selbstbehalten gibt, bzw. den Deckungssummen aber ansonsten auch jeder Fahrer letztendlich das Gleiche zahlt der einen Mietwagen mietet.
2. Aus meiner persönlichen Sicht spielt das überhaupt keine Rolle.
3. Meine persönliche Meinung dazu ist, wenn wir heute für ein Carsharingauto zwischen 7 und 10 Euro Versicherungsprämie pro Tag haben als Kollektivpreis und wenn ich jetzt da eine Differenzierung anfange und sage bei guten Fahrern ist es vielleicht nur 2 bis 3 Euro pro Tag und bei sehr schlechten Fahrern muß ich 30 Euro nehmen oder irgend so etwas, dann glaube ich spreizt das nicht genügend auf die Gesamtkosten im Carsharing genommen und der bürokratische Aufwand, der Abschreckungsaufwand, daß die ganzen Daten erfaßt werden, daß das ganze verwaltet und ausgewertet werden muß, u.s.w., daß ich also auf einmal ein ganzes System dahinter habe.

4. Ob das wirklich so platt funktioniert, Du zahlst ein bischen Prämie mehr und Du kriegst ein bischen Prämie zurück weiß ich nicht. Man kann aber meines Erachtens in zwei Richtungen denken.

2.10.5 Costs – Information gathering costs – can be high important

Theme	Subresearch Questions
Code	Costs
Sub Codes	**Information gathering costs**
Sub Codes	can be high important
Segments	**25**

1. Das ist einmal gut für den Provider und auch am Ende gut für den Kunden und gleichzeitig kann ich natürlich direkt beim Einstieg, wenn ich intelligent Daten abfrage bestimmte Risikogruppen möglicherweise ausgrenzen.
2. Und dann gibt es mit Sicherheit Daten Modelle, die man anzapfen kann, auch externe Daten, die praktisch den Kreis dann automatisch kleiner machen.
3. Aber es ist denke ich durchaus denkbar, dass man da unterschiedliche Tarife wieder zum Einsatz bringt. Warum sollte man das nicht so machen, wenn man sowieso diese grundsätzliche Einstufung macht, wie wir eben geschrieben haben, möglicherweise auch in diesem gestuften System, das System dem Kunden auch eine Tarifempfehlung gibt.
4. Und grundsätzlich bin ich der Meinung wird das funktionieren, wenn der Versicherer ganz eng mit dem Hersteller beziehungsweise dem Provider zusammenarbeitet, weil ganz viele Daten einfach aus dem Auto heraus kommen, die dann auch unterschiedliche Tarifierungsmöglichkeiten ermöglichen und die haben mit dem Verhalten oder mit den Daten des Kunden dann eigentlich nur mittelbar zu tun.
5. Das heißt, ich bin der festen Überzeugung, dass dort immer das Thema Risikoinformation gemessen werden muß an der Komplexität der Aufnahme und der Bereitschaft Informationen abzugeben, das heißt, das ist immer limitiert.

6. Stand heute muß ich eigentlich damit rechnen, dass diese Daten vom Carsharinanbieter eingesammelt werden und auch genutzt werden und dass ich auch überhaupt keine Möglichkeit habe mich dem zu entziehen.
7. Eine positive Risikoselektion ist bereits ein Datenaufzeichnungsgerät im Auto. Das hat der Crashrecorder gezeigt.
8. Das sind genau die gleichen Risikokomponenten die früher die Mietautos hatten, die jetzt die Carsharingautos haben. Ich denke da gibt es gewisse Parallelen und da zeigt es sich in der Vergangenheit, dass solche Datenaufzeichungsgeräte und die entsprechende Information an den Nutzer durchaus einen positiven Effekt haben.
9. Ein Fragebogen, sicher, das ist das was wir heute machen ungefähr mit unseren Antragsfragen. Ich denke da hat sich gezeigt, dass es für ganz viele Zwecke sinnvoll und gut ist, dass es dort natürlich auch Leute gibt die nicht ehrlich sind, aber damit muß man rechnen.
10. Ich weiß nicht wie übertragbar das ist. Diejenigen die ja selbst ein Auto besitzen und fahren werden wahrscheinlich weniger Carsharing benutzen und ich weiß auch nicht ob genug Daten da sind.
11. Ich könnte mir vorstellen, wenn ich jetzt aus Versicherersicht denke, dass ich wesentliche biografische Daten die Unfallrisiken etcetera beeinflussen.
12. Bin ich Wenigfahrer, Vielfahrer oder bewege ich mich eher in Gefährdungsaktiven Kontexten wie Stosszeiten auf der Autobahn oder in der Rush Hour im Innerstädtischen Verkehr, das sind ja alles Faktoren, die nachweislich die Wahrscheinlichkeit zu einem Unfall erhöhen und die ich durch mein Fahrverhalten auch massiv beeinflusse, weil ich begebe mich mit höherer Wahrscheinlichkeit in eine risikoträchtige Situation.
13. Also, je mehr ich im Vorfeld weiß über den Kunden, sein Fahrverhalten, seine Nutzungspräferenzen, auch seine Wünsche, Träume, Ziele, also einen Beratungsprozess davor schalte um nicht einfach nur Carsharing oder Car2go als preiswerte einfache schmutzige Form der Mobilitätsunterstützung sehe, sondern so etwas wie ein Lifestylekonzept für meine urbane Mobilität.
14. Also ich werde nicht im Detail überwacht, sondern es wird in einer Black Box, die auch Datenschutzrechtlich abgesichert ist, so eine Art Index gemacht und dann kommt so eine Art Mitteilung „in den letzten 3 Fahrten hast Du aber ziemlich reingehauen, bitte ändere das, ansonsten müssen wir Sie ausschließen oder so etwas. Das wäre eine andere Akzeptanz, weil man sich nicht so im Detail überprüft fühlt.
15. Das ist eventuell für die Carsharer relativ unattraktiv, aber ich könnte ja zum Beispiel eine Punkteabfrage in Flensburg installieren als Bedingung.

16. Das könnte dann so gesehen noch mehr Daten auswerten, weil es den Nutzer sieht, wie er über verschiedene Carsharingunternehmen bucht.
17. Bei der Frage wäre ich auch dafür, natürlich unter Berücksichtigung der Datenschutzbestimmungen und so weiter, sondern nur um die Einschätzung des Risikos besser vornehmen zu können auch auf dieses Thema Telematikdatenübertragung zu gehen.
18. Wir stehen da zwar immer noch ziemlich am Anfang, aber unabhängig von diesem Carsharingthema gehen die Versicherer glaube ich dahin über alle unter der Überschrift Big Data, wie sämtliche Daten besser genutzt werden können um eine individuelle Risikosituation und Prämienkalkulation vorzunehmen und da würde ich Carsharing vom Grundsatz her erst einmal auch mit einschliessen.
19. Der Knackpunkt aus Versicherersicht ist aber, daß die Versicherer zu wenig Erfahrung haben, mangels Daten und auch Nutzungsverhältnisse.
20. Ich könnte mir aber durchaus vorstellen, daß es unter den Carsharinganbietern einen großen Anteil an potentiellen Interessenten für ein solches Angebot geben könnte.
21. Und wenn wir über Risikosteuerung nachdenken, dann müssen wir einfach auch mal gucken, was haben wir für gute Kunden, was haben wir für schlechte Kunden? Wie identifizieren wir gute Kunden? Was machen wir dann mit Ihnen? Wie identifizieren wir schlechte Kunden? Gerade wenn ein Carsharingkunde schon Kunde ist haben wir natürlich eine gewisse Historie, die wir auch verwenden können.
22. Natürlich ist es sinnvoll diese Information, wenn Carsharing volkswirtschaftlich gesehen eine Bedeutung bekommt, wirklich mit privater sonstiger eigener Nutzung von Fahrzeugen auf Augenhöhe ist.
23. Ich kann Sie in soweit aber beruhigen, wir reden ja über zukünftige Welten und in zukünftigen Welten werden wir die Kunden nicht mehr fragen, sondern wir werden über Big Data alles rausbekommen.
24. Ich habe da keine Detailkenntnisse, aber ich denke einfach mal die Kunden, die dieses Carsharing bevorzugt beanspruchen ist ja zum einen eine Gruppe von jungen Leuten, die noch kein eigenes Auto haben, weil sie sich das nicht leisten können, und auf der anderen Seite die etwas fortgeschrittenere Altersgruppe, die sagen ich fahre so wenig, die paar Strecken, da mache ich das lieber mit dem Carsharing, denn damit kann ich meine eigenen Kosten senken.
25. Für einen Versicherer ist es natürlich interessant zusätzliche Daten zu generieren und zu gewinnen. Daten sind Macht und Daten sind Wissen,

sind eine hohe Komplexität, aber wenn man die managed und große Versicherer können das, ist das immer interessant.

2.10.6 Costs – Information gathering costs – should be low

Theme	Subresearch Questions
Code	Costs
Sub Codes	**Information gathering costs**
Sub Codes	should be low
Segments	**05**

1. Der kann jetzt keine meiner Carsharingautos mehr nehmen. Ich glaube, daß das wesentlich einfachere Systeme sind, bei denen die schlimmsten Finger rauskommen und solche Themen wie diese Autorennen, die lassen sich meines Erachtens nicht über ein sehr kompliziertes telematisches Prüfungsverfahren ausschliessen.
2. Das hängt wieder damit zusammen, wie ist eigentlich der Preisanteil der Versicherung in dem ganzen Spiel. Man muß aufpassen, daß sich der Versicherer nicht als der Bremser für die Nutzung des Carsharings entwickelt, wenn man da zu sehr Einschränkungen macht.
3. Im Flottengeschäft machen wir auch keine Auswahl welche Fahrer da fahren dürfen auf den LKW oder den PKW, wir machen da keine Kontrolle.
4. Mich würde es sehr überraschen, wenn die Daten die die sammeln homogen sind und auch in irgendeiner Art vergleichbar sind.
5. Jetzt stelle ich mir vor ein Geschäftsmann nutzt dieses Fahrzeug und hat vielleicht am Tag verschiedene Kontaktpunkte und besucht einen Mitbewerber auf um mit dem ein Recruitinggespräch zu führen. Das wäre eine sehr delikate Information, wenn das an seinen Arbeitgeber käme, der als Partner das Carsharing bezahlt.

2.10.7 Costs – Control costs – can be high important

Theme	Subresearch Questions
Code	Costs
Sub Codes	**Control costs**

Sub Codes	can be high important
Segments	**13**

1. Meine persönliche Überzeugung ist, soziale Kontrolle in den meisten Sharing economy Modellen ist gering und deswegen würde an einer Kontrolle, in diesem Falle beispielsweise in technischer Hinsicht, tendenziell kein Weg dran vorbeiführen.
2. Meiner Meinung nach um noch einmal darauf zurückzukommen, in Sharing economy Modellen insgesamt ist der Anreiz sich konform zu verhalten, wenn keine soziale Kontrolle vorliegt relativ gering.
3. Bis in einen sehr hohen Grenzbereich bin ich, glaube ich, als Versicherer besser beraten meine Claims Leakage zu minimieren, dadurch durchaus auch höhere Kosten in Kauf zu nehmen, auf der Verwaltungs- bzw. Kontrollseite.
4. Das heißt, ich bin der festen Überzeugung, dass dort immer das Thema Risikoinformation gemessen werden muß an der Komplexität der Aufnahme und der Bereitschaft Informationen abzugeben, das heißt, das ist immer limitiert.
5. Dann haben Sie übrigens auch noch die soziale Kontrolle drin, dann kontrollieren die sich auch noch gegenseitig.
6. Die hat auch eine ganz andere Qualität als so eine Black Box, weil sie das ganze technische Equipment komplett kontrollieren können. Ich habe bisher auch noch keine Möglichkeit gefunden aus diesem Datensammeln rauszuoptieren.
7. Es gab ja gerade in Köln die Fälle wo Carsharing, ich glaube sogar DriveNow Fahrzeuge genutzt wurden um illegale Rennen zu fahren. Das kann man ja zumindest theoretisch dadurch unterbinden, dass wenn der Carsharinganbieter über das Tracking der Fahrzeuge mitkriegt, dass diese missbraucht werden, dass dann der Motor abgeschaltet wird.
8. Weil es dann die Hemmschwelle senkt Neukunde zu werden und ab dann Kontrolle, gnadenlose Kontrolle.
9. Da erhoffe ich mir schon, dass ein bischen soziale Kontrolle durchaus auch mitspielen könnte.
10. Diese Telematiksysteme geben ja auch zunehmend Rückmeldung über das Fahrverhalten. Wenn ich persönlich Feedback bekomme, wird das bei den allermeisten Menschen dazu führen, daß man sich dessen bewusster ist.

11. Das Thema Kontrolle kann ja nicht nur aus dem Bereich Carsharing ausdehnen, sondern viele buchen ja nicht nur über die Carsharingunternehmen, also aktuell schon noch.
12. Ich glaube das sind eher Faktoren, die man sich in einem ersten Schritt anschauen könnte, die auch umsetzbar sind, als vielleicht das Beispiel Fahrschule oder begleitetes Fahren von wem auch immer wer das erst einmal kontrolliert.
13. Vertrauen ist natürlich gut, Kontrolle ist besser.

2.10.8 Costs – Control costs – should be low

Theme	Subresearch Questions
Code	Costs
Sub Codes	**Control costs**
Sub Codes	should be low
Segments	**07**

1. Ich glaube nicht, das hat sich auch bei den Mietwagen bisher nicht durchgesetzt, daß ich über diese stärkere Kontrolle und dem Aufwand, ja eine Schatten SFR aufzubauen um dann zu sagen, aha, Herr Saeger hat jetzt schon 10 Anmietungen gemacht und da waren jetzt leider auch schon 2 Unfälle mit dabei, der rast immer wie bekloppt durch die Gegend, was heißt das jetzt?
2. Wenn man dagegen aber setzt, Regulierungskosten, Besichtigungskosten, Gutachterkosten, Rechtsanwaltskosten, die eingesetzt werden und und und. Prozesskosten in der Bearbeitung, telefonisch, wie Schriftgutbearbeitung ist da wahrscheinlich das Prinzip Vertrauen eins, das wirtschaftlich schlau ist. Vermutlich wird es im Zuge von Digitalisierung am Ende eher die Frage sein, wo an welcher Stelle erzeuge ich dieses Vertrauen? Ich finde den Gedanken cool und ich könnte mir vorstellen dieses Prinzip offensiv zu spielen, als Differenzierungsmerkmal.
3. Allein die Frage zeichnet das System auf wo ich bin und erfährt jemand wo ich war und wer kann Zugriff nehmen auf die Daten?
4. Dieser Wahnsinn Kontrolle auf der Basis von Misstrauen, ich glaube das ist die Frage.
5. Für jemanden der nicht gewohnt ist beobachtet kontrolliert zu fahren wäre das wahrscheinlich eine ziemliche Hürde einzusteigen.

6. Bei der Nutzung wird es wahrscheinlich eine gewisse Überwachung geben.
7. Wir müssen echt gucken Kosten und Nutzen in Relation zueinander zu setzen. Da haben wir vielleicht auch den Bogen in der Vergangenheit bei der Risikoprüfung überspannt.

APPENDIX 3: CURRICULUM VITAE

Hendrik Saeger was born in Essen (Germany) in 1969. He graduated with honours in business administration from the University of Passau (1998). After starting his career as executive assistant to the CEO of AXA Germany, he became project manager for the German part of an international AXA-project to set up an online banking-platform. That was followed in 2003 by a change into the strategy office of the group-project-management for AXA Germany. In 2007 he joined the operational motor fleet business for AXA Germany and became head of this business line since 2016 as executive director for the product management, as well as the operational lines.

Since the end of 2012 he took up his PhD at the Catholic University San Antonio (UCAM) in Murcia (Spain) and the applied University FOM in Essen (Germany).

In the center of his research stands the New Institutional Economics and the strategic options for motor insurers by the example of carsharing.