

Degree Project

Master's degree

Which product attributes lead consumers to prefer startups' products over established companies' products in the specialty product category?

A study of the electric vehicle market in Germany

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Abstract

Purpose – The purpose of this study is to investigate which product attributes lead consumers to prefer startups' products over established companies' products in the specialty product category. The research object is the electric vehicle market in Germany and the product attributes that are researched are alignable attributes, non-alignable attributes and the price.

Design/Methodology/Approach – Quantitative data was collected via an internet questionnaire by means of the non-probability sampling techniques convenience and snowball sampling. The data of 408 members of the German Generation Y (age 17 – 38) was used to test six hypotheses by applying ANOVA and multiple linear regression analysis.

Findings – It was found that established companies possess a pioneer advantage in comparison to startups for the specialty product 'electric vehicle'. This advantage can be overcome when startups differentiate their electric vehicles by implementing superior alignable attributes, a valuable non-alignable attribute or a lower price. Superior alignable attributes had the strongest positive influence on consumers' preferences towards the startup's electric vehicle, followed by the lower price and a valuable non-alignable attribute.

Limitations/Implications – This study is limited to investigating consumers' preferences without focusing on the reasons behind the preferences. Further, the category of specialty products is represented by only one example, namely the electric vehicle industry.

Practical Implications – Startups can benefit from the results by adopting differentiation strategies that were found to be successful in overcoming pioneer advantage.

Originality/Value – This study contributes to pioneer advantage literature by researching how startups can successfully overcome pioneer advantage in the specialty product category.

Keywords: Pioneer Advantage, Specialty Product, Electric Vehicle, Startup, Established Company, Enhancing Strategy, Distinctive Strategy, Me-too Strategy

Paper Type: Research Paper

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List of Abbreviations

ACEA	European Automobile Manufacturers' Association
ANOVA	Analysis of Variance
APA	American Psychological Association
B	Beta Coefficient
BEV	Battery Electric Vehicle
BMW	Bayerische Motorenwerke
CEO	Chief Executive Officer
CES	Consumer Electronics Show
e.g.	example given
EV	Electric Vehicle
HEV	Hybrid Electric Vehicle
Gen Y	Generation Y
Max.	Maximum
Min.	Minimum
n	Number of valid responses
p	Probability
Ph.D.	Doctor of Philosophy
PHEV	Plug-In Hybrid Electric Vehicle
s	Standard deviation
Sig.	Significance level
SPSS	Statistical Package for the Social Sciences
Std.	Standard
US	United States
VW	Volkswagen
\bar{x}	Sample mean

1. Introduction

1.1 Background

Nowadays the business world is not only characterized by powerful mature companies which have dominated the market for many years. There is also a high number of new enterprise foundations and startups observed worldwide, challenging current market leaders (Kim & Kosoff, 2015). Startups are defined as companies in the early stage of a firm's life cycle (WebFinance Inc., 2018). Within this stage the founder secures the financing, develops basic structures of the company and starts its operations (WebFinance Inc., 2018). The cofounder and co-CEO of Warby Parker, Neil Blumenthal, describes a startup as a firm which is working on problem solving "where the solution is not obvious and success [is] not guaranteed" (Robehmed, 2013, para. 2).

Startups are founded in all kinds of industries. Especially in internet based businesses like the development of software, information technology as well as e-commerce and online market places, a lot of different new businesses were founded (Statista GmbH, 2017-a) and have developed successfully over time. This becomes obvious by reviewing the most valuable startups of 2015. The value of startups like Snapchat, Uber or Airbnb has raised up to over 10 billion dollar and underlines the rapid success of internet businesses, which often create a completely new market for their services (Kim & Kosoff, 2015). However, startups which did not create a new service or product for an undeveloped market have been successful in the past as well. Startups like Xiaomi and Tesla were able to enter developed and mature markets and compete successfully (Kim & Kosoff, 2015; Stringham, Miller, & Clark, 2015).

According to Pehrsson (2009), these companies have to overcome exogenous and endogenous barriers when entering an established market, because consumers and competitors are already familiar with their type of product or service. Exogenous barriers cannot be controlled by firms as they are characterized by their embeddedness in the market (Pehrsson, 2009). Naming examples, established brands benefit from cost advantages, their brand is already well known and they have a better access to distribution channels in comparison to new brands, which also compete with a larger number of competitors than companies which entered the market first (Pehrsson, 2009). Endogenous barriers are formed by the established firms' strategies and behaviour, like the increased advertising and sales promotion of established brands or their price competition (Pehrsson, 2009).

1.2 Research Problem

As described in the previous chapter, many startups are able to overcome those barriers and compete successfully in mature markets where established companies dominate the market already. To be successful and survive, startups need to take over market share from existing brands by convincing consumers to buy their products instead of competitors' products (Besharat, Langan, & Nguyen, 2016; Liang, Cherian, & Fu, 2010; Zhang & Markman, 1998). In order to provide for a better understanding of this competition between established brands and startups, this chapter will take a closer look on *pioneer advantage theory*. In this research field, *pioneers* are referred to as companies which entered a new market in an early stage (Besharat et al., 2016) while brands which enter a mature market in a late stage are called *followers* (Kardes & Kalyanaram, 1992). *Established companies* have usually been on the market for some time and therefore entered the market in an early stage like a pioneer, while *startups* enter a mature market in a late stage and can thus be considered as followers.

Lots of research indicates that consumers perceive pioneer brands more favourably than followers like startups (Alpert & Kamins, 1995; Carpenter & Nakamoto, 1989; Denstadli, Lines, & Grønhaug, 2005; Mady, 2011; Wilkie, Johnson, & White, 2015). This competitive advantage, which is referred to as pioneer, early entrant or first-mover advantage (Alpert & Kamins, 1995; Besharat et al., 2016; Carpenter & Nakamoto, 1989; Denstadli et al., 2005; Mady, 2011; Wilkie et al., 2015; Zhang & Markman, 1998), can derive from consumers' learning processes, according to Carpenter and Nakamoto (1989). As consumers mostly have a lack of knowledge about a product after it has just been introduced to the market by a pioneer, they will highly be influenced by the pioneer product's attributes when learning more about it (Carpenter & Nakamoto, 1989). Thus, they will perceive the combination of the product's attributes as ideal and compare followers' products with the pioneer's product that they already know and perceive as favourable (Carpenter & Nakamoto, 1989; Liang et al., 2010). Carpenter and Nakamoto (1989) add that pioneers are often associated with the whole product category and are therefore accepted as a status quo producer of a certain product type, like Kleenex or Wrigley's. Consequently, when these pioneers become established companies in the market, they are anchored in consumers' memory and associated with a higher degree of reliability and quality or are seen as a status symbol (Alpert & Kamins, 1995).

Regarding the time of market entry, follower brands like startups are also evaluated differently than pioneers. While pioneers influence the consumers' general perception of what a product should be like as mentioned above, follower brands are always compared to existing

brands (Carpenter & Nakamoto, 1989; Liang et al., 2010; Wilkie et al., 2015). Therefore, the question rises what a follower's product should be like in order to be perceived more positively than the pioneer's product by consumers. Literature indicates that it is possible for followers to overcome pioneers under certain conditions (Besharat et al., 2016; Cunha & Laran, 2009; Zhang & Markman, 1998). Wilkie et al. (2015) point out that followers entering a market with a dominant market leader should rather focus on a differentiation than a similarity strategy in regard of products. When follower brands aim for differentiation from established companies, they can differentiate their products for example by changing either *alignable* or *non-alignable attributes* (Besharat et al., 2016; Liang et al., 2010). Alignable attributes of two products can be compared to each other because the value might differ, like the resolution quality of a camera, while non-alignable attributes are not comparable, like if one company adds waterproofness as a camera feature (Besharat et al., 2016). When consumers perceive the attributes of a follower's product as more valuable than the attributes of a pioneer's product, they might be more likely to choose the maybe unknown product over the pioneer's product.

Transferring pioneer advantage theory to the competition between established companies and startups, parallels become apparent. As explained in the previous sections, the pioneer advantage is connected to the consumers' high familiarity with the pioneer's product and the pioneer being anchored in consumers' memory (Alpert & Kamins, 1995; Carpenter & Nakamoto, 1989). Since established brands have also been competing successfully on the market for some time, consumers are likely to be familiar with these brands and might even have accepted their products as status quo. When startups enter this mature market, consumers are familiar with their products, but not with the company. Thus, they compare the startup with the established brand which they have known or even used for a long time. This might result in a competitive advantage for the established brand, just as the pioneer obtains an advantage in comparison to the follower brand (Alpert & Kamins, 1995; Besharat et al., 2016; Carpenter & Nakamoto, 1989; Denstadli et al., 2005; Mady, 2011; Wilkie et al., 2015; Zhang & Markman, 1998). To conclude, just as the follower tries to take over market share from the pioneer (Besharat et al., 2016), the startup needs to find a way to be preferred by consumers in order to overcome the pioneer advantage of the established company.

1.3 Research Gap

Even though there were no studies found regarding how startups can overcome established brands, there are studies about consumers' preferences between pioneer and follower goods. Most of them focus on convenience products like beer, diapers (Alpert & Kamins, 1995), toilet paper, tissues (Wilkie et al., 2015), pizza (Liang et al., 2010), microwave popcorn (Zhang & Markman, 1998), wine (Cunha & Laran, 2009) or olive oil (Besharat et al., 2016). Other goods that are researched are shopping products like digital cameras and MP3 players (Montaguti & Zammit, 2017), and condition-specific health supplements like pregnancy supplements and eye care (Wilkie et al., 2015).

However, products of the category of *specialty goods* have not been researched in the context of pioneer advantage so far. Specialty products are defined as goods “with unique characteristics or brand identification for which enough buyers are willing to make a special purchasing effort” (Kotler & Keller, 2016, p. 164). According to Poon and Joseph (2000), consumers usually have a strong brand preference and loyalty towards that brand, which is why they often do not put much effort in comparing different brands (Kotler & Keller, 2012). Allred and Chakraborty (2004) add that specialty products are rather expensive goods, hence consumers invest lots of time and effort in buying the desired product (Kotler & Keller, 2012; Murphy & Enis, 1986; Thirumalai & Sinha, 2009). All these characteristics differentiate specialty products from convenience and shopping products (Murphy & Enis, 1986). Thus, it is relevant to investigate if the pioneer advantage of established companies can also be overcome by startups in the specialty product category and similar results like in the convenience and shopping product category can be obtained.

One common example for the specialty product category is the *car market* (Kotler & Keller, 2012), in which a competition between established companies and startups takes place. As more than 50% of the global market share is held by ten brands like Toyota, VW, Ford, Honda and Nissan (Statista GmbH, 2017-b), it becomes obvious that the car market is characterized by powerful established companies with which startups need to compete when entering the car market. Stringham et al. (2015, p. 85) further argue that “industries like the automobile industry seem especially immune to the threat of new entry and upstart competitors.” This dominance of mature companies which have been on the market for a long time and are therefore likely to be anchored in consumers' minds, makes the car market a very relevant example of specialty goods for research regarding the competition between established companies and startups.

Another reason is the significant importance of the global car industry for the economy of several countries by employing directly or indirectly around 50 million people worldwide (International Organization of Motor Vehicle Manufacturers, 2018). Compared to the economic power of countries, the automotive industry would be the sixth largest economy in the world (International Organization of Motor Vehicle Manufacturers, 2018). The car industry sold 79.56 million cars in 2017 and the car sales increased nearly 3% compared to the previous year (Statista GmbH, 2017-c). In comparison to the increase of the global car sales, the sales numbers of *electric vehicles (EV)* are even significantly higher. Globally, 63% more EVs were sold in 2017 compared to the year 2016 (Hirtenstein, 2017). For the year 2018 it is expected that for the first time, more than one million EVs will be sold (Hirtenstein, 2017), which shows the high potential of the EV for the car industry in the future on the one hand, and the relevance to research EVs as part of the car market on the other hand.

The foundation for this development of the EV industry was laid by Tesla, the company which is considered to be the pioneer of EVs as it made electric mobility popular (Stringham et al., 2015). Tesla was founded as a startup in 2003 and sold its first EVs in 2008, according to CEO Elon Musk aiming to “drive the world’s transition to electric mobility by bringing a full range of increasingly affordable electric cars to market” (Stringham et al., 2015, p. 86). Thus, Musk does not consider other EV producers as a threat but sees “the enormous flood of gasoline cars pouring out of the world’s factories every day” (Stringham et al., 2015, p. 95) as the true competition for Tesla and EVs. Therefore, Tesla made all of its patents accessible to public in 2014 in order to facilitate the production of EVs for other companies and thus, encourage the foundation of new startups (Stringham et al., 2015). Having a company value of 47 billion US dollar in March 2018 (Lambert, 2018), Tesla has overcome the high entrance barriers of the car market and developed from being a startup to competing successfully in the middle luxury segment with combustion engine cars (Stringham et al., 2015). Due to its promotion of EVs, Tesla has inspired entrepreneurs to found new EV startups (Schaal, 2017) as well as put pressure on the global car manufacturers which mainly produce combustion engine cars, to start producing EVs (Stringham et al., 2015).

The global car manufacturing industry is dominated by China, Japan, Germany, USA, South Korea and India which all produced more than three million cars in 2016 (Statista GmbH, 2017-b). In Europe, Germany is the largest car manufacturer by producing more than 30% of all cars output in Europe (Verband der Automobilindustrie e.V., 2017) and it has the highest number of registered cars (ACEA, 2017). Further, Germany is host of the Volkswagen Group,

the car manufacturer that sold the most cars worldwide in 2017 (Statista GmbH, 2018-a). Thus, Germany is of high importance for the car industry. According to Seiwert and Reccius (2017), over 1.8 million people are employed directly or indirectly within this industry or in industries influenced by car manufacturers. Around 25% of all turnovers of the German manufacturing industry lead back to the automobile industry (Seiwert & Reccius, 2017). The industry's most important market remains its domestic market as in 2016, 37% of the turnover was generated in Germany and 63% subdivided between other countries (Statista GmbH, n.d.). As Germany is of high significance for the car industry, it is considered as a relevant country for undertaking this research.

Since 2008, the number of registered cars has constantly been growing in Germany up to nearly 46 million cars in 2017 (Statista GmbH, 2017-d). While the registrations of cars with fossil fuels have remained constant from 2010 till 2017, the number of registered EVs increased rapidly (Kraftfahrt-Bundesamt, n.d.). Even though only 0.73% of all registered cars in Germany are electric, over 25,000 new EVs were registered in 2017 (Weemaes, 2017). This trend has also been identified by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety in its representative survey of the German environmental awareness of 2016 (Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit, 2017). More than two third of the respondents would use an EV for shopping and in their free time and 60% would also use EVs for their daily way to work. The base for all respondents' use of EVs is an improvement in range and costs as well as recharge infrastructure (Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit, 2017). These results support the aforementioned high potential of EVs for the future of the German car market as well.

This potential is reflected by well-established car companies like BMW or VW offering EVs (Deutsche Gesellschaft für Sonnenenergie, 2018), but also by the recent foundation of startups in the German EV industry, like e.GO Mobile AG and Sono Motors GmbH (Schaal, 2017). The first EVs of these startups roll of the production line in 2018 (ecomento UG, 2018). This development shows that the German EV market is influenced by a competition between established companies and startups. On the one hand, there are powerful mature companies that were founded in the early 20th century like BMW (BMW AG, n.d.) or VW (Volkswagen AG, 2008) and therefore they are well-known and established in the car market. However, the EV segment is also a relatively new segment for them and they are known for successfully producing cars, but not EVs yet. Therefore, it is interesting to see if this makes a difference

for consumers in their preferences for EV brands. On the other hand there are startups like e.GO Mobile AG and Sono Motors GmbH which were founded in 2015 (e.GO Mobile AG, 2017) and 2016 (Sono Motors GmbH, 2018), aiming to gain market share from established car companies. Both the aforementioned established companies and the startups produce mainly sub-compact and compact electric cars and therefore compete with each other, while Tesla's EVs are luxury sedans competing mainly with other combustion engine luxury sedans (Stringham et al., 2015).

Due to the high relevance of the car and EV industry for consumers and the worldwide economy as well as the recent foundation of EV startups challenging established car manufacturers, this area is considered to be highly relevant and interesting for research in the scope of investigating specialty goods. As there is no research on how startups can overcome established companies in the specialty product category to this date, this study aims to close this gap which leads to the formulation of the research aim.

1.4 Research Aim

After explaining the background of this study as well as the research problem in the previous chapters, the following research aim for this paper is stated:

The research aim is to investigate which product attributes lead consumers to prefer startups' products over established companies' products in the specialty product category by means of the competition between startups and established companies in the German EV market.

1.5 Outline of the Research Project

This research project will be structured as follows. In chapter two the conceptual framework for the paper will be outlined and the hypotheses which were tested in the scope of this study will be presented. Chapter three will contain the research design by explaining the data collection process, the measurement and analysis of data as well as how validity, reliability and research ethics were ensured. Chapter four will contain the results, which will be discussed in chapter five. The thesis will end with a conclusion in chapter six. In this chapter the research aim will be fulfilled, the relevance of the paper will be discussed, the limitations will be outlined and suggestions for further research will be given.

2. Conceptual Framework

The theories and concepts explained in this chapter are used as a base for motivating the hypotheses and for analysing and interpreting the data that was collected for this research project.

2.1 Pioneer Advantage Theory

As motivated in the introductory part of this paper, pioneer advantage theory can be applied to investigate what might lead consumers' preferences to shift from an established brand's product to a startup's product. Therefore, the background of this theory will be explained more closely in this chapter.

Pioneer brands usually have a competitive advantage in comparison to followers, which is referred to as pioneer, early entrant or first-mover advantage (Alpert & Kamins, 1995; Besharat et al., 2016; Carpenter & Nakamoto, 1989; Denstadli et al., 2005; Mady, 2011; Wilkie et al., 2015; Zhang & Markman, 1998). This implies that follower brands need to find a way to overcome this pioneer advantage in order to compete successfully on the market (Besharat et al., 2016; Liang et al., 2010; Zhang & Markman, 1998). Besharat et al. (2016) name three different strategies follower companies can adopt herefore: an *enhancing strategy*, a *distinctive strategy* or a *me-too strategy*. These strategies differ in the manner of product differentiation between the pioneer and the follower (Besharat et al., 2016). In previous studies of pioneer advantage, the success or failure of these three strategies has been explained by theories of learning (Besharat et al., 2016; Cunha & Laran, 2009; Liang et al., 2010; Zhang & Markman, 1998), as the pioneer advantage is grounded on the learning capabilities of consumers (Carpenter & Nakamoto, 1989). Therefore, the following chapter will be engaged with consumer brand learning theory.

2.1.1 Consumer Brand Learning Theory

As the consumers' perspective on established companies' and startups' products is the main concern of this research, it is important to gain an understanding about the drivers of consumers' preferences, which are closely related to consumer learning (Carpenter & Nakamoto, 1989). There are different theories about consumer brand learning that are relevant for the decision making between pioneers' and followers' products (Besharat et al., 2016). These learning theories will be presented in the following sections.

Reminding-based category learning is based on the assumption that consumers learn about new brands by comparing these to brands in the same category that they already know

(Kardes & Kalyanaram, 1992; Zhang & Markman, 1998). During these comparison processes, individuals search for commonalities and differences between the products (Markman & Gentner, 2001). When there are mainly commonalities between the pioneer's and the follower's product, meaning that the products are very similar to each other, consumers are likely to prefer the pioneer brand (Besharat et al., 2016; Carpenter & Nakamoto, 1989; Kardes & Kalyanaram, 1992). According to Kardes and Kalyanaram (1992), this pioneer brand preference derives from the earlier market entry of the pioneer. When the pioneer entered the new market, the product attributes were new to consumers and therefore interesting, hence they spent more time on collecting information about the product (Kardes & Kalyanaram, 1992). When the follower enters the market with a similar product, the consumers are already familiar with the product attributes and as they are not new to them, they perceive the product information as not as interesting as the pioneer's product was (Kardes & Kalyanaram, 1992). Since in this case consumers cannot detect differences between the products and perceive the information about the follower product as redundant, "commonalities are not the focal point of comparison" (Liang et al., 2010, p. 86) and the follower's product will not be perceived as more valuable than the pioneer's product (Kardes & Kalyanaram, 1992; Liang et al., 2010).

Apart from commonalities, the differences between products are compared by consumers as well (Markman & Gentner, 2001). Differences can further be divided into *alignable* and *non-alignable differences* (Besharat et al., 2016; Liang et al., 2010; Zhang & Markman, 1998). Zhang and Markman (1998, p. 414) define alignable differences as being "commonalities, in that they are corresponding elements of a pair, but they are also like differences, in that they are unlike elements that correspond". To give an example, the follower brand Samsung differentiates its phone Samsung Galaxy S5 from the pioneer Apple's iPhone 5S by implementing a longer battery life and a larger screen (Besharat et al., 2016). Following the aforementioned definition, alignable differences are a focal comparison factor, because on the one hand consumers are familiar with the attributes, which is why they are able to retrieve these attributes better than attributes they are not familiar with (Zhang & Markman, 1998). On the other hand, they perceive differences due to the different values the attributes possess (Zhang & Markman, 1998). As a conclusion, follower brands might be able to overcome pioneer advantage when differentiating their products by offering *superior alignable attributes* (Besharat et al., 2016; Kardes & Kalyanaram, 1992; Liang et al., 2010; Markman & Gentner, 2001; Zhang & Markman, 1998).

The second possibility of differentiation is the implementation of non-alignable attributes (Besharat et al., 2016; Liang et al., 2010; Zhang & Markman, 1998). Non-alignable attributes are new product attributes that the pioneer's products do not have, thus there is no correspondent in the pioneer's product for the new attribute (Besharat et al., 2016; Zhang & Markman, 1998). Besharat et al. (2016) mention Samsung adding water resistance as a new attribute for the Galaxy S5 as an example, while Apple's iPhone 5S is not equipped with this feature. As consumers are not familiar with these non-alignable attributes and learn about them differently (Besharat et al., 2016), they do not remember them as well as they remember alignable attributes (Zhang & Markman, 1998), which is why non-alignable attributes are often ignored or overlooked by consumers (Kardes & Kalyanaram, 1992; Liang et al., 2010). To sum it up, therefore non-alignable attributes are not considered to be as effective in overcoming pioneer advantage as superior alignable attributes in the reminding-based category learning theory (Besharat et al., 2016; Liang et al., 2010; Markman & Gentner, 2001; Zhang & Markman, 1998).

However Besharat et al. (2016) and Cunha and Laran (2009) point out that another learning theory might explain why follower brands can also overcome pioneers by differentiating their products with non-alignable attributes. Besharat et al. (2016, p. 719) describe *associative learning theory* as the way "how consumers learn the associations between product features and product benefits". Cunha and Laran (2009) state that consumers show an assymetric association of alignable and non-alignable attributes with the pioneer and the follower brand. The reason herefore is that consumers tend to protect previously learned associations when developing new associations (Cunha & Laran, 2009; Kruschke, 2001). When consumers learn about an unknown product, they will associate the product attributes with the brand (Cunha & Laran, 2009). Hence, when a follower brand enters the market with a similar product, consumers already have an association for the alignable attributes with the pioneer brand, which they will aim to protect (Cunha & Laran, 2009). Therefore, consumers have a stronger association with the pioneer concerning alignable attributes (Besharat et al., 2016; Cunha & Laran, 2009). For non-alignable attributes however, it is different. As consumers do not have any previously learned associations for the unknown non-alignable attribute, the consumers' attention is drawn towards this attribute (Cunha & Laran, 2009). According to Besharat et al. (2016) and Cunha and Laran (2009), this results in consumers' associations with non-alignable attributes being stronger for the follower than the association between the pioneer and its non-alignable attributes.

To summarize the implications of the associative learning theory for overcoming pioneer advantage, “consumers more strongly associate an attribute possessed by two brands with the brand they learned of earlier and more strongly associate a unique attribute with the brand they learned later” (Cunha & Laran, 2009, p. 798). Under the condition that the follower product’s *non-alignable attribute* is *valuable* to the consumer, follower brands are able to overcome pioneer advantage (Besharat et al., 2016; Cunha & Laran, 2009).

2.1.2 Enhancing Strategy

As mentioned in the beginning of chapter two, according to Besharat et al. (2016) follower brands can apply three different strategies when entering new markets. The first one is the *enhancing strategy* (Besharat et al., 2016). This strategy implies that followers differentiate their product from the pioneer’s product by implementing superior alignable attributes (Besharat et al., 2016; Zhang & Markman, 1998).

Several empirical studies indicate that follower brands can overcome pioneer advantage with the help of superior alignable attributes. Besharat et al. (2016) perform a study on pioneer advantage and superior alignable attributes for the product *olive oil*. They present a pioneer’s and a follower’s product and manipulate the alignable attributes of the follower’s product in order to ask 156 respondents to rate the products. Besharat et al. (2016, p. 723) conclude that follower brands “can successfully compete against pioneer brands if they enhance alignable attributes”. Zhang and Markman (1998) achieve similar results when performing a study with 22 college students on the pioneer advantage for the product *microwave popcorn*. Their conclusion is that “consumers are more likely to prefer an objectively superior late entrant than earlier entrants when the late entrant has alignable differences with earlier entrants” (Zhang & Markman, 1998, p. 423). Liang et al. (2010) add on these findings in their study of pioneer advantage for brand extensions in the *fast food sector*. The authors conclude that followers can overcome pioneers when offering superior alignable attributes (Liang et al., 2010).

These results are consistent with the reminding-based category learning theory as consumers are more likely to remember attributes they are already familiar with when comparing pioneers’ and followers’ products (Zhang & Markman, 1998). Thus, consumers will retrieve the superiority of the follower brand, which leads to a shift in preference from the pioneer towards the follower (Besharat et al., 2016; Kardes & Kalyanaram, 1992; Liang et al., 2010; Markman & Gentner, 2001; Zhang & Markman, 1998).

To sum it up, existing empirical research suggests that followers can overcome pioneer advantage by applying an enhancing strategy and implementing superior alignable attributes in the product (Besharat et al., 2016; Liang et al., 2010; Zhang & Markman, 1998).

2.1.3 Distinctive Strategy

The second strategy explained by Besharat et al. (2016) is the *distinctive strategy*. It implies that follower brands differentiate their products from the pioneer by implementing non-alignable attributes (Besharat et al., 2016). However the findings on the effectiveness of this strategy are ambiguous. In their pioneer advantage study on *microwave popcorn*, which was presented in the previous chapter, Zhang and Markman (1998) find out that follower products which only differ from the pioneer product by non-alignable differences are not able to overcome pioneer advantage. The authors explain these findings by stating that “[n]on-alignable features of a new brand receive less elaboration because they are not comparable with any properties of previous entrants and, thus, are less promoted by the comparison process” (Zhang & Markman, 1998, p. 424), which is in accordance with the reminding-based category learning theory. However, Zhang and Markman (1998) also state that this result might be due to the fact that they did not use any innovative or novel non-alignable attributes in their study, so the consumers might not have perceived the new non-alignable attributes as valuable. The authors state that the outcome might be different when innovative non-alignable attributes are used (Zhang & Markman, 1998).

This statement is in accordance with the results of Besharat et al.’s (2016) study, as the results of their study about *olive oil* are different from Zhang and Markman’s (1998) findings. Besharat et al. (2016) find that followers can overcome pioneer advantage with the help of non-alignable attributes as long as these attributes are evaluated as valuable in terms of functionality by the consumers. Furthermore, the authors identify the distinctive strategy to be more successful than the enhancing strategy when the non-alignable attributes are valuable to consumers (Besharat et al., 2016). Cunha and Laran’s (2009) study supports the finding that followers can overcome pioneers by offering products with valuable non-alignable attributes. The authors study the preferences of 141 undergraduate students about the product *wine* and also emphasize the importance of value for non-alignable attributes (Cunha & Laran, 2009). Cunha and Laran (2009) find out that consumers will prefer the pioneer when they perceive the alignable attributes as more valuable than the non-alignable attributes, because they have stronger associations with the pioneer for alignable attributes. However, if the follower product’s non-alignable attributes are perceived as valuable, consumers will prefer the

follower brand as they have stronger associations with non-alignable attributes for followers than for pioneers (Cunha & Laran, 2009).

To sum it up, literature indicates that a distinctive strategy will not be effective in overcoming pioneer advantage when the non-alignable attributes are not valuable to consumers (Cunha & Laran, 2009; Zhang & Markman, 1998). However, when the value of the non-alignable attributes is evaluated as high by consumers, the follower will be preferred (Cunha & Laran, 2009) and “a distinctive strategy can [even] seize a greater market share from a pioneer brand than an enhanced strategy” (Besharat et al., 2016, p. 723). These findings are in line with the associative learning theory (Besharat et al., 2016; Cunha & Laran, 2009).

2.1.4 Me-Too Strategy

The third strategy follower brands might adopt according to Besharat et al. (2016) is a *me-too strategy*. This strategy implies that the follower offers the same product attributes as the pioneer (Besharat et al., 2016), which means that there is no differentiation in alignable or non-alignable attributes between the pioneer's and the follower's products. As explained in chapter 2.1.1, several authors state that consumers will prefer the pioneer's product when there are only commonalities between the pioneer's and the follower's products (Besharat et al., 2016; Carpenter & Nakamoto, 1989; Kardes & Kalyanaram, 1992), which is the case for follower brands pursuing a me-too strategy. Therefore, Zhang and Markman (1998) claim, that me-too followers can only overcome the pioneer when offering a price advantage.

When a pioneer enters the market, consumers do not only perceive the product attributes as the status quo for the product category (Carpenter & Nakamoto, 1989). They also consider the price as a reference price for this product (Lowe & Alpert, 2010). Therefore, follower brands can differentiate themselves from the pioneer by offering a lower price in relation to the reference price (Lowe & Alpert, 2010). Sinapuelas and Robinson (2012, p. 350) confirm this by stating that “[c]onventional wisdom suggests a me-too brand succeeds if it charges a low price”. Bohlmann, Golder and Mitra (2002) have similar findings as they find out that follower brands can benefit from offering lower prices because they have cost savings due to advanced technologies. However, by claiming that “price is least effective at stealing share from the pioneer for a me-too brand”, Carpenter and Nakamoto (1989, p. 297) state that a price reduction might not be that successful.

To conclude, followers might be able to overcome pioneer advantage by copying the pioneer's product and reducing the price (Bohlmann et al., 2002; Lowe & Alpert, 2010;

Sinapuelas & Robinson, 2012; Zhang & Markman, 1998). However, this strategy might not be as successful as the enhancing or the distinctive strategy (Carpenter & Nakamoto, 1989).

To provide for a better understanding, the theories and resulting strategies will be summarized in figure 1.

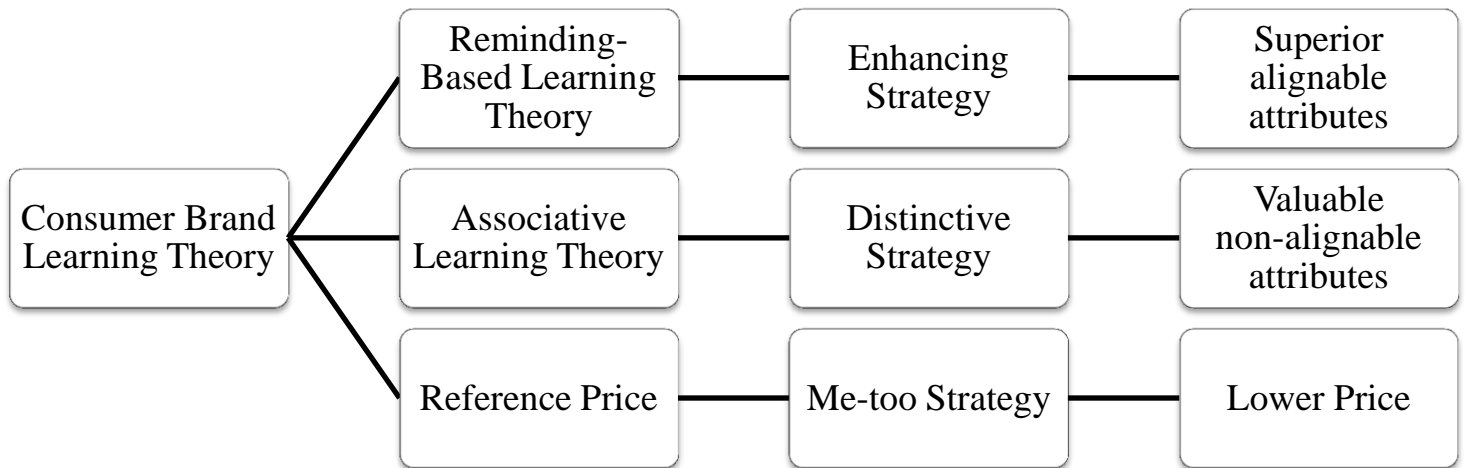


Figure 1: Summary of Consumer Brand Learning Theory

2.2 Specialty Product ‘Electric Vehicle’ and Pioneer Advantage

After introducing three strategies which follower brands may apply to overcome pioneer advantage, the concern in this chapter will be the product category of specialty goods that cars belong to (Kotler & Keller, 2012) in relation to pioneer advantage.

As explained in the introductory part, specialty products are defined as goods “with unique characteristics or brand identification for which enough buyers are willing to make a special purchasing effort” (Kotler & Keller, 2016, p. 164). For the car purchase this becomes obvious as buyers are often willing to make a big effort, like travelling a long way to pick the car up (Kotler & Keller, 2012). One characteristic of specialty goods is the high brand preference consumers have in this product category and the extensive loyalty they show towards the desired brand (Poon & Joseph, 2000). This implies that consumers usually strive for the exact brand they would like to possess, for example a Mercedes, without comparing other brands or accepting alternatives (Kotler & Keller, 2012; Murphy & Enis, 1986).

Due to this high brand preference, consumers usually do not put much effort in comparing their desired brand with alternative brands (Kotler & Keller, 2012), which is why the specialty product category might be different from the convenience or shopping product category in relation to pioneer advantage theory. As consumers’ product preferences derive from their

learning capabilities (Carpenter & Nakamoto, 1989) and consumers learn about brands by comparing their attributes (Kardes & Kalyanaram, 1992; Zhang & Markman, 1998), a base for the preference shift from the pioneer's to the follower's brand seems to be the comparison between the two products, made by the consumer. However, when willing to purchase a specialty good, consumers hardly compare any other companies as they are focused on their desired brand (Kotler & Keller, 2012). When reviewing the aforementioned studies on overcoming pioneer advantage, it becomes obvious that the authors used convenience products like *olive oil* (Besharat et al., 2016), *wine* (Cunha & Laran, 2009), *microwave popcorn* (Zhang & Markman, 1998) and *fast food* (Liang et al., 2010), for which consumers usually do not have a high brand preference (Murphy & Enis, 1986). Hence, the question arises if similar results like in the aforementioned studies will be achieved in this research, or if consumers' brand preference towards established companies will be too strong to be overcome by the implementation of superior alignable and valuable non-alignable attributes.

Similar differences apply to the price. In the specialty product category it is usually most important for consumers to purchase the brand they desire to own (Murphy & Enis, 1986; Poon & Joseph, 2000), which is why the price is not the most important factor even though specialty goods are usually high-priced (Allred & Chakraborty, 2004). Hence, although literature indicates that followers with the same product attributes can overcome pioneer advantage by offering a lower price (Bohlmann et al., 2002; Lowe & Alpert, 2010; Sinapuelas & Robinson, 2012; Zhang & Markman, 1998), this might not hold true for products in the specialty product category.

2.3 Electric Vehicles

This chapter will take a closer look on EVs, which form the research object in this study. At first, EVs will be defined in chapter 2.3.1. Afterwards, relevant alignable and non-alignable attributes for EVs will be presented in chapter 2.3.2 and the chapter will close by stating the hypotheses to be tested in this study.

2.3.1. Electric Vehicle Definition

A clear definition of the EV type this research focuses on is necessary, because in literature different types of electric cars are named EVs (Axsen & Kurani, 2013; Li, Long, Chen, & Geng, 2017). A *Hybrid Electric Vehicle* (HEV) is powered by an internal combustion engine and a battery simultaneously (Ergon Energy, 2018). The battery is recharged by the vehicle's engine or through regenerative braking and cannot be charged externally, e.g. from an electricity grid (Carley, 2014). Another type of electric car is the *Plug-In Hybrid Electric*

Vehicle (PHEV), which is also powered with the help of a combustion and an electric engine at the same time or by one engine type alone (Axsen & Kurani, 2013). In contrast to HEVs, batteries of PHEVs can additionally be charged by plugging the car in an external charging outlet (Carley, 2014). The third group of EVs is the *Battery Electric Vehicle* (BEV). These cars “are powered by electricity and have no internal combustion engine, and as a result do not produce gas emissions” (Li et al., 2017, p. 318).

To conclude, for this empirical study EVs are defined as BEVs. HEVs and PHEVs are not included because they both use internal combustion engines and are not completely electric.

2.3.2. Electric Vehicle Attributes

This section will introduce EV attributes. With the help of these, startup brands can differentiate themselves from established car brands in order to overcome the pioneer advantage that established companies benefit from. At first, the focus will be on alignable attributes, followed by non-alignable attributes and prices. The hypotheses which were tested in the scope of this research will be stated at the end of each section.

As explained in chapter 2.1.2, follower brands can overcome pioneer advantage by adapting an enhancing strategy and offering superior alignable attributes (Besharat et al., 2016; Liang et al., 2010; Zhang & Markman, 1998). In an empirical study in Germany, Lieven, Mühlmeier, Henkel and Waller (2011) examine the importance of car attributes for German car drivers. They identify that consumers put less emphasize on the criteria durability, environment and convenience for conventional cars and EVs (Lieven et al., 2011). Instead, consumers indicate range as the most important attribute for the purchase of an EV (Lieven et al., 2011). Hence, range – the distance a car is able to drive with a fully charged battery (Herron, 2016) – can be detected as an alignable attribute of EVs (Lieven et al., 2011). To identify further attributes, product websites of currently available EVs were analysed. The attributes presented on the brands’ websites differ noticeably. Some car manufacturers present only a small amount of alignable attributes, like range, price, power consumption or produced emissions (e.g. Daimler AG, 2018; Renault Deutschland AG, 2018-a; Tesla GmbH, 2018-a). In contrast, other EV producers name a large number of alignable attributes, like top speed, expedition, car size, charging time, weight, seats, luggage space, performance in horsepower or kilowatt hours as well as the aforementioned attributes (e.g. BYD Company Limited, 2018; CITROËN DEUTSCHLAND GMBH, 2018; e.GO Mobile AG, 2018; Hyundai Motor Deutschland GmbH, 2018).

After identifying various alignable attributes, the focus was on elaborating the most important ones. Therefore, websites and literature which compare EVs based on alignable attributes were analysed. These references focus mainly on the *number of passenger seats, top speed, performance, power consumption, range and charging time* (Deutsche Gesellschaft für Sonnenenergie, 2018; Greenfinder UG, n.d.; Henßler, 2017). Thus, these alignable attributes were used in the research in order to examine whether EV startups are able to overcome established car brands with the help of superior alignable attributes. As literature indicates that this is possible (Besharat et al., 2016; Liang et al., 2010; Zhang & Markman, 1998), the following hypothesis is stated:

H1: Consumers are more likely to prefer a startup's EV over an established company's EV when the startup's EV possesses superior alignable attributes.

Literature indicates that followers are also able to overcome pioneer advantage when adapting a distinctive strategy and implementing non-alignable attributes in the product (Besharat et al., 2016; Cunha & Laran, 2009). However, the base for being able to overcome pioneer advantage is that the non-alignable attribute is perceived as valuable by consumers (Besharat et al., 2016; Cunha & Laran, 2009). Zhang and Markman (1998) add that the novel and innovative character of a non-alignable attribute might be essential for overcoming pioneer advantage. Therefore, the focus was on identifying an innovative and novel attribute that consumers are likely to perceive as valuable. For the identification of non-alignable attributes of currently available EVs, websites and product information of car manufacturers have been analysed. The German EV startup Sono Motors GmbH launches their first car 'Sion' with two unique features which their competitors' cars do not provide for their customers (Sono Motors GmbH, n.d.). With help of the 'viSono' technology the 'Sion' is able to recharge the battery by using only the power of the sun, due to several solar cells placed on the auto body. Through this system the car is able to drive 30 kilometres a day by sun's power (Sono Motors GmbH, n.d.). The second non-alignable attribute is called 'biSono' which allows consumers to use electronic devices by plugging them in the car's household plug, based on a bidirectional charging system (Sono Motors GmbH, n.d.).

The US car brand Tesla presented another unique feature which cannot be found in other EVs. All of Tesla's EVs are equipped with the technique to drive autonomously (Tesla GmbH, 2018-b). With the help of this attribute a car is able to regulate speed and distance to other cars, changes lanes or navigates through motorway junctions (Tesla GmbH, 2018-b). Autonomous driving has also been identified as one of the biggest car trends for the future at

the Consumer Electronics Show (CES) in Las Vegas in 2018 (Moseman, 2018). Thus, due to the uniqueness and innovativeness of this feature, the *autonomous driving* attribute was used in this study to represent the non-alignable attributes. As literature indicates that startups are able to overcome established brands with the help of a valuable non-alignable attribute (Besharat et al., 2016; Cunha & Laran, 2009), the following hypothesis is stated:

H2: Consumers are more likely to prefer a startup's EV over an established company's EV when the startup's EV possesses a valuable non-alignable attribute.

In contrast to what literature indicates about consumers' strong brand preference for specialty products (Kotler & Keller, 2012), Lieven et al. (2011, p. 239) discover that "[p]rice is the top priority for both conventional and the electric vehicles" in their study of German consumers. This implies that the decision in favour or against a car is often based on the price of the vehicle, which is reasonable due to the fact that products in the specialty good category are usually high-priced (Allred & Chakraborty, 2004). The prices for EVs available on the German market reach from 6,950€ for the 'Renault Twizy LIFE' (Renault Deutschland AG, 2018-b) up to at least 144,670€ for Tesla's 'Model S P100D' (Tesla GmbH, 2018-c). Also the prices for EVs of German car manufacturers vary clearly beginning at around 16,000€ for the startup brands' cars 'e.GO Life' (e.GO Mobile AG, 2018) and 'Sion' (Sono Motors GmbH, n.d.). The EVs of the established German brands are more expensive, starting from 22,000€ for the 'Smart electric', 26,900€ for VW's 'E-up!', 34,950€ for the BMW 'i3' and ending with 39,151€ for Mercedes' 'B 250e' (Deutsche Gesellschaft für Sonnenenergie, 2018). Although the price is assumed not to be the most important factor for the purchase of a specialty good (Murphy & Enis, 1986), Lieven et al. (2011) discovered that the price is the highest priority for German car buyers. Therefore, the following hypothesis is stated:

H3: Consumers are more likely to prefer a startup's EV over an established company's EV when the startup's EV offers a lower price for a comparable product.

Apart from the influence of superior alignable and non-alignable attributes as well as the price, it might be relevant to identify which of these strategies is the most effective one, as Besharat et al. (2016) did in their research. The authors find out that a distinctive strategy with a valuable non-alignable attribute will be the most effective strategy (Besharat et al, 2016). Therefore, the following hypothesis is stated:

H4a: The valuable non-alignable attribute has a stronger effect on the consumers' preference towards the startup's EV than superior alignable attributes and a lower price for a comparable product.

Concerning the effectivity of offering a lower price for the same product attributes, Carpenter and Nakamoto (1989) state that the me-too strategy will be the least effective one. Therefore, the following hypothesis is stated:

H4b: The lower price for a comparable product has a weaker effect on the consumers' preference towards the startup's EV than superior alignable attributes and a valuable non-alignable attribute.

Finally, as superior alignable attributes, a valuable non-alignable attribute and a lower price for a comparable product are each expected to have a positive effect on consumers' preferences towards the startup's product, the combination of all three of them would be expected to have the strongest effect. Therefore, the last hypothesis is stated:

H4c: The combination of superior alignable attributes, a valuable non-alignable attribute and a lower price has the strongest effect on the consumers' preference towards the startup's EV.

3. Research Design

3.1 Research Approach and Research Strategy

The study is based on *primary data* collected from the *German Generation Y* that will be treated more closely in the next chapter. Since there is a relevant amount of research on overcoming pioneer advantage already, this study can build on the theories that were used in previous research and explained in chapter two, in order to apply these to the specialty product category and for this particular research, the EV market in Germany. As this research tests existing theories in a new context, a *deductive research approach* is adopted (Saunders, Lewis, & Thornhill, 2016). In order to test existing theory, six hypotheses were developed on the base of literature and were tested in the scope of this study.

A deductive approach is often combined with a *quantitative research design* which is characterized by the use of mainly numeric data that are collected in a structured and standardized process (Saunders et al., 2016). A quantitative research design is considered to be appropriate for this study because it is possible to analyse the relationship between variables with the help of quantitative data (Saunders et al., 2016). In order to draw a conclusion about the hypotheses stated in chapter 2.3.2, it is necessary to examine relationships between the variables, which is why a quantitative research design is suitable to reach this aim. Another advantage of a quantitative research design is the possibility to generalize the study findings to the research population under certain conditions (Saunders et al., 2016). Due to the fact that relationships between variables will be examined, the study is of an *explanatory nature* (Saunders et al., 2016).

While in a quantitative research design several research strategies may be adopted (Saunders et al., 2016), two strategies are of particular interest for this study: the *survey strategy* and the *experiment*. Survey strategies are commonly used to collect quantitative data for a deductive approach and allow to collect data from a relatively high number of respondents (Saunders et al., 2016). This leads to the possibility of generalizing the findings to the research population under certain conditions (Saunders et al., 2016). Furthermore, a survey allows to collect a considerably high amount of data in a relatively short time with low monetary efforts (Saunders et al., 2016), which is an advantage for this research project. However, other empirical studies on overcoming pioneer advantage use an experiment strategy for their research (Besharat et al., 2016; Cunha & Laran, 2009; Zhang & Markman, 1998). In an experiment, causality is established by manipulating an independent variable to identify a change in the dependent variable (Saunders et al., 2016). A reason for the adoption of an

experiment strategy in Besharat et al.'s (2016), Cunha and Laran's (2009) and Zhang and Markman's (1998) research is that they also examined other relationships that required to undertake a set of experiments. However, as this research focuses only on the relationship between alignable attributes, non-alignable attributes, price and consumer preference, it is not considered to be necessary to conduct a set of experiments. A weakness of experiments is that their generalizability to real life settings is usually more difficult to establish due to the laboratory conditions under which they are performed (Saunders et al., 2016). Therefore, the possibility to generalize findings may be higher when conducting a survey, which is why this research adopted a survey strategy.

Since the hypotheses are based on literature that adopted an experimental research strategy though, they do not only predict relationships but also causality between the variables. Therefore, the survey strategy is combined with some characteristics of an experiment strategy, more precisely with a *within-subjects design*. In contrast to an experiment or quasi-experiment where participants are assigned to an experimental group and a control group, there is only one group in a within-subjects experimental design (Saunders et al., 2016). This matches with a survey strategy as it is not possible to have two different groups of respondents in a survey. In one part of the survey the respondents are exposed to a pre-intervention measurement in order to establish a baseline for the dependent variable like in a within-subjects experimental design (Saunders et al., 2016). Afterwards, they are exposed to different scenarios in which the independent variables are manipulated in order to identify the effect in the dependent variable (Saunders et al., 2016). This part of the survey will be explained more detailedly in chapter 3.4, which is engaged with the measurement of the variables.

Due to the limited time of ten weeks, a *cross-sectional approach* was chosen concerning the time horizon of the research project. Cross-sectional studies examine "a particular phenomenon [...] at a particular time" (Saunders et al., 2016, p. 200) and are often combined with a survey strategy, which is adopted for this research (Saunders et al., 2016). Due to time limitations a longitudinal survey would not be feasible.

3.2 Research Population

In the following sections the research population will be presented and motivated. Strauss and Howe (1991) identify generation cycles which are changing over time in their book “Generations: The History of America’s Future, 1584–2069”. This theory bases the creation of generations on the assumption that people of a certain period of time have been influenced by the same political and socio-economic factors (Hopkins, 2016). Strauss and Howe (1991) identified the ‘Millennial Generation’, also called ‘generation Y’ (Gen Y) (McCrindle, 2014), as their last generation. This generation begins in 1982 and is expected to end around the year 2000 (Strauss & Howe, 1991). Even though Gen Y’s timeframe is defined differently in research by varying from 1980 to the early 2000s (Heyn & Kochhan, 2016; McCrindle, 2014; Strauss & Howe, 1991), the tendency of definitions shows that this generation comprises people born from 1980 to 2000. Thus, for this research the Gen Y is defined as *people born between the years 1980 and 2000*.

As already mentioned, generations are influenced by socio-economic and political factors (Hopkins, 2016). This also applies to the Gen Y which has been exposed to environmental catastrophes as well as to a growing public consciousness regarding the environment (McKay, 2010, as cited in Hopkins, 2016). This implies that members of the Gen Y are aware of environmental issues. Heyn and Kochhan (2016) support this assumption by stating that the actions of the Gen Y are affected by their awareness of the importance of social responsibility for the society and the environment which can also be applied to their consumer behaviour. Bhaduri and Ha-Brookshire (2011) underline the generation’s environmental and social awareness by examining that young people desire to make informed decisions about purchases to avoid harming the environment or society. The environmental awareness of Gen Y is also supported by the fact that this generation is informed and aware of the negative impacts of cars towards the environment (Fordward, 2010, as cited in Hopkins, 2016). The presented *environmental and social consciousness* identify this generation as a good fitting research population, as they are aware of the negative effects of the use of vehicles with combustion engines. Thus, they might be more interested in alternative mobility like EVs and therefore perceive this study as relevant.

Williams and Page (2011) examine several characteristics of the Gen Y as consumers. They identify this generation as learning-oriented (Williams & Page, 2011). As presented in chapter 2.1, consumers are more likely to choose a product after learning more about it because they become more familiar with this product. The Gen Y’s *learning orientation* underlines their

suitability as a research population, because its members are open to learn about new products. Several researchers identify the Gen Y as a large and powerful consumer segment (Bhaduri & Ha-Brookshire, 2011; Hill & Lee, 2012; Williams & Page, 2011). The Gen Y is especially of high interest for the automobile industry, because it is a *major market of potential consumers* (Williams & Page, 2011). These characteristics demonstrate the significance of Gen Y as a research population, because the findings are of high interest for the EV industry to get more knowledge about the product preference of the future's major consumers.

Apart from that, the brands that Gen Y members purchase are important to them, which is why they are more likely to buy prestige products (Williams & Page, 2011). Gen Y consumers are also likely to be loyal customers towards status brands (Grotts & Johanson, 2013, as cited in Eastman, Iyer, Shepherd, Heugel, & Faulk, 2018). The brand loyalty is a particular characteristic of specialty goods and therefore of cars, as explained in chapter 2.2. Thus, the Gen Y with its *loyalty towards brands* and the probability of the *purchase of prestige products*, which include specialty goods like cars, is an adequate research population. In contrast towards the brand loyalty, consumers of the Gen Y are characterized as *sceptical of large corporations and their messages* (Bhaduri & Ha-Brookshire, 2011). This might support the likelihood of the interest in startups, because Gen Y consumers might consider the purchase of a young, unestablished brand's product as an alternative towards the product of an established large corporation.

Besides the already presented socio-economic and political factors influencing the Gen Y, Deal, Altman and Rogelberg (2010) identify that the Gen Y has been exposed to technological innovations which were invented in recent history, resulting in a different use of technology among this generation. Thus, literature describes the Gen Y as '*digital natives*' because they grew up with technology in contrast to other generations (Pînzaru et al., 2016). Since the exposure towards environmental catastrophes results in a growing environmental awareness of the Gen Y, the exposure towards technological innovations can be assumed to result in a higher openness for technologies and innovation of the Gen Y. Thus, this generation might be more open towards cars with innovative driving technologies, like EVs, and are therefore considered to be a relevant research population for this study.

As already presented in the introduction, this research was conducted in Germany. Therefore, the German Gen Y will be described briefly. For this study the German Gen Y is defined as all people registered in Germany and born between 1980 and 2000. Expansions of the year

2015 predict that the Gen Y will have a size of around 20,424,000 people by the year 2017 (Statistisches Bundesamt, 2015). Compared to the total German population of around 82.6 million inhabitants in 2017 (Statistisches Bundesamt, 2016), the Gen Y represents nearly 25% of the German population. The outcome of this is the research population for this study of *20.424 million members of the Gen Y in Germany*.

It is important to note that the concept of generations is also criticized (Hopkins, 2016). The only proven characteristic that these groups share is being member of a certain age group and the age range is relatively high. Therefore, although certain general tendencies can be detected for the Gen Y as explained in this chapter, individuals might have different opinions that are not in accordance with the aforementioned characteristics. Thus, the survey contains several control variables in order to detect differences within the German Gen Y.

3.3 Data Collection

3.3.1 Sampling

As discussed in chapter 3.2 the research population selected for this study is the German Gen Y. Due to the enormous size of 20.424 million members of the research population, it was not possible to conduct a census of the Gen Y on grounds of financial and time limitation of this research. Furthermore, it was not possible to generate a complete list of the whole research population, hence a sampling frame was not available for this study. Since probability sampling is not possible without a sampling frame (Saunders et al., 2016) *non-probability sampling* was applied to collect data from the German Gen Y.

Even though there are several non-probability sampling techniques available, the techniques chosen for this research are *convenience sampling* and *snowball sampling*, which belong to the group of haphazard sampling and volunteer sampling (Saunders et al., 2016). When applying convenience sampling, respondents are selected without any principles and “only because they are easily available” (Saunders et al., 2016, p. 304). As there is no list of all members of the German Gen Y, it was considered to be the most economic and least time-consuming technique to survey the population members that are easily available.

The second sampling technique applied for this study was snowball sampling by asking respondents to forward the survey to friends, colleagues and family and invite them to participate (Saunders et al, 2016). Scherbaum and Shockley (2015, p. 39) state that this method might be useful “if a researcher lacks a sampling frame or has a limited capacity to contact research participants”. Through this technique the researchers aimed to collect data

from a geographically spread and larger sample in order to increase the sample's representativeness. Furthermore, it was possible to collect more data in a faster manner as the survey was spread by many people.

3.3.2 Sampling Method

As already presented in section 3.1, a quantitative research design of an explanatory nature was adopted for this research. Thus, the primary data was collected through a *questionnaire*, which is mostly used in descriptive and explanatory research (Saunders et al., 2016). Due to the enormous size of the research population it was aimed to reach as many representatives of the German Gen Y. Thus, it was unfeasible to guide participants through face-to-face or telephone questionnaires. Hence, a *self-completed questionnaire*, meaning that respondents complete a survey on their own (Saunders et al., 2016), was identified as most suitable for this research. To reach as many participants as possible, an *internet questionnaire*, a type of self-completed questionnaire which is distributed via internet (Saunders et al., 2016), was used to collect the required data. Also costs for data collection were kept in mind by deciding in favour of an internet questionnaire, because the used survey tool 'umfrageonline.com' is free of charge. Most of the younger people in Germany, thus members of Gen Y, use the internet on a daily basis (Projektgruppe ARD/ZDF-Multimedia, 2017), which underlines the suitability of the selected questionnaire type. The participation in the questionnaire was voluntary.

3.3.3 Data Collection Process

This chapter will explain how the research population was reached. As a self-completed internet questionnaire was used, it is obvious that the questionnaire was spread via internet. Different channels were used in order to avoid bias towards one specific channel.

The questionnaire was distributed through the social media platform *Facebook*. Even though the appropriateness of this medium is still discussed (Baltar & Brunet, 2012), the use of Facebook enables to perform a fast and cheap collection of data and is especially well-suited for snowball sampling (Brickman Bhutta, 2012). 89% of the German internet users in the age group 20-29 years use Facebook and of the age group 30-39 years 84% use this social media platform (Statista GmbH, 2018-b). As most members of the German Gen Y form part of these two age groups, Facebook was considered to be a relevant medium to reach members of the research population. In the scope of the snowball sampling technique, respondents were invited further to share the questionnaire with their friends, family and colleagues.

Another way to spread the questionnaire was through *university organizations*. Since members of the German Gen Y are in the age group from 18 to 38, it is likely that a high number of university students will be in this age group. The average age of graduates of German universities was 24.1 years in 2016 (Statista GmbH, 2017-e), which supports this assumption. Therefore, university organizations were approached and invited to forward the survey to their student members.

To get a better hold of the working population as well, the questionnaire was distributed in the professional network *Xing*¹, too. The questionnaire was shared by the researchers to reach their personal professional network and distributed in several Xing groups.

3.4 Measurement

The questionnaire is separated into three different parts: The first section covers demographic and background information about the respondents, while the second part contains questions about the respondents' relationship towards cars. The third part is the most important for testing the hypotheses by surveying the respondents' preferences for EVs of established brands and startups. The full English and German version of the questionnaire can be found in Appendix I and II. In order to test the hypotheses, the relationships between variables were analysed. How the variables were measured will be presented in the following sections.

3.4.1 Independent Variables

The independent variables in this research project are the *alignable attributes*, the *non-alignable attribute* and the *price*. The alignable attributes that were manipulated in the questionnaire are *range*, *charging time* and *top speed*. The non-alignable attribute that was manipulated is *autonomous driving*. The third part of the questionnaire in which the independent variables are manipulated had a within-subjects experimental character as explained in chapter 3.1. A fictional profile for one established car company and one startup which sell EVs was created and presented to the respondents. The profile of the established company is based on successfully established car brands that have started producing EVs. The profile of the startup is based on EV startups. Both brands are described in a way that the respondents get a clear understanding of the brands, even though they are fictional. Afterwards, the characteristics of the EVs, consisting of the alignable attributes and the non-alignable attribute, are described. To avoid bias regarding design or colour, only facts and no pictures are used. At the end the price is stated.

¹ Professional network in Germany, comparable to LinkedIn

This example was presented five times. As explained in chapter 3.1, when using a within-subjects experiment strategy it is required to expose the respondents to a pre-intervention measurement in order to establish a baseline for the dependent variable (Saunders et al., 2016). This baseline is the respondents' preference when all attributes and the price of both EVs are equal. In the following three examples, the alignable attributes, the non-alignable attribute and the price are manipulated separately in order to test H1-H3, H4a and H4b. Thus, it can be argued that the manipulated independent variable causes the change in the dependent variable, as all other factors remain constant. In the last example, all three independent variables are manipulated in order to test H4c. The value of the manipulated independent variables are fictional but adapted to the characteristics of existing EVs. This research design is inspired by Besharat et al.'s (2016) and Zhang and Markman's (1998) research and adapted for the purpose of this study.

3.4.2 Dependent Variable

As mentioned in the previous chapter, the dependent variable in this research is the consumers' *preference* for the EV of the established car company or the EV of the startup company. After being exposed to the independent variable(s) by reading through the descriptions of the established company's car and the startup's car, the respondents were asked which car they prefer. At first they were asked to decide for one car, afterwards they were asked to state the intensity of their decision on a 6-point scale. This question was asked to find out more about the respondents' tendencies towards the established brand and the startup when the independent variables are manipulated. Even though the respondents might not choose the other EV after the manipulation, the intensity of their decision might shift towards the other EV and can be measured by the 6-point scale.

3.4.3 Control Variables

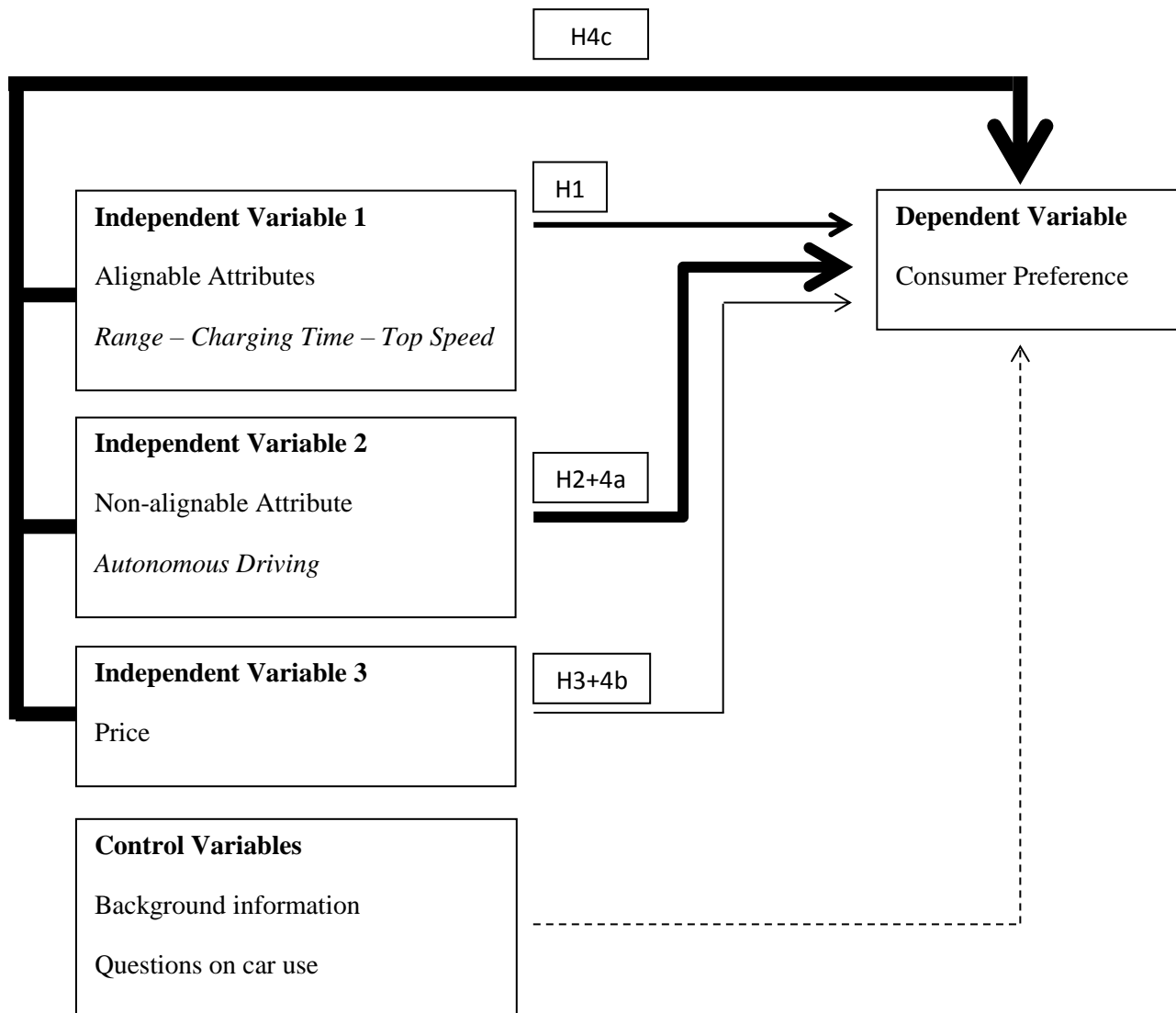
Apart from the independent variables and the dependent variable, the first and the second part of the questionnaire also contain a number of control variables to provide for a better understanding of the sample's characteristics.

The first part of the questionnaire requires the respondents to provide demographic information like their *gender*, *age*, *education*, *occupation*, *income* and *place of living*. Furthermore, their *environmental concern* is measured on a 5-point Likert scale, consisting of five statements for which the respondents are asked to state their degree of agreement. The scale was adopted from Pagiaslis and Krontalis' (2014) study in which it was used to measure the environmental concern of 1695 consumers. As the Cronbach Alpha for this scale was 0.93

(Pagiaslis & Krontalis, 2014), it was considered to be appropriate to measure the environmental concern of the participants of this research.

Several questions were asked in the second part of the questionnaire in order to get an impression of the respondents' relationship towards cars and EVs. To identify the general familiarity regarding cars, the respondents were asked if they possess a *driving licence*, *own a car* and if they have a *general interest in cars*. In order to understand the familiarity and general perception regarding EVs, the respondents were asked to state their *level of information about EVs* and their *general purchase consideration*. The respondents were asked further to which degree they have a *preference for a specific car brand*. This question is relevant for the study due to the characteristics of a specialty product. The last question concerns the respondents' evaluation of the non-alignable EV attribute *autonomous driving*. This question is highly relevant as according to literature the pioneer advantage can only be overcome if the non-alignable attribute is perceived as valuable by consumers (Besharat et al., 2016; Cunha & Laran, 2009).

The variables are summarized in relation to the hypotheses in figure 2.



Explanation:

—————> means expected positive influence

-----> means potential influence of control variables

The thickness of the lines represents the expected strength of influence, as stated in H4a, H4b and H4c. The thicker the line the stronger is the expected influence on the dependent variable.

Figure 2: Summary of Variables in Relation to Hypotheses

3.5 Data Analysis

Quantitative data can be analysed with the help of statistical methods (Saunders et al., 2016). Therefore, *descriptive and inferential statistics* were used to analyse the data. The Statistical Package for the Social Sciences (SPSS) of the company IBM was used as analysis tool for the collected data.

3.5.1 Descriptive Statistics

Sirakaya-Turk, Uysal, Hammitt and Vaske (2011, p. 190) state, that “descriptive statistics are mostly used to describe the characteristics of the population of interest”. Therefore, the sample was described with the help of *measures of central tendency* (mean) as well as *measures of central variability* (standard deviation). The measures of central tendency aimed to identify typical values of the collected data and the measures of central variability examined the data distribution around these values (Sirakaya-Turk et al., 2011). Hence, the descriptive statistics supported a better understanding of the research’s sample.

3.5.2 Inferential Statistics

Inferential statistics enable to draw conclusions from a sample about the entire research population (Sirakaya-Turk et al., 2011). For this reason the sample’s means of preference for the different EV attributes were compared to test the hypotheses with the help of the *analysis of variance* (ANOVA) (Sirakaya-Turk et al., 2011). To identify and test relationships between preferences and the respondents’ characteristics, *multiple linear regression analysis* was performed (Sirakaya-Turk et al., 2011). Thus, inferential statistics were used to test the study’s hypotheses and predict consumers’ preferences based upon their characteristics.

3.6 Data Quality

3.6.1 Expected Data Quality Limitations

Although this empirical study has been planned and executed with high consideration for the quality of the data that was collected, it is important to be aware of the limitations. These should be considered when interpreting the research’s results.

As explained in chapter 3.3, non-probability sampling was used as no sampling frame for the German Gen Y is available. Therefore, the chance for each member of the population being included in the sample was not equal which is why it is likely that the sample is not completely representative for the population (Saunders et al., 2016). Also the sampling techniques convenience sampling and snowball sampling implicate some limitations. Due to obtaining data from the easiest available respondents in convenience sampling, the sample is

unlikely to be representative as many members of the sample were never reached by the survey and the sample is biased towards respondents who felt like answering the questions. Furthermore, the sampling process could not be controlled by the researchers (Saunders et al., 2016). A limitation of snowball sampling is that a more homogeneous sample might be generated because respondents might send the survey to people that are similar to them (Saunders et al., 2016). However, these possible limitations and the possible bias were accepted by the researchers in order to reach a high number of participants in an economic and time-saving manner as a higher number of respondents also increases the representativeness of the sample (Saunders et al., 2016).

The data collection process as well brought up possible limitations because the questionnaire was sent out via Email, social media and professional networks, which excluded all members of the research population who do not use the internet, social media or professional networks.

3.6.2 Reliability and Validity

As reliability and validity are essential for the high quality of a research project (Saunders et al., 2016), the concern of this chapter will be to explain how validity and reliability were ensured in this research.

Reliability refers to the replicability and consistency of the research design (Saunders et al., 2016). *External reliability* (Saunders et al., 2016) was addressed by ensuring that other researchers would be able to repeat the study, although due to non-probability sampling the characteristics of the sample would be likely to be different. By making the research design and every step that was undertaken in this research transparent and explaining it in detail, *external reliability* is established to a certain extent. Saunders et al. (2016) state further that *internal reliability* might be improved by integrating more than one researcher into the research project. This is the case for this study as it was conducted by two researchers. The data was also analysed by both researchers and consistent results were obtained. Besides, by choosing a self-completed questionnaire, *participant error* and *participant bias* (Saunders et al., 2016) were reduced because respondents were able to choose to complete the questionnaire when they had sufficient time and when they felt safe because their data anonymity was not endangered. To further reduce respondents' anonymity concerns and therefore decrease *participant bias* (Saunders et al., 2016), they were assured that their data is treated anonymously and only used for the purpose of this study. Furthermore, Sirakaya-Turk et al. (2011) note that reliability can be assessed by running an item analysis, which was done

by calculating the Cronbach's Alpha test for the question measuring the respondents' environmental concern.

According to Saunders et al. (2016, p. 202), “*validity* refers to the appropriateness of the measures used, accuracy of the analysis of the results and generalisability of the findings”. The authors state that “[i]nternal validity is established when [the] research accurately demonstrates a causal relationship between two variables” (Saunders et al., 2016, p. 203). This was ensured with the help of inferential statistics. Due to the experimental setting in which only one independent variable is changed while everything else remains equal, it was ensured that no other product attributes or factors like design or colour influence the dependent variable. To ensure *construct validity* for the set of questions about environmental concern, the questions were adopted from a study that has previously used this set of questions and the set was considered to be valid to measure environmental concern. To increase the questionnaire's *face validity*, which refers to that the questionnaire can be understood and makes sense to the respondents (Saunders et al., 2016), the questionnaire was handed out in German and in a simple language to provide for a clear understanding. Furthermore, the research design was inspired by previous studies (Besharat et al., 2016; Zhang & Markman, 1998), which increases the *content validity* (Saunders et al., 2016). *External validity* refers to the extent to which the research findings may be generalized to the population (Saunders et al., 2016). Due to the use of non-probability sampling, it is not possible to statistically generalize the findings. However, the use of inferential statistics allows to argue for a wider applicability of the findings to a certain extent.

In order to avoid bias towards a certain group of the population, two sampling techniques, namely convenience sampling and snowball sampling, were used. In addition, several channels were used to spread the questionnaire and reach out to the respondents when collecting the data, as explained in chapter 3.3.3.

Another feature that was applied to enhance the study's *reliability* and *validity* is the execution of a pilot study. It was conducted with 13 members of the German Gen Y as a pilot study should be based on respondents who are similar to the population (Saunders et al., 2016). The pilot test helped to ensure that the respondents understand all questions and no doubts or confusions occur (Saunders et al., 2016). A first assessment of the questions' validity and reliability was also possible (Saunders et al., 2016). Before conducting the pilot test, Saunders et al. (2016) recommend to discuss the questionnaire with an expert, which was done by consulting the supervisor concerning the questions' quality and suitability.

3.7 Research Ethics

When working with participants in research, the importance of considering *research ethics* in the research project gains significance because the researcher needs to ensure the respondents' security (Saunders et al., 2016). As presented, the data for this research was collected through an internet questionnaire. In regards to research ethics, data was made anonymous, so answers could not be traced back to a single respondent. The respondents were further informed that the data will not be used for any other purposes than this study and will not be handed to a third party. The confidential data were stored on a data medium, which only the researchers of this study have access to.

Another process to address the study's research ethics was the use of the pilot test prior to the data collection. Members of the research population proofread the questionnaire to avoid the use of questions which might be harmful to respondents. Because of the voluntary participation in the questionnaire, respondents were able to stop answering questions at any time and there was no pressure on them to complete the questionnaire. Due to the deductive approach of this explanatory study, the research is based on reviewed literature. Hence, all sources are stated in APA referencing style to avoid plagiarism.

4. Results

During a time period of nine days the data was collected with help of the survey tool ‘umfrageonline.com’ and a total number of 451 respondents took part in the survey. However, few respondents did not answer the questionnaire until the end, hence their answers were withdrawn from the sample. Their characteristics did not differ remarkably from respondents who completed the survey. Out of 415 completed questionnaires, 7 respondents were not registered in Germany, so their data was not included in the data analysis. In total, 408 valid questionnaires were obtained and used for the analysis. Even though the sample is unlikely to be representative for the population due to non-probability sampling (Saunders et al., 2016), a sample size larger than 384 respondents allows to carefully generalize the results to the German Gen Y at a 95% confidence level for a 5% margin of error (Saunders et al., 2016). After analysing the data with SPSS, the following results were obtained.

4.1 Description of Results

4.1.1 Background Information about the Sample

Every age of the German Gen Y’s age range 17 to 38 is represented in the sample. The *average age* (mean = \bar{x}) of the respondents is 26.26 with a standard deviation (s) of 5.203 years.

n = 408	Min.	Max.	\bar{x}	s
Age	17	38	26.26	5.203

Table 1: Sample Age

The gender distribution of the sample is close to being equal with 49.5% *female* and 50.2% *male* respondents. 0.2% selected the option *other*.

Concerning the completed educational level, all given options are represented in the sample. Most respondents obtained a *Bachelor Degree* (29.2%), followed by *Abitur*² (26.7%) and a *Master Degree or Diplom*³ (23.8%). 11.8% completed an *apprenticeship* after school and 2.0% did a *Ph.D.* The other respondents finished school with *Mittlere Reife*⁴ (5.6%) and *Hauptschulabschluss*⁵ (0.7%) or *did not complete school* (0.2%). As more than half of the sample completed a university degree and less than 1% did not complete school or completed the lowest secondary school education, the sample appears to be considerably educated.

² Highest secondary education level in Germany, comparable to A-levels

³ University degree on the level of a Master Degree

⁴ Middle secondary education level in Germany

⁵ Lowest secondary education level in Germany

In terms of occupation, most respondents are *working* (60.0%) or *university students* (31.4%). As the youngest members of Gen Y are only 17 years old, 3.9% of the respondents are still *students at school*. Only a small part of the sample is *unemployed* (2.0%).

When surveying the pre-tax income of the respondents, half of the sample earns less than 2001€ per month while the category <1000€ was selected most frequently (20.3%), followed by respondents receiving *no salary* (17.6%). For the other half of the sample the categories 2001€ - 3000€ (18.4%) and 3001€ - 4000€ (17.9%) were selected most frequently.

Most respondents live in *urban areas* (50.7%), while the other half is distributed quite evenly between *suburban* (25.5%) and *rural areas* (23.8%).

n = 408		Frequency	Percent (%)
Gender			
	Female	202	49.5
	Male	205	50.2
	Other	1	.2
Education			
	School not completed	1	.2
	Hauptschulabschluss	3	.7
	Mittlere Reife	23	5.6
	Abitur	109	26.7
	Apprenticeship	48	11.8
	Bachelor	119	29.2
	Master / Diplom	97	23.8
	Ph.D.	8	2.0
Occupation			
	Student	16	3.9
	University Student	139	34.1
	Working	245	60.0
	Unemployed	8	2.0
Income			
	No salary	72	17.6
	< 1000€	83	20.3
	1000€ - 2000€	49	12.0
	2001€ - 3000€	75	18.4
	3001€ - 4000€	73	17.9
	4001€ - 6000€	42	10.3
	6001€ - 8000€	10	2.5
	> 8000€	4	1.0
Living Area			
	Rural	97	23.8
	Suburban	104	25.5
	Urban	207	50.7

Table 2: Sample Characteristics

The sample's *environmental concern* was measured on a 5-point Likert scale. The respondents were asked to state their accordance with five statements while 1 represented *does not apply to me at all* and 5 represented *totally applies to me*. As the mean is higher than 3.0 ($\bar{x}=3.356$), the respondents seem to be rather concerned about the environment which is in accordance with the generally high environmental concern of the Gen Y as explained in chapter 3.2. The Cronbach's Alpha for the concept of *environmental concern* is 0.824. Sirakaya-Turk et al. (2011) state that an item scale is reliable to measure a concept when achieving a Cronbach's Alpha of 0.7 and higher. Thus, the reliability of the concept *environmental concern* in this research is given.

n = 408	Min.	Max.	\bar{x}	s	Cronbach's Alpha
Environmental Concern	1	5	3.356	.815	.824
EC1 (concern)	1	5	3.69	1.010	.768
EC2 (pollution)	1	5	3.89	1.093	.766
EC3 (water + air)	1	5	3.11	1.072	.782
EC4 (water consumption)	1	5	2.90	1.124	.844
EC5 (purchase)	1	5	3.19	1.019	.779

Table 3: Sample's Environmental Concern

4.1.2 Car Use of the Sample

In this chapter the results concerning the respondents' car use will be presented. Almost all respondents have a *valid driving licence* (97.3%) and 64.2% *possess their own car*, which shows that the sample is familiar with cars and many use cars on a regular basis.

n = 408	Frequency	Percent (%)
Driving Licence		
Yes	397	97.3
No	11	2.7
Car Ownership		
Yes	262	64.2
No	146	35.8

Table 4: Sample's Car Use I

The following questions concerning the sample's relationship towards cars and EVs were measured on a 5-point Likert scale in which 1 represented *totally disagree* and 5 represented *totally agree*. The respondents show a rather high *interest in cars* ($\bar{x}=3.1$; $s=1.306$) and the *brand preference for a certain car brand* achieved a similar rating ($\bar{x}=3.03$; $s=1.401$). Even though the sample is *not very well informed about EVs* ($\bar{x}=2.82$; $s=1.286$), a comparably larger part of the sample would generally *consider purchasing an EV* ($\bar{x}=3.36$; $s=1.283$). The

technology of autonomous driving seems to be rather perceived as exciting by the sample ($\bar{x}=3.18$). However as the highest standard deviation ($s=1.412$) was obtained for this question, the opinions about this seem to differ.

n = 408	Min.	Max.	\bar{x}	s
Car Interest	1	5	3.10	1.306
Brand Preference	1	5	3.03	1.401
EV Information	1	5	2.82	1.286
EV Purchase	1	5	3.36	1.283
Autonomous Driving	1	5	3.18	1.412

Table 5: Sample's Car Use II

In general, the relatively high standard deviations show that the sample's relationship towards cars and EVs is quite ambiguous.

4.1.3 Sample Preference towards the Established Company's and Startup's EV

The third part of the questionnaire contains the comparison questions between the established company's EV and the startup's EV. At first, the respondents were asked to make a clear decision which car they prefer, while the intensity of their decision was measured on a 6-point scale afterwards. 1 represented *totally the established brand's car* while 6 represented *totally the startup's car*.

Car Comparison 1: Car attributes equal

When the car attributes and the price for both EVs were equal and the only difference between the two EVs was the different brands, the majority clearly chose the established brand's car (70.3%) over the startup's car (29.7%). The average intensity score of the respondents' decision was also towards the established brand ($\bar{x}=3.02$; $s=1.157$).

Car Comparison 2: Superior alignable attributes

When the startup's car was equipped with superior values for the alignable attributes *range*, *charging time* and *top speed*, the majority clearly preferred the startup's car (81.1%) over the established brand's car (18.9%). The intensity also shifted clearly towards the startup's car ($\bar{x}=4.39$; $s=1.237$).

Car Comparison 3: Non-alignable attribute

When the startup's car was equipped with the non-alignable attribute *autonomous driving*, the close majority chose the established brand's car (52.7%) over the startup's car (47.3%). The

intensity of the decision was also slightly in the direction of the established brand ($\bar{x}=3.41$; $s=1.429$).

Car Comparison 4: Price

When the startup offered the exact same car as the established brand for a *lower price*, the majority clearly chose the startup's car (78.7%) over the established brand's car (21.3%). This decision was also reflected in the intensity towards the startup's car ($\bar{x}=4.33$; $s=1.278$).

Car Comparison 5: Superior alignable attributes, non-alignable attribute, price

When the startup's car was equipped with superior values for the alignable attributes *range*, *charging time* and *top speed*, the non-alignable attribute *autonomous driving* and a *lower price*, the highest number of respondents chose the startup's car (88.7%) over the established brand's car (11.3%). The intensity of the decision was also the strongest towards the startup's car ($\bar{x}=4.73$; $s=1.374$).

The results are summarized in the following two tables.

n = 408	Frequency	Percent (%)
Car Preference 1		
Established Brand's Car	287	70.3
Startup's Car	121	29.7
Car Preference 2		
Established Brand's Car	77	18.9
Startup's Car	331	81.1
Car Preference 3		
Established Brand's Car	215	52.7
Startup's Car	193	47.3
Car Preference 4		
Established Brand's Car	87	21.3
Startup's Car	321	78.7
Car Preference 5		
Established Brand's Car	46	11.3
Startup's Car	362	88.7

Table 6: Sample's Car Preference

n = 408	Min.	Max.	\bar{x}	s
Intensity 1 (equal)	1	6	3.02	1.157
Intensity 2 (alignable attributes)	1	6	4.39	1.237
Intensity 3 (non-alignable attributes)	1	6	3.41	1.429
Intensity 4 (price)	1	6	4.33	1.278
Intensity 5 (all)	1	6	4.73	1.374

Table 7: Sample's Decision Intensity

4.2 Hypotheses Testing

After describing the survey's results, this chapter is devoted to testing the hypotheses with the help of ANOVA. As presented in the previous chapter, for each car comparison question an average score (=mean) was calculated for the decision intensity. When the mean is lower than 3.5, the average respondents' decision intensity is closer to the established company's EV. When the mean is higher than 3.5, the average respondents' decision intensity is closer to the startup's EV. As described in the previous chapter, the average scores for the different car comparison questions differ from each other. Since these differences are caused by the independent variables *alignable attributes*, *non-alignable attribute* and *price*, the influence of these variables can be analysed when comparing the average scores.

However, in order to find out if these differences occurred only by chance or if the hypotheses can be confirmed because the differences are statistically significant, ANOVA was performed. $p=0.05$ was chosen as a significance level, meaning that the probability (p) of confirming a hypothesis although it is not true is 5% or lower. Afterwards, the means of the decision intensity in the car comparison questions were compared to test the hypotheses. The mean differences between the first car comparison question (where all attributes are equal) and the following car comparison questions (where the attributes vary) are the most important ones in order to confirm or reject the hypotheses, as they will reveal if the change in attributes caused a shift in the preference from the established brand's EV to the startup's EV. The results of the ANOVA are also summarized in table 8 and 9. At first, H1 and H3 will be tested because all respondents' answers were used for these tests. Subsequently, H2 and H4a-c will be tested, which include only the answers of respondents who perceived the non-alignable attribute *autonomous driving* as valuable.

Hypothesis 1: Comparison between equal values and superior alignable attributes

H1: Consumers are more likely to prefer a startup's EV over an established company's EV when the startup's EV possesses superior alignable attributes.

Table 9 shows that there is a statistically significant difference between the mean of the equal EVs and the mean when the startup's EV was equipped with a superior alignable attribute ($p=0.000$). The mean for the difference in the alignable attributes shifted 1.373 units towards the startup's EV. This means that consumers are more likely to prefer a startup's EV over an established company's EV when the startup's EV possesses superior alignable attributes. *Therefore, H1 is confirmed.*

Hypothesis 3: Comparison between equal values and price

H3: Consumers are more likely to prefer a startup's EV over an established company's EV when the startup's EV offers a lower price for a comparable product.

The difference between the mean of the equal EVs and the mean when the startup's EV is offered for a lower price is also statistically significant ($p=0.000$). The mean for the price difference shifted 1.314 units towards the startup's EV. Therefore, consumers are more likely to prefer a startup's EV over an established company's EV when the startup's EV offers a lower price. *As a result, H3 is confirmed.*

The hypotheses H2 and H4a-c predict the outcome for a *valuable* non-alignable attribute. This is due to Besharat et al.'s (2016) and Cunha and Laran's (2009) findings, implying that the non-alignable attribute must be perceived as valuable by consumers in order to overcome pioneer advantage. As already presented in chapter 4.1.2, the mean for the question about the value of the non-alignable attribute *autonomous driving* is 3.18, meaning that *autonomous driving* was very slightly rated as exciting. As this result was quite narrow, a closer look was taken on the influence of the value attached to *autonomous driving* by the respondents. Thus, ANOVA was performed in order to find out if there were any statistically significant differences between the respondents' evaluation of the non-alignable attribute *autonomous driving* and their decision intensity in the car comparison question with the non-alignable attribute. It was found that respondents who chose 4 and 5 on the Likert scale measuring their excitement for *autonomous driving* have a statistically significant higher score for the decision intensity in car comparison question 3 than those who chose 1 and 2 or 3 (the ANOVA table can be found in Appendix III).

This shows that the respondents' answer to the question about *autonomous driving* has an influence on their decision intensity in the car comparison question in which the startup's EV is equipped with the non-alignable attribute. Therefore, for this car comparison question, only the answers given by respondents who perceived *autonomous driving* as valuable (those who chose 4 or 5 on the 5-point Likert scale), were included in the analysis. If the answers of the respondents who do not perceive *autonomous driving* as valuable were included for car comparison question 3, it would not be possible to test hypotheses 2 and 4a-c. For the other car comparison questions, the answers of all respondents were included.

Hypothesis 2: Comparison between equal values and a valuable non-alignable attribute

H2: Consumers are more likely to prefer a startup's EV over an established company's EV when the startup's EV possesses a valuable non-alignable attribute.

The difference between the mean of the equal EVs and the mean for which the startup's EV was equipped with a valuable non-alignable attribute is also statistically significant ($p=0.000$). The mean for the difference in the non-alignable attribute shifted 0.825 units towards the startup's EV when only the answers of the respondents who perceive *autonomous driving* as valuable are included. This means that consumers are more likely to prefer a startup's EV over an established company's EV when the startup's EV possesses a valuable non-alignable attribute. *Thus, H2 is confirmed.*

Hypotheses 4a-c: Strength of effect of superior alignable attributes, valuable non-alignable attribute and price

In order to test hypotheses H4a-c, the strength of the effect that the independent variables cause in the consumers' preference is compared.

H4a: The valuable non-alignable attribute has a stronger effect on the consumers' preference towards the startup's EV than superior alignable attributes and a lower price for a comparable product.

As H4a predicts that a valuable non-alignable attribute has a stronger effect on the consumers' preference towards the startup's EV than superior alignable attributes and a lower price, the decision intensity means of the relevant comparison questions are compared. There is a statistically significant difference between the mean of the comparison questions with a valuable non-alignable attribute and the alignable attributes ($p=0.000$). However, the direction is not as predicted because the alignable attributes cause a preference shift by 0.547 units towards the startup's EV in comparison to the valuable non-alignable attribute. A similar result occurs when comparing the means of the valuable non-alignable attribute and the price. When the EV was offered for a lower price, the consumers' preference shifted 0.488 units towards the startup's car in comparison with the valuable non-alignable attribute ($p=0.000$). *As the superior alignable attributes and the lower price cause a stronger effect in the consumers' preference shift towards the startup's EV than the valuable non-alignable attribute, H4a is rejected.*

H4b: The lower price for a comparable product has a weaker effect on the consumers' preference towards the startup's EV than superior alignable attributes and a valuable non-alignable attribute.

To test this hypothesis, the means of the comparison questions in which the alignable attributes, the non-alignable attribute and the price were manipulated were compared. When comparing the means of the price and the alignable attributes, the preference shift towards the pioneer is 0.059 stronger for the superior alignable attributes. However this result is not statistically significant ($p=0.965$). As already discussed in the previous section, the positive effect of the price is stronger than the effect of the valuable non-alignable attribute. *Since the difference between the alignable attributes and the price is not statistically significant and the price has a stronger effect than the valuable non-alignable attribute, H4b is rejected.*

H4c: The combination of superior alignable attributes, a valuable non-alignable attribute and a lower price has the strongest effect on the consumers' preference towards the startup's EV.

Thus, the means of all car comparison questions were compared with each other in order to test this hypothesis, excluding car comparison question 1 as all attributes were equal for both EVs. When the startup's EV is equipped with superior alignable attributes, a valuable non-alignable attribute and a lower price, the mean is 0.338 units higher than for the alignable attributes ($p=0.02$), 0.886 units higher than for the valuable non-alignable attribute ($p=0.000$) and 0.397 units than for the price ($p=0.000$). *Thus, the combination of superior alignable attributes, a valuable non-alignable attribute and a lower price has the strongest effect on the consumers' preference towards the startup's EV and H4c is confirmed.*

On the next page, the ANOVA results will be summarized in table 8 and 9.

Decision Intensity

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	707.248	4	176.812	107.905	.000
Within Groups	2967.478	1811	1.639		
Total	3674.726	1815			

Table 8: ANOVA - Decision Intensity

As $p=0.000 < 0.05$, it can be concluded that there is at least one statistically significant difference between the decision intensity means of the different car comparison questions. In order to determine where the statistically significant difference lies and how strong it is, the Tukey post-hoc test was run. The results are summarized in table 9.

Multiple Comparisons

Dependent Variable: Decision Intensity

Tukey HSD

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Equal Values	Alignable Attributes	-1.373*	.090	.000	-1.62	-1.13
	Non-alignable Attribute	-.825*	.114	.000	-1.14	-.51
	Price	-1.314*	.090	.000	-1.56	-1.07
	All Attributes	-1.711*	.090	.000	-1.96	-1.47
Alignable Attributes	Equal Values	1.373*	.090	.000	1.13	1.62
	Non-alignable Attribute	.547*	.114	.000	.24	.86
	Price	.059	.090	.965	-.19	.30
	All Attributes	-.338*	.090	.002	-.58	-.09
Non-alignable Attribute	Equal Values	.825*	.114	.000	.51	1.14
	Alignable Attributes	-.547*	.114	.000	-.86	-.24
	Price	-.488*	.114	.000	-.80	-.18
	All Attributes	-.886*	.114	.000	-1.20	-.58
Price	Equal Values	1.314*	.090	.000	1.07	1.56
	Alignable Attributes	-.059	.090	.965	-.30	.19
	Non-alignable Attribute	.488*	.114	.000	.18	.80
	All Attributes	-.397*	.090	.000	-.64	-.15
All Attributes	Equal Values	1.711*	.090	.000	1.47	1.96
	Alignable Attributes	.338*	.090	.002	.09	.58
	Non-alignable Attribute	.886*	.114	.000	.58	1.20
	Price	.397*	.090	.000	.15	.64

*. The mean difference is significant at the 0.05 level.

Table 9: Post-Hoc - Decision Intensity

4.3 Influence of Control Variables

Multiple linear regression analysis was used to investigate if there are any relationships between the control variables and the respondents' EV preferences. With the help of the regression analysis it was possible to examine, if the respondents' background information or their relationship towards cars influenced their preference for the established company's EV or the startup's EV. The relationship of the control variables with both the car preference and the decision intensity was investigated. Like for the ANOVA analysis, a significance level of $p=0.05$ was chosen. The most remarkable relationships are presented, structured according to the control variables, and a summary of the statistically significant results is shown at the end of the chapter. The complete regression analysis tables can be found in Appendix IV.

Gender

A relationship was found between the gender and the respondents' EV preference and decision intensity for car comparison question 3 (startup's EV equipped with non-alignable attribute), and the decision intensity for car comparison question 2 (startup's EV equipped with superior alignable attributes) and 5 (startup's EV offers superior alignable attributes, a non-alignable attribute and a lower price). The regression analysis shows that male respondents were more likely to choose the startup's EV than female respondents for the aforementioned car comparison questions.

Income

The respondents' income influenced their EV preference when the startup's EV was offered for a lower price (car comparison question 4). The lower the respondents' income was, the more likely they were to choose the lower-priced startup's EV.

Living Area

The respondents' living area influenced their car preference and decision intensity for car comparison questions 3 (startup's EV equipped with non-alignable attribute), 4 (startup offers a lower price) and 5 (startup offers superior alignable attributes, a non-alignable attribute and a lower price). Respondents who live in urban or suburban areas are more likely to prefer the startup's EV than respondents who live in rural areas for these questions.

Car Interest

The respondents' general interest in cars influenced their decision intensity when both EVs had equal attributes (car comparison question 1). The higher the respondents' car interest, the more likely they are to prefer the established company's EV.

Brand Preference

Another influence on the respondents' EV preference was their general preference for a specific car brand. The brand preference influenced both the preference for an EV and the decision intensity for car comparison questions 3 (startup's EV equipped with non-alignable attribute), 4 (startup offers a lower price) and 5 (startup's EV offers superior alignable attributes, a non-alignable attribute and a lower price). If the respondents' score for the brand preference increases, the decision intensity score decreases, meaning it shifts towards the established company's EV. Thus, the results show that respondents who have a higher preference for a specific car brand are more likely to prefer the established company's EV.

Level of Information about EVs

The respondents' level of information about EVs influenced their car preference and decision intensity in car comparison question 3 (startup's EV equipped with non-alignable attribute). The regression analysis shows an increasing decision intensity score if the respondents' score for the question about their EV information level increases. This implies that the better respondents are informed about EVs, the more likely they are to prefer the startup's EV.

General Consideration of an EV Purchase

The respondents' general consideration of purchasing an EV influenced their car preference and decision intensity in car comparison question 1 (all values equal) and 2 (startup's EV equipped with superior alignable attributes), and only the decision intensity in car comparison question 3 (startup's EV equipped with non-alignable attribute) and 5 (startup offers superior alignable attributes, a non-alignable attribute and a lower price). When the respondents' score for their general consideration of an EV purchase increases, the score for the decision intensity increases as well. Thus, it can be concluded that the more the respondents generally consider purchasing an EV, the more likely they are to prefer the startup's EV.

Autonomous Driving

The respondents' excitement for autonomous driving influenced both the car preference and the decision intensity for the two car comparison questions in which autonomous driving was included (3 and 5). When the respondents' score of their excitement for autonomous driving increased, their decision intensity increased as well. This means that the more excited respondents are for autonomous driving, the more likely they are to prefer the startup's EV.

On the next page the statistically significant results of the linear regression analysis are summarized.

Question	Category*	B	Sig.
Gender			
Decision Intensity 2	Male	.446	.000
Car Preference 3	Male	.209	.000
Decision Intensity 3	Male	.451	.001
Decision Intensity 5	Male	.368	.007
Income			
Car Preference 4		-.037	.019
Living Area			
Car Preference 3	Suburban	.158	.025
Car Preference 3	Urban	.142	.021
Decision Intensity 3	Suburban	.400	.046
Decision Intensity 3	Urban	.514	.003
Car Preference 4	Suburban	.147	.011
Car Preference 4	Urban	.156	.002
Decision Intensity 4	Suburban	.401	.026
Decision Intensity 4	Urban	.369	.019
Car Preference 5	Suburban	.169	.000
Car Preference 5	Urban	.140	.000
Decision Intensity 5	Suburban	.802	.000
Decision Intensity 5	Urban	.585	.000
Car Interest			
Decision Intensity 1		-.132	.018
Brand Preference			
Car Preference 3		-.046	.019
Decision Intensity 3		-.113	.041
Car Preference 4		-.039	.019
Decision Intensity 4		-.162	.002
Car Preference 5		-.034	.008
Decision Intensity 5		-.157	.003
Level of Information about EV			
Car Preference 3		.073	.001
Decision Intensity 3		.165	.009
General Consideration of EV Purchase			
Car Preference 1		.059	.003
Decision Intensity 1		.195	.000
Car Preference 2		.051	.002
Decision Intensity 2		.178	.001
Decision Intensity 3		.165	.004
Decision Intensity 5		.175	.002
Autonomous Driving			
Car Preference 3		.086	.000
Decision Intensity 3		.223	.000
Car Preference 5		.046	.000
Decision Intensity 5		.221	.000

*. Only stated for categorical variables

Table 10: Statistically Significant Regression Analysis Results

For the variable *age*, no statistically significant relationships were found, even though the sample's age range was from 17 to 38 years and the generational concept is criticized for comprising people of a relatively high age range together into one group (Hopkins, 2016), as explained in chapter 3.2. This result however shows that the age difference between the respondents did not influence their EV preference significantly. For the variables *car ownership* and *environmental concern*, no statistically significant relationships were found either, so these variables had no influence on the EV preference.

For the variables *occupation* and *education*, some statistically significant relationships were found and can be seen in Appendix IV. However, these relationships were neither constant nor remarkable and are therefore not described more closely. For the variable *driving licence*, there was also a statistically significant relationship. However, since only 11 respondents do not own a driving licence, these results are unlikely to be meaningful and are not described further.

5. Discussion

After presenting the results of the survey, they will be discussed in connection to the existing theories and concepts that were explained in the conceptual framework in chapter 2.

5.1 Pioneer Advantage in Relation to the Speciality Product ‘Electric Vehicle’

Derived from pioneer advantage theory, many authors argue that companies which entered a new market in an early stage possess a pioneer advantage in comparison to companies which enter a mature market in a later stage (Alpert & Kamins, 1995; Carpenter & Nakamoto, 1989; Denstadli et al., 2005; Mady, 2011; Wilkie et al., 2015). Therefore, it was expected that this pioneer advantage of established companies would also be found in this study of the specialty product EV.

The result of car comparison question 1, in which both EVs were completely equal and only the different companies influenced the respondents’ decision, clearly shows, that established companies possess a pioneer advantage in comparison to startups in the EV industry. While 70.3% of the respondents preferred the established company’s EV, only 29.7% preferred the startup’s EV. As Alpert and Kamins (1995) and Carpenter and Nakamoto (1989) state, one reason for this result might be the respondents’ higher familiarity with the established company. Since the established car producers have been on the market for a long time, they are anchored in consumers’ memories (Alpert & Kamins, 1995) and might be considered as status quo producers of cars (Carpenter & Nakamoto, 1989). Alpert and Kamins (1995) add that established companies are often seen as a status symbol and consumers also associate them with a higher degree of reliability and quality. This good reputation of established car companies for producing combustion engine cars was apparently transferred to the comparably new segment of EVs by the consumers. Thus, these reasons might have led more than two thirds of the respondents to prefer the established company’s EV. Further, it is worth mentioning, that *a high preference for a specific car brand* did not have a statistically significant influence on the consumers’ preference when both EVs were equal. This implies that even though some consumers do not prefer a specific car brand, they still chose the established company’s EV, which underlines the pioneer advantage.

Hence, this research confirms the results of previous studies by finding out that the pioneer advantage of established companies also exists for specialty products like an EV. This study further confirms other authors’ research in which they state that it is possible for follower brands to overcome the pioneer advantage (Besharat et al., 2016; Cunha & Laran, 2009; Liang et al., 2010; Zhang & Markman, 1998). With the help of the different car comparison

questions it was demonstrated that EV startups are able to overcome the established companies' advantage by means of differentiating their products with superior alignable attributes, a valuable non-alignable attribute and a lower price. What differentiates this research from the aforementioned studies is the research object. Other authors demonstrated that the pioneer advantage can be overcome for convenience products like olive oil (Besharat et al., 2016), wine (Cunha & Laran, 2009) or microwave popcorn (Zhang & Markman, 1998). EVs form part of the specialty product category though (Kotler & Keller, 2012) and are therefore characterized by a high brand preference (Poon & Joseph, 2000). Thus, this study adds on literature by demonstrating that a startup can overcome the pioneer advantage of an established company even for a specialty product like the EV, which is usually characterized by consumers' high loyalty towards their preferred brand (Poon & Joseph, 2000).

5.2 The Influence of Superior Alignable Attributes

The results of this study show that an established company's pioneer advantage can be overcome by a startup when differentiating its EV by equipping it with superior alignable attributes. The success of this enhancing strategy is in line with Besharat et al.'s (2016), Liang et al.'s (2010) and Zhang and Markman's (1998) findings. In car comparison question 2, the startup's EV offered superior values for the alignable attributes *range*, *charging time* and *top speed*. Due to this change in attributes, 81.1% of the respondents preferred the startup's EV and only 18.9% chose the established company's EV. With the help of ANOVA it was demonstrated, that the average score on the scale for the decision intensity shifted 1.373 units closer to the startup's EV for car comparison question 2 in comparison to car comparison question 1, for which both EVs were equal.

This result is also in accordance with Lieven et al.'s (2011) study about the importance of car attributes for Germans, in which they identify *range* as the most important attribute for EVs. The German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety achieves the same result by discovering that the *range* is an important factor for the EV purchase (Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit, 2017). Since the attribute which is most important to consumers had superior values for the startup's EV, consumers might have been motivated to prefer the startup's EV over the established company's EV.

A control variable that had a positive influence on the preference towards the startup's EV in this comparison question was a *higher general purchase consideration for EVs*. As pioneer advantage theory explains, the advantage of established brands is also grounded on

consumers' higher familiarity with the established brand (Alpert & Kamins, 1995; Carpenter & Nakamoto, 1989). When consumers generally consider purchasing an EV they might already be more familiar with EVs and also aware of EV startups. Therefore the consumers' familiarity gap between startup and established brand might be smaller and they are more likely to prefer the startup's EV.

To sum it up, this study confirms the findings of Besharat et al. (2016), Liang et al. (2010) and Zhang and Markman (1998) for the EV industry, demonstrating that an established company's pioneer advantage can be overcome by startups if they implement superior alignable attributes. Thus, the success of an enhancing strategy for overcoming pioneer advantage in the convenience product category is also applicable to the category of specialty products.

5.3 The Influence of a Valuable Non-alignable Attribute

Besharat et al. (2016) also state that startups can overcome an established company's advantage by applying a distinctive strategy, which means that a non-alignable attribute is implemented in the product. This study confirms the success of a distinctive strategy which is also in line with Cunha and Laran's (2009) results. Due to its novelty and innovativeness, *autonomous driving* was used as the non-alignable attribute in car comparison question 3 and the respondents were asked to evaluate the attribute. With the help of ANOVA it was demonstrated, that the respondents' decision intensity shifted 0.825 units towards the startup's EV in comparison to car comparison question 1, including only respondents who rated *autonomous driving* as valuable. Thus, Zhang and Markman's (1998) finding, that a non-alignable attribute is not able to overcome an established company's advantage, was refuted, while Besharat et al.'s (2016) and Cunha and Laran's (2009) results were confirmed. Again, the findings for convenience products apply to a product of the specialty goods category.

Further, the authors of all three papers came to the conclusion that the value, innovativeness and novelty of the non-alignable attribute are crucial in order to overcome pioneer advantage. By showing that the respondents' evaluation of *autonomous driving* influenced their EV preference, the assumption by Besharat et al. (2016), Cunha and Laran (2009) and Zhang and Markman (1998) that the non-alignable attribute should be valuable, was confirmed. The more favourably *autonomous driving* was perceived, the more respondents preferred the startup's EV. This result emphasizes the importance of the high value when a non-alignable attribute is used to differentiate a startup's product from an established company's product.

Therefore, it might be essential for startups to be sure about the consumers' evaluation of a non-alignable attribute when applying a distinctive strategy.

Furthermore, a *higher level of information about EVs* and a *higher general purchase consideration* had a positive influence on the preference towards the startup's EV in this comparison question. When learning more about EVs, consumers become more familiar with the products and are more likely to also learn about EV startups. As pioneer advantage theory explains, the advantage of established brands is also grounded on consumers' higher familiarity with the established brand (Alpert & Kamins, 1995; Carpenter & Nakamoto, 1989). When consumers learn more about EVs in general and therefore also about EV startups, their familiarity with startups grows and as a result, the pioneer advantage of the established company might decrease. This is a meaningful implication for startups as it shows that the more people know about EVs and actually consider purchasing one, the more likely they are to prefer the startup's EV instead of preferring an EV of a well-known brand.

5.4 The Influence of a Lower Price

In car comparison question 4, the startup offered a *lower price* for its EV than the established company even though the attributes of both cars were equal, which is named me-too strategy by Besharat et al. (2016). As a result, 78.7% of the respondents preferred the startup's EV and only 21.3% the established company's EV. The respondents' decision intensity moved 1.314 units towards the startup's EV in comparison with car comparison question 1. Thus, the success of a me-too strategy in the EV industry was demonstrated. The result is also in accordance with existing literature, stating that a startup is able to overcome the pioneer advantage of an established company by offering the same product for a lower price (Bohlmann et al., 2002; Lowe & Alpert, 2010; Sinapuelas & Robinson, 2012; Zhang & Markman, 1998). This also matches Lieven et al.'s (2011) study, in which the *price* was identified as the most important factor for Germans when purchasing EVs. The survey results of the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit, 2017) confirm the importance of the EV *price* for Germans.

One factor that was found to play a role for this comparison question was the respondents' *preference for a specific car brand*. The higher their preference was for a specific brand, the less likely they were to prefer the startup's EV instead of the established company's EV, even though the price was lower. This might be explained by one of the characteristics of a specialty product: the high loyalty towards one preferred brand (Kotler & Keller, 2012).

When consumers only strive to possess a certain brand and also perceive that brand as a status symbol, they might be less likely to be open to buying an unknown brand even though that brand offers a better product or price.

5.5 The Strength of the Influences

After all aforementioned results for overcoming the pioneer advantage of established companies in the EV market have been in accordance with previous studies on convenience products, the results for specialty products differ in regard of the influence strength of the alignable and non-alignable attribute as well as the price.

In this study, the alignable attributes had the strongest positive effect on the preference shift towards the startup's product, followed by the price, even though the difference between the effects of these two attributes was not statistically significant. The valuable non-alignable attribute had the weakest positive effect. This result is in contrast with Besharat et al.'s (2016) finding that the distinctive strategy with a valuable non-alignable attribute is the most successful one. In this study of the EV market however, the valuable non-alignable attribute had the weakest effect on the preference shift, as the decision intensity towards the startup's EV was 0.547 points lower than for the alignable attributes and 0.488 points lower than for the price.

One reason therefore might be that the respondents perceived the alignable attributes like the *driving range* as more important than *autonomous driving*, which would be supported by Lieven et al.'s (2011) study on the importance of car attributes. Apart from the *range* being very important for the EV purchase, Lieven et al. (2011) further identified the *price* as being the focal factor for consumers. This might explain why the *price* also has a stronger positive effect on the consumers' preference shift towards the startup than the valuable non-alignable attribute, even though Carpenter and Nakamoto (1989) expected the price to have the weakest influence. Furthermore, an EV is an expensive product and therefore the price difference of several thousand euros might play a more important role than for a convenience product for which the price difference might only be a few euros. Hence, for the strength of the influence, differences can be detected for the EV industry forming part of the specialty product category, in comparison to the previous studies in the convenience product category.

The positive effect on the consumers' preference towards the startup's EV was the strongest in car comparison question 5, when the startup's EV was offered for a *lower price* even though it was equipped with the unique feature *autonomous driving* and superior values for

the *range*, *charging time* and *top speed*. However, 11.3% of the respondents still chose the established company's EV even though the startup offered a remarkably superior price performance ratio. For this car comparison question again, the *general preference for a specific car brand* had a negative influence on the preference towards the startup's EV. Therefore, this result might be based on the high preference for a specific car brand of some respondents, which is in line with the characteristics of a specialty product (Poon & Joseph, 2000). On the other hand, the *general EV purchase consideration* and the *excitement for autonomous driving* had a positive influence on the preference towards the startup's EV again.

Finally, it is relevant to mention that both the gender and the living area influenced the consumers' preference towards the startup's EV in several car comparison questions as shown in chapter 4.3. However, both variables have not been addressed in previous literature on pioneer advantage, which is why a deeper investigation would be necessary in order to explain these influences.

6. Conclusion

After discussing the results of the survey, this chapter will explain how the research aim was fulfilled. The aim of the research was to investigate which product attributes lead consumers to prefer startups' products over established companies' products in the specialty product category by means of the competition between startups and established companies in the German EV market.

6.1 Fulfilment of the Research Aim

The results of the survey show that established companies have a pioneer advantage in comparison to startups in the German EV market as the majority of respondents preferred the established company's EV, both EVs being equal. Thus, the pioneer advantage which was identified in various studies on convenience and shopping products was also found for the specialty product category. However, in this study it was also demonstrated, that it is possible for EV startups to overcome this pioneer advantage when they differentiate their products from established companies' products. As specialty products are characterized by consumers' high brand preference and certain established brands are often seen as a status symbol, it was not taken for granted that the pioneer advantage in this product category could be overcome as clearly as it was demonstrated for convenience products. Anyway, the results of this study show that startups can overcome the pioneer advantage of established companies for products of the specialty goods category as well.

The findings demonstrate that German Gen Y consumers are more likely to prefer startups' EVs over established companies' EVs if the startup's EV is equipped with *superior alignable attributes*, a *valuable non-alignable attribute* or if an EV with equal values is offered for a *lower price*. Thus, the influence of the aforementioned attributes and the lower price is strong enough to lead consumers to prefer a startup's product over an established company's product in the specialty product category.

Further, it was found that superior alignable attributes, in this study the *driving range*, *charging time* and *top speed*, had the strongest positive effect on the preference towards the startup's EV, followed by the lower price. The valuable non-alignable attribute, in this study *autonomous driving*, had the weakest positive effect on the preference towards the startup's EV. The results also show the importance of the consumers' evaluation of the non-alignable attribute, as the preference towards the startup's EV depends on the value the consumers attach to it. When the startup's EV was equipped with superior alignable attributes, a valuable non-alignable attribute and a lower price, the positive effect on the consumers' preference

towards the startup was the strongest. This shows that the higher the differentiation from the established company and thus the higher the value for the consumers is, the more likely they are to prefer the startup's product.

Furthermore, a high level of information about EVs and a high general consideration of an EV purchase were found to have a positive influence on the preference towards the startup's EV. On the other hand, a high preference for a specific car brand was found to have a negative influence on the preference towards the startup's EV.

6.2 Contribution of Research

By fulfilling the research aim, this study contributes to research by both adding on pioneer advantage literature as well as offering practical implications for the EV industry. It expands existing pioneer advantage theory about convenience and shopping products to the category of specialty products which the EV market forms part of. This is demonstrated by identifying an advantage for established companies and the possibility for startups to overcome this pioneer advantage. Furthermore, it was detected that the pioneer advantage of an established brand can be transferred from a product segment it is known for, like the combustion engine cars, to a segment it is new in, like the EV segment.

Alongside theoretical contribution for research, also practical implications can be derived from this study. Different strategies of how the pioneer advantage of established brands can be overcome are presented, which might be very useful for EV startups when introducing their EVs to the market. Through this research it becomes apparent that brands with a high price performance ratio (superior alignable attributes, valuable non-alignable attribute or lower price) are more likely to be preferred by German Gen Y consumers. Apart from that it was demonstrated, that it is very important for EV startups to ensure that a non-alignable attribute is perceived as valuable by consumers, when they aim to differentiate their EV by adding a unique feature. Furthermore, startups can benefit from improving the general information level of consumers about EVs as well-informed customers are more likely to prefer the startup's EV. These implications for the EV industry may be applicable to other goods of the specialty product category as well, even though this should be treated with caution as the limitations of this study should be considered.

6.3 Limitations

Finally, it is important to be aware of the limitations of this study. As outlined in chapter 3.6.1, there are limitations due to the data quality as a non-probability sampling and the sampling techniques convenience and snowball sampling were used. Furthermore, there is no consensus in literature regarding the definition of Gen Y, as mentioned in section 3.2. Therefore, when defining the Gen Y differently, different results might be obtained, even though the age did not play a role for the results in this research. It is also important to be aware that this study only focused on the German Gen Y. Thus, when investigating a different generation in Germany or the Gen Y of a different nation, the results would not necessarily be the same.

Furthermore, the findings on the pioneer advantage of established companies in the specialty product category are only based on one example, namely the EV industry. When investigating different specialty products, the results might differ. Apart from that, only one non-alignable attribute was used for testing its effect on the consumer preference as it was intended to keep the questionnaire rather short. For a different non-alignable attribute the results might differ as well.

Besides, this study focused on investigating consumers' preferences. Therefore, the results might also differ if the actual purchase intention or behaviour was measured. Finally, this research was limited to investigating the preference of consumers without trying to develop a deeper understanding of why they preferred the established company's EV or the startup's EV. Therefore, it was only possible to make assumptions about the reasons for consumers' preferences by connecting the study's results to pioneer advantage theory and the control variables.

6.4 Suggestions for Further Research

As this study was limited to the German Gen Y, it would be relevant to see if similar findings could be obtained for different generations or the Gen Y in other countries. Thereby it could be assessed if the age and the nationality influence consumers' preferences towards established companies and startups. Furthermore, it might be interesting to understand why consumers have certain preferences and how their preferences are influenced by the attributes and the price. This could also uncover influencing factors that are unique for the EV market or the specialty product category and have not been analysed in the scope of pioneer advantage literature yet. By investigating the background of consumers' preferences, it might be possible

to understand the influence of factors like the gender or living area, which could not be explained sufficiently in this study.

In order to take a closer look on the influence of non-alignable attributes, adding other unique features to the product and investigating consumers' preferences could generate more insights in this topic. Finally, there are many industries with completely different products in which startups compete with established companies. Thus, many products still remain under-researched in relation to pioneer advantage theory and by investigating a greater variety of different products, similarities and differences between products and product categories could be analysed further. For this reason it might also be vital to investigate different specialty products in the future in order to see if the same results like in this study could be obtained.

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Appendix I

Master Thesis Survey

Survey on the consumer preference towards established companies and startups

Dear participant,

Were you born between the years 1980 and 2000 and are you registered in Germany? Then we are looking for you to participate in our study.

We are Alina Häßler and Bernd Souren. We are from Germany and are currently doing our Master Degree in Business Studies with an International Focus at Dalarna University in Sweden. In our Master Thesis we are investigating consumers' preferences towards established companies and startups in the Electric Vehicle market.

No matter if you are interested in cars or electric vehicles, we are are interested in your opinion!

The survey will take approximately 10 minutes to complete and we would be very grateful if you took your time to help us by answering the questions.

The participation in the study is voluntary and you can stop answering the questions any time. All answers will be treated anonymously and cannot be traced back to you. The collected data will only be used for the scope of this Master Thesis and will not be forwarded to third parties.

Thank you for your contribution!

Alina Häßler & Bernd Souren

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1. General questions

1.1 Please select your gender. *

☐

Female


☐

Male

☐

Other

1.2 Please select your age.

Please choose... 

1.3 Are you currently registered in Germany?

Main or secondary residence

☐ Yes

☐ No

1.4 Please select your highest completed level of education. *

☐ School not completed

☐ Hauptschule

☐ Mittlere Reife

☐ Abitur

☐ Apprenticeship

☐ Bachelor

☐ Master / Diplom

☐ Ph.D.

1.5 Please select your current work situation. *

☐ Student

☐ University Student

☐ Working

☐ Unemployed

1.6 Please select one of the wage classes which represents your current pre-tax salary. *

- ☐ No salary
- ☐ < 1000€
- ☐ 1000€ - 2000€
- ☐ 2001 € - 3000€
- ☐ 3001€ - 4000€
- ☐ 4001€ - 6000€
- ☐ 6001€ - 8000€
- ☐ > 8000€

1.7 Please select the area you live in. *

- ☐ Rural
- ☐ Suburban
- ☐ Urban

1.8 Please state how intense the statements apply to you with the help of the scale. *

1 = does not apply to me at all
5 = totally applies to me

	1	2	3	4	5
I am concerned about the environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am concerned about pollution.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am concerned about water and air pollution in my city / region.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am concerned about extravagant water usage in my city / region.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am concerned about the environment when making purchases.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Questions on the car use

2.1 Do you own a driving licence? *

- ☐ Yes
☐ No

2.2 Do you own a car? *

- ☐ Yes
☐ No

2.3 Please state how intense the statements apply to you with the help of the scale. *

1 = totally disagree
5 = totally agree

	1	2	3	4	5
I am interested in cars.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a specific car brand which I (would) preferably buy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am well-informed about electric vehicles.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would generally consider the purchase of an electric vehicle.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the technology of autonomous driving is exciting.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>








3. Comparison questions

Two electric vehicles of different companies will be presented to you for each question in this part. Then you are asked to state which of the two electric vehicles you prefer. This decision should only be based on the company descriptions and the car characteristics.

Five car comparison questions will be presented. The car companies will always remain the same. Please read the descriptions of the car companies carefully. For the following comparison questions only the electric vehicle characteristics will change.

3.1 Car Comparison 1

Please read the information about the car brands and their electric cars carefully.

	Established Brand's Car	Startup's Car
	<p>Founded in the year 1910</p> <p>Successful, popular and well-established company</p> <p>Started with the production of cars with combustion engine</p> <p>Have been producing EVs since 2012</p> <p>Approx. 2 million cars sold per year</p> <p>The brand could be compared to e.g. BMW, VW, Mercedes, Nissan, Renault, Kia</p>	<p>Founded in the year 2016</p> <p>Innovative startup company</p> <p>No production of cars with combustion engine</p> <p>Produce only EVs</p> <p>Approx. 6000 cars sold per year</p> <p>The brand could be compared to e.g. e.GO Mobile, Sono Motors</p>
	Description of EV characteristics	
 Number of passenger seats	4	4
 Top speed	140 km/h	140 km/h
 Performance	60 kW	60 kW
 Power consumption	11.5 kwh/100km	11.5 kwh/100km
 Range	200 km	200 km
 Charging time	max. 8 hours	max. 8 hours
	Price	
 Price	26,000€	26,000€

Please answer the following questions based on the given information.

3.1.1 Which car do you prefer, based on the given information about the brand and electric car? *

☐

The established brand's car

☐

The startup's car

3.1.2 Please state to which intensity you prefer which car. *

1 = totally the established brand's car

6 = totally the startup's car

1

2

3

4

5








6

Please state to
which intensity
you prefer which
car.

☐☐☐☐☐☐

3.2 Car Comparison 2

Please read the information about the car brands and their electric cars carefully.

	Established Brand's Car	Startup's Car
	<p>Founded in the year 1910</p> <p>Successful, popular and well-established company</p> <p>Started with the production of cars with combustion engine</p> <p>Have been producing EVs since 2012</p> <p>Approx. 2 million cars sold per year</p> <p>The brand could be compared to e.g. BMW, VW, Mercedes, Nissan, Renault, Kia</p>	<p>Founded in the year 2016</p> <p>Innovative startup company</p> <p>No production of cars with combustion engine</p> <p>Produce only EVs</p> <p>Approx. 6000 cars sold per year</p> <p>The brand could be compared to e.g. e.GO Mobile, Sono Motors</p>
	Description of EV characteristics	
 Number of passenger seats	4	4
 Top speed	120 km/h	150 km/h
 Performance	60 kW	60 kW
 Power consumption	11.5 kwh/100km	11.5 kwh/100km
 Range	200 km	300 km
 Charging time	max. 8 hours	max. 5 hours
	Price	
 Price	26,000€	26,000€

Please answer the following questions based on the given information.

3.2.1 Which car do you prefer, based on the given information about the brand and electric car? *

☐

The established brand's car

☐

The startup's car

3.2.2 Please state to which intensity you prefer which car. *

1 = totally the established brand's car

6 = totally the startup's car

1

2

3

4

5







6

Please state to
which intensity
you prefer which
car.

☐☐☐☐☐☐

3.3 Car Comparison 3

Please read the information about the car brands and their electric cars carefully.

	Established Brand's Car	Startup's Car
	<p>Founded in the year 1910</p> <p>Successful, popular and well-established company</p> <p>Started with the production of cars with combustion engine</p> <p>Have been producing EVs since 2012</p> <p>Approx. 2 million cars sold per year</p> <p>The brand could be compared to e.g. BMW, VW, Mercedes, Nissan, Renault, Kia</p>	<p>Founded in the year 2016</p> <p>Innovative startup company</p> <p>No production of cars with combustion engine</p> <p>Produce only EVs</p> <p>Approx. 6000 cars sold per year</p> <p>The brand could be compared to e.g. e.GO Mobile, Sono Motors</p>
	Description of EV characteristics	
 Number of passenger seats	4	4
 Top speed	140 km/h	140 km/h
 Performance	60 kW	60 kW
 Power consumption	11.5 kwh/100km	11.5 kwh/100km
 Range	200 km	200 km
 Charging time	max. 8 hours	max. 8 hours
	Extra	
	-	Autonomous driving
	Price	
€ Price	26,000€	26,000€

Please answer the following questions based on the given information.

3.3.1 Which car do you prefer, based on the given information about the brand and electric car? *

☐

The established brand's car

☐

The startup's car

3.3.2 Please state to which intensity you prefer which car. *

1 = totally the established brand's car

6 = totally the startup's car

1

2

3

4

5








6

Please state to
which intensity
you prefer which
car.

☐☐☐☐☐☐

3.4 Car Comparison 4

Please read the information about the car brands and their electric cars carefully.

	Established Brand's Car	Startup's Car
	<p>Founded in the year 1910</p> <p>Successful, popular and well-established company</p> <p>Started with the production of cars with combustion engine</p> <p>Have been producing EVs since 2012</p> <p>Approx. 2 million cars sold per year</p> <p>The brand could be compared to e.g. BMW, VW, Mercedes, Nissan, Renault, Kia</p>	<p>Founded in the year 2016</p> <p>Innovative startup company</p> <p>No production of cars with combustion engine</p> <p>Produce only EVs</p> <p>Approx. 6000 cars sold per year</p> <p>The brand could be compared to e.g. e.GO Mobile, Sono Motors</p>
	Description of EV characteristics	
 Number of passenger seats	4	4
 Top speed	140 km/h	140 km/h
 Performance	60 kW	60 kW
 Power consumption	11.5 kwh/100km	11.5 kwh/100km
 Range	200 km	200 km
 Charging time	max. 8 hours	max. 8 hours
	Price	
 Price	22,000€	16,000€

Please answer the following questions based on the given information.

3.4.1 Which car do you prefer, based on the given information about the brand and electric car? *

☐

The established brand's car

☐

The startup's car

3.4.2 Please state to which intensity you prefer which car. *

1 = totally the established brand's car

6 = totally the startup's car

1

2

3

4

5







6

Please state to
which intensity
you prefer which
car.

☐☐☐☐☐☐

3.5 Car Comparison 5

Please read the information about the car brands and their electric cars carefully.

	Established Brand's Car	Startup's Car
	<p>Founded in the year 1910</p> <p>Successful, popular and well-established company</p> <p>Started with the production of cars with combustion engine</p> <p>Have been producing EVs since 2012</p> <p>Approx. 2 million cars sold per year</p> <p>The brand could be compared to e.g. BMW, VW, Mercedes, Nissan, Renault, Kia</p>	<p>Founded in the year 2016</p> <p>Innovative startup company</p> <p>No production of cars with combustion engine</p> <p>Produce only EVs</p> <p>Approx. 6000 cars sold per year</p> <p>The brand could be compared to e.g. e.GO Mobile, Sono Motors</p>
	Description of EV characteristics	
 Number of passenger seats	4	4
 Top speed	120 km/h	150 km/h
 Performance	60 kW	60 kW
 Power consumption	11.5 kwh/100km	11.5 kwh/100km
 Range	200 km	300 km
 Charging time	max. 8 hours	max. 5 hours
	Extra	
	-	Autonomous driving
	Price	
€ Price	22,000€	16,000€

Please compare these electric vehicles and decide which car do you prefer and to which extent.

3.5.1 Which car do you prefer, based on the given information about the brand and electric car? *

☐

The established brand's car

☐

The startup's car

3.5.2 Please state to which intensity you prefer which car. *

1 = totally the established brand's car

6 = totally the startup's car

1

2

3

4

5

6

Please state to
which intensity
you prefer which
car.

☐☐☐☐☐☐

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Thank you for participating in our survey! You helped us a lot!

We would be thankful if you forwarded this survey to your friends, colleagues or family members.

If you have any questions, please do not hesitate to contact us.

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Appendix II

Masterarbeit Umfrage

Umfrage zur Konsumenten-Präferenz gegenüber etablierten Unternehmen und Startups

Sehr geehrte(r) Teilnehmer(in),

sind Sie zwischen 1980 und 2000 geboren und in Deutschland gemeldet? Dann können Sie uns mit Ihrer Teilnahme an unserer Studie helfen.

Wir, Alina Häßler und Bernd Souren, kommen aus Deutschland und machen gerade unser Master-Studium in Business Studies with an International Focus an der Dalarna University in Schweden. In unserer Masterarbeit untersuchen wir die Präferenz von Konsumenten gegenüber etablierten Unternehmen und Startups im Elektroauto Markt.

Egal ob Sie an Autos / Elektroautos interessiert sind oder nicht, wir interessieren uns für Ihre Meinung!

Die Umfrage wird ungefähr 10 Minuten in Anspruch nehmen. Wir wären Ihnen sehr dankbar, wenn Sie sich die Zeit nehmen würden, um uns mit der Beantwortung der Fragen bei unserer Masterarbeit zu unterstützen.

Die Teilnahme an der Umfrage ist freiwillig und Sie können diese jederzeit unterbrechen. Alle Antworten werden anonym behandelt und können nicht zurückverfolgt werden. Die gesammelten Daten werden nur für diese Masterarbeit verwendet und nicht an Dritte weitergegeben.

Vielen Dank für Ihre Unterstützung!

Alina Häßler & Bernd Souren

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1. Allgemeine Fragen

1.1 Bitte geben Sie Ihr Geschlecht an. *

☐

Weiblich

☐

Männlich

☐

Anderes

1.2 Bitte geben Sie Ihr Alter an. *

1.3 Sind Sie zur Zeit in Deutschland gemeldet? *

Sowohl Hauptwohnsitz als auch Zweitwohnsitz ist möglich.

- ☐ ja
- ☐ nein

1.4 Bitte geben Sie Ihren höchsten erlangten Bildungsabschluss an. *

Beispiel: Falls Sie momentan das Abitur anstreben aber noch nicht abgeschlossen haben, so geben Sie bitte "Mittlere Reife" als höchsten erlangten Bildungsabschluss an.

- ☐ kein Schulabschluss
- ☐ Hauptschulabschluss
- ☐ Mittlere Reife
- ☐ Abitur
- ☐ Ausbildung
- ☐ Bachelor
- ☐ Master / Diplom
- ☐ Doktor

1.5 Bitte geben Sie Ihre derzeitige Berufssituation an. *

- ☐ Schüler
- ☐ Student
- ☐ Arbeitend
- ☐ Arbeitssuchend

1.6 Bitte ordnen Sie Ihr derzeitiges brutto Gehalt in eine der Gehaltsklassen ein. *

Bitte wählen...

1.7 Bitte geben Sie an, in welcher Umgebung Sie leben. *

- ☐ Ländlich
- ☐ Suburban / Vorstädtisch
- ☐ Städtisch

1.8 Bitte geben Sie auf der Skala an, wie sehr die folgenden Aussagen auf Sie zutreffen. *

1 = gar nicht zutreffend
5 = vollkommen zutreffend

	1	2	3	4	5
Umweltschutz ist für mich von großer Bedeutung.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich bin besorgt über Umweltverschmutzung.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich bin besorgt über die Wasser- und Luftverschmutzung in meiner Stadt / Region.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich bin besorgt über unnötigen Wasserverbrauch in meiner Stadt / Region.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Umweltschutz spielt beim Kauf von Produkten eine wichtige Rolle für mich.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Fragen zur Autonutzung

2.1 Besitzen Sie eine gültige Fahrerlaubnis? *

- ☐ ja
☐ nein

2.2 Besitzen Sie zur Zeit ein Auto? *

- ☐ ja
☐ nein

2.3 Bitte geben Sie auf der Skala an, wie sehr die folgenden Aussagen auf Sie zutreffen. *

1 = gar nicht zutreffend

5 = vollkommen zutreffend

Autonomes Fahren = selbständiges Fahren des Elektroautos im Beisein des Fahrers

	1	2	3	4	5
Ich interessiere mich für Autos.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich habe eine Automarke, die ich bevorzugt kaufe / kaufen würde.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich bin gut über Elektroautos informiert.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Der Kauf eines Elektroautos kommt für mich grundsätzlich in Frage.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich finde die Technologie des autonomen Fahrens spannend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>








3. Vergleichsfragen

In diesem Teil werden Ihnen pro Frage zwei Elektroautos von verschiedenen Marken präsentiert. Sie müssen jeweils angeben, welches der beiden Elektroautos Sie präferieren. Diese Entscheidung soll ausschließlich auf Basis der beschriebenen Herstellerfirmen und angegebenen Charakteristika der Autos getroffen werden.

Insgesamt werden Ihnen fünf Autovergleiche präsentiert, in welchen die herstellenden Unternehmen unverändert bleiben. Bitte lesen Sie sich diese Unternehmensbeschreibungen genau durch. Bei den folgenden Vergleichen werden nur die Charakteristika der Elektroautos verändert.

3.1 Autovergleich 1

Bitte lesen Sie sich die Unternehmensinformationen und die Charakteristika der beiden Elektroautos aufmerksam durch.

	Auto eines am Markt etablierten Unternehmens	Auto eines Startups
Unternehmensdetails	<p>Gegründet im Jahr 1910</p> <p>Erfolgreiches, bekanntes und etabliertes Unternehmen</p> <p>Begann mit der Produktion von Autos mit Verbrennungsmotoren</p> <p>Produktion von Elektroautos seit 2012</p> <p>Verkauf von ca. 2 Millionen Autos pro Jahr</p> <p>Das Unternehmen könnte verglichen werden mit z.B. BMW, VW, Mercedes, Nissan, Renault oder Kia</p>	<p>Gegründet im Jahr 2016</p> <p>Innovatives Startup Unternehmen</p> <p>Keine Produktion von Autos mit Verbrennungsmotoren</p> <p>Ausschließliche Produktion von Elektroautos</p> <p>Verkauf von ca. 6.000 Autos pro Jahr</p> <p>Das Unternehmen könnte verglichen werden mit z.B. e.GO Mobile oder Sono Motors</p>
	Beschreibung der Elektroautos	
 Anzahl Sitzplätze	4	4
 Höchstgeschwindigkeit	140 km/h	140 km/h
 Leistung	60 kW	60 kW
 Stromverbrauch	11,5 kWh/100km	11,5 kWh/100km
 Reichweite	200 km	200 km
 Ladedauer	max. 8 Stunden	max. 8 Stunden
	Preis	
 Preis	26.000€	26.000€

Bitte beantworten Sie nun die folgenden Fragen.

3.1.1 Welches der beiden präsentierten Elektroautos würden Sie basierend auf den Unternehmensinformationen und den angegebenen Charakteristika bevorzugen? *

☐

Elektroauto des etablierten Herstellers

☐

Elektroauto des Startups

3.1.2 Bitte geben Sie an mit welcher Intensität Sie zu welchem Auto tendieren. *

1 = vollkommen zu dem Elektroauto des etablierten Herstellers

6 = vollkommen zu dem Elektroauto des Startups

1

2

3

4

5







6

Bitte geben Sie
an mit welcher
Intensität Sie zu
welchem Auto
tendieren.

☐☐☐☐☐☐

3.2 Autovergleich 2

Bitte lesen Sie sich die Unternehmensinformationen und die Charakteristika der beiden Elektroautos aufmerksam durch.

	Auto eines am Markt etablierten Unternehmens	Auto eines Startups
Unternehmensdetails	<p>Gegründet im Jahr 1910</p> <p>Erfolgreiches, bekanntes und etabliertes Unternehmen</p> <p>Begann mit der Produktion von Autos mit Verbrennungsmotoren</p> <p>Produktion von Elektroautos seit 2012</p> <p>Verkauf von ca. 2 Millionen Autos pro Jahr</p> <p>Das Unternehmen könnte verglichen werden mit z.B. BMW, VW, Mercedes, Nissan, Renault oder Kia</p>	<p>Gegründet im Jahr 2016</p> <p>Innovatives Startup Unternehmen</p> <p>Keine Produktion von Autos mit Verbrennungsmotoren</p> <p>Ausschließliche Produktion von Elektroautos</p> <p>Verkauf von ca. 6.000 Autos pro Jahr</p> <p>Das Unternehmen könnte verglichen werden mit z.B. e.GO Mobile oder Sono Motors</p>
	Beschreibung der Elektroautos	
 Anzahl Sitzplätze	4	4
 Höchstgeschwindigkeit	120 km/h	150 km/h
 Leistung	60 kW	60 kW
 Stromverbrauch	11,5 kWh/100km	11,5 kWh/100km
 Reichweite	200 km	300 km
 Ladedauer	max. 8 Stunden	max. 5 Stunden
	Preis	
€ Preis	26.000€	26.000€

Bitte beantworten Sie nun die folgenden Fragen.

3.2.1 Welches der beiden präsentierten Elektroautos würden Sie basierend auf den Unternehmensinformationen und den angegebenen Charakteristika bevorzugen? *

☐

Elektroauto des etablierten Herstellers

☐

Elektroauto des Startups

3.2.2 Bitte geben Sie an mit welcher Intensität Sie zu welchem Auto tendieren. *

1 = vollkommen zu dem Elektroauto des etablierten Herstellers

6 = vollkommen zu dem Elektroauto des Startups

1

2

3

4

5


6

Bitte geben Sie
an mit welcher
Intensität Sie zu
welchem Auto
tendieren.

☐☐☐☐☐☐

3.3 Autovergleich 3

Bitte lesen Sie sich die Unternehmensinformationen und die Charakteristika der beiden Elektroautos aufmerksam durch.

	Auto eines am Markt etablierten Unternehmens	Auto eines Startups
Unternehmensdetails	<p>Gegründet im Jahr 1910</p> <p>Erfolgreiches, bekanntes und etabliertes Unternehmen</p> <p>Begann mit der Produktion von Autos mit Verbrennungsmotoren</p> <p>Produktion von Elektroautos seit 2012</p> <p>Verkauf von ca. 2 Millionen Autos pro Jahr</p> <p>Das Unternehmen könnte verglichen werden mit z.B. BMW, VW, Mercedes, Nissan, Renault oder Kia</p>	<p>Gegründet im Jahr 2016</p> <p>Innovatives Startup Unternehmen</p> <p>Keine Produktion von Autos mit Verbrennungsmotoren</p> <p>Ausschließliche Produktion von Elektroautos</p> <p>Verkauf von ca. 6.000 Autos pro Jahr</p> <p>Das Unternehmen könnte verglichen werden mit z.B. e.GO Mobile oder Sono Motors</p>
	Beschreibung der Elektroautos	
 Anzahl Sitzplätze	4	4
 Höchstgeschwindigkeit	140 km/h	140 km/h
 Leistung	60 kW	60 kW
 Stromverbrauch	11.5 kWh/100km	11.5 kWh/100km
 Reichweite	200 km	200 km
 Ladedauer	max. 8 Stunden	max. 8 Stunden
	Extra	
	-	Autonomes Fahren
	Preis	
€ Preis	26.000€	26.000€

Bitte beantworten Sie nun die folgenden Fragen.

3.3.1 Welches der beiden präsentierten Elektroautos würden Sie basierend auf den Unternehmensinformationen und den angegebenen Charakteristika bevorzugen? *

☐ Elektroauto des etablierten Herstellers

☐ Elektroauto des Startups

3.3.2 Bitte geben Sie an mit welcher Intensität Sie zu welchem Auto tendieren. *







1 = vollkommen zu dem Elektroauto des etablierten Herstellers

6 = vollkommen zu dem Elektroauto des Startups

	1	2	3	4	5	6
Bitte geben Sie an mit welcher Intensität Sie zu welchem Auto tendieren.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3.4 Autovergleich 4

Bitte lesen Sie sich die Unternehmensinformationen und die Charakteristika der beiden Elektroautos aufmerksam durch.

	Auto eines am Markt etablierten Unternehmens	Auto eines Startups
Unternehmensdetails	<p>Gegründet im Jahr 1910</p> <p>Erfolgreiches, bekanntes und etabliertes Unternehmen</p> <p>Begann mit der Produktion von Autos mit Verbrennungsmotoren</p> <p>Produktion von Elektroautos seit 2012</p> <p>Verkauf von ca. 2 Millionen Autos pro Jahr</p> <p>Das Unternehmen könnte verglichen werden mit z.B. BMW, VW, Mercedes, Nissan, Renault oder Kia</p>	<p>Gegründet im Jahr 2016</p> <p>Innovatives Startup Unternehmen</p> <p>Keine Produktion von Autos mit Verbrennungsmotoren</p> <p>Ausschließliche Produktion von Elektroautos</p> <p>Verkauf von ca. 6.000 Autos pro Jahr</p> <p>Das Unternehmen könnte verglichen werden mit z.B. e.GO Mobile oder Sono Motors</p>
Beschreibung der Elektroautos		
 Anzahl Sitzplätze	4	4
 Höchstgeschwindigkeit	140 km/h	140 km/h
 Leistung	60 kW	60 kW
 Stromverbrauch	11,5 kWh/100km	11,5 kWh/100km
 Reichweite	200 km	200 km
 Ladedauer	max. 8 Stunden	max. 8 Stunden
Preis		
€ Preis	22.000€	16.000€

Bitte beantworten Sie nun die folgenden Fragen.

3.4.1 Welches der beiden präsentierten Elektroautos würden Sie basierend auf den Unternehmensinformationen und den angegebenen Charakteristika bevorzugen? *

☐

Elektroauto des etablierten Herstellers

☐

Elektroauto des Startups

3.4.2 Bitte geben Sie an mit welcher Intensität Sie zu welchem Auto tendieren. *

1 = vollkommen zu dem Elektroauto des etablierten Herstellers

6 = vollkommen zu dem Elektroauto des Startups

1

2

3

4

5






6

Bitte geben Sie
an mit welcher
Intensität Sie zu
welchem Auto
tendieren.

☐☐☐☐☐☐

3.5 Autovergleich 5

Bitte lesen Sie sich die Unternehmensinformationen und die Charakteristika der beiden Elektroautos aufmerksam durch.

	Auto eines am Markt etablierten Unternehmens	Auto eines Startups
Unternehmensdetails	<p>Gegründet im Jahr 1910</p> <p>Erfolgreiches, bekanntes und etabliertes Unternehmen</p> <p>Begann mit der Produktion von Autos mit Verbrennungsmotoren</p> <p>Produktion von Elektroautos seit 2012</p> <p>Verkauf von ca. 2 Millionen Autos pro Jahr</p> <p>Das Unternehmen könnte verglichen werden mit z.B. BMW, VW, Mercedes, Nissan, Renault oder Kia</p>	<p>Gegründet im Jahr 2016</p> <p>Innovatives Startup Unternehmen</p> <p>Keine Produktion von Autos mit Verbrennungsmotoren</p> <p>Ausschließliche Produktion von Elektroautos</p> <p>Verkauf von ca. 6.000 Autos pro Jahr</p> <p>Das Unternehmen könnte verglichen werden mit z.B. e.GO Mobile oder Sono Motors</p>
	Beschreibung der Elektroautos	
 Anzahl Sitzplätze	4	4
 Höchstgeschwindigkeit	120 km/h	150 km/h
 Leistung	60 kW	60 kW
 Stromverbrauch	11.5 kWh/100km	11.5 kWh/100km
 Reichweite	200 km	300 km
 Ladedauer	max. 8 Stunden	max. 5 Stunden
	Extra	
	-	Autonomes Fahren
	Preis	
 Preis	22.000€	16.000€

Bitte beantworten Sie nun die folgenden Fragen.

3.5.1 Welches der beiden präsentierten Elektroautos würden Sie basierend auf den Unternehmensinformationen und den angegebenen Charakteristika bevorzugen? *

☐

Elektroauto des etablierten Herstellers

☐

Elektroauto des Startups

3.5.2 Bitte geben Sie an mit welcher Intensität Sie zu welchem Auto tendieren. *

1 = vollkommen zu dem Elektroauto des etablierten Herstellers

6 = vollkommen zu dem Elektroauto des Startups

	1	2	3	4	5	6
Bitte geben Sie an mit welcher Intensität Sie zu welchem Auto tendieren.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Seite 10

Vielen Dank für die Teilnahme an unserer Umfrage! Sie haben uns damit sehr geholfen!

Wir freuen uns, wenn Sie unsere Umfrage auch an Freunde, Familie oder Kollegen weiterleiten.

Hier der Link zur Umfrage: <https://www.umfrageonline.com/s/6111fc9>

Gerne stehen wir und unsere Masterarbeits-Betreuerin Dr. Tao Yang (tjn@du.se) auch bei Fragen oder Anregungen zur Verfügung.

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Appendix III

Influence of excitement for autonomous driving on decision intensity for car comparison question 3 (non-alignable attribute)

Preference Intensity of Non-alignable Attribute

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	62.198	3	20.733	10.523	.000
Within Groups	1599.797	812	1.970		
Total	1661.995	815			

Multiple Comparisons

Dependent Variable: Preference Intensity of Non-alignable Attribute

Tukey HSD

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Excitement for Autonomous Driving 1+2	Excitement for Autonomous Driving 3	-.118	.191	.926	-.61	.37
	Excitement for Autonomous Driving 4+5	-.827*	.159	.000	-1.24	-.42
	Sample's Excitement for Autonomous Driving	-.399*	.140	.023	-.76	-.04
Excitement for Autonomous Driving 3	Excitement for Autonomous Driving 1+2	.118	.191	.926	-.37	.61
	Excitement for Autonomous Driving 4+5	-.709*	.181	.001	-1.17	-.24
	Sample's Excitement for Autonomous Driving	-.281	.163	.315	-.70	.14
Excitement for Autonomous Driving 4+5	Excitement for Autonomous Driving 1+2	.827*	.159	.000	.42	1.24
	Excitement for Autonomous Driving 3	.709*	.181	.001	.24	1.17
	Sample's Excitement for Autonomous Driving	.428*	.125	.003	.11	.75
Sample's Excitement for Autonomous Driving	Excitement for Autonomous Driving 1+2	.399*	.140	.023	.04	.76
	Excitement for Autonomous Driving 3	.281	.163	.315	-.14	.70

Excitement for Autonomous Driving 4+5	-.428 [*]	.125	.003	-.75	-.11
--	--------------------	------	------	------	------

*. The mean difference is significant at the 0.05 level.

Appendix IV

Regression Analysis

Age, Income, Environmental Concern, Car Interest, Brand Preference, EV Information, EV Purchase, Autonomous Driving – Car Preference 1

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age ^b	.	Enter

a. Dependent Variable: CPI

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.232 ^a	.054	.035	.449

a. Predictors: (Constant), Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.564	8	.571	2.826	.005 ^b
	Residual	80.551	399	.202		
	Total	85.115	407			

a. Dependent Variable: CPI

b. Predictors: (Constant), Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.250	.170		1.474	.141
	Age	.005	.006	.062	.923	.357
	Income	-.022	.018	-.084	-1.224	.222
	Environmental Concern	-.016	.029	-.028	-.546	.585
	Car-Interest	-.038	.022	-.109	-1.702	.089
	Brand-Preference	-.028	.019	-.085	-1.467	.143
	EV-Information	.036	.022	.101	1.669	.096
	EV-Purchase	.054	.020	.152	2.700	.007
	Autonomous-Driving	-.023	.018	-.072	-1.321	.187

a. Dependent Variable: CPI

Age, Income, Environmental Concern, Car Interest, Brand Preference, EV Information, EV Purchase, Autonomous Driving – Decision Intensity 1

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age ^b	.	Enter

a. Dependent Variable: CI1

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.294 ^a	.087	.068	1.117

a. Predictors: (Constant), Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	47.147	8	5.893	4.724	.000 ^b
	Residual	497.733	399	1.247		
	Total	544.880	407			

a. Dependent Variable: CI1

b. Predictors: (Constant), Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.223	.422		7.646	.000
	Age	-.008	.015	-.035	-.526	.599
	Income	-.041	.044	-.063	-.937	.349
	Environmental Concern	-.004	.071	-.003	-.060	.952
	Car-Interest	-.132	.056	-.149	-2.377	.018
	Brand-Preference	-.061	.047	-.074	-1.302	.194
	EV-Information	.056	.054	.062	1.040	.299
	EV-Purchase	.191	.050	.211	3.825	.000
	Autonomous-Driving	-.029	.044	-.035	-.654	.514

a. Dependent Variable: CI1

Age, Income, Environmental Concern, Car Interest, Brand Preference, EV Information, EV Purchase, Autonomous Driving – Car Preference 2

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age ^b	.	Enter

a. Dependent Variable: CP2

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.231 ^a	.053	.034	.385

a. Predictors: (Constant), Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.336	8	.417	2.813	.005 ^b
	Residual	59.132	399	.148		
	Total	62.468	407			

a. Dependent Variable: CP2

b. Predictors: (Constant), Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.520	.145		3.581	.000
	Age	.006	.005	.083	1.231	.219
	Income	-.029	.015	-.130	-1.892	.059
	Environmental Concern	.012	.025	.024	.475	.635
	Car-Interest	-.013	.019	-.042	-.664	.507
	Brand-Preference	-.004	.016	-.015	-.259	.796
	EV-Information	.002	.018	.005	.089	.929
	EV-Purchase	.053	.017	.173	3.079	.002
	Autonomous-Driving	.008	.015	.030	.558	.577

a. Dependent Variable: CP2

Age, Income, Environmental Concern, Car Interest, Brand Preference, EV Information, EV Purchase, Autonomous Driving – Decision Intensity 2

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age ^b	.	Enter

a. Dependent Variable: CI2

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.289 ^a	.083	.065	1.196

a. Predictors: (Constant), Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	51.958	8	6.495	4.538	.000 ^b
	Residual	571.079	399	1.431		
	Total	623.037	407			

a. Dependent Variable: CI2

b. Predictors: (Constant), Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.360	.452		7.440	.000
	Age	.017	.016	.070	1.048	.295
	Income	-.086	.047	-.124	-1.836	.067
	Environmental Concern	.056	.077	.037	.728	.467
	Car-Interest	-.054	.059	-.057	-.909	.364
	Brand-Preference	-.064	.050	-.072	-1.266	.206
	EV-Information	.074	.057	.077	1.293	.197
	EV-Purchase	.177	.053	.184	3.316	.001
	Autonomous-Driving	.055	.047	.062	1.170	.243

a. Dependent Variable: CI2

Age, Income, Environmental Concern, Car Interest, Brand Preference, EV Information, EV Purchase, Autonomous Driving – Car Preference 3

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age ^b	.	Enter

a. Dependent Variable: CP3

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.388 ^a	.150	.133	.465

a. Predictors: (Constant), Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.287	8	1.911	8.823	.000 ^b
	Residual	86.417	399	.217		
	Total	101.703	407			

a. Dependent Variable: CP3

b. Predictors: (Constant), Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.320	.176		1.819	.070
	Age	-.003	.006	-.027	-.426	.670
	Income	.017	.018	.061	.934	.351
	Environmental Concern	-.039	.030	-.064	-1.311	.191
	Car-Interest	-.040	.023	-.104	-1.713	.087
	Brand-Preference	-.048	.020	-.135	-2.473	.014
	EV-Information	.077	.022	.199	3.463	.001
	EV-Purchase	.029	.021	.074	1.384	.167
	Autonomous-Driving	.084	.018	.236	4.595	.000

a. Dependent Variable: CP3

Age, Income, Environmental Concern, Car Interest, Brand Preference, EV Information, EV Purchase, Autonomous Driving – Decision Intensity 3

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age ^b	.	Enter

a. Dependent Variable: CI3

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.403 ^a	.162	.145	1.321

a. Predictors: (Constant), Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	134.637	8	16.830	9.643	.000 ^b
	Residual	696.361	399	1.745		
	Total	830.998	407			

a. Dependent Variable: CI3

b. Predictors: (Constant), Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.478	.499		4.969	.000
	Age	-.010	.017	-.037	-.582	.561
	Income	.090	.052	.113	1.741	.082
	Environmental Concern	-.009	.085	-.005	-.107	.915
	Car-Interest	-.118	.066	-.107	-1.789	.074
	Brand-Preference	-.119	.055	-.117	-2.156	.032
	EV-Information	.178	.063	.160	2.804	.005
	EV-Purchase	.156	.059	.140	2.646	.008
	Autonomous-Driving	.225	.052	.222	4.348	.000

a. Dependent Variable: CI3

Age, Income, Environmental Concern, Car Interest, Brand Preference, EV Information, EV Purchase, Autonomous Driving – Car Preference 4

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age ^b	.	Enter

a. Dependent Variable: CP4

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.283 ^a	.080	.061	.397

a. Predictors: (Constant), Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.470	8	.684	4.332	.000 ^b
	Residual	62.978	399	.158		
	Total	68.449	407			

a. Dependent Variable: CP4

b. Predictors: (Constant), Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.664	.150		4.430	.000
	Age	.003	.005	.035	.522	.602
	Income	-.038	.016	-.166	-2.453	.015
	Environmental Concern	.039	.025	.078	1.549	.122
	Car-Interest	-.025	.020	-.081	-1.282	.201
	Brand-Preference	-.039	.017	-.134	-2.349	.019
	EV-Information	.034	.019	.108	1.804	.072
	EV-Purchase	.027	.018	.083	1.496	.136
	Autonomous-Driving	.007	.016	.024	.454	.650

a. Dependent Variable: CP4

Age, Income, Environmental Concern, Car Interest, Brand Preference, EV Information, EV Purchase, Autonomous Driving – Decision Intensity 4

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age ^b	.	Enter

a. Dependent Variable: CI4

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.315 ^a	.099	.081	1.225

a. Predictors: (Constant), Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	65.898	8	8.237	5.492	.000 ^b
	Residual	598.433	399	1.500		
	Total	664.331	407			

a. Dependent Variable: CI4

b. Predictors: (Constant), Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.909	.462		8.456	.000
	Age	.008	.016	.032	.481	.631
	Income	-.076	.048	-.106	-1.580	.115
	Environmental Concern	.117	.078	.075	1.498	.135
	Car-Interest	-.102	.061	-.105	-1.679	.094
	Brand-Preference	-.162	.051	-.178	-3.157	.002
	EV-Information	.102	.059	.103	1.743	.082
	EV-Purchase	.071	.055	.072	1.307	.192
	Autonomous-Driving	.091	.048	.100	1.891	.059

a. Dependent Variable: CI4

Age, Income, Environmental Concern, Car Interest, Brand Preference, EV Information, EV Purchase, Autonomous Driving – Car Preference 5

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age ^b	.	Enter

a. Dependent Variable: CP5

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.315 ^a	.099	.081	.304

a. Predictors: (Constant), Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.050	8	.506	5.494	.000 ^b
	Residual	36.764	399	.092		
	Total	40.814	407			

a. Dependent Variable: CP5

b. Predictors: (Constant), Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.676	.115		5.897	.000
	Age	.004	.004	.071	1.074	.283
	Income	-.012	.012	-.067	-.994	.321
	Environmental Concern	-.009	.019	-.023	-.461	.645
	Car-Interest	.000	.015	.001	.024	.981
	Brand-Preference	-.035	.013	-.157	-2.785	.006
	EV-Information	.014	.015	.056	.949	.343
	EV-Purchase	.023	.014	.092	1.682	.093
	Autonomous-Driving	.047	.012	.208	3.922	.000

a. Dependent Variable: CP5

Age, Income, Environmental Concern, Car Interest, Brand Preference, EV Information, EV Purchase, Autonomous Driving – Decision Intensity 5

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age ^b	.	Enter

a. Dependent Variable: CI5

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.408 ^a	.167	.150	1.267

a. Predictors: (Constant), Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	128.158	8	16.020	9.977	.000 ^b
	Residual	640.643	399	1.606		
	Total	768.801	407			

a. Dependent Variable: CI5

b. Predictors: (Constant), Autonomous-Driving, Brand-Preference, Income, Environmental Concern, EV-Purchase, EV-Information, Car-Interest, Age

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.318	.478		6.937	.000
	Age	.008	.017	.030	.471	.638
	Income	.005	.050	.007	.108	.914
	Environmental Concern	-.005	.081	-.003	-.065	.948
	Car-Interest	.032	.063	.030	.504	.615
	Brand-Preference	-.166	.053	-.169	-3.121	.002
	EV-Information	.098	.061	.092	1.614	.107
	EV-Purchase	.176	.057	.164	3.110	.002
	Autonomous-Driving	.234	.050	.240	4.719	.000

a. Dependent Variable: CI5

Gender (Female as base value) – Car Preference 1

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Other, Male ^b	.	Enter

a. Dependent Variable: CPI

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.081 ^a	.007	.002	.457

a. Predictors: (Constant), Other, Male

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.555	2	.277	1.328	.266 ^b
	Residual	84.561	405	.209		
	Total	85.115	407			

a. Dependent Variable: CPI

b. Predictors: (Constant), Other, Male

Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.307	.032		9.547	.000
	Male	-.024	.045	-.026	-.530	.596
	Other	.693	.458	.075	1.513	.131

a. Dependent Variable: CPI

Gender (Female as base value) – Decision Intensity 1

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Other, Male ^b	.	Enter

a. Dependent Variable: CI1

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.045 ^a	.002	-.003	1.159

a. Predictors: (Constant), Other, Male

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.127	2	.564	.420	.657 ^b
	Residual	543.753	405	1.343		
	Total	544.880	407			

a. Dependent Variable: CI1

b. Predictors: (Constant), Other, Male

Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.035	.082		37.223	.000
	Male	-.040	.115	-.017	-.344	.731
	Other	.965	1.162	.041	.831	.406

a. Dependent Variable: CI1

Gender (Female as base value) – Car Preference 2

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Other, Male ^b	.	Enter

a. Dependent Variable: CP2

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.088 ^a	.008	.003	.391

a. Predictors: (Constant), Other, Male

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.488	2	.244	1.594	.204 ^b
	Residual	61.980	405	.153		
	Total	62.468	407			

a. Dependent Variable: CP2

b. Predictors: (Constant), Other, Male

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.777	.028		28.237	.000
	Male	.067	.039	.085	1.719	.086
	Other	.223	.392	.028	.568	.570

a. Dependent Variable: CP2

Gender (Female as base value) – Decision Intensity 2

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Other, Male ^b	.	Enter

a. Dependent Variable: CI2

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.182 ^a	.033	.028	1.220

a. Predictors: (Constant), Other, Male

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.647	2	10.324	6.941	.001 ^b
	Residual	602.389	405	1.487		
	Total	623.037	407			

a. Dependent Variable: CI2

b. Predictors: (Constant), Other, Male

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.163	.086		48.519	.000
	Male	.446	.121	.181	3.692	.000
	Other	.837	1.223	.033	.684	.494

a. Dependent Variable: CI2

Gender (Female as base value) – Car Preference 3

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Other, Male ^b	.	Enter

a. Dependent Variable: CP3

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.216 ^a	.047	.042	.489

a. Predictors: (Constant), Other, Male

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.734	2	2.367	9.887	.000 ^b
	Residual	96.969	405	.239		
	Total	101.703	407			

a. Dependent Variable: CP3

b. Predictors: (Constant), Other, Male

Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.366	.034		10.641	.000
	Male	.209	.049	.210	4.314	.000
	Other	.634	.491	.063	1.292	.197

a. Dependent Variable: CP3

Gender (Female as base value) – Decision Intensity 3

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Other, Male ^b	.	Enter

a. Dependent Variable: CI3

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.167 ^a	.028	.023	1.412

a. Predictors: (Constant), Other, Male

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.214	2	11.607	5.819	.003 ^b
	Residual	807.784	405	1.995		
	Total	830.998	407			

a. Dependent Variable: CI3

b. Predictors: (Constant), Other, Male

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	3.183	.099		.000
	Male	.451	.140	.158	.001
	Other	1.817	1.416	.063	.200

a. Dependent Variable: CI3

Gender (Female as base value) – Car Preference 4

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Other, Male ^b	.	Enter

a. Dependent Variable: CP4

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.029 ^a	.001	-.004	.411

a. Predictors: (Constant), Other, Male

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.059	2	.030	.175	.839 ^b
	Residual	68.389	405	.169		
	Total	68.449	407			

a. Dependent Variable: CP4

b. Predictors: (Constant), Other, Male

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	.792	.029		.000
	Male	-.012	.041	-.014	.776
	Other	.208	.412	.025	.614

a. Dependent Variable: CP4

Gender (Female as base value) – Decision Intensity 4

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Other, Male ^b	.	Enter

a. Dependent Variable: CI4

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.077 ^a	.006	.001	1.277

a. Predictors: (Constant), Other, Male

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.984	2	1.992	1.222	.296 ^b
	Residual	660.347	405	1.630		
	Total	664.331	407			

a. Dependent Variable: CI4

b. Predictors: (Constant), Other, Male

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	4.272	.090		.000
	Male	.108	.127	.042	.393
	Other	1.728	1.280	.067	.178

a. Dependent Variable: CI4

Gender (Female as base value) – Car Preference 5

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Other, Male ^b	.	Enter

a. Dependent Variable: CP5

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.025 ^a	.001	-.004	.317

a. Predictors: (Constant), Other, Male

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.026	2	.013	.130	.878 ^b
	Residual	40.788	405	.101		
	Total	40.814	407			

a. Dependent Variable: CP5

b. Predictors: (Constant), Other, Male

Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.881	.022		39.465	.000
	Male	.011	.031	.018	.365	.715
	Other	.119	.318	.019	.373	.709

a. Dependent Variable: CP5

Gender (Female as base value) – Decision Intensity 5

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Other, Male ^b	.	Enter

a. Dependent Variable: CI5

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.141 ^a	.020	.015	1.364

a. Predictors: (Constant), Other, Male

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.379	2	7.690	4.134	.017 ^b
	Residual	753.422	405	1.860		
	Total	768.801	407			

a. Dependent Variable: CI5

b. Predictors: (Constant), Other, Male

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.540	.096		47.304	.000
	Male	.368	.135	.134	2.719	.007
	Other	1.460	1.367	.053	1.068	.286

a. Dependent Variable: CI5

Education (Bachelor Degree as base value) – Car Preference 1

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur ^b	.	Enter

a. Dependent Variable: CP1

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.129 ^a	.017	-.001	.457

a. Predictors: (Constant), PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.411	7	.202	.963	.458 ^b
	Residual	83.704	400	.209		
	Total	85.115	407			

a. Dependent Variable: CP1

b. Predictors: (Constant), PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.261	.042		6.212	.000
	SchoolNotCompleted	-.261	.459	-.028	-.567	.571
	Hauptschulabschluss	.073	.267	.014	.272	.785
	MittlereReife	.218	.104	.110	2.090	.037
	Abitur	.015	.061	.014	.243	.808
	Apprenticeship	.052	.078	.037	.665	.507
	MasterDiplom	.069	.063	.065	1.109	.268
	PhD	-.136	.167	-.041	-.811	.418

a. Dependent Variable: CP1

Education (Bachelor Degree as base value) – Decision Intensity 1

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur ^b	.	Enter

a. Dependent Variable: CI1

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.150 ^a	.022	.005	1.154

a. Predictors: (Constant), PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.227	7	1.747	1.312	.243 ^b
	Residual	532.653	400	1.332		
	Total	544.880	407			

a. Dependent Variable: CI1

b. Predictors: (Constant), PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.924	.106		27.645	.000
	SchoolNotCompleted	2.076	1.159	.089	1.791	.074
	Hauptschulabschluss	-.924	.675	-.068	-1.370	.171
	MittlereReife	.467	.263	.093	1.776	.076
	Abitur	.103	.153	.039	.674	.501
	Apprenticeship	.180	.197	.050	.911	.363
	MasterDiplom	.096	.158	.035	.610	.542
	PhD	-.174	.421	-.021	-.414	.679

a. Dependent Variable: CI1

Education (Bachelor Degree as base value) – Car Preference 2

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur ^b	.	Enter

a. Dependent Variable: CP2

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.207 ^a	.043	.026	.387

a. Predictors: (Constant), PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.689	7	.384	2.571	.013 ^b
	Residual	59.779	400	.149		
	Total	62.468	407			

a. Dependent Variable: CP2

b. Predictors: (Constant), PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.866	.035		24.424	.000
	SchoolNotCompleted	.134	.388	.017	.346	.729
	Hauptschulabschluss	-.532	.226	-.116	-2.355	.019
	MittlereReife	-.257	.088	-.151	-2.917	.004
	Abitur	-.031	.051	-.035	-.599	.550
	Apprenticeship	-.136	.066	-.112	-2.063	.040
	MasterDiplom	-.061	.053	-.067	-1.161	.246
	PhD	.134	.141	.048	.952	.342

a. Dependent Variable: CP2

Education (Bachelor Degree as base value) – Decision Intensity 2

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur ^b	.	Enter

a. Dependent Variable: CI2

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.109 ^a	.012	-.005	1.241

a. Predictors: (Constant), PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.359	7	1.051	.683	.687 ^b
	Residual	615.678	400	1.539		
	Total	623.037	407			

a. Dependent Variable: CI2

b. Predictors: (Constant), PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.353	.114		38.274	.000
	SchoolNotCompleted	-.353	1.246	-.014	-.283	.777
	Hauptschulabschluss	-.686	.725	-.047	-.946	.345
	MittlereReife	-.309	.283	-.058	-1.095	.274
	Abitur	.179	.164	.064	1.089	.277
	Apprenticeship	.001	.212	.000	.006	.995
	MasterDiplom	.029	.170	.010	.168	.867
	PhD	.272	.453	.031	.600	.549

a. Dependent Variable: CI2

Education (Bachelor Degree as base value) – Car Preference 3

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur ^b	.	Enter

a. Dependent Variable: CP3

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.133 ^a	.018	.001	.500

a. Predictors: (Constant), PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur

		ANOVA ^a				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.806	7	.258	1.033	.407 ^b
	Residual	99.897	400	.250		
	Total	101.703	407			

a. Dependent Variable: CP3

b. Predictors: (Constant), PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.471	.046		10.272	.000
	SchoolNotCompleted	.529	.502	.052	1.055	.292
	Hauptschulabschluss	-.137	.292	-.023	-.470	.639
	MittlereReife	.008	.114	.004	.067	.946
	Abitur	-.067	.066	-.059	-1.010	.313
	Apprenticeship	-.012	.085	-.008	-.143	.886
	MasterDiplom	.096	.068	.082	1.410	.159
	PhD	-.096	.183	-.027	-.524	.601

a. Dependent Variable: CP3

Education (Bachelor Degree as base value) – Decision Intensity 3

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur ^b	.	Enter

a. Dependent Variable: CI3

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.136 ^a	.019	.001	1.428

a. Predictors: (Constant), PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.453	7	2.208	1.083	.373 ^b
	Residual	815.545	400	2.039		
	Total	830.998	407			

a. Dependent Variable: CI3

b. Predictors: (Constant), PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.496	.131		26.707	.000
	SchoolNotCompleted	.504	1.434	.017	.352	.725
	Hauptschulabschluss	.171	.835	.010	.205	.838
	MittlereReife	-.191	.325	-.031	-.589	.556
	Abitur	-.367	.189	-.114	-1.941	.053
	Apprenticeship	-.058	.244	-.013	-.239	.811
	MasterDiplom	.143	.195	.043	.734	.463
	PhD	-.121	.522	-.012	-.232	.817

a. Dependent Variable: CI3

Education (Bachelor Degree as base value) – Car Preference 4

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur ^b	.	Enter

a. Dependent Variable: CP4

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.154 ^a	.024	.007	.409

a. Predictors: (Constant), PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur

		ANOVA ^a				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.626	7	.232	1.391	.208 ^b
	Residual	66.822	400	.167		
	Total	68.449	407			

a. Dependent Variable: CP4

b. Predictors: (Constant), PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.748	.037		19.961	.000
	SchoolNotCompleted	.252	.410	.030	.614	.539
	Hauptschulabschluss	-.415	.239	-.086	-1.735	.083
	MittlereReife	-.009	.093	-.005	-.094	.925
	Abitur	.105	.054	.114	1.943	.053
	Apprenticeship	-.019	.070	-.015	-.268	.789
	MasterDiplom	.056	.056	.058	1.006	.315
	PhD	.127	.149	.043	.851	.395

a. Dependent Variable: CP4

Education (Bachelor Degree as base value) – Decision Intensity 4

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur ^b	.	Enter

a. Dependent Variable: CI4

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.135 ^a	.018	.001	1.277

a. Predictors: (Constant), PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.135	7	1.734	1.063	.386 ^b
	Residual	652.196	400	1.630		
	Total	664.331	407			

a. Dependent Variable: CI4

b. Predictors: (Constant), PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.193	.117		35.823	.000
	SchoolNotCompleted	.807	1.282	.031	.629	.530
	Hauptschulabschluss	-.860	.746	-.058	-1.152	.250
	MittlereReife	.111	.291	.020	.382	.703
	Abitur	.339	.169	.117	2.001	.046
	Apprenticeship	-.047	.218	-.012	-.217	.828
	MasterDiplom	.198	.175	.066	1.136	.257
	PhD	.182	.466	.020	.390	.697

a. Dependent Variable: CI4

Education (Bachelor Degree as base value) – Car Preference 5

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur ^b	.	Enter

a. Dependent Variable: CP5

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.173 ^a	.030	.013	.315

a. Predictors: (Constant), PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.220	7	.174	1.761	.094 ^b
	Residual	39.594	400	.099		
	Total	40.814	407			

a. Dependent Variable: CP5

b. Predictors: (Constant), PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.916	.029		31.759	.000
	SchoolNotCompleted	.084	.316	.013	.266	.790
	Hauptschulabschluss	-.583	.184	-.157	-3.168	.002
	MittlereReife	-.003	.072	-.002	-.041	.967
	Abitur	-.063	.042	-.088	-1.504	.133
	Apprenticeship	-.041	.054	-.042	-.762	.447
	MasterDiplom	-.009	.043	-.012	-.203	.839
	PhD	-.041	.115	-.018	-.357	.722

a. Dependent Variable: CP5

Education (Bachelor Degree as base value) – Decision Intensity 5

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur ^b	.	Enter

a. Dependent Variable: CI5

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.126 ^a	.016	-.001	1.375

a. Predictors: (Constant), PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur

		ANOVA ^a				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.205	7	1.744	.922	.489 ^b
	Residual	756.597	400	1.891		
	Total	768.801	407			

a. Dependent Variable: CI5

b. Predictors: (Constant), PhD, SchoolNotCompleted, Hauptschulabschluss, MittlereReife, Apprenticeship, MasterDiplom, Abitur

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.756	.126		37.726	.000
	SchoolNotCompleted	.244	1.381	.009	.176	.860
	Hauptschulabschluss	-1.090	.804	-.068	-1.355	.176
	MittlereReife	-.235	.313	-.039	-.749	.454
	Abitur	-.151	.182	-.049	-.827	.409
	Apprenticeship	-.152	.235	-.036	-.647	.518
	MasterDiplom	.192	.188	.060	1.021	.308
	PhD	.244	.502	.025	.485	.628

a. Dependent Variable: CI5

Occupation (Working as base value) – Car Preference 1

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Unemployed, Student, UniversityStudent ^b	.	Enter

a. Dependent Variable: CPI

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.094 ^a	.009	.002	.457

a. Predictors: (Constant), Unemployed, Student, UniversityStudent

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.758	3	.253	1.210	.306 ^b
	Residual	84.357	404	.209		
	Total	85.115	407			

a. Dependent Variable: CPI

b. Predictors: (Constant), Unemployed, Student, UniversityStudent

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.290	.029		9.927	.000
	Student	.210	.118	.089	1.783	.075
	UniversityStudent	-.009	.049	-.010	-.190	.849
	Unemployed	.085	.164	.026	.519	.604

a. Dependent Variable: CPI

Occupation (Working as base value) – Decision Intensity 1

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Unemployed, Student, UniversityStudent ^b	.	Enter

a. Dependent Variable: CI1

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.126 ^a	.016	.009	1.152

a. Predictors: (Constant), Unemployed, Student, UniversityStudent

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.707	3	2.902	2.187	.089 ^b
	Residual	536.173	404	1.327		
	Total	544.880	407			

a. Dependent Variable: CI1

b. Predictors: (Constant), Unemployed, Student, UniversityStudent

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.935	.074		39.873	.000
	Student	.628	.297	.105	2.112	.035
	UniversityStudent	.137	.122	.056	1.122	.263
	Unemployed	.565	.414	.068	1.366	.173

a. Dependent Variable: CI1

Occupation (Working as base value) – Car Preference 2

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Unemployed, Student, UniversityStudent ^b	.	Enter

a. Dependent Variable: CP2

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.124 ^a	.015	.008	.390

a. Predictors: (Constant), Unemployed, Student, UniversityStudent

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.957	3	.319	2.095	.100 ^b
	Residual	61.511	404	.152		
	Total	62.468	407			

a. Dependent Variable: CP2

b. Predictors: (Constant), Unemployed, Student, UniversityStudent

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.776	.025		31.109	.000
	Student	.037	.101	.018	.367	.714
	UniversityStudent	.102	.041	.124	2.466	.014
	Unemployed	-.026	.140	-.009	-.182	.856

a. Dependent Variable: CP2

Occupation (Working as base value) – Decision Intensity 2

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Unemployed, Student, UniversityStudent ^b	.	Enter

a. Dependent Variable: CI2

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.103 ^a	.011	.003	1.235

a. Predictors: (Constant), Unemployed, Student, UniversityStudent

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.632	3	2.211	1.449	.228 ^b
	Residual	616.405	404	1.526		
	Total	623.037	407			

a. Dependent Variable: CI2

b. Predictors: (Constant), Unemployed, Student, UniversityStudent

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.290	.079		54.360	.000
	Student	.085	.319	.013	.267	.789
	UniversityStudent	.271	.131	.104	2.069	.039
	Unemployed	.210	.444	.024	.474	.636

a. Dependent Variable: CI2

Occupation (Working as base value) – Car Preference 3

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Unemployed, Student, UniversityStudent ^b	.	Enter

a. Dependent Variable: CP3

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.064 ^a	.004	-.003	.501

a. Predictors: (Constant), Unemployed, Student, UniversityStudent

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.419	3	.140	.557	.644 ^b
	Residual	101.284	404	.251		
	Total	101.703	407			

a. Dependent Variable: CP3

b. Predictors: (Constant), Unemployed, Student, UniversityStudent

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.478	.032		14.929	.000
	Student	.085	.129	.033	.658	.511
	UniversityStudent	-.032	.053	-.030	-.593	.554
	Unemployed	.147	.180	.041	.820	.413

a. Dependent Variable: CP3

Occupation (Working as base value) – Decision Intensity 3

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Unemployed, Student, UniversityStudent ^b	.	Enter

a. Dependent Variable: CI3

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.085 ^a	.007	.000	1.429

a. Predictors: (Constant), Unemployed, Student, UniversityStudent

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.993	3	1.998	.978	.403 ^b
	Residual	825.004	404	2.042		
	Total	830.998	407			

a. Dependent Variable: CI3

b. Predictors: (Constant), Unemployed, Student, UniversityStudent

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.473	.091		38.046	.000
	Student	-.161	.369	-.022	-.437	.663
	UniversityStudent	-.186	.152	-.062	-1.224	.222
	Unemployed	.527	.513	.051	1.026	.306

a. Dependent Variable: CI3

Occupation (Working as base value) – Car Preference 4

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Unemployed, Student, UniversityStudent ^b	.	Enter

a. Dependent Variable: CP4

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.109 ^a	.012	.004	.409

a. Predictors: (Constant), Unemployed, Student, UniversityStudent

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.806	3	.269	1.604	.188 ^b
	Residual	67.643	404	.167		
	Total	68.449	407			

a. Dependent Variable: CP4

b. Predictors: (Constant), Unemployed, Student, UniversityStudent

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.751	.026		28.729	.000
	Student	.061	.106	.029	.582	.561
	UniversityStudent	.091	.043	.105	2.088	.037
	Unemployed	.124	.147	.042	.843	.400

a. Dependent Variable: CP4

Occupation (Working as base value) – Decision Intensity 4

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Unemployed, Student, UniversityStudent ^b	.	Enter

a. Dependent Variable: CI4

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.071 ^a	.005	-.002	1.279

a. Predictors: (Constant), Unemployed, Student, UniversityStudent

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.363	3	1.121	.685	.561 ^b
	Residual	660.968	404	1.636		
	Total	664.331	407			

a. Dependent Variable: CI4

b. Predictors: (Constant), Unemployed, Student, UniversityStudent

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4,257	,082		52,096	,000
	Student	,180	,330	,027	,546	,585
	UniversityStudent	,182	,136	,067	1,338	,182
	Unemployed	,243	,460	,026	,528	,597

a. Dependent Variable: CI4

Occupation (Working as base value) – Car Preference 5

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Unemployed, Student, UniversityStudent ^b	.	Enter

a. Dependent Variable: CP5

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.092 ^a	.008	.001	.316

a. Predictors: (Constant), Unemployed, Student, UniversityStudent

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.345	3	.115	1.147	.330 ^b
	Residual	40.469	404	.100		
	Total	40.814	407			

a. Dependent Variable: CP5

b. Predictors: (Constant), Unemployed, Student, UniversityStudent

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.886	.020		43.803	.000
	Student	.114	.082	.070	1.399	.162
	UniversityStudent	-.015	.034	-.023	-.453	.651
	Unemployed	.114	.114	.050	1.005	.315

a. Dependent Variable: CP5

Occupation (Working as base value) – Decision Intensity 5

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Unemployed, Student, UniversityStudent ^b	.	Enter

a. Dependent Variable: CI5

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.073 ^a	.005	-.002	1.376

a. Predictors: (Constant), Unemployed, Student, UniversityStudent

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.089	3	1.363	.720	.540 ^b
	Residual	764.712	404	1.893		
	Total	768.801	407			

a. Dependent Variable: CI5

b. Predictors: (Constant), Unemployed, Student, UniversityStudent

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.747	.088		54.006	.000
	Student	.378	.355	.053	1.065	.288
	UniversityStudent	-.078	.146	-.027	-.533	.594
	Unemployed	-.372	.494	-.038	-.752	.452

a. Dependent Variable: CI5

Living Area (Rural as base value) – Car Preference 1

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Urban, Suburban ^b	.	Enter

a. Dependent Variable: CP1

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.055 ^a	.003	-.002	.458

a. Predictors: (Constant), Urban, Suburban

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.254	2	.127	.607	.545 ^b
	Residual	84.861	405	.210		
	Total	85.115	407			

a. Dependent Variable: CP1

b. Predictors: (Constant), Urban, Suburban

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	.268	.046		.000
	Suburban	.068	.065	.065	.290
	Urban	.022	.056	.024	.699

a. Dependent Variable: CP1

Living Area (Rural as base value) – Decision Intensity 1

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Urban, Suburban ^b	.	Enter

a. Dependent Variable: CI1

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.055 ^a	.003	-.002	1.158

a. Predictors: (Constant), Urban, Suburban

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.627	2	.813	.606	.546 ^b
	Residual	543.253	405	1.341		
	Total	544.880	407			

a. Dependent Variable: CI1

b. Predictors: (Constant), Urban, Suburban

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.918	.118		24.810	.000
	Suburban	.082	.163	.031	.504	.614
	Urban	.155	.143	.067	1.087	.278

a. Dependent Variable: CI1

Living Area (Rural as base value) – Car Preference 2

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Urban, Suburban ^b	.	Enter

a. Dependent Variable: CP2

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.086 ^a	.007	.002	.391

a. Predictors: (Constant), Urban, Suburban

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.462	2	.231	1.509	.222 ^b
	Residual	62.006	405	.153		
	Total	62.468	407			

a. Dependent Variable: CP2

b. Predictors: (Constant), Urban, Suburban

Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.753	.040		18.943	.000
	Suburban	.065	.055	.072	1.172	.242
	Urban	.083	.048	.106	1.728	.085

a. Dependent Variable: CP2

Living Area (Rural as base value) – Decision Intensity 2

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Urban, Suburban ^b	.	Enter

a. Dependent Variable: CI2

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.085 ^a	.007	.002	1.236

a. Predictors: (Constant), Urban, Suburban

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4.496	2	2.248	1.472	.231 ^b
	Residual	618.541	405	1.527		
	Total	623.037	407			

a. Dependent Variable: CI2

b. Predictors: (Constant), Urban, Suburban

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.216	.125		33.603	.000
	Suburban	.293	.174	.103	1.680	.094
	Urban	.194	.152	.079	1.277	.202

a. Dependent Variable: CI2

Living Area (Rural as base value) – Car Preference 3

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Urban, Suburban ^b	.	Enter

a. Dependent Variable: CP3

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.126 ^a	.016	.011	.497

a. Predictors: (Constant), Urban, Suburban

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.622	2	.811	3.282	.039 ^b
	Residual	100.081	405	.247		
	Total	101.703	407			

a. Dependent Variable: CP3

b. Predictors: (Constant), Urban, Suburban

Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.361	.050		7.149	.000
	Suburban	.158	.070	.138	2.257	.025
	Urban	.142	.061	.142	2.315	.021

a. Dependent Variable: CP3

Living Area (Rural as base value) – Decision Intensity 3

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Urban, Suburban ^b	.	Enter

a. Dependent Variable: CI3

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.146 ^a	.021	.016	1.417

a. Predictors: (Constant), Urban, Suburban

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.626	2	8.813	4.388	.013 ^b
	Residual	813.371	405	2.008		
	Total	830.998	407			

a. Dependent Variable: CI3

b. Predictors: (Constant), Urban, Suburban

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.052	.144		21.207	.000
	Suburban	.400	.200	.122	2.002	.046
	Urban	.514	.174	.180	2.946	.003

a. Dependent Variable: CI3

Living Area (Rural as base value) – Car Preference 4

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Urban, Suburban ^b	.	Enter

a. Dependent Variable: CP4

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.159 ^a	.025	.021	.406

a. Predictors: (Constant), Urban, Suburban

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.737	2	.869	5.273	.005 ^b
	Residual	66.711	405	.165		
	Total	68.449	407			

a. Dependent Variable: CP4

b. Predictors: (Constant), Urban, Suburban

Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.670	.041		16.261	.000
	Suburban	.147	.057	.157	2.570	.011
	Urban	.156	.050	.190	3.124	.002

a. Dependent Variable: CP4

Living Area (Rural as base value) – Decision Intensity 4

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Urban, Suburban ^b	.	Enter

a. Dependent Variable: CI4

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.127 ^a	.016	.011	1.270

a. Predictors: (Constant), Urban, Suburban

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.745	2	5.373	3.329	.037 ^b
	Residual	653.586	405	1.614		
	Total	664.331	407			

a. Dependent Variable: CI4

b. Predictors: (Constant), Urban, Suburban

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.041	.129		31.331	.000
	Suburban	.401	.179	.137	2.237	.026
	Urban	.369	.156	.145	2.363	.019

a. Dependent Variable: CI4

Living Area (Rural as base value) – Car Preference 5

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Urban, Suburban ^b	.	Enter

a. Dependent Variable: CP5

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.205 ^a	.042	.037	.311

a. Predictors: (Constant), Urban, Suburban

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.715	2	.857	8.881	.000 ^b
	Residual	39.099	405	.097		
	Total	40.814	407			

a. Dependent Variable: CP5

b. Predictors: (Constant), Urban, Suburban

Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.773	.032		24.509	.000
	Suburban	.169	.044	.233	3.856	.000
	Urban	.140	.038	.221	3.658	.000

a. Dependent Variable: CP5

Living Area (Rural as base value) – Decision Intensity 5

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Urban, Suburban ^b	.	Enter

a. Dependent Variable: CI5

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.214 ^a	.046	.041	1.346

a. Predictors: (Constant), Urban, Suburban

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.226	2	17.613	9.724	.000 ^b
	Residual	733.576	405	1.811		
	Total	768.801	407			

a. Dependent Variable: CI5

b. Predictors: (Constant), Urban, Suburban

Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.227	.137		30.932	.000
	Suburban	.802	.190	.255	4.222	.000
	Urban	.585	.166	.213	3.531	.000

a. Dependent Variable: CI5