

The quality of market research reports

The case of Marketline Advantage and the automobile industry

Master thesis

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Abstract

This thesis focuses on the case of Marketline Advantage and the quality of its market research reports published about the automotive industry. By providing relevant, timely and qualitative data, market research is a critical part of decision-making or the formulation of strategies. Through the World Wide Web, the number of digitally published market research reports has increased. One of the main reasons of buying such a report is the management acceptance of the results presented, however, uncertainty arises because of an inability to interpret research findings and their implications correctly. Market analysts often obtain secondary data, which was primary data for another researcher. It is important to understand the issues involved while the primary data was gathered. The original source provides all background information needed to understand issues whereas using secondary data implies a loss of control over how data was collected, already modified data and poor documentation.

In research, reliability and validity are key concerns as these are seen as a sign of quality. By providing insight into how findings and interpretations were achieved, repeatability of the research and describing changes in procedures, reliability is increased. Factors increasing validity are the extent to which results are credible, the accuracy of reporting or the generalizability of results.

To investigate the quality of the market research reports under question, a new framework was developed. As categories, the specification of data collection and analysis, the specifications about potential changes in procedures, updates, missing market research reports or comparing data were used. Potential issues with reliability and validity were used as indicators. The findings of this study revealed that potential problems with the quality of market research reports are prevailing.

Table of content

ABSTRACT.....	3
LIST OF FIGURES.....	5
ABBREVIATIONS.....	5
CHAPTER 1 - INTRODUCTION.....	6
1.1 BACKGROUND.....	6
1.2 PROBLEM	7
1.3 RESEARCH OUTLINE.....	8
CHAPTER 2 - THEORETICAL FRAMEWORK.....	9
2.1 MARKET RESEARCH.....	9
2.2 SECONDARY RESEARCH.....	10
2.3 PRIMARY RESEARCH.....	11
2.4 RELIABILITY AND VALIDITY IN QUANTITATIVE AND QUALITATIVE RESEARCH	11
2.4.1 <i>Reliability in quantitative and qualitative research</i>	11
2.4.2 <i>Validity in quantitative and qualitative research</i>	12
2.4.3 <i>Evaluating the quality of market research reports</i>	15
CHAPTER 3 - METHODOLOGY	18
3.1 RESEARCH METHOD.....	18
3.2 DATA COLLECTION.....	18
3.3 DATA ANALYSIS	18
CHAPTER 4 - ANALYSIS	20
4.1 ANALYSIS OF THE SPECIFICATION OF DATA COLLECTION AND ANALYSIS	20
4.1.1 <i>Type of research, methods, transforming and coding, quality controls and missing data..</i>	20
4.1.2 <i>Sources</i>	21
4.1.3 <i>Date of collection</i>	22
4.1.4 <i>Definition of markets and organization of data</i>	22
4.1.5 <i>Contact data</i>	23
4.2 ANALYSIS OF THE SPECIFICATION ABOUT POTENTIAL CHANGES IN PROCEDURES	23
4.3 ANALYSIS OF UPDATES	24
4.4 DATA COMPARISON – MARKETLINE ADVANTAGE VS. OTHER SOURCES	24
4.5 MISSING MARKET RESEARCH REPORTS	27
CHAPTER 5 - CONCLUSION.....	33
CHAPTER 6 - DISCUSSION.....	34
6.1 DISCUSSION.....	34
6.2 ACADEMIC RELEVANCE.....	35
6.3 LIMITATIONS AND FUTURE RESEARCH	35
CHAPTER 7 - REFERENCES	36
APPENDIX.....	45

List of figures

Tables

<i>Table 1 Overview - Advantages and disadvantages of primary and secondary research</i>	10
<i>Table 2 Errors and issues in secondary data (Tasic et al. (2012))</i>	14
<i>Table 3 Criteria for assessing reliability/validity in a market research report</i>	16
<i>Table 4 Result analysis of the specification of the data collection and analysis^a</i>	21
<i>Table 5 Results analysis of the specification about potential changes in procedures</i>	24
<i>Table 6 Results of the analysis of updates</i>	24
<i>Table 7 Global automobile market development (CAGR 2006-2010)^a</i>	25
<i>Table 8 New cars industry development (CAGR 2007-2011)^a</i>	25
<i>Table 9 Development market volume trucks (CAGR 2007-2011)^a</i>	26
<i>Table 10 Car manufacturing industry development (CAGR 2008-2012)^a</i>	26
<i>Table 11 Car Manufacturing industry - Leading companies in Europe, Global, Western Europe 2012^a</i>	27
<i>Table 12 Results of data comparison between Marketline Advantage and other sources</i>	27
<i>Table 13 Missing reports - Automobile and New Cars industry CAGR 2007-2012^a</i>	28
<i>Table 14 Romania leading companies automobile industry 2010^a</i>	29
<i>Table 15 - Analysis on missing data</i>	32

Appendix

Appendix 2 Overview conclusions drawn on reliability and validity	45
Appendix 1 Marketline Advantage - Regions and countries covering the automotive industry	45

Abbreviations

ACEA ... European Automobiles Manufacturer's Association
CAGR ... Compounded Annual Growth Rate
GM ... General Motors
OICA ... International Organization of Motor Vehicle Manufacturers
PSA ... PSA Peugeot Citroen

Chapter 1 - Introduction

Searching and obtaining already published market research reports today is a relatively routine and easy process. The reports are still quite expensive, however, the upfront costs, such as registration fees, dropped. Through the emergence of the World Wide Web, the numbers of digitally published market research sites have increased. Due to the great availability of market research reports, many managers do not believe that it is necessary to hire a consultant for the development of expensive and customized market research projects from the scratch. Making a choice for a market research report then is a critical step. Factors such as the business objective and specific questions about competitors, geographical areas or the sample size need to be reflected (Routledge 2004).

Commercial research firms prepare and publish market research reports on either a specific industry or product (Daniells, 1993) (Peterson & Kerin, 1980). Specialized skills, knowledge and resources, objectivity, cost savings, the anonymity in conducting research or the management acceptance of results presented are among the main reasons for using market research reports. Reducing uncertainty and the creation of a scientific foundation to influence the decision-making process in a positive manner are further reasons for the acquisition of market research reports. The existence of the market research industry is largely based on this expectation of managers (Zaltman & Deshpande, 1982).

Managers preferring to buy market research reports rather than conducting market research on their own do not necessarily consider that a published market research report may not provide the actual responses needed. The actual value of a research project depends largely on the prior and future information to be collected (Hu, 1986). The user's knowledge of its external environment relies then heavily on the researchers information. Uncertainty and vulnerability are arising because of the inability to evaluate the quality of a research service, interpret research findings and assess their implications correctly (Moormann, 1993). Market research organizations have often been criticized for not giving adequate advice to their clients on how to use the findings (Bentley, 1999).

1.1 Background

Marketline Advantage is a business information publisher located in the United Kingdom. Academic institutions, advertising agencies, sales and business development or finance and investing are addressed by the published market research reports (Marketline Advantage, 2013o). Marketline Advantage claims to profile all major companies, industries and regions. According to Marketline Advantage these profiles are based on primary and secondary research, which is aggregated, analysed, cross-checked and presented in a consistent and accessible way. Data can be easily accessed and extracted and includes a geographical representation.

An internal team of analysts produces the content of the market research reports based on extensive secondary research and Marketline Advantage's in-house databases. As Marketline Advantage (2013o) reports, national/governmental statistics, international data (official international sources), national/international trade associations, broker and analysts reports, company annual reports and business information libraries and databases are sources for secondary data. Marketline Advantage claims using stringent checks and controls to ensure and validate the accuracy of the provided data.

Marketline Advantage develops own modelling and forecasting tools through which quantitative and qualitative data can be combined and related to macroeconomic and demographic drivers. Marketline Advantage (2013o) claims that this leads to the creation of market models and forecasts that can be redefined according to specific competitive, regulatory and demand-related factors.

1.2 Problem

On the one hand, companies are trying to gather market intelligence and obtain information about consumer needs. A critical part is market research as it helps to improve decision making by the provision of relevant, reliable and timely data. This information is needed to make decisions and build strategies (Tasic & Feruh, 2012). On the other hand, business information providers such as Marketline Advantage claim to conduct extensive research and data analysis, covering a broad range of industries and geographies or using research methods and processes that ensure the provision of reliable, current and forecasted data (Marketline Advantage, 2012).

Market analysts often use secondary data that were created by someone else as primary data. Using this, it is important to understand the issues involved while the original primary data was gathered. Secondary data is often available from two sources, the original source and a source summarizing this data and market the information. The original source provides all of the background information about data collection techniques, methodologies, inaccuracies or other inputs (Tasic & Feruh, 2012). Using secondary data implies potential inappropriateness of the data for one's own research, the loss of control over how data was generated and collected, data is already modified by a researcher, a potential poor documentation, substantial purchasing costs as well as data may neither be valid or reliable (Cowton, 1998; Babbie, 2010).

The identification of potential bias of secondary data remains a difficult task to do. Though, secondary data should be checked for potential errors and bias before it is used. All secondary data should have properties such as reliability, validation, bias or time if researchers want to have reliable results. As Pierce (2009) states reliability is an important issue as it refers to the extent to which one can rely on the source of the data and therefore on the data itself. Knowing about the existence of errors helps in establishing some degree of confidence in the judgements made (Tasic & Feruh, 2012). All research may include errors to some extent, however, the less errors are included, the higher reliability is.

As Saunders et al. (2009) state, survey data from market research companies is likely to be reliable and trustworthy as organisations depend on the credibility of their data. However, there are often inconsistencies and inaccuracies while these organizations claim that their data is reliable.

Following this, the overall aim of this research is the evaluation of the reliability and validity of market research reports published by Marketline Advantage. Thus, the research question can be formulated as follows:

To which extent are the Marketline Advantage market research reports about the automobile industry reliable and valid?

In order to answer the main research question, the following sub-questions are formulated:

1. Which criteria can be used to assess the reliability of data presented in market research reports?
2. Which criteria can be used to assess the validity of data presented in market research reports?

1.3 Research outline

Based on this, the aim of this research is the assessment of the reliability of market research reports about the automotive industry. In chapter 2, a literature review is presented. The methodological part then describes and explains the design of this research. In chapter 4, the findings of the analysis conducted are presented. The main research question will be answered in chapter 5. Suggestions for future research as well as limitations of the research are given in chapter 6.

Chapter 2 - Theoretical framework

Within chapter 2, the theoretical framework needed to answer the main research question will be introduced. In this regard, the terms market research, primary and secondary research and their relation to reliability are examined. Following this, errors influencing reliability are described. Afterwards, a list with criteria for the evaluation of reliability will be created for the analysis of the market research reports of Marketline Advantage.

2.1 Market research

Market research combines all efforts made to collect information about markets or consumers. This term is often mixed up with marketing research, although marketing research refers to anything specifically related to marketing processes, whereas market research is specifically concerned with markets (Kotler, Wong, Saunders, & Armstrong, 2005; Gabler Wirtschaftslexikon, 2014).

In maintaining competitiveness, market research is a key factor as it provides and analyzes information about market needs, size and competition. By using statistical and analytical methods of the applied social sciences, market research helps in gaining insight or supports decision-making (ICC/ESOMAR, 2007). As market research is a quite a specialized part of marketing it is done by specialists either within an organization or by a business information publisher. The final outcome is in both cases market research reports, which may cover an entire industry, specific segments of an industry, an individual product or a series of related products (Taylor & Francis, 2008). Market research is of such an importance that it has professional bodies, qualifications and an industry on its own. Organizations can choose between different suppliers with different skills and qualities. Specialists conducting market research are either making use of primary research (quantitative vs. qualitative) or secondary research, or both. Hence, market research reports are either based on primary or secondary data (Routledge, 2004, p. 92).

Besides companies undertaking market research, governments are conducting surveys and publishing official statistics that cover social, economic or demographic topics. Governments usually provide census data on for example a population, available either in printed form or via the Internet. As the participation in censuses is obligatory, this data usually implies a good coverage of the population surveyed. Census data collected by governments is usually intended to fit the needs of the governmental departments or local governments which is why it is clearly defined, well documented, of high quality and easily accessible. Thus, data collected by conducting surveys excluding census data is more difficult to obtain as it is restricted to national regulations and hence access is limited (Saunders, Lewis, & Thornhill, 2009).

According to Kotler et al. (2005), the quality of decision-making depends on the quality of the market research conducted and its interpretations. The perception of market research results depends on the original source. Most reliability is credited to results presented by scientific journals and universities, followed by market research results from business information providers. The least trust is given to market research results presented by political organizations (Deinzer, 2012). As Saunders et al. (2009) state, survey data from government organizations is also likely to be reliable, although it is not perceived as such.

2.2 Secondary research

Mc Quarrie (2012) states that secondary research refers to the search for and usage of data that a third person gathered for another purpose on the same topic that is relevant to one's own research. Secondary data research is divided into external and internal data. External data includes data published by the Census Bureau, government agencies and publicly available information like articles, searching on the Internet for information or reports written and sold by consulting firms. Sales records, customer databases or market research reports from the past are examples for internal secondary data (Mc Quarrie, 2012).

As table 1 depicts, secondary research offers several advantages and disadvantages in comparison to primary research. Using secondary data offers the advantage of obtaining data more quickly, at a lower cost and it can provide information that is not directly available or would be too expensive to collect. Besides the advantages of secondary data, there are also some shortcomings. Before secondary data is used, the quality of both the source and the data itself needs to be assessed. Definitions used by one researcher may not be suitable for another researcher's purpose. Measurement errors are, depending on the purpose of a research, more relevant to one researcher than to another. Secondary sources may also be biased as researchers may have their reasons to provide a more positive or negative outcome for their purpose or organization. The time period during which the original secondary data was collected may also influence the nature of the data, for example, crises. Over time, the reliability of published data may vary. This can happen through a change in the collection method without any indication to the reader of the published data. Governments can also change boundaries, geographical or administrative ones. Ideally, several secondary sources are used to crosscheck and confirm the sources one of another (Kotler, Wong, Saunders, & Armstrong, 2005; Zikmund, Babin, Carr, & Griffith, 2013; Crawford, 1977).

Table 1 Overview - Advantages and disadvantages of primary and secondary research

Type of research	Definition	Advantage	Disadvantage
Secondary research	Refers to the search for and usage of data another person gathered for a different purpose on the same topic relevant to one's own research.	Obtaining data more quickly	Quality of sources used needs to be checked before data is used
		Lower costs	Quality of data needs to be checked before data is used
		Data available that would be too expensive to collect	Definitions used may not be suitable for one's own research
		Access to information that is not directly available	Data can be biased
		Different sources can be cross-checked	Collection period can influence nature of data
			Reliability may vary over time
Primary research	Refers to the collection of original data for a specific purpose by a researcher	Addressing specific research issues	High costs
		Control over research design	Time consuming
		Control over methods used	
		Control over project size	
		Control over data analysis	
		Control over time and goal	

2.3 Primary research

According to Kotler et al. (2005) primary research is the collection of original data for a specific purpose at hand by a researcher. Secondary research is often a starting point for primary research in order to gain insight into a topic or by analyzing previously collected primary data.

Compared to secondary research, preparing and carrying out primary research is much more costly and time consuming (cf. table 1). It also takes less time to acquire secondary data than carrying out one's own research. At the time of completion, the whole research, may have already become obsolete. Though, primary research enables the researcher to address specific research issues as they can control whether a research design fits to the specific needs of the research. This also leads to a high degree of control over how data is collected, for example, method, size of project, goal or time. A research can either focus on qualitative or quantitative issues, or on both (Kotler, Wong, Saunders, & Armstrong, 2005; Babbie, 2010).

Depending on the aim of the research, a researcher chooses for either a quantitative or qualitative research approach. Quantitative research focuses on the objective measurement and numerical analysis of data which is collected through questionnaires, surveys or interviews (University of Southern California, 2014). All aspects of the study can be carefully designed and research instruments are used to gather data. According to Babbie (2010), qualitative research is the non-numerical analysis and interpretation of observations with the aim of the identification of underlying meanings or patterns of a relationship.

2.4 Reliability and validity in quantitative and qualitative research

Validity and reliability are key concerns in quantitative and qualitative research as it is perceived as a sign of quality. Thus, reliability and validity appear to be fundamental in quantitative research. In qualitative research, researchers have attempted to provide principles and processes similar to the notion of reliability and validity in quantitative research (Klenke, 2008). The following section provides an overview of the meanings and discussions of reliability and validity with regard to quantitative and qualitative research.

2.4.1 Reliability in quantitative and qualitative research

A key question in quantitative and qualitative research is the reliability of results. According to Morse et al. (2002) research becomes worthless, fiction and loses its utility without rigor, which is why a lot of attention is paid to reliability (Morse, Barrett, Mayan, Olson, & Spiers, 2002, p. 14). Without the certainty of numbers and p-values, qualitative research expresses a loss of confidence within and outside the field. Instead of explaining how reliability can be attained and estimated, leading qualitative researchers either suggested the adoption of new criteria or argued that reliability is an issue solely belonging to the quantitative research.

In terms of quantitative research, reliability is commonly defined as the extent to which an instrument or process consistently yields the same results under the same conditions, regardless of the number of repetitions (Babbie, 2010; Tasic & Feruh, 2012). As Pierce (2009) further states, reliability is also referring to the extent to which one can rely on the source of the data and therefore on the data itself. A researcher can improve his research instrument by repeatability and increasing its internal consistency and hence reliability. The three main types of reliability in quantitative research are the degree of the consistency of results, stability over time and the similarity within a given period (Bashir, Afzal, & Azeem, 2008). It is not possible to calculate reliability, however, in quantitative research, it can be estimated by using the following tests (Golafshani, 2003):

- *Inter – Rater /Observer reliability*: Degree to which different raters/observers are giving the same answers or estimates
- *Test-Retest Reliability*: Consistency of a measure over time
- *Parallel - Forms reliability*: The reliability of two tests constructed the same way, from the same content
- *Internal consistency reliability*: Consistency of results across items, often measured as Cronbach's Alpha

As much as researchers and methodologists agree upon the definition and measurement of reliability in quantitative research, the less agreement exists in qualitative research. From a quantitative point of view, reliability and its measurement is clearly defined. In qualitative research, the answer to what reliability is and how to measure it, is not as clear, as many discussions exist.

According to Golafshani (2003), the concept of reliability is used for all kinds of research, although it is a concept for evaluating quantitative research. The most important test of a qualitative study is its quality, if one takes the idea of testing as a way of retrieving information.

Stenbacka (2001) argues that the concept of reliability is irrelevant or even misleading in qualitative research as it is impossible to differentiate between the researcher and method used. Repetitive correctness as it is required in quantitative research does not have any value in qualitative research. Rather than discussing qualitative research with the notion of reliability, it is important that the researcher makes the whole process (preparation, data gathering, analysis) visible (Stenbacka, 2001).

According to Morse et al. (2002) consistency, confirmability and dependability are new terms that were introduced as parallel concepts of reliability in qualitative research. The consistency of data is similar to the concept of findings being consistent when a study is repeated. Consistency can be achieved when the research process can be verified from the raw data collection over data reduction to the findings. Confirmability then refers to the extent to which a researcher shows how findings and interpretations were actually arrived (Koch, 2006). In other words, it is the degree to which others can confirm results. According to Venkatesh et al. (2012-2013), dependability is the need for a researcher to describe changes that are occurring and how these affect the way of approaching a study.

2.4.2 Validity in quantitative and qualitative research

Besides reliability, validity is an important factor in quantitative and qualitative research. In quantitative research, validity refers to the degree to which a measure captures what it is intended to measure and the accuracy of drawing inferences regarding what a score means. In quantitative research, there are different types of validity: internal and external validity, face validity, construct validity and content validity.

According to Klenke (2008), internal and external validity (design validity) are the two main quality criteria of quantitative research. Internal validity deals with causal relationships between dependent and independent variables in a study. The generalizability of the findings of a study to other settings or groups refers to external validity.

Construct validity is the confidence in the interpretations of what a measure means. It is the degree to which the measure captures the underlying theory. The measure should be related to

measures of similar constructs (convergent validity) and unrelated to measures of different constructs (divergent validity) (Babbie, 2010; Saunders, Lewis, & Thornhill, 2009).

Babbie (2010) states that face validity refers “to the quality of an indicator that makes him a reasonable measure of some variable.” (Babbie, 2010, p. 153). Saunders et al. (2009) ask whether the measure and findings appear to make sense.

Content validity refers to the degree to which a measure covers a range of meanings included that are included in a concept (Babbie, 2010). Judgements on the adequate measure can be made by providing a thorough definition of the research based on literature reviewed (Saunders, Lewis, & Thornhill, 2009).

Though, in quantitative research there is a consensus on validation procedures and processes among researchers. As in qualitative research this consensus cannot be found, different perceptions on how to deal with validity exist. (Venkatesh, Brown, & Bala, Forthcoming 2012-2013).

Researchers such as Stenbacka (2001) suggest that the notion of validity should not be considered in qualitative research. Stenbacka (2001) claims that the basic definition of validity is useless in qualitative research, because qualitative research is never going to measure anything. Venkatesh et al. (2012-2013) suggests to apply the same set of criteria in qualitative research as in quantitative research.

Highlighting the importance of validity in qualitative research, different criteria for evaluating validity in qualitative research were developed. In order to distinguish qualitative research from what is done in quantitative research these criteria received different names than validity. In qualitative research, validity refers to the extent to which data are plausible, credible and trustworthy (Venkatesh, Brown, & Bala, Forthcoming 2012-2013).

Venkatesh et al. (2012-2013) introduce analytical validity in qualitative research, which refers to how well qualitative data was collected and analysed so that findings are plausible, consistent and dependable. As described earlier, consistency and dependability are related to reliability in qualitative research.

Morse et al. (2002) state that transferability and credibility are alternative criteria for judging validity in qualitative research. According to Venkatesh et al. (2012-2013) credibility, transferability and descriptive validity are equivalent to design validity in quantitative research. In qualitative research, design validity refers to the quality of the design and execution of a study. Transferability (or external validity) refers to the generalizability of a study to a situation, person or time outside the study itself. By a thorough description of the research method, context and assumptions that are central to the research as well as data analysis techniques, transferability can be enhanced (Venkatesh, Brown, & Bala, Forthcoming 2012-2013) (Johnson, 1997).

Credibility is the paralleling form of internal validity in qualitative research. It refers to the extent to which results are credible or believable (Klenke, 2008). Descriptive validity is defined as the accuracy of facts being reported, e.g., events, objects, behaviours, settings, time,...)(Venkatesh, Brown, & Bala, Forthcoming 2012-2013). This type of validity is an important factor due to the fact that description is a major objective in qualitative research (Johnson, 1997)

In their article, Tasic et al. (2012) are discussing errors and bias in using secondary data in marketing research instead of solely discussing definitions of reliability and validity in quantitative and qualitative research. The authors state that secondary data used in an analysis may contain errors or bias that influence the reliability or accuracy of a research. Tasic et al. (2012) further state that an analyst cannot remove all errors, however, if he is cautious enough and knows about their existence, conclusions can be drawn with a certain degree of confidence in the judgements made. Secondary data should be controlled for errors in order to certify its accuracy.

Reliability, validation and appropriateness are important properties secondary data should have when reliable results of an analysis are intended. Validation is “the process of checking to make sure the proper procedures were followed in collecting, organizing, and analyzing data.” (Tasic & Feruh, 2012, p. 328). The process of validation involves reliability and validity. Data is reliable if the estimates are approximately the same when the same variable is measured several times. With the term appropriateness, Tasic et al. (2012) refer to validity as a measure needs to measure what it is supposed to measure. In case that a validation cannot be reached, secondary data should be regarded as suspicious.

As table 2 shows, Tasic et al. (2012) divide errors and issues that may have an impact on the use of secondary data in different categories. As the definition of reliability and appropriateness by Tasic et al. (2012) reveal, these authors point of view on research is a more quantitative one.

Table 2 Errors and issues in secondary data (Tasic et al. (2012))

Errors and issues in secondary data	Caused by	
<i>Errors that can invalidate data</i>	Manipulation	The organization gathering data may manipulate/reorganize data to meet a purpose unknown to other. Collecting agency may want to show that ist organizational goal is met.
	Inappropriateness, confusion or carelessness	a) Organization might collect, organize and distribute data without properly specifying the particulars of the collection process or assembly procedures b) Organization may not care about data quality or validity c) Organization's staff may not know how to collect data
	Concept error	Concept error arise because of the difference between the concept to be measured and a specific item that is used to measure a concept. Data containing error can still be use, however, only if something is known about the nature of the error.
<i>Errors requiring data reformulation</i>	Changing circumstances	Changes affecting a data series which are not readily apparent in that data series, e.g. change in geographical boundaries, change in underlying unit of measurement
	Inappropriate transformations	Original data in secondary data sources is often presented in categories or tables that make the data more presentable or the original categories do not reflect an analyst's needs to handle the task at hand.
	Inappropriate temporal extrapolations	Secondary data often not available for intervening periods between published reports. Data for these periods need to be interpolated from the nearest two reporting years. Not knowing the true change between two these two point, any answer can be obtained for the point of time in question.
	Inappropriate temporal recognition	Arising from a misunderstanding of the time dimension of secondary data. There is always a time lag between the gathering of primary data and the time when it is made available.
<i>Errors reducing reliability</i>	Correct(ed) data	Data can be inconsistent from one report to another in the same published series because of errors that have been discovered, corrected and then reflected in subsequent version of the data set. Or publisher of secondary data can adjust forecasts for a decimal year against actual census numbers.
	Changes in collection procedures	Occurs due to different methods or circumstances surrounding the collection, e.g. time of collection, way of summarizing data. Generated data can be quite different from previous data in the same data set.
	Clerical errors	Occurs because of the transposition of numbers in a series with the same number of digits or the misplacing a decimal. Outliers can be easily detected by creating diagrams or tables.

Errors that can invalidate data are the first category of issues and errors in secondary data. Tasic et al. (2012) suggest that secondary data can become invalid by actions or attitudes of person(s) or orientations of organizations collecting data. Manipulation, inappropriateness, confusion, carelessness and concept errors are threats to the validity of a research. From a

qualitative point of view, Tasic et al. (2012) refer to design validity. By providing a thorough description on the collection, organization, quality controls of data to be measured validity can be increased. This is due to the fact that findings are becoming more plausible, trustworthy and credible.

The next category comprises errors requiring a data reformulation (cf. table 2). It can happen that secondary data are not directly helpful or useful due to the fact that these do not adequately measure the concept being studied (Tasic & Feruh 2012). Hence, changing circumstances, inappropriate transformations, inappropriate temporal extrapolations and an inappropriate temporal recognition are typical situations requiring reformulations of data are threat to the validity of a research.

The last category deals with errors reducing reliability (cf. table 2). Tasic et al. (2012) state here that a “data set is reliable if successive counts produce the same results” (Tasic & Feruh, 2012, p. 333). Using this definition, Tasic et al. (2012) focus on reliability from a quantitative point of view. The organization gathering and publishing secondary data is responsible for the reliability of this data. There are several issues that should be kept in mind when the organization collecting the data is evaluated, for example, the purpose of the organization, experience and training of the employees involved in data collection procedures and the possessing of adequate sources to do a thorough analysis.

Thus, Tasic et al. (2012) do not include consistency and conformability in their errors reducing reliability (cf. table 2). By making the whole process (preparation, data gathering and analysis) visible, consistency can be increased and hence reliability. By making the process visible, conformability is also increased as a researcher shows how findings and interpretations were derived. By using the terms changes in collection procedures and correct(ed) data, Tasic et al. (2012) refer to dependability, which is the need for researchers to describe changes that are occurring during the research and may have an effect on the results presented.

2.4.3 Evaluating the quality of market research reports

Based on the discussion before, it becomes clear that neither secondary nor primary research is offering a guarantee of providing solely unbiased data. Both approaches offer several advantages and disadvantages. Although the assessment of reliability and validity of especially secondary data is an important issue, it is, depending on the type of research (quantitative or qualitative) used, a difficult task to do. This is due to the fact that the quantitative and qualitative approach offer different perspectives, opinions and definitions on reliability and validity. From the previous sections, it can also be inferred that while a qualitative research approach is used, a pre-defined tool or method for the assessment of reliability and validity, as it is the case in quantitative research, does not exist.

As a suitable tool or method for the assessment of the reliability and validity of market research reports could not be found in the literature, building on the theoretical framework presented so far, a framework for the assessment of reliability of market research reports was built (cf. table 3). Table 3 contains five categories which are further divided into individual indicators of reliability or validity. The last column then reflects the level of reliability or validity if these indicators are found.

Table 3 Criteria for assessing reliability/validity in a market research report

Indicator of reliability and validity		Level of reliability and validity	Level of validity
<i>Clear specification of data collection and data analysis</i>	Detailed description on which type of research was used	High	High
	Definitions of markets	High	High
	Sources used stated	High	High
	Information on how it is dealt with missing data	High	High
	Date of collection available	High	High
	Information on how quality of data used is controlled	High	High
	Transforming data (from raw data to result?)	High	High
	Information about method used - e.g. statistical tests	High	High
	Coding of data - whether and how?	High	High
	Clear organization of data, e.g. by industry, company?	High	High
	Contact data presented	High	High
<i>Clear specification about potential changes in procedures</i>	Information about changes in methods used from one report to another	High	High
	Information about changes in sources used from one report to another	High	High
	Information about changes in definitions used from one report to another	High	High
<i>Updates</i>	Due to error correction - information given	High	High
	Due to new version of report	High	High
<i>Results of comparing data collected outside Marketline with Marketline data</i>	Data sets similar to each other	High	High
<i>Missing market research reports</i>	Data for missing market research reports could be found using other sources than Marketline	Low	Low
	Data for missing market research reports could be partly found using other sources than Marketline	Medium	Medium
	Data for missing market research reports could not be found using other sources than Marketline	High	High

^a Own illustration based on theoretical framework described in chapter 2

Clear specification of data collection and data analysis

The first category refers to the description of the process of data collection and analysis. A company may collect, organize and distribute data while poorly specifying the particulars of the collection process, their data assembly procedures (methodology), providing insight into the whole process (gathering, collection, analysis) as well as sources used. By providing this information, evidence in supporting a claim made in a report is increased as well as the possibility for the buyer of a market research report to see how findings in a market research report were actually derived is given (Spencer, Ritchie, Lewis, & Dillon, 2003). As defined earlier, reliability refers to the possibility of measuring the same variable several times with more or less the same results. If specifications about the collection process, sources used or data assembly procedures are missing, a replication of the study done by using the same procedures becomes difficult, eventually impossible, for a third person. In qualitative research, consistency and confirmability can be achieved by stating the whole process of data preparation, gathering and analysis. Besides this, sources are a way of quickly assessing the reliability and validity of data presented (Saunders, Lewis, & Thornhill, 2009). If a researcher presents the whole research process, reliability is considered to be high.

Secondary data used for the preparation of a market research report can already be outdated. Errors from inappropriate temporal recognition also occur and are linked to the error of inappropriateness and confusion (Tasic & Feruh, 2012). A time lack between the data collection and publication always occurs. This often leads to “using data in their year of publication instead of the year for which these were gathered” (Pierce, 2009, p. 333). If the data collection process and sources are properly documented, it is possible to identify the time of the data collection besides the year of publication. By this, the timeliness of data can be judged by a buyer of a report, for example non-current, and hence whether to rely on it. Knowing the collection date and publishing date of data indicates high reliability.

Thus, by giving insight into the whole process of data gathering, collection and analysis, validity can also be increased. By knowing the process, it can be assessed whether Marketline

Advantage measured what it actually claims to measure and whether the findings can be generalized. The more insight a researcher gives into his research, the more credibility is given to the findings presented.

Clear specification about potential changes in procedures

The second category deals with potential changes in procedures. Reliability (dependability) is considered to be high if information on changes in methods, sources or definitions can be found and hence at least judgements on how these affect the data presented in the market research reports from Marketline Advantage can be made (Morse et al. (2002).

Updates

The third category comprises updates, which can either be made due to error correction or due to a new version of a market research report. Data can be even inconsistent from one report to another in the same published series because of errors being discovered and corrected in subsequent versions. Errors due to correct(ed) data also occur when a company such as Marketline can adjust forecasts for a year against actual census numbers. Previous estimates are then adjusted and corrected in subsequent publications. Corrections of errors may also be caused by using inappropriate methods or sources or by using methods for the data processing in an incorrect manner. Publishing corrected versions of market research reports decreases validity when errors need to be corrected that are caused by a wrong adaptation of methods. A buyer of a market research report may buy the report containing errors without knowing that a new version was/will be published. Frequent updates of market research reports indicate high validity, however, publishing new versions due to error correction indicate low validity.

Comparing data collected outside of Marketline Advantage to Marketline Advantage

Theoretically, sources outside of Marketline Advantage should provide data that is similar/equal to Marketline Advantage's data. As Babbie (2010) states, reliability of an instrument is given when it yields the same results regardless of the number of repetitions. Hence, a search for data about the automotive industry using the same definitions, years and units as Marketline Advantage should provide similar findings and trends. If this is the case, reliability of the market research reports is strengthened.

Missing market research reports

Finally, missing data may further impact the reliability of market research reports as by an improper data collection, processing or storage or it can be forgotten to be obtained (Graham, 2012). If the final data presented in a market research report was created based on data sets including missing data, chances are high that decisions or conclusions are made based on biased data. Missing data can have a significant effect on conclusions drawn. Claims being made in a report lose their strength when the results presented are based on incomplete data (Enders, 2010). If any information about missing data or processes, sources and methods used are clearly documented and hence a replication can be done to identify whether data is missing, reliability is increased. Thus, if data not presented in Marketline Advantage's market research report though by definition included can be found outside from Marketline Advantage, it is an indication that reliability is low.

Chapter 3 - Methodology

Within this chapter, the methodological part of this thesis is described with the aim of providing an overview of the research method, data collection and analysis conducted.

3.1 Research method

In order to answer the main research question, secondary research is conducted. Through a subscription of the University of Twente to the Marketline Advantage database at the point when the thesis at hand was written, the access to the market research reports under investigation was simple, time saving and free of costs. Besides Marketline Advantage data, secondary data from sources such as government agencies or associations are used. These sources also offer the advantage that they are free of costs and help in saving time. Collecting own data, e.g., by conducting interviews, is not seen as an appropriate method to be used in evaluating the reliability and validity of market research reports. By conducting interviews with managers using market research reports the focus is shifted towards the managers' perception of market research reports rather than on the reliability of the market research reports themselves.

3.2 Data collection

Secondary data was obtained from Marketline Advantage in the form of market research reports. Marketline Advantage offers market research reports for more than one industry, the focus is on the automobile industry because of: (1) personal preference, (2) a lot is already known about the automobile industry, thus, the value of the Marketline Advantage data can be checked .

Data to be compared with data from Marketline Advantage was collected from sources such as the European Automobiles Manufacturer's Association, automobile manufacturers (ACEA) or the International Organization of Motor Vehicle Manufacturers (OICA). In terms of units, years and definitions, the data collected needs to have the same characteristics as Marketline Advantage data. Otherwise it is not suitable for this research.

3.3 Data analysis

Before any data could be analysed, a literature review on market research, different types of research as well as on reliability and validity was conducted. This literature review aims at getting an insight into the controverse discussions about reliability and validity in research as well as the assessment of reliability and validity in market research reports. As suitable information, especially on assessing the reliability of market research reports, could not be found, criteria for the assessment of the quality of market research reports were developed.

According to the criteria developed, the findings of the analysis of the market research reports in question are presented. Therefore, the analysis is done in two main steps.

Step 1: The focus is on the analysis of indicators influencing the reliability and validity referring to the data collection and analysis, changes in procedures and updates. In order to be able to make judgements about these errors, indicators of reliability and validity referring to data collection and analysis (as defined in chapter 2) are searched for. The analysis was done by searching for the respective indicators within Marketline Advantage's market research

reports. All findings are described and partly presented in pivot tables. The impact on reliability and validity is assessed and presented with the help of the framework developed in chapter 2.

Step 2: The second step focuses on the analysis of indicators of reliability and validity related to the comparison of data from Marketline Advantage to other sources as well as data about missing market research reports is searched for. As described in chapter 2, in order to make judgements about these criteria, indicators of reliability were searched for.

a) By comparing and contrasting data from different sources to Marketline Advantage, a second step in the assessment of the reliability and validity of market research reports is taken. In order to be able to compare the data searched for to Marketline Advantage, it needs to be equal in terms of:

- *Unit of measurement*
 - Market volume in units
 - Market share based on volume
- *Year*
 - Corresponding time period to Marketline Advantage
- *Region/country*
 - Corresponding to Marketline Advantage

If the data found does not match all of these requirements, it cannot be used. Sources used are, for example, automotive companies or different national /international automotive associations.

For the presentation and comparison of the data found to Marketline Advantage, pivot tables were created. The columns of these tables reflect the industry, regions, CAGR (period x) source outside Marketline and CAGR (period x) Marketline Advantage.

b) Due to the fact that missing data can cause bias in the results presented and the fact that Marketline Advantage did not present market research reports for all countries defined as being part of a region, data about these countries is collected. The countries for which data is searched for are Turkey, Romania, Switzerland, Israel, Egypt, Ukraine, Greece, Saudi-Arabia, the United Arab Emirates and Nigeria. Data searched for and used needs to fit the requirements as stated in step 2b to be suitable for the underlying analysis. This data is presented and sorted by using pivot tables, which contain the country, industry and CAGR (period x).

Finally, based on the analysis described above the, main research question will be answered.

Chapter 4 - Analysis

Within this chapter, the results of the analysis of Marketline Advantage's market research reports about the automotive industry published between 2011 and 2013 are presented.

The findings are presented according to the criteria for the assessment of reliability and validity of market research reports as presented in table 3, chapter 2. First, the findings of the analysis of the specification of the data collection and analysis are presented. Then, the information about potential changes in procedures as well as updates are analysed. The results of the comparison of Marketline Advantage data to sources outside of Marketline are presented in the next section. Finally, information collected on missing market research reports from Marketline Advantage is presented.

4.1 Analysis of the specification of data collection and analysis

Based on the criteria for the assessment of reliability and validity as developed in chapter 2 (cf. table 3), Marketline Advantage's market research reports were analysed. The analysis was done by searching for these indicators and the wealth of information coming together with them within the market research reports of Marketline Advantage about the automotive industry. In order to develop a better understanding on the reliability/validity of Marketline Advantage research reports, it is compared to other companies such as KPMG or the ACEA.

4.1.1 Type of research, methods, transforming and coding, quality controls and missing data

With regard to Marketline Advantage, this company does not make the whole process of preparation, data collection and analysis clear. General information is presented about the data collection and data analysis by stating that in-house databases, preparatory research, secondary research as well as own modelling and forecasting tools are used, for example New Cars in North America (Marketline Advantage, 2012f). It remains unclear how these modelling and forecasting tools or researches look like, quality checks of data are done, data is coded or transformed and how it is dealt with missing data.

Compared to Marketline Advantage, KPMG (2011a) provides information on which type of research was used, namely in-depth interviews. KPMG (2011a) even states with whom these interviews were conducted. It is also stated that the research was conducted in cooperation with the institute for automotive research. Similar to Marketline Advantage, information on how it is dealt with missing data is not presented by KPMG, however, KPMG published a transparency report in which it is described how the quality of the data used and reports published is controlled. Key activities and tools used are described in more detail. Thus, it remains unclear how data is transformed or coded and how it is dealt with missing data (KPMG, 2013).

The ACEA (2014) neither provides information on which type of research or method is used, how the data is coded or transformed nor how it is dealt with missing data. In comparison to this, Statista Inc. (2014b) states that it combines data from different institutes and sources, however, it remains unclear how this data is searched for, transformed and coded, quality is controlled or missing data is handled. Similar to Statista Inc. (2014b), the OICA (2014) does not provide information on how data is transformed and coded, quality is controlled or missing data is handled. It does not either provide a description on which type of research or method was used.

Overall, although KPMG's process of data collection and analysis cannot be fully tracked back, it offers the most information. Marketline Advantage and Statista Inc. only state the type of research, whereas the OICA and ACEA do not give any insight into their data collection and analysis processes. Based on the information presented, neither a replication of the study can be done nor can it be confirmed how the findings and interpretations were derived. This might indicate an issue with reliability. Besides this, a thorough description of the research process would increase the plausibility, trustworthiness and transferability of the data presented.

An overview of the findings and their indication on the degree of reliability or validity is presented in table 4. Besides presenting the individual degree of reliability and validity per indicator and company, the traffic light rating system is used to effectively visualize the differences between Marketline Advantage and the companies compared to it. The colours used have the following meaning: red = potential issue with reliability/validity, yellow = could /could not be an issue with reliability/validity, green = no potential issue with reliability/validity.

Table 4 Result analysis of the specification of the data collection and analysis^a

		Company				
Indicator of reliability and validity		Marketline Advantage	KPMG	OICA	ACEA	Statista
Clear specification of data collection and data analysis	Description on which type of research was used	Medium	Medium	Low	Low	Medium
	Method used	Low	Medium	Low	Low	Low
	Transforming data (from raw data to result?)	Low	Low	Low	Low	Low
	Coding of data - whether and how?	Low	Low	Low	Low	Low
	Information on how quality of data used is controlled	Low	Medium	Low	Low	Low
	Information on how it is dealt with missing data	Low	Low	Low	Low	Low
	Sources used stated	Low	Medium	Medium	Low	High
	Date of collection available	Low	Low	Low	Low	High
	Definitions of markets	High	High	High	Low	Low
	Clear organization of data, e.g. by industry, company?	High	High	High	High	High
	Contact data presented	Low	High	High	High	High

^ared indicates low reliability/validity, yellow indicates medium reliability/ validity, green indicates high reliability/validity

4.1.2 Sources

Although Marketline Advantage uses secondary research, the sources used cannot be identified. Marketline Advantage presents itself as the source, implicitly by being the publisher of the market research report and explicitly by referencing to itself under the tables showing market volume, market value or leading companies in the market research reports, for example New Cars in North America (Marketline Advantage, 2012f).

KPMG (2011a) states sources used by stating with whom the in-depth interviews were conducted, referencing under tables to different sources and stating that there was a cooperation with the institute for automotive research. In contrast to this, the OICA (2014) does not explicitly state a source, however, it provides the information that it works together with 38 national and international trade associations, which include all major automobile manufacturing as well as with Fourin (Asian continent) and Ward's (American continent) (OICA, 2014b). A similar approach is followed by the ACEA (2014), which does not explicitly state which sources are used, however, provides a full list of its members and partners.

Comparing Statista Inc. (2014b) to the other information publishers, this company provides a general list with the names and information on the sources used. Besides this, under each table presented, the sources are mentioned (Statista Inc., 2014b)

Overall, Marketline Advantage and the ACEA do not mention their sources, which indicates a potential problem with reliability. This is due to the fact that reliability also refers to the extent to which one can rely on a source and hence on the data presented. Due to the fact that sources are a quick way of assessing reliability and validity, there might also be an issue with validity. As presented in table 4, an issue on reliability or validity cannot be found at Statista Inc. because this company presents its sources.

4.1.3 Date of collection

A time gap between the collection and publication date can not either be identified based on the market research reports. For example, a market research report published by Marketline Advantage during 2012 (Marketline Advantage, 2012f) presents data for the period 2007-2011 and forecasted data from 2011-2016. It can be inferred that the data was collected somewhere between 2008 and 2012, though Marketline does not provide information about the actual collection period. The same holds true for reports published in 2011 or 2013, though with differing (forecasted) periods (Marketline Advantage (2011aaa, 2013bb)). Hence, it is also not possible to identify the actual date when the data was collected.

Like Marketline Advantage, KPMG (2011a) does not present the actual date of collection. From the publishing data and the years mentioned in tables, the actual collection data can only be inferred. Besides mentioning the publishing date, Statista Inc. (2014) states the date of collection so that the actual time gap between the collection and publication of the data is known. Similar to Marketline Advantage and KPMG (2011a), the OICA (2014b) and ACEA (2014) do not provide any information on the actual collection date. This date can only be inferred from the publication date and time periods dealt with.

Overall, only Statista Inc. states when the data was collected. A time lack between the data collection and publication always occurs, however, judgements on the timeliness of the (secondary) data presented can be made. By doing this, Statista Inc. increases its reliability (cf. table 4). Compared to this, Marketline Advantage does not state the collection date, thus, the data may be used in the year of its publication instead of the year for which it was gathered and the timeliness cannot be judged. These facts decrease the reliability of Marketline Advantage's market research reports.

4.1.4 Definition of markets and organization of data

Both Marketline Advantage and KPMG (2011a) provide a clear definition of the markets investigated. Thus, Marketline Advantage defines South Africa as a part of Middle-East Africa, however, South Africa does not belong to Middle-East Africa¹ (cf. (World Bank, 2014)).

Like KPMG and Marketline Advantage, Statista Inc. (2014b) provides clearly organized data by industry, company or region. Consequently, a definition of a market cannot be found. The OICA (2014) provides both a clear definition of the data presented and a clear organization of the data presented (OICA, 2014). In contrast to this, the ACEA (2014) does not provide any definition of the markets dealt with, although the data is structured according to industry or company.

¹ Definitions of Marketline Advantage are presented in Appendix 1

Overall, Marketline Advantage, KPMG and the OICA clearly define and organize their data. This is needed to be able to replicate a study and hence increase reliability. However, there might be an issue with the reliability of Statista Inc. and ACEA, as these two companies only structure their data according to industries and do not provide definitions (cf. table 4).

4.1.5 Contact data

Contact data is only provided in general for Marketline Advantage in the UK and US. One can get into contact with the company either by e-mail or phone. Information about the analysts preparing the market research reports is not presented.

Compared to this, KPMG (2011a) presents information on who prepared the report, who is responsible for a certain region and how the respective person can be contacted. In addition to this, on its homepage, KPMG states that visitors are welcome at its local offices. Besides, the contact via phone, e-mail or personal, social media can also be used to contact KPMG (KPMG, 2014). Similar to KPMG (2011a), Statista Inc. (2014b) can be contacted by either visiting the office, e-mail, phone or other social media. Information on the person preparing the data is not given.

The OICA (2014a) does not only provide contact data like KPMG (2011a) or Statista Inc. (2014b) but also information on hotels located near their office and public transportation (OICA, 2014a). However, information about the responsible person for a report is not presented. This is similar to ACEA (2014), which does not provide any contact information besides place, phone- number and e-mail address.

Overall, Marketline Advantage does not clearly state who the authors of its market research reports are and how these can be directly contacted. The OICA, the ACEA and Statista Inc. are more transparent in this regard, especially KPMG states who the authors are, their positions and how these can be contacted. Against it, in case that support is needed from Marketline Advantage, a person not involved in the development of the market research report in question may try to answer questions. It is possible then that answers given are not helpful. This issue lowers reliability (cf. table 4).

4.2 Analysis of the specification about potential changes in procedures

Announcements of potential changes in the collection or assembly method could not be found in the market research report. At the point when the market research reports to be analysed were downloaded and analysed, no updated versions of these market research reports were published. An indication whether changes in procedures, methods, definitions or sources used were not presented by Marketline Advantage.

Like Marketline Advantage, neither KPMG (2011a), the OICA (2014), the ACEA (2014) nor Statista Inc. (2014b) provide information on potential changes in methods, sources or definitions used from one report to another.

As these potential changes are not communicated, there might be an issue with reliability (cf. table 5). Sources are important to enhance reliability as based on the sources used, judgements can be made on whether to rely on the data presented. Besides this, in order to achieve consistency, changes of sources, methods or definitions should be communicated to ensure that the research can be replicated. From a qualitative research point of view, in order to confirm data presented, it should be visible how the findings and interpretations were derived.

Table 5 Results analysis of the specification about potential changes in procedures

		Company				
Indicator of reliability and validity		Marketline Advantage	KPMG	OICA	ACEA	Statista
<i>Clear specification about potential changes in procedures</i>	Information about changes in methods used from one report to another	Low	Low	Low	Low	Low
	Information about changes in sources used from one report to another	Low	Low	Low	Low	Low
	Information about changes in definitions used from one report to another	Low	Low	Low	Low	Low

4.3 Analysis of updates

Between the years 2011 and 2013, Marketline Advantage did not publish new versions of its market research reports. However in 2014, market research reports, which were not available during the period analysed as well as several new versions, were published (Marketline Advantage, 2014).

The OICA (2014) publishes new statistics every year on, e.g., the production levels in the automotive industry. The ACEA (2014) chooses a similar approach by frequently publishing information on the automotive industry. Compared to this, Statista Inc. (2014) provides updates as soon as new data is available, whereas KPMG (2014) frequently publishes, for example, new executive surveys on the automotive industry (KPMG , 2014b).

Although updates are being published, the real reason for an update (error correction vs. new version) cannot be identified. As table 6 shows, the indication on reliability and validity is stated to be medium for all companies analysed. On the one hand, in case that updates are being made because of the correction of errors, methods may have been incorrectly adapted. This may then cause an issue with validity. On the other hand, there might not be an issue with validity, in case that updates are being made because of adjusting forecasted data against actual census data or due to a certain interval (e.g. year, month, weekly,..) of publishing reports.

Table 6 Results of the analysis of updates

		Company				
Indicator of reliability and validity		Marketline Advantage	KPMG	OICA	ACEA	Statista
<i>Updates</i>	Due to error correction	Medium	Medium	Medium	Medium	Medium
	Due to new version of report	Medium	Medium	Medium	Medium	Medium

4.4 Data comparison – Marketline Advantage vs. other sources

Within this section, the findings of comparing and contrasting own data to Marketline Advantage data are presented. As stated earlier, the data presented was chosen based on the unit of measurement (market volume in units not sales, market share based on volume), year (corresponding to time period chosen by Marketline Advantage) and the region (corresponding to Marketline). As the research was limited by these definitions, it was not possible to collect suitable data for all industries as described by Marketline Advantage. Although perceived as publishing high quality data, data from the OECD or governmental data could not be used. This is due to the fact that either suitable data could not be found or the data found focused more on general issues such as road traffic rather than on the automotive industry itself.

In table 7, the CAGRs of the global automotive industry during the period 2006-2010 are presented. Although both sources, the OICA (2013) and Marketline Advantage (2011aaa), show the same growth trend, the actual CAGRs differ from each other.

Table 7 Global automobile market development (CAGR 2006-2010)^a

Industry	Region	Marketline Advantage 2007-2011(CAGR %)	OICA 2007- 2011(CAGR %)
Automobiles	Global	1,8	13,2

a) Data taken from OICA (2013) Marketline Advantage (2011aaa)

Concerning the new cars industry and its CAGRs between 2007 and 2011, a similar picture occurs (cf. table 7). Comparing Marketline Advantage (2011a-g) to the OICA (2013) and ACEA (2014a), the data found shows the same negative growth trend at a similar CAGR in Europe. The same is found in South America when comparing data from Marketline Advantage (2011a-g) to data from the OICA (2013). In all other cases, the data differ from from each other. Although, by definition, Middle East Africa is part of the global perspective on the new cars industry, data cannot be found using Marketline Advantage.

Table 8 New cars industry development (CAGR 2007-2011)^a

Industry	Region	Marketline Advantage 2007-2011(CAGR %)	OICA 2007- 2011(CAGR %)	ACEA 2007- 2011(CAGR %)
New Cars	Asia-Pacific	10,2	13,6	na
	Eastern Europe	-5,7	-2,3	na
	Europe	-3,9	-3,1	-3,6
	Global	2,8	4,7	na
	Middle-East-Africa	na	-2,5	na
	North America	-2,5	-17,4	na
	South America	9,4	9,7	na
	Western Europe	-5,7	-2,3	na

^a Data taken from Marketline Advantage (2011a-g), OICA (2013), ACEA (2014)

Table 9 further shows the findings of the comparison of the trucks market's CAGR from 2007-2011 between different sources. More data on the trucks industry could be found by using sources such as KPMG (2011a) and OICA (2013). Similar results could be found between Marketline Advantage, the ACEA (2014) and KPMG (2011a) for the European trucks market for which the OICA (2013) shows a completely different CAGR. Thus, data on the Eastern European trucks market, e.g., which Marketline Advantage did not present, could be found by using the OICA (2013) or KPMG (2011a). Although Marketline Advantage does not present individual market research reports for the Eastern and Western Europe, Middle-East Africa as well as North and South America, data about these regions is by definition, included in the market research report taking over a global perspective.

Table 9 Development market volume trucks (CAGR 2007-2011)^a

Industry	Region	Marketline Advantage 2007-2011(CAGR %)	OICA 2007- 2011(CAGR %)	ACEA 2007- 2011 (CAGR %)	KPMG 2007- 2011(CAGR %)
Trucks	Asia-Pacific	4,1	3,6	na	12,6
	Eastern Europe	na	2,1	na	-2,5
	Europe	-4,5	106,6	-4,7	-3,9
	Global	-1,4	54,8	na	-3,1
	Middle-East-Africa	na	3,1	na	na
	North America	na	1,5	na	-4,1
	South America	na	20,8	na	9
	Western Europe	na	126,3	na	-4,2

^a Data taken from OICA (2013), ACEA (2014), KPMG (2011a), Marketline Advantage (2012oo-qq)

With regard to the car manufacturing industry, Marketline Advantage (2013p-u) and Statista (2014) provide the same CAGR (2008-2012) from a global point of view. Comparing the OICA (2013) to Marketline Advantage (2013p-u), none of the data collected is similar to each other. As table 10 depicts, the OICA (2013) does not provide data for all regions, however, Marketline Advantage does not provide data about Middle-East Africa. Thus, as stated earlier, by definition Middle East Africa is part of the Global perspective presented by Marketline Advantage.

Table 10 Car manufacturing industry development (CAGR 2008-2012)^a

Industry	Region	Marketline Advantage 2008-2012(CAGR %)	OICA 2008- 2012 (CAGR %)	Statista 2008- 2012 (CAGR %)
Car Manufacturing	Asia-Pacific	9,8	na	na
	Eastern Europe	0,4	4,4	na
	Europe	-2,4	-1,8	na
	Global	4,5	5,2	4,5
	Middle-East-Africa	na	na	na
	North America	3	6,8	na
	South America	1,5	na	na
	Western Europe	-3,3	na	na

^a Data taken from OICA (2013), Statista Inc. (2013), Marketline Advantage (2013 p-u)

Leading companies

In several of its market research reports, beside providing the CAGRs, Marketline Advantage (2013o-u) provides the description of leading companies (incl. key facts, key financials, key ratios, etc.) without stating the actual market share. It can also not be inferred whether other criteria play a role in the ranking of leading companies. For example, it is not clear why and which rank each of the car manufacturers reaches. According to OICA (2012), Volkswagen is the leading global car manufacturer closely followed by its competitors Toyota, Hyundai and General Motors. These four companies together have a market share of around 55% (cf. table 13) In Europe and Western Europe, Volkswagen is also the leading car manufacturer with 24.8% and 24.2% respectively. It is followed by PSA in Europe (11.7%) and Western Europe (12%). The four leading companies together comprise around 70% of the total market shares in Europe and Western Europe ((ACEA, 2014; Statista Inc., 2014a). As this data could be found using other sources than Marketline Advantage plus being uninformed how Marketline came to its ranking, reliability is lowered.

Table 11 Car Manufacturing industry - Leading companies in Europe, Global, Western Europe 2012^a

Industry	Region	Company	Market Share (%)
Car manufacturing	Europe	Citroen	5,4
		Others	50,5
		Peugot	6,3
		PSA	11,7
		Volkswagen	24,8
	Global	General Motors	11,8
		Hyundai	12,1
		Others	45,9
		Toyota	14,9
		Volkswagen	15,3
	Western Europe	GM	8,0
		Others	32,6
		PSA	12,0
		Renault	8,2
		Volkswagen	24,2

^a Data taken from OICA (2012), ACEA (2014), Statista Inc. (2014a)

Overall, most of the findings presented by Marketline Advantage could not be confirmed by using other sources. Even between the sources used, similar data could not be found. Thus, in order to establish reliability in the data presented, similar data should have been found. Based on the analysis conducted, it cannot be finally concluded which source might potentially have a reliability issue. Hence, any of the sources used could have a problem with reliability (table 12).

Table 12 Results of data comparison between Marketline Advantage and other sources

Indicator of reliability and validity		Company				
		Marketline Advantage	KPMG	OICA	ACEA	Statista
<i>Results of comparing data collected outside Marketline with Marketline data</i>	Data sets similar to each other	Medium	Medium	Medium	Medium	Medium

4.5 Missing market research reports

According to Marketline Advantage, countries such as Turkey or Romania belong to Europe, however, looking at the country level of the market research reports reveals that Marketline Advantage did not publish one for all defined countries between 2010 and 2013. This fact raises the question why and to which extent country-based data is/can be actually included in the respective market research reports from a regional perspective. At this point it is therefore investigated which information about the automobile industry in the respective countries is actually available and how this industry looks like. After describing the findings per country a conclusion with regard to the influence on reliability is drawn.

Turkey

According to KPMG (2014), the automotive industry in Turkey has developed successfully since the 1960s. Deloitte (2010) states that the first production under licence from Ford, Renault and Fiat began in a heavily protected domestic market. The large size of the domestic market with individuals having more bargaining power as well as a significant

expansion of international trade following the Customs Union Agreement signed with the EU in 1996 are reasons for this development (Deloitte, 2010). In Europe, Turkey is the 7th and worldwide it is ranked as 17th largest automobile manufacturer. KPMG (2014) further states that Turkey is one of the largest passenger cars exporters to Europe (KPMG, 2014). In 2012, Turkey was ranked 9th on the share in world imports of the leading 15 automotive product importers (Statista, 2014). Deloitte (2010) further reports that the Turkish automobile industry was affected by the global economic crises. Though after a period of recovery it is expected to reach annual growth rates of 4-5% from 2011 on. According to the OICA (2013), the automobile industry grew with a CAGR of 8.1%² between 2007 and 2012. During the same period the new cars market in Turkey grew by 15.2% (cf. table 13).

Table 13 Missing reports - Automobile and New Cars industry CAGR 2007-2012^a

Country	Industry	CAGR 2007-2012(%)
Argentina	Automobiles	9,7
	New Cars	-7,4
Egypt***	Automobiles	7,5
Egypt*****	New Cars	5,5
Greece	Automobiles	-24,1
	New Cars	-22,2
Israel*	Automobiles	1,3
	New Cars	2,1
Nigeria	Automobiles	63,8
Nigeria*	New Cars	94,8
Romania	Automobiles	-22,7
	New Cars	-25,2
Saudi Arabia	Automobiles	13,2
Saudi Arabia**	New Cars	14,8
Switzerland	Automobiles	3,3
	New Cars	3,1
Turkey	Automobiles	8,1
	New Cars	15,2
Ukraine	Automobiles	-2,2
	New Cars	-5,3
United Arab Emirates	New Cars	20,5
United Arab Emirates**	Automobiles	13,3

^a The CAGRs were calculated based on data taken from OICA (2013).

Figures are partly estimated: *estimated, **year 2012 estimated, *** years 2011-2012 estimated, **** years 2008-2011 estimated, ***** year 2011 estimated

Switzerland

Traditionally, Switzerland does not have an automobile industry in a classical sense. However, Suisse automobile suppliers are important to the automobile industries in their neighbouring countries. Especially for manufacturers in Germany, France and Italy, the parts and components suppliers are indispensable. Among the better known suppliers are brands companies such as the Georg Fischer AG or the Rieter Automotive AG, however, there are many smaller suppliers besides these companies. Components and parts are mainly produced, followed by investment goods, so the suppliers mainly belong to the Tier-2 or Tier-3 suppliers. Though, around 1/3 of these supplies has direct business contacts with the OEMs (Köth, 2008). According to the OICA (2013), the automobile industry grew with a CAGR of

² The CAGRs were calculated based on data taken from OICA (2013). All figures estimated.

3.3%³ between 2007 and 2012. During the same period, the new cars market in Switzerland grew by 3.1% (cf. table 13).

Romania

According to Gheorghisor (2011), the Romanian automobile industry was one of the most profitable sectors in Romania in recent years. Among Eastern European countries Romania shows the most potential for a further development of the automobile industry. According to Ernst & Young (2010a), Romania is in the situation that it can aim at two growing target segments with its low-budget cars (below €7000), Western Europe and the emerging markets.

Though, it is unclear yet whether the Romanian automobile industry simply hosts final assembly and some large suppliers or if it will develop the typical tier-structure as in other countries. Most of the Romanian suppliers are active in joint ventures with international car manufacturers, for example Dacia-Renault (Gheorghisor, 2011). Today, Renault produces most of its passenger cars in Romania (Ernst & Young, 2010a). Around 91% of the Romanian car production was exported which makes external demand important. The domestic demand is two times lower than in Western Europe, which is also caused by a regional recession (Gheorghisor, 2011).

The Romanian automobile industry mainly consists of foreign firms, however, there are some important domestic manufacturers such as Dacia (cf. (Gheorghisor, 2011; OICA, 2013)). According to the OICA (2013), the automobile industry shrank with a CAGR of 22.7%⁴ between 2007 and 2012. During the same period the new cars industry shrank by 25.2% (cf. table 13). Ernst & Young (2010a) state that the Romanian government offers financial aids and incentives in order to support the domestic automobile industry since 2008.

In 2010, Dacia was the leading car producer in Romania with a market share of around 33%, followed by Volkswagen and Renault with around 8% (cf. table 14). Entering the Romanian automobile industry without a local partner with a well-established distribution network is quite difficult, whereas the parts accessories market still offers potential for new entries (Gheorghisor, 2011).

Table 14 Romania leading companies automobile industry 2010^a

Country	Industry	Company	Market share (%) 2010
Romania	Automobile	Dacia	32,35
		Ford	7,2
		Others	37
		Renault	7,9
		Skoda	7,6
		Volkswagen	8,3

^a Data taken from OICA (2013)

³ The CAGRs were calculated based on data taken from OICA (2013).

⁴ The CAGRs were calculated based on data taken from OICA (2013).

Israel

The Israel export and international cooperation institute (2010) states that Israel does not engage in large scale vehicle manufacturing, however, around 150 Israeli manufacturers are suppliers of systems, parts or modules to OEMs and the aftermarket. Exports with a value of around \$800 million of automotive parts and systems per year are purchased by OEMs like BMW, Daimler, Volkswagen, Ford or General Motors. Next to the OEMs, Tier 1 suppliers like Bosch or Magna Steyr also purchase parts and components. Companies such as MAN or Hyundai maintain local purchase offices while Volvo Bus jointly owns the local bus manufacturer Merkavim Transportation Technologies. Skilled workforce, advanced R&D capabilities or the strict compliance with international quality standards make Israel a good destination for outsourcing and development of new products (The Israel Export and International Cooperation Institute, 2010). Overall, according to the OICA (2013), the automobile industry in Israel shrank with a CAGR of 1.3%⁵ between 2007 and 2012. During the same period, the new cars industry shrank by 2.1% (cf. table 13).

Egypt

The Oxford Business Group (2012) reports that Egypt is one of the largest auto retail sectors in the Middle East and North African (MENA) region. It has a large domestic market and local manufacturing base, however, sales were hit by recent political instability and economic slowdown. Vehicles sales were up to 4.4% on a year-to-year base as reported in June 2012. As of May 2011, passenger car sales decreased by 3.8%, whereas the sale of commercial vehicles showed a double-digit growth. Compared to this, the OICA (2013) estimated that the automobile industry grew 7.5 with a CAGR of 24.1%⁶ between 2007 and 2012. During the same period, the new cars industry shrank by 5.5% (cf. table 13).

GB Auto is the largest independent car manufacturer in the Middle-East and assembles, imports and distributes vehicles for companies such as Hyundai, Volvo or Mazda. Up to 40% of the passenger cars sold in Egypt are assembled domestically, including brands such as Daimler, BMW or General Motors (Oxford Business Group, 2012). Though, the activities of these automobile manufacturers were interrupted by a worsening violence in Egypt. For example, General Motors and Toyota temporarily shut down their operations (The Economist Group, 2013).

According to the Oxford Business Group (2012) the market showed signs of recovery in May 2012, however, the confidence of customers needs to be re-established, especially by elections and a unified government in place.

Ukraine

According to Ernst & Young (2010), the Ukraine does not have significant global manufacturers of its own, however, the local government is hoping for more foreign investments after the stabilization of the economical and political situation. The political and economic instability makes it difficult for car producers to make energy costs predictions and a high inflation leads to a decrease in industrial production and slow economic growth. Though, the Ukraine offers the competitive advantage of being close to Russia, which is the most important foreign trade partner.

The Ukrainian automotive market has grown continuously since 2003, thus the domestic light vehicle market faced a severe decline by over 70% during 2009. Due to the economic crisis

⁵ The CAGRs were calculated based on data taken from OICA (2013). Based on estimated figures.

⁶ The CAGRs were calculated based on data taken from OICA (2013). Automobile industry years 2011-2012 estimated. New cars industry year 2012 estimated.

import duties were increased again although import duties and restrictions were cut respectively removed after the Ukraine joined the World Trade Organization in 2008.

Ernst & Young (2010) and the OICA (2013) further state that through the economic crises the consumers lost their confidence, which resulted in a declining automotive market by over 73% in 2009. Overall, according to the OICA (2013), the automobile industry shrank with a CAGR of 2.2%⁷ between 2007 and 2012. During the same period, the new cars industry shrank by 5.3% (cf. table 13).

Compared to other Central and Eastern European countries, most vehicles produced in Ukraine are for the domestic market. The market leader ZAZ is the largest local car manufacturer and mainly producing foreign brands under license (e.g. GM, Lada, Kia, Opel) after its joint venture partner Daewoo went bankrupt. In 2002 UkrAVTO, which is involved in many segments of the automobile industry, took control over ZAZ. In the car distribution, UkrAVTO cooperates with companies such as Mercedes-Benz, Hyundai, Isuzu or Toyota (Ernst & Young, 2010).

Greece, Saudi-Arabia, United Arab Emirates, Nigeria

With regard to Greece, Saudi-Arabia, the United Arab Emirates and Nigeria, not enough suitable information could be found. Though, based on the OICA (2013), the compounded average growth rates of the automobile industry as well as the new cars market can be presented at this point.

According to the OICA (2013), the Greek automobile industry shrank with a CAGR of 24.1%⁸ between 2007 and 2012. During the same period, the new cars industry shrank by 22.2% (cf. table 15). In Saudi-Arabia, according to the OICA (2013), the automobile industry shrank with a CAGR of 13.2%⁹ between 2007 and 2012. During the same period, the new cars industry shrank by 14.8% (cf. table 15). Compared to this, according to the OICA (2013), the automobile industry in Nigeria grew with a CAGR of 63.8%¹⁰ between 2007 and 2012. During the same period grew the new cars 94.8% (cf. table 13).

Overall, this section reveals that information about countries for which Marketline Advantage did not publish a market research report is available. General information on the automotive industry as well as on the CAGRs could be found for all countries under investigation. The analysis also revealed that countries such as Romania, Turkey or Switzerland are closely connected to the automotive industry. However, in countries such as Israel, Egypt, Nigeria, and the United Arab Emirates, numbers on the market volume were only estimated. On the one hand, it is questionable why these countries are considered to be included in a market research report when numbers can only be estimated. On the other hand, it is still not understandable why market research reports about Turkey or Romania, for example, were not published, although explicitly considered by Marketline Advantage in its market definitions. As table 15 reflects, there might be an issue with reliability and validity of Marketline Advantage market research reports. Data could be found using KPMG and the OICA, however, also by using data from McKinsey, Deloitte or Ernst and Young.

⁷ The CAGRs were calculated based on data taken from OICA (2013).

⁸ The CAGRs were calculated based on data taken from OICA (2013).

⁹ The CAGRs were calculated based on data taken from OICA (2013). Automobiles industry based on estimated figures. New cars industry year 2012 estimated.

¹⁰ The CAGRs were calculated based on data taken from OICA (2013).

Overall, Marketline Advantage uses secondary data, which may already include missing data so that the data can already be biased. Information on whether missing data on specific countries exists or a market research report was simply not published, for example, because of less interest by potential users or data unavailability is not given by Marketline Advantage. Thus, as shown in table 15, all of these factors lower reliability of market research reports about the automotive industry published by Marketline Advantage

Table 15 - Analysis on missing data

		Company				
Indicator of reliability and validity		Marketline Advantage	KPMG	OICA	ACEA	Statista
Missing market research reports	Data for missing market research reports could be found using other sources than Marketline	Low	High	High	na	na
	Data for missing market research reports could be partly found using other sources than Marketline	na	na	na	na	na
	Data for missing market research reports could not be found using other sources than Marketline	na	na	na	na	na

Chapter 5 - Conclusion

This thesis aimed at analysing and judging the quality of the market research reports about the automobile industry published by Marketline Advantage (2011-2013). The main goal was to answer the following research question:

To which extent are the Marketline Advantage research reports about the automobile industry reliable and valid?

The literature review conducted revealed a controversial discussion on the issues reliability and validity with regard to different types of research. A tool or method suitable for the assessment of reliability, especially for the analysis of market research reports, could not be identified. Based on the literature found, a list with indicators of reliability for the assessment of market research reports was developed.

The first part of the analysis focused on the specification of the data collection and data analysis. It revealed that Marketline Advantage does not present the whole process, collection and analysis of the data, the data transformation or coding as well as sources of data. A clear definition of the automotive market and well-organized data is presented.

Updates could be due to the adjustment of forecasted data against actual numbers or due to the usage of incorrect methods, there is the potential of a person buying a market research report presenting biased data.

Considering these findings and the fact that reliability of a research can be increased by its repeatability, consistency and making the whole process of data collection, processing and analysis visible, this analysis revealed that neither the research can be repeated nor can one be aware of potential errors and hence draw conclusions with a certain degree of confidence. Hence, potential issues with reliability and validity of Marketline Advantage's market research reports cannot be excluded.

The second part of the analysis focused on the comparison of data from Marketline Advantage to other sources as well as missing market research reports. Comparing data between Marketline Advantage and other sources has shown that any of the sources used may have a problem with reliability or validity. Besides this, data that is by definition included in Marketline Advantage's market research reports, though not published as market research report, could be found by using other sources. Data not presented in market research reports by using other sources can be caused by using secondary data, manipulation or reorganization of data for a specific goal or using incomplete data sets.

Overall, identifying these potential bias as a buyer remains a difficult task to do. Companies buying market research reports usually do this as it is less time consuming and expensive compared to conducting ones own research. However, as the research conducted reveals, one loses control over how data was generated and collected, data is already modified and poor documentation exists. Potential issues with the reliability and validity of the analysed market research reports published by Marketline Advantage are prevailing.

Chapter 6 - Discussion

Within chapter 6, the findings presented in this thesis are discussed. Limitations of the research conducted, the academic relevance and suggestions for future research are also presented.

6.1 Discussion

The assessment of reliability and validity of secondary data involves the assessment of the whole research process. This assessment typically involves looking at the methodology section, who is involved in the data collection and preparation, sources used or the organization of data. The more is known, the better a feeling for the likelihood of potential errors or bias can be developed.

By not making the whole process of data preparation, gathering and analyses visible and clear reliability of the market research reports under investigation is lowered (cf. appendix 2). To some extent, reliability is increased by at least generally stating which types of research were used. Though, neither a replication of the research nor judgements about potential bias in the data or methods used by Marketline Advantage can be made based on the presented information in the analysed market research reports.

From a strategical point of view, Marketline Advantage may not want to give insight into its research methods as there are other business information publishers such as KPMG or McKinsey. Thus, comparing Marketline Advantage to KPMG, the OICA, ACEA and Statista, KPMG provides most insight into people involved in the report preparation, sources used, data quality checks or research and methods used. From this point of view, KPMG's data appears to be more plausible, trustworthy and credible.

The analysis conducted also revealed that data about the automotive industry is difficult to obtain from governments. Governments seem to focus more on census data or issues concerning the public such as the road traffic rather than on the industries themselves. However, governments are introducing new regulations (e.g. emissions laws) or need to make decisions related to the infrastructure. For the latter, data could be found from the governments. The effects of regulations on needed emission reductions could be done by using data collected from any other organization. Thus, as potential issues with reliability and validity of information publishers such as Marketline Advantage were found, it may be of higher value for governments to conduct their own research.

Manager considering buying and using a report from Marketline Advantage are not only facing substantial, but also acquisition costs, potential issues with reliability and validity of the data presented. As the whole research process is not known potential bias cannot be identified. By not or partly presenting sources, the simplest way of assessing reliability and validity of the data presented is taken away from the user of a report. Besides this, it is supposed that managers and companies working in the automotive industry usually know their industry well from the daily business. Following this reasoning, it can be questioned what the actual value of buying a report from Marketline Advantage is as it may not reveal new information.

6.2 Academic relevance

The goal of this research was to study the reliability of market research reports. This research enhances the academic literature in two ways. First, there is a lack of literature dealing with the reliability of market research reports. Second, a theoretical framework for testing reliability of market research reports was developed and introduced.

6.3 Limitations and future research

The limited time available to write the thesis at hand made it impossible to analyse more than one industry. Besides this, Marketline Advantage also published reports with the focus on SWOT and PESTEL analysis, which could not be considered. Therefore, findings cannot be generalized to other reports published by Marketline Advantage. Further, it is limited by its need to collect data that has the same definitions, units and years that lowers the availability of data.

Based on the theoretical framework presented in the thesis at hand, the research can be repeated and/or enhanced by using market research reports related to different industries, updated reports about the automobile industry, SWOT or PESTEL analysis. By doing this, a general statement on the reliability of Marketline Advantage's market research report can be made. Additionally, the theoretical framework can be further improved.

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Appendix

Appendix 1 – Definitions by Marketline Advantage

Country		
Region	Asia- Pacific	Australia, China, India, Indonesia, Japan, New Zealand, Singapore, South Korea, Taiwan, Thailand
	Eastern Europe	Czech Republic, Hungary, Poland, Romania, Russia, Ukraine
	Global	All countries mentioned in this table
	Middle-East Africa (MEA)	Egypt, Israel, Nigeria, Saudi Arabia, South Africa, Arab Emirates
	North America	Canada, Mexico, United States
	South America	Argentina, Brazil, Chile, Colombia, Venezuela
	Western Europe	Belgium, Denmark, France, Germany, Greece, Italy, The Netherlands, Norway, Spain, Sweden, Switzerland, Turkey, United Kingdom

Appendix 1 Marketline Advantage - Regions and countries covering the automotive industry

Source 1 Own illustration based on Marketline Advantage reports

Appendix 2 – Overview conclusions analysis

Indicator of reliability and validity		Company				
		Marketline Advantage	KPMG	OICA	ACEA	Statista
Clear specification of data collection and data analysis	Description on which type of research was used	Medium	Medium	Low	Low	Medium
	Method used	Low	Medium	Low	Low	Low
	Transforming data (from raw data to result?)	Low	Low	Low	Low	Low
	Coding of data - whether and how?	Low	Low	Low	Low	Low
	Information on how quality of data used is controlled	Low	Medium	Low	Low	Low
	Information on how it is dealt with missing data	Low	Low	Low	Low	Low
	Sources used stated	Low	Medium	Medium	Low	High
	Date of collection available	Low	Low	Low	Low	High
	Definitions of markets	High	High	High	Low	Low
	Clear organization of data, e.g. by industry, company?	High	High	High	High	High
Clear specification about potential changes in procedures	Contact data presented	Low	High	High	High	High
	Information about changes in methods used from one report to another	Low	Low	Low	Low	Low
	Information about changes in sources used from one report to another	Low	Low	Low	Low	Low
Updates	Information about changes in definitions used from one report to another	Low	Low	Low	Low	Low
	Due to error correction	Medium	Medium	Medium	Medium	Medium
Results of comparing data collected outside Marketline with Marketline data	Due to new version of report	Medium	Medium	Medium	Medium	Medium
	Data sets similar to each other	Medium	Medium	Medium	Medium	Medium
Missing market research reports	Data for missing market research reports could be found using other sources than Marketline	Low	High	High	na	na

Appendix 2 Overview conclusions drawn on reliability and validity

Source 2 Own illustration