



Car Subscription Models: Chinese EV Producers and the German B2C Car Market

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Abstract

The automotive industry is experiencing rapid transformation, driven by the shifts towards electric mobility, autonomous driving, connectivity and new car usage models, creating opportunities for new entrants to challenge established players in markets that long seemed untouchable. This thesis examines whether car subscription models can serve as an effective market entry strategy for Chinese electric vehicle (EV) producers to gain a foothold in the German business-to-customer (B2C) car market. A mixed methods approach, combining qualitative interviews with industry experts and a quantitative survey with potential customers, was used to assess the viability of this strategy.

The findings suggest that while Chinese producers possess dynamic capabilities and technological innovations, they still face significant market entry barriers that arise from negative user perceptions, lack of brand recognition, the need for building distribution channels, potential tariffs and capital requirements. Car subscriptions, which offer a low-commitment entry option for potential customers, are especially attractive for customers who's negative perceptions manifest in experiencing social and performance risk towards the car and can provide a more capital-efficient entry by reducing the need for extensive dealership networks. However, the study also highlights operational and financial challenges associated with car subscriptions, such as managing vehicle returns, maintaining service networks, and ensuring sustainable revenue streams. It concludes that while subscriptions are a promising strategy for market entry, they should be part of a broader multi-channels sales strategy, which long term success is highly dependent on the companies' ability to convince the customers of their brand during the subscription period.

Keywords: automotive industry, car subscriptions, China, dynamic capabilities, electric vehicles, Germany, market entry barriers

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Resumo

A indústria automóvel tem vindo a sofrer uma rápida transformação, impulsionada por mudanças nos campos da mobilidade elétrica, da condução autónoma, da conectividade e dos novos modelos de utilização dos automóveis, criando oportunidades para novas empresas no setor desafiarem as já estabelecidas e que há muito pareciam intocáveis. Esta dissertação analisa se os modelos de subscrição de veículos poderão servir como estratégia eficaz de entrada no mercado para produtores chineses de veículos elétricos ganharem uma posição no mercado automóvel alemão business-to-customer. Utilizou-se uma metodologia mista, que combinou entrevistas qualitativas a peritos da indústria e um inquérito quantitativo a potenciais clientes, de forma a avaliar a viabilidade desta estratégia.

Os resultados sugerem que, embora os produtores chineses possuam capacidades dinâmicas e inovações tecnológicas, ainda enfrentam barreiras significativas à entrada no mercado, decorrentes de perceções negativas dos utilizadores, da falta de reconhecimento da marca automóvel, da necessidade de criar canais de distribuição, de potenciais tarifas e de requisitos de capital. A subscrição de veículos, que oferece aos potenciais clientes uma opção de baixo compromisso, é especialmente atrativa para aqueles cujas perceções negativas se manifestam na experiência de risco social e no desempenho do veículo. Além disso, pode proporcionar uma entrada mais eficiente em termos de capital, reduzindo a necessidade de redes de concessionários extensas. Contudo, o estudo também salienta os desafios operacionais e financeiros associados à subscrição automóvel, como a gestão das devoluções de veículos, a manutenção de redes de assistência técnica e a manutenção de um sistema de gestão de resíduos.

Palavras-chave: Alemanha, barreiras à entrada no mercado, capacidades dinâmicas, China, indústria automóvel, subscrição automóvel, veículos elétricos

Título: Modelos de subscrição de automóveis: produção chinesa de veículos elétricos e o mercado automóvel B2C alemão.

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B2C	Business-to-Consumer
BCG	Boston Consulting Group
BEV	Battery Electric Vehicle
CASE	Connectivity, Autonomous Driving, Service & Shared and Electrification
D2C	Direct-to-Consumer
EV	Electric Vehicle
ICE	Internal Combustion Engine
OEM	Original Equipment Manufacturers
RQ	Research Question

1. INTRODUCTION

When Dan Amann, the former president of General Motors, said in 2016: “We see more change in the next five years than there’s been in the last fifty”, (Burke, 2016) he was already aware that the once stable automotive market was on the brink of reinvention. We can only speculate whether he could have anticipated just how drastically the market would be transformed over the next eight years.

The forces that Amann likely envisioned were the megatrends that Mercedes defined in the same year, naming them CASE: Connectivity, Autonomous Driving, Service & Shared and Electrification (Mercedes, 2017). These trends are not just changing how vehicles are manufactured and sold, they are also describing evolving customer needs and societal demands of what a car should deliver.

Climate Change has created an urgency prompting governments to impose restrictions on the automotive industry, such as the European Union’s mandate for all new vehicles sold by 2035 to be emission-free (Bundesregierung, 2023). This has accelerated the expansion of electric vehicles (EVs) among Original Equipment Manufacturers (OEMs). At the same time, changing customer needs, especially in urban areas, led to new mobility solutions like car sharing.

The competitive landscape is shifting towards customer experience being the biggest driver for car sales. While engineering capabilities still remain important for automakers, in today’s digitalized world customers expect more from a car. One of the first car makers to pick up on this trend was Tesla, which not only realized that cars could be sold online directly to customers but created a suite of customer centric services, building a smart user interface that is regularly updated to serve the customer in the best possible way (Grüntges et al., 2021).

Car subscriptions, an all-in-one short term leasing offering that includes tax, insurance and maintenance payments, are one of the new business models that came up in the recent years. Although car subscriptions currently account for only 6.6 percent of new car sales in the German B2C market (Rosche, 2023), the Boston Consulting Group (BCG) sees the market potential in Europe and the US at 30 to 40 billion by 2030 representing 15 percent of new car sales (Schellong et al., 2021).

Not only are business models evolving, but global markets are changing as well. In 2022, China managed to pass Germany in vehicle exports for the first time. Chinese OEMs exported three million vehicles while German OEMs, long leading the market, only exported 2.6 million units (Cornet et al., 2023). This milestone highlights the growing influence of Chinese

OEMs in the global market. Additionally, the Chinese automaker BYD has overtaken Tesla as the world's leading EV producer (Miller, 2023).

While the Chinese market is on the rise, with the government backing the industry with heavy investments in battery technology and research and development in the EV sector, the German automotive industry is facing a massive challenge navigating this transition. The industry must adopt new operating practices, addressing knowledge deficits and developing skills and capabilities required to further strive in a changing market (Felser et al, 2023).

These struggles among established incumbents in Germany create opportunities for new entrants in a market long dominated by local players. While historically German consumers were critical of Chinese vehicles, new mega trends and business models could give Chinese OEMs another chance to establish themselves in the German market, leading to the Research Question (RQ): **How can car subscription models help Chinese EV producers gain a foothold in the German B2C car market?**

The research starts with a literature review that focusses on the recent changes in the automotive market, Chinese entrants and their dynamic capabilities, car subscriptions, access based consumption as well as market entry barriers that companies face when entering consumer goods markets. To assess whether car subscriptions can serve as an effective strategy for Chinese OEMs to overcome these barriers, a mixed methods approach is used, combining qualitative interviews with industry experts and a quantitative survey of potential customers. The findings are then analyzed and discussed, leading to both theoretical and practical implications.

2. LITERATURE REVIEW

2.1 The Automotive Market

The automotive market has been characterized as stable, dominated by a few major players who maintained equilibrium (Ferrás, 2017), with a focus on the traditional core skills related to car manufacturing itself (Felser et al, 2020). However today, the industry is much more unstable due to rapid technological change that is now also affecting the established OEMs. The automotive industry is in a phase of a disruption that will reshape the industry and its value streams. Decarbonization as well as Digitalization are the biggest drivers of that change (Felser et al, 2023) and lead to Battery-Electric-Vehicles (BEVs) replacing Internal Combustion Engines (ICEs) and various new forms of mobility services such as ride-hailing, car sharing or micro mobility programs like electric scooters appearing next to the traditional car use models (Hagemaier et al, 2023). Moreover, Sales Channels moving from offline to online and new Sales formats like subscriptions appear (Hagemaier et al, 2023). The instability provides opportunities for new entrants to get into the market and compete with incumbents that were long seen as untouchable (Ferrás, 2017).

2.1.1 The Automotive Market in Germany

Germany is Europe's biggest automotive market with 20 percent of European car sales and 25 percent of European production (Di Bitonto, Mester, 2023). Currently the market is still dominated by German OEMs and their subsidiary companies with 63 percent of total car sales in 2023. The Volkswagen Group is the most dominant player with 40 percent of car sales including their daughter companies Skoda, Audi, Seat and Porsche (Statista, 2024).

In Germany, nearly half of B2C customers opt for financing to acquire their cars, which primarily falls into two categories: those that lead to ownership and those that do not. Among the ownership paths, the two most prominent are installment loans and three-way financing, which involves a down payment in addition to monthly installments. On the other hand, leasing and subscriptions are financing options that do not lead to ownership but rather allow for the use of the car for a set period through monthly payments. (Bankenfachverband, 2023).

While leasing is still the dominant form in this category, subscriptions are expected to make up a bigger market share which will be further described in later parts of this review.

2.1.2 BEV adoption in Germany

Last year's sales of BEVs reached a record high with more than 18 percent of vehicles sold in Germany being BEVs (Prack, 2024). Tesla's model Y was the highest sold model in Germany while German manufacturers only have a 42 percent market share up to date (Statista, 2024, Prack, 2024). Moreover, sales are still lagging behind the German government's goal to sell 15 million BEVs by 2030 (Meyer et al, 2024) to eventually meet EU regulations of only selling cars with carbon neutral engines by 2035 (Bundesregierung, 2023). Given that price is the primary consideration for German consumers when deciding to buy a BEV (Tummalapalli et al., 2024), the cut of BEV subsidies in Germany, which reached up to €4,500 for vehicles priced under €40,000 (Gerhäuser, Kraher, 2024), significantly impacted overall vehicle sales, leading to a 29 percent decline from March 2023 to March 2024 (Fastrich, Prack, 2024). Leaving room for affordable BEV alternatives to enter the market.

In addition to price sensitivity, BEV customers also contend with steep depreciation rates, with BEVs losing an average of 50 percent of their value within three years of use. Consequently, there's a noticeable trend towards leasing, with the number of customers choosing to lease a BEV doubling compared to ICE customers (Flötotto et al, 2023). This trend underscores a significant change in consumer preferences towards more adaptable ownership models and non-ownership modes.

2.1.3 Chinese OEMs in Germany

In 2023, Chinese OEMs were able to sell 39,987 cars in Germany with more than 90 percent of them being BEVs with the largest sellers being MG (21,232), Polestar (6,288), GWM (4,260) and BYD (4,139) (KBA, 2024). While they increased their last year's result by almost 50 percent, their total car sales only made up about 1.4 percent of the German automotive market. However, when looking at BEVs sold, their stake in the market was at a more successful 5.5 percent (Janssen, 2024).

Furthermore, Chinese manufacturers like MG are able to market their vehicles (e.g., MG 4 at €28,590) at prices significantly lower than those of their German rivals (e.g., VW ID4 at €39,990), appealing to the cost-conscious German consumer (Tummalapalli et al, 2024). This price advantage stems partly from their reduced research and development expenses and lower labour and energy costs. Additionally, it is supported by the persistent backing from the Chinese Government for new vehicles as a component of their development strategy, further enhancing their competitive edge in the market (Kang, Chen, 2023). This situation has led the European Commission to examine whether Chinese-made electric vehicles are receiving disproportionately high government subsidies, underscoring the increasing tensions and complexities within market dynamics (Yang, 2023).

2.2 Changing Customer Behaviour

2.2.1 Access-based Consumption

As we delve into new entrants and innovations in the mobility sector, it's crucial to also examine the evolving preferences for meeting mobility needs. Access-based ownership models are becoming increasingly popular among consumers.

Schaefer, et al define (2015) access-based consumption as “market mediated transactions that provide customers with temporarily limited access to goods in return for an access fee, while the legal ownership remains with the service provider”. While ownership typically entails making a single upfront payment, access-based consumption gives consumers the right to use through multiple smaller access/rent payments (Lovelock, Gummesson, 2004).

Historically, ownership was the favoured form of consumption and was preferred over renting as it was seen as cheaper and gave the consumer a sense of security (Snare, 1972). In contrast, renting was considered an inferior form of consumption that was mainly used to mitigate financial shortcomings (Durgee and O’Conner, 1995). Access-based consumption however gained popularity in recent times of economic crisis in which consumers readjusted their spending habits and faced uncertainties within the labour market that made ownership a less attainable form of consumption (Bardhi, Eckhardt, 2012; Cheshire et al, 2010). Today, more and more people engage in leasing or sharing products (Matzler, Veider, Kathan, 2015) and

we can see access-based business models disrupting several industries such as entertainment (Netflix, Amazon Prime, Spotify) and hospitality (Airbnb).

In the car industry, car sharing as well as subscription models have become more popular, especially in densely populated urban areas. Moreover, fewer and fewer people see their car as a symbol of status but more as a vehicle for their mobility (Koroth, Pater, Mazurek, 2019). Particularly among the younger generations, owning a car is no longer seen as a necessity. While 75 percent of Baby Boomers think that owning a car is a necessity, only 45 percent of Generation Z think the same (Schellong et al, 2021).

A key differentiator between ownership and access-based consumption that drives people away from ownership is the risks that come with owning goods. Moeller and Wittkowski defined these risks as the so-called burdens of ownership (Moeller, Wittkowski, 2012).

Schaefers et al differentiate between three types of risk dimensions that were previously defined by Kaplan and Jacoby (1974) when measuring their effect on the use of access-based services:

- **Financial Risk:** the potential financial loss a customer could face when buying a product. Financial risk increases with the price of the product.
- **Performance Risk:** the potential for a product to fail or not perform how the user imagined it.
- **Social Risk:** the potential to which others could react negatively towards the purchased product.

The research concluded that all three ownership risks described above have a positive impact on people's use of access-based consumption, in this case, a car-sharing platform, and therefore also have a positive impact on the customer's decision to reduce ownership (Schaefers et al, 2015; Kaplan, Jacoby, 1974). What is not yet researched for the automotive market is how customers see these risks when comparing German BEVs to Chinese BEVs and whether a higher amount of risk for foreign brands also leads to non-ownership models being the favoured usage form for customers.

2.2.2 Car Subscription Models

Car subscription services, representing a new paradigm in automotive consumption, offer comprehensive mobility solutions by covering all associated costs, including insurance,

maintenance and taxes presenting a clear picture of vehicle ownership expenses, potentially appealing to those wary of traditional ownership's hidden costs (Tukker, 2015; Kanatli, Karaer, 2022). Subscriptions differ from traditional leasing or ownership models by providing users with medium-term access to vehicles, combining the flexibility of short-term rentals with the stability of long-term commitments (Chaudhuri et al., 2022; Buss et al, 2019).

The shift in the automotive industry towards inventive business models has arisen from the low average margin of car sales, sometimes dipping to as low as 2% (Gaiardelli et al., 2014). This challenge has driven the industry to seek out new ways to boost revenue, resulting in the exploration and embrace of service-focused business models that emphasize the provision of services rather than the outright sale of vehicles (Schellong et al, 2021).

Market projections are optimistic, with car subscriptions expected to generate \$30 billion to \$40 billion by 2030, accounting for up to 15% of new car sales in Europe and the US, driven by demographic trends and a growing preference for flexible mobility solutions (Schellong et al., 2021; Buss et al., 2019).

There are several players in the Car Subscription market in Germany ranging from OEMs over Start-Ups to Car rental and other companies. The following info was mainly gathered from the players webpages:

- **OEMs**

Volvo's Care Program was the first OEM subscription service that launched in Germany in 2019 (Hubik, 2019). Since then several OEMs started engaging in the subscription model. However, many German OEMs target their subscription models at high-end vehicles, offering limited selections of premium vehicles (e.g., Audi) or allowing users the flexibility to switch cars regularly (e.g., Porsche). Others have a selected range of models to choose from (e.g. Volkswagen) or untransparent pricing models on their websites (e.g. Mercedes). Other OEMs such as Volvo or Stellantis have a bigger range of vehicles offered and display the prices for various subscription options on their website.

- **Start-Ups**

Over the past few years, several Start-Ups that are solely serving the car subscription market have emerged in Germany. Some of the biggest players in this market are FINN,

ViveLeCar, Carminga, Like2Drive, and Faaren. Start-ups like Faaren act as a marketplace for subscriptions of smaller independent car salesmen. Others like FINN invest in their fleet of cars that are then given to their customers. FINN is the most dominant player in the market with yearly revenues of over 160 million euros. The German car subscription market is moving towards consolidation, with the most notable merger being ViveLaCars acquisition of Cluno. Lang et al suggest that the market will end up with a few large players effectively using their economies of scale to present an appealing offering to the car subscription users (Lang et al, 2023).

- **Car Rental and Sharing Companies**

Car Rental Companies like Sixt, Avis and Europcar as well as car-sharing companies like MILES which is one of the biggest car-sharing providers in Germany have extended their service portfolios towards subscriptions too. Additionally, Sixt+ offers subscription services for a range of Chinese automobile brands, including BYD, Nio, MG, and Polestar. They have recently struck an agreement with BYD to acquire 100,000 vehicles by 2028.

Studies on user perception towards car subscriptions revealed that EVs in particular are booked through car subscriptions as perceived risks towards e-mobility can be mitigated by the subscription model with 46 percent of participants saying that a subscription model eases their way into e-mobility (Dudenhöfer et al, 2022). This effect can also be seen among the customers of car subscription company FINN as 26 percent of them choose an electric vehicle subscription while EVs only contributed to 13 percent of new car sales within Germany (Lang et al, 2023).

Financial considerations play a significant role in consumer decisions, with more than half of the respondents in Germany preferring packages priced below €500. Finn's experience, where the most popular car costs around €540 a month, demonstrates the market's price sensitivity and the potential for competitively priced subscriptions to attract consumers (Lang et al, 2023). Volvo's experience with its "Care by Volvo" subscription model illustrates the potential for car subscriptions to attract new customer segments, with 90% of customers during the pilot phase coming from competitors (Swantusch, 2018). This indicates that new entrants, including Chinese companies, can capture significant market share by appealing to consumers with a cost-effective BEV alternative.

Furthermore, the preference for vehicle type over brand or model and the significant interest in electric vehicles (EVs) as part of subscription services (Lang et al, 2023) highlight evolving consumer priorities. With 78% of Finn's subscribers not having purchased a new car previously (Lang et al, 2023), the subscription model appears to offer an effective channel for introducing consumers to new automotive technologies, including EVs, potentially aligning with the strengths of Chinese manufacturers in the EV sector.

2.3 Dynamic Capabilities

When evaluating how well companies perform in rapidly changing market environments like the automotive industry, it is essential to examine the dynamic capabilities of each company. The concept of dynamic capabilities was initially developed by Teece, who defined them as a firm's ability to "integrate, build, and reconfigure internal and external competencies to address rapidly changing environments" (Teece et al., 1997). Teece further categorized dynamic capabilities into three distinct parts:

- **Sensing (Opportunity Identification):** This involves the firm's ability to scan, search, and explore across technologies and markets to identify and assess opportunities to address customer needs.
- **Seizing (Opportunity Capitalization):** This refers to the firm's ability to mobilize resources to address opportunities through new service and product offerings, decision-making processes, and business model innovations.
- **Transforming (Continuous Renewal):** Teece discusses the necessity for ongoing re-configuration of the organization's assets to keep pace with changing environments and to achieve renewal through innovation.

This concept was later revised by Barreto (2010) who critically assessed the existing literature on dynamic capabilities uncovering several key issues: conceptual vagueness and elusiveness that hinder empirical research, tautological links to success that obscure cause and effect, an overemphasis on rapidly changing environments limiting broader applicability, ambiguity in heterogeneity assumptions complicating generalization, and inconsistent links to firm performance raising questions about their direct benefits. To address these issues the following definition was formed, introducing a fourth part to Teece's prior definitions:

“A dynamic capability is the firm’s potential to systematically solve problems, formed by its propensity to sense opportunities and threats, to make timely and market-oriented decisions, and to change its resource base.” (Barreto, 2010).

Dynamic capabilities equip organizations and their leaders to anticipate changes in consumer preferences, business challenges, and technological advancements. These capabilities facilitate the validation and adjustment of forecasts, followed by strategic realignment to continuously innovate and adapt. Strong dynamic capabilities empower firms to outcompete those that are fixated on existing resources, resistant to change, and prioritize efficiency over innovation (Teece, 2014). Numerous studies have demonstrated the significant impact that dynamic capabilities have on fostering innovation and thereby indirectly enhancing company performance (Protogerou et al., 2012; Zhou et al., 2017; AlTaweel, Al-Hawary, 2021).

2.3.1 Importance of Dynamic Capabilities in the Automotive Industry

Teece identifies four paradigm shifts that necessitate dynamic capabilities in the automotive industry: Electric Vehicles (EVs), Autonomous Vehicles (AVs), Connected Cars, and Personal Mobility Services (Teece, 2019). The entry of Chinese vehicles into the German B2C car market through subscription models aligns with two significant industry shifts: EVs and personal mobility services. Additionally, when assessing dynamic capabilities, it is also vital to consider government support. Governments should transition from regulating to facilitating roles, not only supporting local companies but also boosting demand through consumer incentives (Rotjanakorn, 2020). Thus, evaluating the potential success of this market entry requires an assessment of the dynamic capabilities of Chinese companies, alongside the support provided by both the Chinese and German governments.

Looking at the Chinese government, it is clear that there is substantial investment in the success of its EV companies, having facilitated the development of the New Energy Vehicle (NEV) sector since 2010 when it was named one of the seven strategic emerging industries. Since then, the government has not only promoted EVs to the Chinese population through subsidies—which were as high as half of a car's purchase price—and other incentives such as preferred access to license plates (Wang, Sperling, Tal, & Fang, 2017), but has also introduced incentives for companies. For instance, a credit system that financially rewards manufacturers with high average fleet fuel efficiency and penalizes those who do not meet

minimum criteria (Teece, 2019). Furthermore, government procurement has shifted to exclusively purchasing EVs for governmental use and has implemented policies to promote EVs in commercial applications, such as taxis. These combined incentives have contributed to a boom in EV sales in China, making it the largest EV market in the world (Ou et al., 2017).

At the same time, the number of EV startups in China steeply increased to more than 500 in 2019. Many of these startups are led by CEOs with backgrounds as internet entrepreneurs, bringing fresh, tech-oriented perspectives to tackle traditional automotive challenges (Suzuki, 2019). This influx of technology-driven leadership is vital as it aligns with the dynamic capabilities needed to quickly sense and seize market opportunities. Research indicates that top management's ability to foster an environment that embraces change and responds swiftly to market shifts is a critical component of successful dynamic capabilities (Adner, Helfat, 2003; Teece, 2007).

Leading Chinese EV startups have also capitalized on direct-to-consumer (D2C) sales models. This strategy simplifies the supply chain and enhances the ability to gather vital customer data and receive immediate feedback (Suzuki, 2019). Such direct engagement is crucial for continuously refining products and services to align with consumer preferences, exemplifying a transformative capability in action.

Among Chinese auto companies, Geely has particularly demonstrated strong dynamic capabilities. Its strategic global acquisitions, such as Volvo and the London Electric Vehicle Company, and a majority stake in Lotus Cars, have not only expanded its global reach but also broadened its technological and design expertise. These strategic moves enable Geely to harness diverse competencies and drive innovation across its product lineup (Teece, 2019).

The advancement of EVs has created a more level playing field for Chinese producers, particularly in markets like Germany with well-developed EV charging infrastructures (Dong, 2024). This environment reduces one of the significant barriers to EV adoption—charging convenience and availability—thus providing an advantageous backdrop for Chinese manufacturers seeking international expansion. Given these considerations, Germany emerges as an attractive market where Chinese OEMs can effectively utilize their dynamic capabilities. The combination of Germany's advanced infrastructure and the increasing acceptance of EVs positions Chinese EV manufacturers well to compete effectively in the German B2C car market through innovative subscription models.

2.4 Market Entry Barriers

In order to assess whether car subscriptions are a possible mode of entry this thesis will analyze the market barriers that Chinese OEMs face when entering the German market and how especially car subscriptions as an entry format can mitigate some of these risks.

One of the most prominent contributors to the definition of Competitive Strategy and Market Entry was Michael Porter who in 1979 defined five competitive forces now known as Porter's Five Forces consisting of the threat of substitutes, the bargaining power of buyers and suppliers, the rivalry amongst competitors and the threat of new competitors. Moreover, Porter described that the seriousness of the threat imposed by these new entrants is heavily dependent on the entry barriers present. The higher the entry barriers the less threat is posed by the new entrant. In his seminal 1979 paper, Porter identified six barriers to entry, including Economies of Scale, Product Differentiation, Capital Requirements, Cost Disadvantages Independent of Size, Access to Distribution Channels, and Government Policy (Porter, 1979).

Other researchers used these as a basis to extend their list of entry barriers. Karakaya and Stahl extended the list of entry barriers to 25 and asked executives of consumer goods firms from various industries to rate their importance resulting in a list ranked most to least important barrier. The five most important barriers to entry are:

1. Brand Identification Index held by Incumbents
2. Incumbents with absolute cost advantages
3. Consumer loyalty advantages held by incumbents
4. Accessibility of distribution channels
5. Capital requirements to enter a market

Consumer markets therefore differentiate themselves to Industrial Markets which were later analysed by Karakaya (Karakaya, 2002) since Brand Identification, Sales Channels and Customer Loyalty are more important to Consumer Markets as Industrial Markets are mostly cost-driven. Moreover, Karakaya and Stahl also defined the underlying dimensions of all 25 market entry barriers resulting in a three factors solution:

- Incumbent Structural Advantage
- Incumbent Market Strength
- Entrant Financial Investment

These entry barriers and factors will later be used, to assess how Chinese OEMs can decrease them when using subscription services as a business model in their market entry.

2.4.1 Chinese Market Entries in Germany

As previously described, Chinese OEMs still only make up a small percentage of total vehicle sales with most companies only recently entering the European market. However, Chinese OEMs already have a history when entering the German automotive market. Brands like Landwind and Zhonghua have already tried entering the market as early as 2005. Poor performances in crash tests however made them face skepticism from European customers, casting a shadow over the reputation of Chinese-made vehicles (Burgard et al, 2022) and also affecting their more recent entry strategies.

Following market entries were tied to large acquisitions of automotive companies with a rich European heritage like MG and Polestar, to build back consumer trust by sidestepping the low-quality perception European customers previously had for Chinese cars (Yang, 2023). This strategic move proved beneficial as brands such as MG and Polestar have gained higher acceptance among European customers, suggesting a preference for brands with European origins or strong ties (Burgard et al, 2022).

Most recent entries are once again being made directly by Chinese OEMs perhaps influenced by the previously described emerging customer willingness to explore new brands amidst the shift towards BEVs. These companies have employed varied entry modes to penetrate the market: NIO, for instance, has opted to establish its own branded stores, creating a direct sales channel to the consumer, whereas others have leveraged agent networks or collaborated with established importers, like BYD's approach of using existing sales channels to introduce its vehicles (Dau et al, 2022).

The outcomes of these recent market entries by Chinese OEMs remain to be fully seen, especially considering the ambitious goals set by companies like BYD, which aims to sell 100,000

cars to Sixt by 2028. This ambitious target underscores the critical nature of these market entries. The reaction of German customers to these new entrants and the strategies for overcoming market barriers are yet to be fully seen. Therefore, this thesis aims to delve into the effectiveness of subscriptions as an entry mode, seeking to gain deeper insights into customer perceptions and explore whether subscriptions can indeed lower market barriers. This inquiry is crucial as it addresses both the potential for subscriptions to mitigate perceived risks and the broader implications of these new market strategies for the acceptance of Chinese OEMs in Germany.

3 METHODOLOGY

The following chapters include the research design of the thesis as well as the methods of data collection.

3.1 Research Design

To answer the Research Question a mixed methods approach was used in which both qualitative and quantitative data is gathered with inductive and deductive research. This method was chosen since not only experts but also consumer perceptions were crucial to identifying market entry barriers and ways to mitigate them. The Research Methodology is detailed in *Figure 1*.

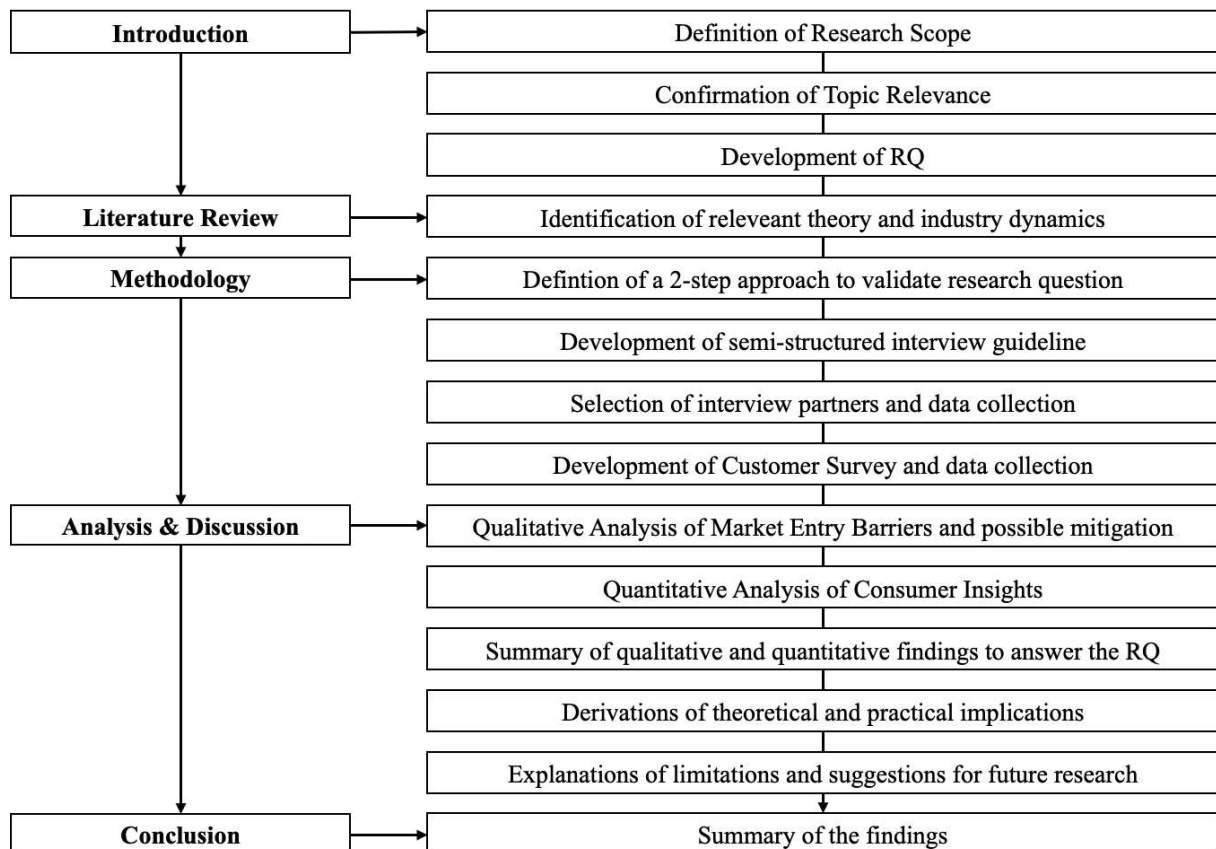


Figure 1: Research Design

Data on market entry barriers as well as dynamic capabilities and companies' innovativeness were first gathered in semi-structured interviews. Data from the interview as well as data gathered in the Literature Review were then used to create hypotheses for the survey. The hypotheses were then validated through regression analysis of the survey data.

3.2 Data Collection

3.2.1 Qualitative Data

Semi-structured interviews were chosen to collect the qualitative data for the study. The method mixes a set of predetermined questions with the flexibility to deep dive into topics when they appear in the interview. This gives the interviewer freedom both to focus on key areas while maintaining latitude to uncover additional relevant information (Bryman, 2016). This approach seemed particularly valuable for this study as some entry barriers were only uncovered within the interviews itself. Semi-structured interviews allowed the researcher to react and adapt as these unforeseen topics emerge (Kallio et al., 2016).

An interview guide (Appendix I) was used that contained the questions that needed to be covered in each interview in a particular order (Cohen & Crabtree, 2008). The guide ensured the collection of valuable as well as comparable data and was developed based on the Literature review incorporating recent market developments, market entry barriers and their mitigation as well as dynamic capabilities.

To gain a comprehensive market view a broad range of experts was consulted (Table 1) including employees from Chinese OEMs working in business development in Germany, employees of Germany's largest car subscription providers, analysts from Germany's largest automotive OEM working in competitive analytics, and automotive consultants. The participants remained anonymous to obtain the deepest insights for this study. The participants were recruited through the author's personal network as well as the professional social network Linked-In.

Interview-Code	Participants current position, experience, expertise
ICO1	Head of Sales Management for a Chinese automotive OEM in Germany - responsible for the brand launch in in the region. Previously held positions in automotive Consulting and served as Head of OEM Partnerships in Germanies biggest car subscription Start-Up.
ICO2	Fleet Key Account Manager at a major Chinese OEM responsible for market launches of two sub-brands in Germany and Italy. Currently working in automotive consulting mainly advising Chinese OEMs entering Europe.
ICO3	Store Manager for Chinese EV company responsible for one of four Flagship stores within Germany.
IGO1	Expert for Automotive and Tech Trends at one of Germanies biggest OEMs, responsible for competitive analytics and market research.
IAC1	Automotive Consultant at Monitor Deloitte, specializing in projects involving Chinese OEMs and their strategic entry into the European and German markets.
IAC2	Automotive Consultant at Porsche Consulting with long term experience on several projects for German OEMs in China.
IAC3	Automotive consultant at Accenture with prior experience at Porsche Consulting - expert in new mobility as well as alternative usage forms
IAC4	Consultant at Accenture specialising in automotive, Mobility-as-a-service as well as new mobility solutions.
ISP1	Executive director for new OEM partnerships at one of Germanys biggest companies for car rental, leasing and subscriptions. Prior role in the company as Executive Director for Chinese OEM partnerships.

Table 1: List of nine Experts

To analyze the data gathered in the interviews, Mayring’s (2019) qualitative content analysis was chosen as a method as it offers a clear step-by-step framework for analyzing interview data that can be based on inductive as well as deductive research. The following process was used to develop categories and sub-categories for the data gathered in the interviews and later allocate certain passages of these interviews to the categories.



Figure 2: Mayring’s qualitative content analysis (own creation)

In the first step (1) of the process categories and subcategories were derived based on the Literature Review made in the previous chapter. Afterwards (2) coding rules were defined and assigned to the corresponding categories.

In the third step (3), the interviews were reviewed and the relevant text passages were assigned to the subcategories. The fourth step (4) was used to revise the categories based on the previous first review of the text passages of the interviews. In step five (5), the material was finally reviewed and allocated to the subcategories. In the sixth (6) chapter the results were analyzed to be later interpreted in the context of the findings from the quantitative research.

3.2.2 Quantitative Data

To gain quantitative insights a consumer survey was conducted targeting potential car buyers in Germany (Appendix III). The survey was developed after most of the interviews were held to validate consumer insights that were gathered during these discussions. Hypotheses were developed by using data from the interviews as well as the information gathered in the literature review. The hypotheses were then tested with the data collected in the survey. The survey was focussed on the German market, only respondents residing in Germany were included in the analysis.

The survey started with testing the participant's general knowledge of Chinese Brands within Germany as well as an assessment of people's general perception of car subscription services. It was followed by a section identifying user perceptions towards EVs from German and Chinese OEMs as well as identifying users' preferred form of acquiring or using their vehicles. It also examined users' perception of subscription services for Chinese EVs as well as general user perception of Chinese OEMs and their adaptiveness to the changing market environment as well as general innovativeness using 7-point Likert scales.

A total of n=121 participants answered the survey out of which 27 had to be excluded since they did not complete all of the survey questions. Four further participants were excluded since they did not pass the qualifying question asked in the middle of the survey. Therefore a total of n=90 qualified answers could be used for further examination. Among these 90 participants, 57 percent were male and 43 percent female.

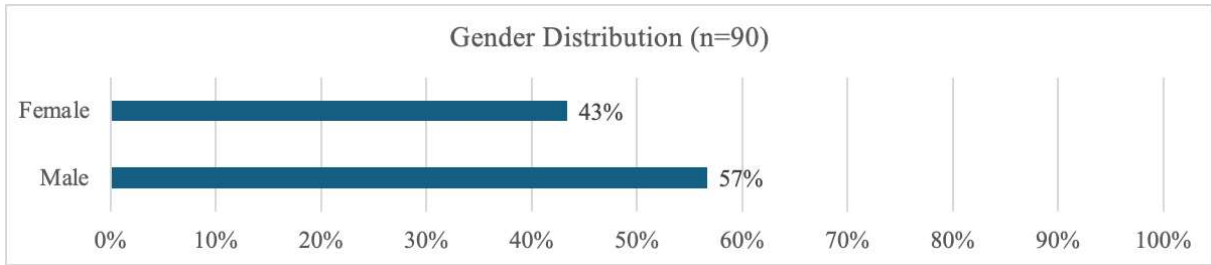


Figure 3: Gender Distribution of participants

Most of the participants were between 20 and 29 years old. 60 percent were below 30 whereas the age groups above 30 made up 40 percent of the participants.

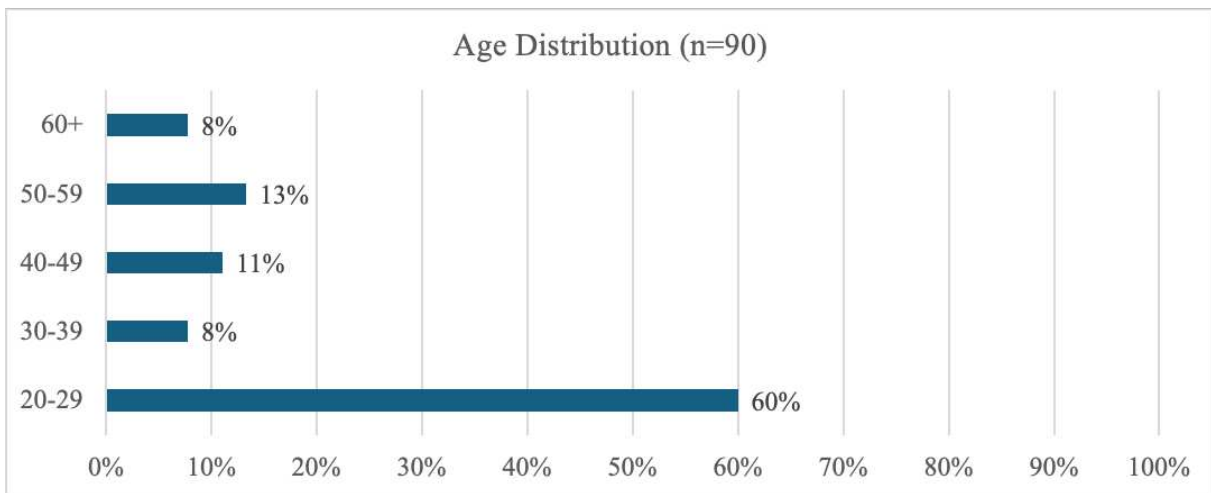


Figure 4: Age Distribution of participants

4 RESULTS

The following chapter deals with the primary data gathered through various interviews as well as consumer research conducted through a survey.

4.1 Qualitative Research

The following chapter describes the results that were gathered in the expert interviews as part of Mayring's (2019) qualitative content analysis that was previously described. The results are structured by the different categories (Appendix III) that were derived from the literature and later refined after reviewing the interviews.

1A – BEV Transition and its effect on market dynamics

The transition from ICE to BEV has significantly influenced the competitive landscape in the automotive industry. Chinese companies which were lacking behind for years in safety and quality standards as well as design are now catching up with German OEMs. This is partly due to immense government investments in battery technology and electric vehicles (ICO2, IAC1, IAC2, IAC4) as well as joint ventures with European companies within China that facilitated knowledge transfer in engineering and production quality (ICO3, IGO1, IAC2). This shift has allowed Chinese manufacturers to scale production efficiently, meeting market demand more effectively than German manufacturers, who face high development costs and reduced profitability on electric models (IAC3, IAC4).

1B – Sensing Opportunities

When it comes to sensing opportunities the experts especially mentioned the superior, start-up-like agility that Chinese OEMs show due to their leaner organizational structures and the younger age of their organizations, which is especially evident in their smaller European subsidiaries (ICO1, IAC1, IAC4). One expert stated that this agility allows Chinese OEMs to quicker sense what needs to be done (ISP1). Another expert pointed out that Chinese OEMs sensed market changes especially in technological advancements more effectively than German OEMs (ICO3) with technology companies like Baidu and Huawei being very invested in car technology (IGO1).

German OEMs are more reserved when it comes to integrating third party technology in their cars. This was recently demonstrated when Mercedes declined to incorporate a new version of Apple Car Play in their cars (ISG1, IAC1). Additionally, experts noted that German OEMs are more cautious about incorporating innovations into their cars due to high customer expectations. They fear that any failures of innovations could damage their long build brand image (ICO1).

1C – Seizing Opportunities

When it comes to seizing the identified opportunities many experts pointed out Chinese superiority when it comes to Research and Development (R&D). Large R&D departments can be financed through Chinese government support (ICO2, IAC1). Furthermore, an expert mentioned that different working mentality and labor laws allow Chinese R&D departments to work in two-shift systems making them more productive (ICO1).

However, experts also mentioned areas in which German OEMs could outplay their Chinese counterparts. One expert mentioned the challenge of adapting to the regulatory and bureaucratic processes in the European market, which can only be handled with local knowledge (ISP1). Additionally, experts who have worked in Chinese OEMs mentioned the top-down leadership in Chinese companies that could lead to quick decision-making but may overlook the insights of local experts (ICO1, ICO2). Therefore one of the experts sees German OEMs in the lead when it comes to reacting to legislative changes such as CO2 guidelines in manufacturing, recycling and sustainable mining of materials (IAC2).

1D – Ongoing Reconfiguration

The previously mentioned Larger R&D departments as well as extensive government support leads to quicker development cycles of new cars. While some experts mention two to three years as a development time for a new car (ICO2) other experts go as low as 18 months with their estimation of development times for new cars (IAC2). German OEMs on the other hand need at least 4 years to develop a brand new car.

2A – Brand Identification and Customer Loyalty

Almost all experts agreed that the factors of brand identification as well as customer loyalty pose a significant entry barrier for Chinese OEMs (ICO1, ICO3, IGO1, IAC1, IAC2, IAC3, IAC4, ISP1), especially in Germany, where there is a strong national pride in the automotive industry (ICO3, ISP1). Although Chinese cars are now on the same level of quality compared to German cars, most Germans still have a bad perception of the quality of Chinese automobiles (IGO1, IAC1,) with one expert even seeing the perceived quality of the cars as the biggest market entry barrier (IAC1).

A former executive who led the market entry of a Chinese OEM in Germany pointed out that reaching certain levels of brand awareness was a tough task when launching the brand (ICO1) since the German market is still dominated by brands with a long heritage such as VW, BMW and Mercedes which can only be created over a longer timeframe (ICO3, IAC4).

“Made in China” is still associated with cheap and low-quality production. Changing this association is one of the biggest challenges for Chinese OEMs entering the German market (IAC1). Despite the significant efforts Chinese OEMs made towards high safety and quality standards often matching those of their German counterparts, the emotional connection and trust that customers have towards German brands remain unmatched by Chinese OEMs (ICO3, IAC2, IAC4).

2B – Distribution Channels

The access to distribution channels was named as the third biggest market entry barrier by most experts (IAC1, IAC2, IAC3, IAC4, IGO1). Establishing a comprehensive Sales Network including After-Sales Services is a considerable challenge that takes time and major investments for Chinese OEMs (ICO2, ICO3, IAC1). After-sales services need an infrastructure that includes maintenance centers, service personnel, and warehouses for spare parts that need to be included in the company’s initial pricing strategy (ICO2). Moreover, entering the leasing market, which still is a significant driver for B2B as well as B2C Sales in Germany, needs significant preparation (ICO1, IAC1) Chinese OEMs have to partner up with Financial Institutions to compete with their German counterparts who often own their financial institutes to get competitive interest rates for their leasing offerings (IAC1, IAC2). Often, Chinese companies who are newly entering the market do not see this challenge due to the differences in market dynamics between Europe and China. In China, customers typically buy new cars which results in a small market for used cars. In contrast, large portions of the European

market consist of young used cars and fleet customers (ISP1). Despite the challenges, one expert also saw a chance when entering the market today, as many German OEMs are slowly switching to D2C distribution leaving space in dealerships that can be used by Chinese OEMs to establish an agent network (ISP1).

2C – Capital Requirements

Capital requirements were considered less of a barrier to market entry by most experts (IAC1, IAC2, IGO1). This is particularly true for large Chinese OEMs, which are already successful in their domestic market and possess the necessary capital to fund their European expansion. Additionally, continuing government support is further reducing the impact of capital requirements as a barrier (IAC1, IAC2) with some Chinese OEMs like SAIC and Geely even acquiring European car brands to successfully enter the market (ICO2).

2D – Incumbent Cost Advantages

The experts agreed that Incumbent cost advantages for German OEMs are non-existent in the German automotive market (IGO1, IAC1, IAC2, IAC3, IAC4) as the cost advantages occur mostly on the side of the Chinese OEMs (ISP1). This effect is seen although Chinese OEMs offer some cars at more than twice the price that is charged in their domestic market to align their brand image with a premium standard (IGO1). Government subsidies as well as the vertical integration of battery production by Chinese OEMs such as BYD further reduce costs and allow them to price their vehicles more attractively compared to European manufacturers such as Volkswagen (ISP1). Thus, the traditional cost advantages of German OEMs are diminishing as Chinese manufacturers continue to optimize production and take advantage of economies of scale to offer low-price vehicles (IAC3).

2E – Tariffs

Another barrier that was defined by three experts (IAC2, IAC3, IAC4) are potential tariffs that Chinese companies could face when importing their cars into Europe. High tariffs made it almost impossible for Chinese OEMs to enter the US market (IAC4). One expert believes that EU tariffs on Chinese cars could be as high as 25% and already be introduced this year (IAC2). These tariffs would increase the cost of importing cars from China, thereby

diminishing the price advantage that Chinese OEMs typically have due to their lower production costs (IAC4).

2F – Regulatory Requirements

Regulatory and Bureaucratic Requirements were mentioned by one expert (ISP1). To acquire certain certificates companies have to navigate through complex local regulations that can often only be overcome with local expertise as German authorities typically do not operate in English (ISP1).

3A – Mitigation – Brand Identification and Customer Loyalty

All experts agreed that subscriptions can mitigate the entry barriers brand identification as well as customer loyalty which were previously defined as the biggest market entry barriers for Chinese OEMs. Subscription models provide a low-risk opportunity without long-term financial commitments, which is particularly appealing given the skepticism and therefore low brand identification users have towards cars from unknown brands (ICO1, ICO2, ICO3, IGO1, IAC1, IAC2, IAC3, IAC4, ISP1). This low-commitment entry could lead to upselling towards higher commitment usage forms like leasing or ownership (ICO3, ISP1). An expert from one of the biggest German subscription providers noted that many users can be upsold from subscription into leasing plans (ISP1).

The subscription model also aligns with the needs of a younger, tech-savvy consumer who values flexibility and up-to-date technology over the status symbols associated with traditional ownership (IAC3). Additionally, subscriptions can be distributed through well-established third-party companies like Sixt or FINN. Partnerships with these companies can help Chinese OEMs enhance their credibility and trust, providing users with a sense of security when choosing a car from a lesser-known brand (ICO2, IGO1, IAC2). Furthermore, companies like Sixt offer several car brands on their websites, making it easy to compare them to Chinese OEMs, which can correct misconceptions and increase consumer trust (IAC2).

3B – Mitigation – Distribution Channels

The experts also noted that car subscriptions could help mitigate the entry barrier related to distribution channels. Subscription services are predominantly offered through online channels, which simplifies access to distribution and reduces the need for physical dealership networks during the initial market entry phase (IAC1, IAC2, IAC3). Moreover, the online

approach allows for quicker and more efficient transactions which especially suits a younger tech-savvy customer (IAC3).

Additionally, partnering with well-known and trusted brands like Sixt or FINN can help establish credibility and trust among consumers, leveraging their existing customer bases and to facilitate market entry (IAC1). These partnerships can provide necessary infrastructure and brand recognition, making it easier for consumers to access and experience Chinese vehicles without the traditional barriers associated with new and unfamiliar brands (IAC2). Partnerships could therefore have mitigating effects for both Distribution Channels as well as Brand Identification and Customer Loyalty. However, Chinese companies entering such partnerships should be aware that they are losing certain decision-making competencies, such as pricing, as well as customer data to the partnering company (ISP1). In contrast, a D2C model would retain these competencies and data in-house.

3C – Mitigation – Capital Requirements

Capital Expenditure which was seen as a smaller entry barrier by most experts also has the potential to be partly mitigated by subscription services. As previously mentioned subscriptions are predominantly sold online over the OEM website (D2C) or through third-party networks. Traditional dealership networks that cost a lot of capital and time to set up are therefore not required (IAC3, IAC4). However, to offer sufficient maintenance and services for cars that are used through subscriptions, Chinese OEMs need a physical service infrastructure which takes time and capital to build up (ICO1). Capital Requirements can therefore only partially be lowered when entering a market with subscription services.

The experts saw no mitigating effect pertaining to the other entry barriers that were previously mentioned.

4A – Financial Considerations

When implementing subscriptions, financial considerations play an important role according to some of the experts. Two experts from Chinese OEMs mentioned that pricing is an important lever in the German market which is quite price-sensitive (ICO1, ICO2). One of the experts stated that allowing discounts on subscriptions can sharply increase subscription sales. Moreover, an expert said that subscriptions could inflate a company's balance sheet resulting

in high depreciation affecting the company's bottom line. Partnering with a subscription provider could mitigate these risks while giving up control over the Sales Channel (IAC2).

4B – Operational Hurdles

Two experts mentioned that building a robust after-sales network for maintenance and repairs is one key challenge when introducing a subscription service (ICO1, IAC4). Having the right spare parts at the right locations is a logistical effort for Chinese OEMs when entering the market (ICO1). Other challenges that experts saw when running subscription models included high operational demands when vehicles return, especially out of short-term contracts (ICO3, IAC4, ISP1). Chinese OEMs have to establish processes to effectively deal with returned vehicles before launching their subscription services (ISP1).

4C – Sustainability

Almost all experts agreed that subscriptions are a useful tool for market penetration when launching in a new market (ICO3, IGO1, IAC1, IAC2, IAC3, IAC4). However, many doubted that subscriptions would work as a single sales channel in the long term. One former employee of a Chinese OEM that launched a subscription-only strategy in Germany argued that there will always be some customers in the German B2C market that want to lease or buy the car right away, which motivated the Chinese OEM to quickly switch to multi-channel distribution (ICO1). Other experts agreed that Chinese OEMs have to switch to a multi-sales strategy especially in the long term since the average usage life of vehicles in subscriptions is no longer than four years and returned vehicles need to be utilized (ICO2, IGO1, IAC1, IAC2, IAC3, IAC4, ISP1). Integrating other sales channels early on gives the opportunity to upsell subscription customers into leasing contracts or purchasing a car (IAC1).

4.2 Quantitative Research

The quantitative research focused on results of a consumer survey answered by 90 participants. Initially, hypotheses were formulated based on the literature review and insights from expert interviews. The general findings of the survey were then highlighted, and the hypotheses either validated or dismissed.

4.2.1 Hypothesis Creation

A consensus among all experts was that German customers generally perceive Chinese vehicles less favourably compared to vehicles from popular German brands due to their lack of visibility and therefore low brand recognition with German customers as well as the bad quality image consumers duplicate from other products that are made in China. Furthermore, experts highlighted a sense of national pride in the German automotive industry that would lead to better perceptions of German and worse perceptions of foreign cars. Consequently, the following hypothesis was formulated:

H1: German consumers will have a worse perception of a Chinese BEV when comparing it to a similar car from a German brand.

The Literature defined three forms of risk, highlighted in chapter 2.2.1, that customers experience when purchasing a product and found that the larger these risks the more consumers are leaning towards access-based consumption forms like subscriptions. All experts agreed that consumer perceptions of Chinese vehicles are a major market entry barrier that could be mitigated using usage forms offering lower commitments like subscriptions. One of the risks mentioned in the literature is performance risk, which describes the potential of a product to not perform the way it's expected. Several data points in the survey tested consumer's expectations of the car's performance (Reliability, Quality, Performance, Service Network (Maintenance), Battery Lifetime, and Safety). The literature suggested that low scores in these areas would increase the participant's willingness to engage with low-commitment usage forms such as subscriptions leading to the following hypothesis:

H2: Consumers who think that a car carries high amounts of performance risk generally pick low-commitment usage forms such as subscriptions.

Another risk defined in the literature when it comes to access-based consumption is social risk which describes people's fear of a negative reaction by others towards their purchase. One data point for the cars asked the participants to rate the social status of the cars. During the expert interviews, most experts agreed that Chinese cars are generally perceived more negatively among German customers which would lead to a lower score in the data point "Social Status", leading to the following hypothesis:

H3: Consumers who think a car carries high amounts of social risk generally pick low-commitment usage forms such as subscriptions.

The third risk mentioned in the Literature is financial risk which describes the potential financial loss customers could face when buying a product. Two of the data points in the survey (Long long-term value, Value for money) aim to measure the financial risk that users experience for each of the cars. The literature suggests that low scores in these areas would increase the participant's willingness to engage with low-commitment usage forms such as subscriptions as contracts can be cancelled within a short timeframe. This leads to the following hypothesis:

H4: Consumers who think a car carries high amounts of financial risk generally pick low-commitment usage forms such as subscriptions.

Furthermore, the literature as well as some experts pointed out that subscriptions are especially attractive for young consumers who do not put much value into cars as a status symbol and lean towards low-commitment forms of car usage. Therefore the following hypothesis was tested.

H5: Young consumers (under 30) are more eager to use subscription models as a usage form for their cars.

To further elaborate on social risk as a factor in the consumers' mobility decisions, the research also focuses on the consumer's perception of Chinese BEV's reputation in Germany. If consumers generally think that Chinese BEVs have a good reputation within Germany their willingness to use a Chinese BEV should increase. Therefore, the following hypothesis was included.

H6: If people have positive perceptions towards the reputation of Chinese OEMs in Germany they are more likely to use a Chinese BEV.

Some of the experts pointed out the lack of brand awareness that German customers have for BEVs from Chinese OEMs and connected them to a worse perception of Chinese vehicles. Building brand reputation was seen as one of the most important goals for Chinese OEMs to successfully enter the German car market and is mostly consistent with brands with a rich heritage. To see if brand knowledge would increase customers' likeliness to purchase a Chinese vehicle the following hypothesis was tested.

H7: People who are more familiar with Chinese BEV brands are more likely to use them.

Furthermore, the experts agreed that especially when it comes to technology and batteries Chinese cars are more innovative than their German counterparts. To see whether perceived innovativeness has an effect on the customer's decision to use a Chinese or German BEV the following hypothesis was created.

H8: People who think that Chinese BEVs offer more innovative features than their competitors are more likely to use a Chinese BEV.

4.2.2 General Findings

At the start of the survey, only 39 percent of participants reported that they were familiar with car subscription models. Another 45 percent reported that they heard of car subscriptions, however, they were not familiar with the model.

After a short educational section on car subscriptions, 70 percent of participants generally agreed that car subscriptions are superior to traditional ownership and leasing models with only 12 percent generally disagreeing with that statement showing a positive perception of the model.

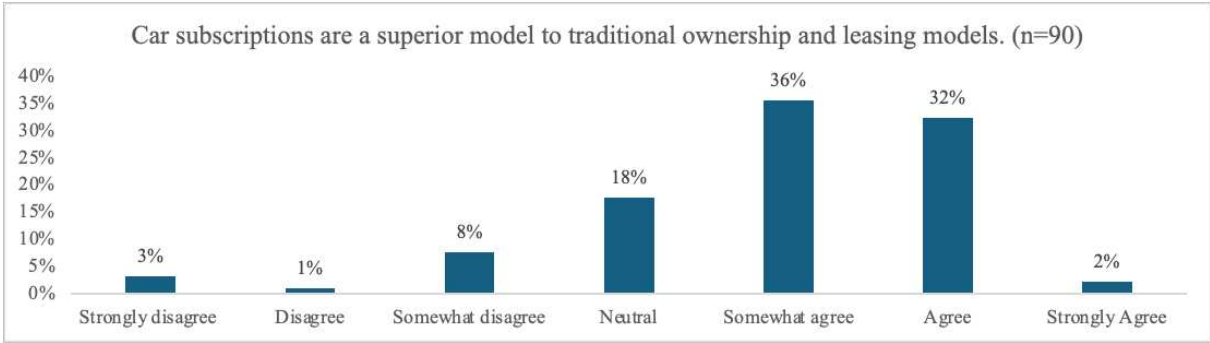


Figure 5: Car Subscriptions as a superior usage model

When being asked about their familiarity with Chinese BEV brands the participants were divided into two groups with only 4 percent picking neutral as their answer. Generally, more participants disagreed with the statement (58 percent) while only 38 percent agreed with no one of the participants strongly agreeing with the statement.

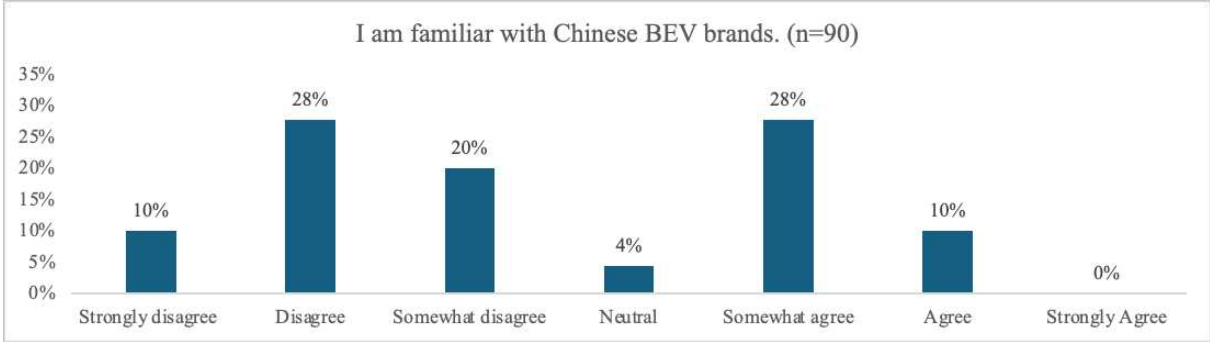


Figure 6: Familiarity with Chinese BEV brands

The next part of the survey dealt with participants’ perception of a BEV from a Chinese and a German OEM as well as the preferred usage form for each car. The cars picked were similar in size, functionality as well as performance and are seen as direct competitors in the market.

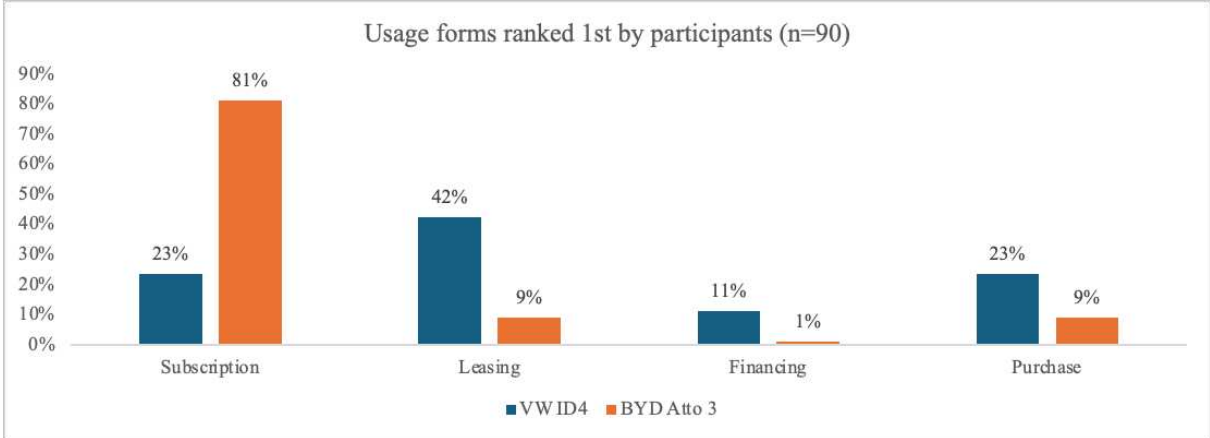


Figure 7: Usage forms ranked 1st by participants

For the BYD, the subscription model emerged as the preferred usage model, with over 80 percent of participants ranking it first. Leasing and Purchase ranked second with 9 percent of participants rating each model first. The participant’s rankings were generally more divided for the VW with leasing being the preferred form of usage at 42 percent followed by Subscription and Purchase both at 23 percent.

User perceptions were measured in 9 different categories on a scale from 0 to 10. The resulting perceptions will be used to answer H1: German consumers will have a worse perception of a Chinese BEV when comparing it to a similar car from a German brand.

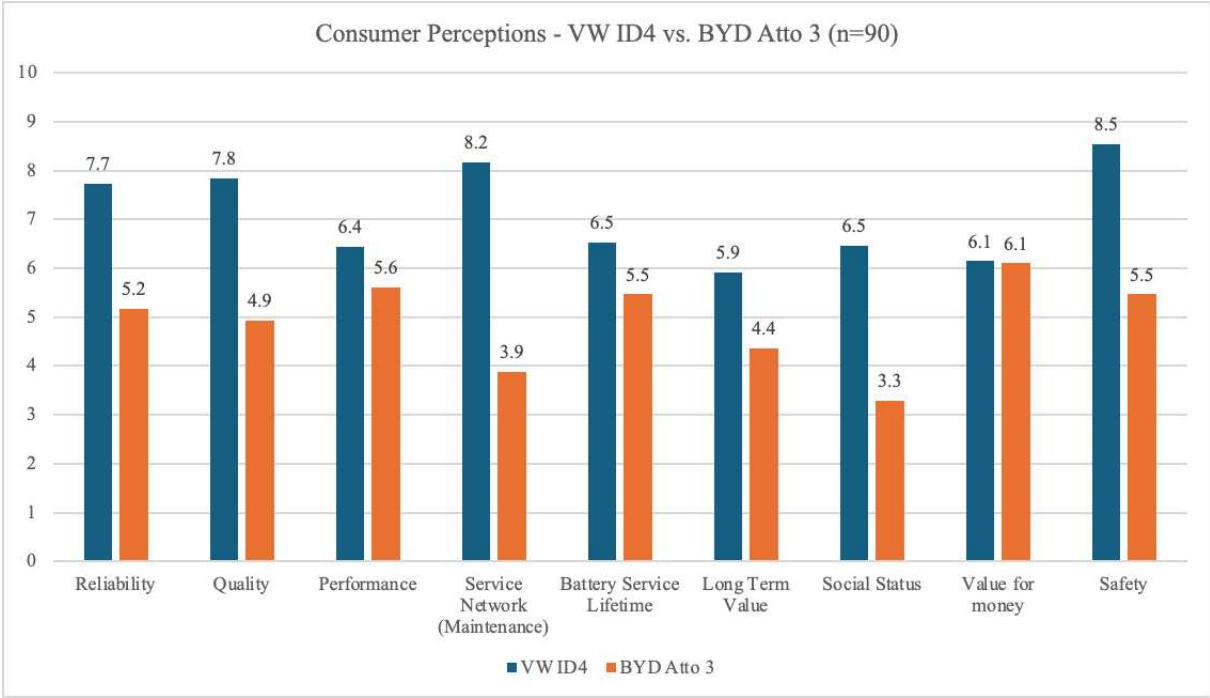


Figure 8: Perceptions of Chinese and German BEVs

When looking at the average scores that the consumers gave both cars one can see that the VW outperformed the BYD in all categories except for “Value for Money” where both cars achieved an equal score. The highest differences in scoring can be seen in “Service Network (Maintenance)”, “Social Status” as well as “Safety” with discrepancies of three or more points. “Performance” was the only category, aside from “Value for money” that measured a difference of less than one point. When combining all scores the Volkswagen scored 64 out of 90 whereas the BYD scored 44 out of 90 resulting in a 20-point difference. Therefore, H1 is validated, confirming that German consumers have a worse perception of a Chinese BEV compared to a similar car from a German brand.

Moreover, when having to choose between the BYD Atto 3 (0) and the VW ID 4 (100) the participant’s average score was at 74.2 leaning more towards the German BEV option.

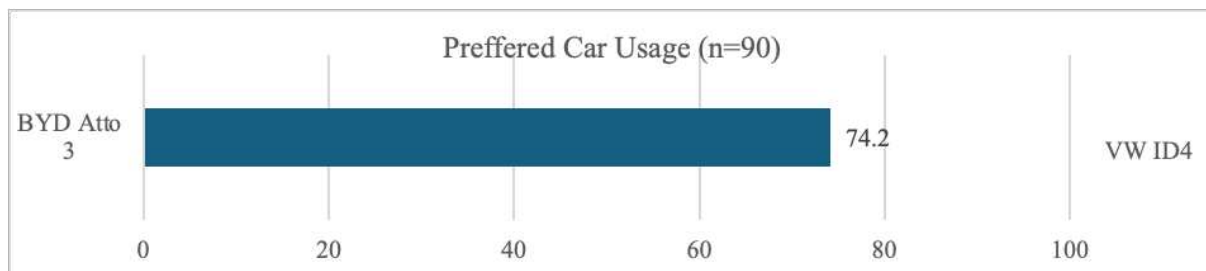


Figure 9: Participants Car Choice

4.2.3 Hypothesis Validation

This chapter deals with validating all other Hypotheses using regression analysis to find significant results.

H2: To validate H2 we explored whether the participant's perception of performance risk would influence the participant's choice of a subscription model. To validate H2 an increase in the participants' performance risk should affect their consumption choice in the way that they would rank the subscription model higher than other models. On the opposite side, a low score in performance risk should increase the participants' ranking of the subscription model as they would more likely engage with lower commitment usage forms.

To test the Hypothesis a regression was performed using the ranking score of subscriptions as the dependent variable and all perception scores including the measurements for performance (Reliability, Quality, Performance, Service Network (Maintenance), Battery Lifetime, Safety) as independent variables. Moreover, the control variables age and gender were included in the Regression. The regression model was tested for Homoscedasticity, which applied, as well as Multicollinearity, which could be excluded. Furthermore, Cook's Distance was applied to identify outliers that potentially need to be excluded. The Regression Model resulted in a p-value of $2.2e-16$ which means that the model does contribute to explaining the variance of the dependent variable. Furthermore, the R^2 is at 0.52 meaning that the model can explain more than half of the variance of the Subscription ranking.

When analyzing the independent variables defined for measuring performance, the Service Network was the only one with a significant effect on the ranking of subscriptions. The coefficient of 0.140 indicates that participants who perceive a car's service network as well-

established generally rank subscriptions lower. Since this is the only coefficient with significant results supporting the hypothesis, the statement has to be partially dismissed.

H3: To see whether social risk influences the participant's choice of car usage the same Regression model is used. When looking at the coefficient for "Social Status" one can see that it is significant at the <0.01 level meaning that we can say that with every extra point participants assigned to Social Status, they ranked Subscription 0.172 places lower on the usage form scale. This means that the higher people rate the Social Status of a car the less they would pick subscriptions as a usage form. Conversely, the lower they perceive the car's social status, the more inclined they are to opt for subscriptions. Therefore H3 can be validated.

H4: To validate H4 both coefficients for value for money as well as Long term Value were analyzed. The coefficient for value for money does not have significance at the <0.05 level, were as Long Term Value has a coefficient of -0.127 at the <0.01 level. Therefore Long Term Value has the opposite effect than what was expected in the Hypothesis meaning that a high score in Long Term Value positively influences the ranking of Subscriptions. The hypothesis is therefore dismissed.

H5: To test whether H5 applies. A dummy variable is introduced dividing the participants into a young (<30) and an old (≥ 30) group, to see whether age affects the ranking of Subscriptions as a consumption form. The coefficient for those under 30 is positive which means that young age has a negative effect on the ranking of Subscriptions as a usage model, meaning age has the opposite of the expected effect. However, as the p-value only meets the <0.1 mark and not the <0.05 mark the results are not significant which is why the H5 cannot be validated. It is also noteworthy that the control variable of gender had a significant influence on the ranking of subscription models. Male survey participants, on average, ranked subscriptions 0.307 points lower than female participants, indicating that women were generally more likely to choose a subscription as their preferred form of car consumption.

H6: To validate whether the perceived reputation of Chinese BEVs has an effect on the consumers' willingness to use a Chinese vehicle over a German car another regression was

performed using the scale presented in Figure 9 as the independent variable. Participants that were clearly liking the BYD would pick 0 on the scale. Participants who clearly wanted to use the VW would pick 100. People's familiarity with Chinese OEMs, their perceived innovativeness as well as their perceived reputation of Chinese OEMs were used as independent variables. Moreover, the control variables age and gender were included in the Regression. The regression model was tested for Homoscedasticity, which applied, as well as Multicollinearity, which could be excluded. Furthermore, Cook's Distance was applied to identify outliers that potentially need to be excluded. The Regression Model resulted in a p-value of $8.128e-5$ which means that the model does contribute to explaining the variance of the dependent variable. Furthermore, the R^2 is at 0.26 meaning that the model can explain a quarter of the variance in the participant's car choice.

When analyzing whether the participant's choice of car usage is affected by their perceived reputation of Chinese BEV brands in Germany we look at the Coefficient for Reputation that measured how much people agree with the statement "Chinese BEV brands have a good reputation in the German market" on a 7 point Likert scale. The coefficient is highly significant at a p-value <0.01 and negative which leads to the conclusion that the better participants think the reputation of Chinese BEVs is in Germany, the more likely they are to pick the Chinese BEV over the German. Therefore H6 can be validated.

H7: To answer whether familiarity with Chinese BEVs plays a role in the participant's choice of car another variable from the model is tested. However, the independent variable "Familiarity" is not significant at a p-value >0.1 . Therefore it cannot be stated that the participant's familiarity with Chinese BEVs affects the choice between a Chinese and a German BEV.

H8: To test whether the customers' perceived innovativeness of Chinese BEVs plays a role when choosing between a German and a Chinese BEV the independent variable Innovativeness is introduced which measured the participants agreement with the statement "Chinese BEVs offer more innovative features compared to other brands" on a 7-point Likert scale. Overall, 42 percent of the survey participants generally agreed to the statement while only 23 percent were disagreeing. The coefficient for innovativeness is at -4.376 and a significance of <0.01 , which means that the more people agree to the statement, the more likely they are to choose a Chinese BEV over a German one.

5 Discussion

The objective of this study was to determine whether car subscription models could serve as a viable strategy for Chinese EV producers to establish themselves in the German B2C car market. The analysis integrated findings from qualitative interviews with industry experts and quantitative consumer survey data to provide a comprehensive understanding of market dynamics, entry barriers, and consumer preferences.

In the context of market dynamics, dynamic capabilities are a crucial point for companies which have to address the changing environments they compete in. Especially in phases of market entry, dynamic capabilities are crucial in order to quickly react to a new customer base. The Literature Review indicates that Chinese OEMs possess strong dynamic capabilities, through their young age as well as their tech-oriented leadership styles. Moreover, the Chinese government facilitates developments in the EV sector through major investments and incentives which helps companies to develop dynamic capabilities.

The qualitative results align with the Literature, adding that especially small European subsidiaries, which often operate like startups, have developed superior sensing abilities making them more agile than their German counterparts. Experts noted that government support has allowed Chinese OEMs to maintain larger R&D departments, coupled with a different work ethic and more flexible labor laws, which gives them an advantage in seizing opportunities. These factors lead to faster development cycles and quicker reconfiguration of vehicle offerings. The quantitative research showed that not only participants were generally more agreeing with the statement that Chinese cars offer more innovative features, but also that the more participants agreed to the statement the more likely it made them to choose a Chinese car. These dynamic capabilities lay the basis for a successful market entry through car subscriptions.

The qualitative research highlighted brand identification and customer loyalty as the most significant entry barriers for Chinese OEMs. The experts mentioned negative user perceptions towards the cars quality. Even though Chinese OEMs are by now on a same quality level with German OEMs, the “made in China” quality stigma sticks with most customers according to the experts. This sentiment was further substantiated by the quantitative research, in which participants rated a Chinese BEV 20 points lower than a similar German BEV on a scale measuring nine different attributes, each ranging from 0 to 10 points (a total of 90 points).

However, the experts believed that subscription models could seriously impact this barrier as they offer a low-risk opportunity for customers to experience a car. The literature defines several forms of risk (Performance, Financial, Social) that can be mitigated through access-based-consumption forms like subscriptions. To see whether these mitigating effects also hold true for BEVs the effect of the risks on the participants ranking of subscriptions as a usage form was tested. When testing attributes related to performance, a service network had a significant influence on the ranking of subscription models which means that participants tend to rank the subscription model higher, the worse they expected a service network to be. Since service network coverage is especially an issue for brands who newly enter markets offering a subscription to mitigate these concern is a logical choice. Surprisingly, neither quality nor safety concerns had a significant impact on the ranking of subscriptions, despite experts highlighting these as major consumer worries that could be mitigated.

The anticipated role of financial risk in driving subscriptions could not be validated, as the expected results did not materialize in the regression analysis. Interestingly, high scores in long-term value even boosted participants' rankings of subscription models, which contradicts expert opinions that subscriptions would appeal more to customers uncertain about a car's longevity. Neither the experts nor the previously reviewed literature provided an explanation for this result obtained, therefore it will not be further elaborated in this study.

The effect of social risk on subscriptions could clearly be stated in Hypothesis 3 as a low rating in social status for cars had a significant positive impact on the rating of subscriptions as a usage model meaning that users fearing judgement on their car choice are aiming more towards low-commitment usage models. On the other hand, users who thought that the Chinese BEV was generally more positively perceived by the general public were more eager to choose it over a German BEV, meaning that low social status generally lowers car sales for an OEM, however cars that are sold have a higher chance of getting sold through low commitment usage forms. Therefore, OEMs with vehicles with low social status scores should consider offering subscriptions as a market entry strategy and gradually build their brand reputation.

Distribution Channels were ranked as the third biggest entry barrier by most experts. Subscription were seen as having some mitigating effects since they are predominantly sold online which cuts the need of having an extensive dealership network when entering the market. At the same time this also mitigates capital requirements as a market entry could also be

planned with less physical dealerships and only few flagship stores for users to experience the brand.

Despite these mitigating effects experts also saw challenges when entering the market through subscriptions. On the one hand, companies must have robust processes in place to effectively manage car returns and maintenance work. Moreover, getting the right pricing as well as minimum subscription term is crucial for companies not to be overwhelmed by too many short term rentals. Alternatively, companies need to be aware of the depreciation as well as the impact on the company's balance sheet as cars sold through subscriptions remain owned by companies. Moreover, companies need to find solutions to deal with cars that are returning from subscriptions since most cars will be only used for a couple years.

Partnerships with car subscription brands offer a solution to some of the problems since OEMs can sell their cars directly to companies which then offer them to an already existing customer base. Brands like Sixt are especially attractive for this purpose as they already have a brand recognition in Germany, which most Chinese OEMs lack. However, when working with a partner, OEMs will give up control over their distribution channels as well as pricing and marketing.

While experts and the results of the quantitative analysis concluded that low-commitment usage forms like subscriptions can mitigate entrance barriers for OEMs, the experts agreed that other usage forms like leasing, and direct purchase need to be implemented as well as OEMs upselling customers other forms of purchasing to save long term cash flows and establish brands in the market.

5.1 Theoretical Implications

The findings of the study contribute to the existing body of knowledge in several key areas. For enhancing dynamic capabilities, the study emphasized the role of government support that is evident in the case of Chinese OEMs. The study stressed that government support directly impacts R&D capacities in a company and boosts a company's ability to innovate and compete in international markets. Moreover, the research proved that key innovativeness is a driver for brand preference in the automotive industry, highlighting the impact of dynamic capabilities on brand differentiation.

The study reinforced existing theories on brand identification and customer loyalty being significant barriers to market entry especially for foreign companies entering well established markets. The findings further suggested that usage forms like subscriptions can mitigate these risks by offering a low-commitment entry for customers to experience new brands. Other entry barriers like Incumbent Cost Advantages, pointed out as significant by prior studies, were not seen as important in the scenario that the study examined.

Furthermore, the study added to research on access-based consumption by empirically testing the impact of perceived risk on consumer preferences of subscription models. The research suggested that in the scenario of Chinese OEMs entering the German market, service networks and social perceptions played a more significant role in influencing consumer preferences than previously understood. While the impact of financial risk could not be seen, offering new insights to the factors that drive access-based consumption.

5.2 Practical Implications

The study provided valuable insights for Chinese OEMs entering a well-established automotive market. It showed that consumers still hold significant biases against Chinese cars due to a perception of low quality as well as low brand recognition. Subscriptions provide a low-commitment entry to experience the cars, giving an opportunity to turn around perceptions over time. Moreover, subscriptions reduced the need for extensive dealership networks since most sales are made online allowing OEMs to enter markets with less capital expansion.

When starting a subscription service, Chinese OEMs should be aware of the processes that need to be in place for effectively managing vehicle returns, as well as setting up a manageable minimum subscription term in order not to be overwhelmed by a high amount of short term subscriptions that increases pressure on operations. While subscriptions offer low upfront investments, they can inflate OEMs' balance sheets and lead to depreciation risks for companies. Early partnerships with financial institutes or third party subscription providers could mitigate these risks. Additionally third party subscription providers like Sixt that already have a reputation in Germany will add to consumer trust in the cars. However, OEMs must carefully balance these partnerships to retain control over pricing, customer data, and long-term brand strategy.

Last but not least, while subscriptions are an effective market entry strategy, they should not be the sole focus of OEMs as the research suggest that OEMs need to establish multi-channel sales-strategies in order to build long term cash flows and upsell their customers. After market entry, OEMs should prioritize building or partnering with existing service networks to ensure customers feel supported as well as building their brand image in the market as those were factors that pushed customers in low subscription usage forms and could be barriers for upselling.

5.3 Limitations and Future Research

While this study provided insights on the potential of car subscription models as an entry strategy for Chinese EV producers into the German market, there were several limitations that must be acknowledged.

The quantitative research included 90 participants. While these participants were enough to perform statistical analysis and validate hypotheses, they may not represent the whole diversity of opinions that exist within the German market. A larger and more diverse sample size would lead to more reliable and generalizable results.

Moreover, the study solely focussed on the German market, that has unique characteristics such as a strong national pride in the automotive industry. Therefore the findings are most likely not directly applicable to other European countries where customer attitudes towards Chinese EVs might differ. To explore how subscriptions could affect a European market entry, further countries have to be examined.

Furthermore, the study mostly explored the short term effects of subscriptions as a market entry strategy and only touched on the transition to implementing a brand in a long term. Future studies could explore how to effectively build a brand in a new market using subscriptions to deliver experiences to customers and determine what those experiences should entail to build long term customer loyalty.

Lastly, this study only looked at a certain timeframe in a rapidly developing market that is highly dependent upon economic conditions as well as regulatory and legislative changes. Future research should highlight how changes in these specific areas could alter the market landscape and therefore the potential for successful market entries.

6 Conclusion

Despite substantial advancements in vehicle quality as well as battery technology and superior dynamic capabilities that lead to faster development cycles, Chinese OEMs still have to overcome major market entry barriers that are mainly rooted in negative consumer perceptions when trying to establish themselves in the German car market. Building robust distribution channels, capital requirements, tariffs as well as bureaucratic processes represent other entry barriers found in the study.

Car subscriptions emerge as a promising tool to mitigate most of these entry barriers. By offering a low-commitment entry into experiencing the cars that is especially attractive for customers facing social and performance risk towards a purchase. The qualitative data shows that subscriptions can serve as an initial touchpoint from which brand awareness and trust can be built incrementally, reducing the perceived risk overtime. Moreover, subscriptions allow for a more capital-efficient entry as online bookings result in a leaner dealership network.

However, to achieve a successful market entry using subscription models, companies need to be aware of the challenges associated with running such a model. Operational hurdles include building a reliable after sales network, effectively managing vehicle returns, and finding a pricing strategy that prevents users from booking only short term subscriptions. Financial hurdles like the impact on balance sheets as well as the need for sustainable revenue streams, further complicate relying on subscriptions as a sole retail strategy. The study advocated to build on trust gained in subscription models to upsell customers to higher commitment forms of usage. To further build this trust and reduce operational hurdles, companies could partner with existing subscription providers within Germany. However, companies need to be aware that a loss of control of pricing and marketing could also negatively affect entry strategies.

In conclusion, while there are significant challenges, car subscriptions present an effective pathway for Chinese OEMs to penetrate the German automotive market. How successful their entry will be depends on how operational and financial hurdles are addressed and strategic partnerships are leveraged. Long term success will depend on their ability to retain customers and transition them into higher-commitment usage forms. With careful planning, strategic alliances, and a strong emphasis on delivering value and innovation, Chinese EV producers have the potential not only to enter the German market but to thrive within it.

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Appendix

Appendix I: Interview Guide

The semi structured interview guides were designed to gain insights on market entry barriers for Chinese OEMs and how they can be mitigated by using car subscription services. Moreover, it assessed the ability of Chinese and German OEMs to adapt in changing environments and their level of innovation.

Section 1: Introduction

The purpose of this interview is to gather expert insights into the feasibility and potential impact of car subscription models as a market entry strategy for Chinese EV producers in the German B2C market.

Q1: Could you please state your name and current position?

Section 2: Market Entry Barriers

Before launching their current Battery Electric Vehicle (BEV) models in Germany, Chinese manufacturers already tried to launch Internal-Combustion Engine (ICE) vehicles in the German market and failed to gain substantial market share and the trust of German customers.

Q2: How do you think the competitive landscape in the German Car market has changed when moving from ICE to BEV vehicles?

When looking at consumer markets, the literature mentions Brand Identification and Customer Loyalty, Cost advantages of incumbents, accessibility to distribution channels as well as capital requirements as the most important market entry barriers.

Q3: Would you agree to that when it comes to Chinese OEMs entering the German market, or are there other barriers you see as more important?

Section 3: Mitigation through Subscriptions

Q4: How do you think that choosing a subscription model as a Sales Channel for the market entry can mitigate these entry barriers?

Q5: From a long-term strategic perspective, how sustainable are subscription models as a market entry strategy? What are the potential risks or downsides?

Section 4: Adapting to Changing Environments

Companies often need to be flexible and responsive to succeed in rapidly changing markets. This includes identifying new opportunities, making quick decisions, and effectively using resources.

Q6: How well do you think Chinese and German car manufacturers are able to adapt to changes in the market and technological advancements?

Q7: Do you think there is a difference between German and Chinese OEMs when it comes to their innovativeness?

Section 5: Closing

Thank you for your time and insights. Is there anything else you would like to add that we haven't covered in this interview?

Appendix II: Summarized answers of expert interviews

Code: ICO1	Date: 16.05.2024	Time: 14:30 am	Duration: 33 min	Type: Teams
Question 2				
<p>Past: Chinese companies needed to catch up as their quality and safety standards were not yet on par with those of German companies. Present: Today, automotive magazines and ADAC tests consistently portray a positive image of Chinese cars in Germany. For instance, the NIO ET7 even won the Golden Steering Wheel award, indicating that the quality of Chinese vehicles is now on the same level as German brands, with connectivity features often surpassing them.</p>				
Question 3				
<p>Understanding the market is probably one of the biggest barrier: Two thirds of the German market are made up by B2B Sales, which are mostly price driven; leasing is still the biggest sales channel in B2B Sales, subscriptions only make up a minor share. Brand awareness and user sentiments present significant challenges for Chinese OEMs in Germany. Unguided brand awareness stands at just 1%, while guided brand awareness ranges between 10% and 15%. Additionally, there are deep-rooted negative sentiments towards Chinese products among German consumers. Addressing and overcoming these sentiments will be a long-term effort, likely requiring several years to decades. Distribution channels are crucial for the success of Chinese OEMs in the German market, particularly through connections with major leasing banks to offer competitive prices to leasing customers. In B2B sales channels, understanding how to navigate distribution is essential. However, a significant challenge is the reluctance to offer discounts, a common practice in B2B leasing, which could hinder their competitiveness in this sector.</p>				
Question 4				
<p>Brand awareness and user sentiments: Car subscriptions offer low barrier entrances into the B2C market especially if the brand is not yet well known. It works especially well in the EV market as many customers still have sentiments that prevent them from closing long term commitments. However the model does not run itself, many customers still have doubts about the maintenance network. Establishing such a network and having all spare parts ready at multiple locations is a logistical effort that takes time – a subscription model can be an entry strategy for Chinese OEMs however it needs to be done the right way.</p>				
Question 5				
<p>Using subscriptions as the only sales channel for B2C customers is not the right approach since there are always customers that want to lease or even buy the car. There should always be a multi-channel distribution strategy. When we were entering the German market with subscriptions only, we quickly saw that there were some customers that were demanding other usage forms such as leasing or purchase. We therefore quickly adapted, to also satisfy those customers. Getting the price right is also crucial for subscriptions. When working at FINN I saw how price sensitive German customers are, with a discounted Chinese EV being sold hundreds of times in days.</p>				
Question 6				
<p>People often argue that Chinese OEMs' ability to develop a new car in just three years is a sign of their improved innovativeness. However, this rapid development is more attributable to different working conditions in China. For instance, R&D departments frequently operate in two-shift systems to maximize output. Additionally, the agility of Chinese companies, stemming from their relatively young age, contributes to this rapid innovation pace. In</p>				

contrast, established German OEMs, with their long-standing reputations, are typically more cautious and cannot afford mistakes, which slows their development processes.

Question 7

There are significant cultural differences between Chinese and German companies. Chinese companies typically operate with a top-down management style, where decisions are made quickly by higher-ups, giving the appearance of agility from the outside. In contrast, German companies tend to make decisions collectively, involving input from various team members. While the top-down approach in Chinese companies can facilitate rapid decision-making, it often lacks full support from the entire team, potentially leading to issues in implementation.

Code: ICO2	Date: 21.05.2024	Time: 16:30 am	Duration: 36 min	Type: Teams
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Question 2

Heavy investments by the Chinese government in battery technology and electric vehicles have significantly boosted the development of EVs by Chinese companies. European companies, on the other hand, could only enter the Chinese market through joint ventures with these local firms. These collaborations have allowed Chinese OEMs to substantially increase their knowledge and expertise in production, leading to enhanced production quality. Additionally, these efforts have resulted in improved vehicle designs and safety standards, positioning Chinese EVs as competitive options in the global market.

Question 3

Access to distribution channels and pricing is a complex challenge for Chinese OEMs entering the German and European markets. It involves more than just shipping cars; it also requires controlling the prices at which independent dealers sell the cars. Additionally, after-sales services, including warehouses for spare parts and wages for service personnel, must be integrated into the pricing strategy, and any warranties offered need to be upheld. While large OEMs like Geely and SAIC, supported by substantial capital, have successfully acquired entire car brands to facilitate their market entry, smaller startups often face significant capital constraints. Furthermore, incumbents possess cost advantages due to their deep familiarity with the German car and after-sales markets, providing them with a competitive edge in sectors like leasing.

Question 4

Chinese EVs face a dual challenge in customer perception: the apprehension towards electric cars and skepticism about cars from China. Car subscription models offer a low-commitment way for customers to experience these vehicles, which can mitigate these concerns. For example, in Italy, the "try and buy" system allows customers to lease a car through a subscription and then deduct the subscription payments from the purchase price if they decide to buy. Partnerships with subscription services have proven advantageous for Chinese EV manufacturers. BYD's long-term partnership with Sixt is an example, as such collaborations can positively influence customer perception. Companies like Sixt, well-known and trusted in Germany, can help elevate the premium image of Chinese EVs, making them more appealing to German consumers.

Question 5

Car subscriptions are particularly effective with a young and urban population, making them a great fit for brands targeting this demographic. However, if your brand does not primarily target young urbanites, subscriptions might not be the ideal approach. When partnering with subscription services, effective volume management is crucial. Subscriptions need

to be offered at attractive prices, so managing orders, sizes, and discounts is key to successful partnerships. It is also important to note that subscriptions cannot be the sole strategy; investing in building and strengthening your brand remains essential for long-term success in the market.

Question 6

Chinese OEMs have a significant advantage in terms of time to market, often taking just 2-3 years to develop a completely new car. This rapid development is supported by substantial government funding, which allows for large R&D departments. Additionally, lower testing barriers in the Chinese home market contribute to faster time to market. However, when these vehicles are introduced to the European market, more rigorous testing requirements can extend the development timeline. Despite this, Chinese companies that are already operating in Europe have improved their testing processes and still manage to outpace the development cycles of German companies by at least three years.

Question 7

Due to their faster development cycles, Chinese OEMs can react to market changes more quickly than their competitors. This agility allows them to adapt to new trends and consumer demands with remarkable speed. However, cultural conflicts can arise, as Chinese OEMs may sometimes resist advice from market experts, leading to suboptimal customer responses. This resistance can hinder their ability to fully leverage their rapid development capabilities and effectively cater to the preferences of local markets.

Code: ICO3	Date: 27.05.2024	Time: 10:15 am	Duration: 32 min	Type: Teams
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Question 2

The competitive landscape in the German car market has significantly changed with the transition from internal combustion engine (ICE) vehicles to battery electric vehicles (BEVs). In the early 2000s, Chinese brands tried to enter the European market, including the German market. However, due to safety deficiencies, consumers did not want to buy these cars. Chinese cars received very low ratings (1 to 1.5 stars) in the Euro NCAP crash test, while German cars received very high ratings (4.5 to 5 stars). Over the years, Chinese manufacturers like Geely have acquired European brands like Volvo, thereby transferring European know-how, especially in the areas of safety technology and electrical engineering, to China. The lower production costs in China enable Chinese manufacturers to offer technologically well-equipped cars at significantly lower prices than their European competitors. Developing new platforms for electric vehicles is incredibly expensive and requires billions in investments, which is a major challenge for many companies. While combustion models sold well in the past, the high development costs for electric vehicles have led to lower margins. Prices for entry-level cars have risen sharply, while wages have not increased at the same rate, further reducing profitability for manufacturers. Many manufacturers have tried to sell luxury models in China to achieve higher profits, but this strategy is no longer as effective. In response to these challenges, the US and Europe have introduced higher tariffs to protect their markets.

Question 3

Brand identification and customer loyalty, cost, capital, and distribution advantages are indeed significant market entry barriers for Chinese OEMs in the German market. Chinese brands lack the established brand identity of BMW, Mercedes, or VW, which have a long history and emotional connection with their customers. This long-standing history and associated loyalty cannot be artificially created. Chinese brands may offer technologically

excellent products, but they lack the emotional connection and trust that German brands enjoy. Additionally, Chinese manufacturers need to build a distribution network and after-sales services, which is a significant challenge. Many Chinese companies now enter the market through distributors to overcome these barriers.

Question 4

Choosing a subscription model as a sales channel can significantly mitigate entry barriers as this model lowers the hurdle for customers to try a new car. A subscription model allows customers to decide on a vehicle short-term without a long-term commitment, providing flexibility and reducing the perceived risk of switching to a new, less-known brand. At the same time, it allows manufacturers to quickly gather customer feedback and increase their visibility on the road, which is crucial for market entry. The low entry barrier makes it easier to convince customers to try a new product, which is particularly beneficial for brands without an established reputation.

Question 5

Subscription models are effective as a market entry strategy for creating visibility and gathering initial customer reactions, but they are not always financially sustainable in the long term. While subscription models can help get cars on the road and make the brand known, they often do not generate enough profit to be sustainable on their own. Long-term, manufacturers need to diversify their sales models, including leasing, to ensure a stable and profitable revenue stream. Another risk is that customers may use the subscription model only short-term, leading to vehicles being returned quickly and not generating enough revenue to cover costs. Therefore, manufacturers need to offer other financing models to be successful in the long run.

Question 6

Chinese car manufacturers have significantly better adapted to market changes and technological advancements in recent years compared to German manufacturers. They have understood the current trends and are bringing modern cars with advanced technology and attractive prices to the market. These vehicles often offer features that are either not available or only available at high prices from German manufacturers. In contrast, German manufacturers often struggle to adapt quickly. They seem either unwilling to see the trends or are unsure which direction to take. The parallel development of combustion and electric vehicles presents a huge financial burden. Chinese manufacturers like Nio benefit from government funding, allowing them to invest long-term in innovations, which German manufacturers lack.

Question 7

There are significant differences in innovativeness between German and Chinese OEMs. Chinese manufacturers like Nio benefit from extensive government subsidies, enabling them to invest long-term in innovative technologies. They bring modern vehicles with the latest technologies and attractive prices to the market and can quickly adapt to changing market conditions. In contrast, German manufacturers have difficulties fully focusing on electric mobility as they simultaneously develop combustion and electric vehicles, which is very costly. Furthermore, German manufacturers often seem to ignore current trends or are uncertain which direction to take. At auto shows in China, German manufacturers were often overlooked as they had no suitable answers to the current trends, while Chinese manufacturers impressed with innovative and market-appropriate models.

Code: IGO1	Date: 13.05.2024	Time: 08:15 am	Duration: 31 min	Type: Cell-phone
Question 2				
<p>Quality of work: Chinese manufacturers had a strong development in the last years, in the past especially their design was lacking behind with weak exterior and interior design. EV technology: from an engineering perspective, building an EV is much easier than building an ICE vehicle. Regulation: the fact that German OEMs had to build Joint Ventures in China in order to operate meant that there was significant knowledge spillover. Customer expectations: nowadays customers expect more connectivity possibilities from their cars.</p>				
Question 3				
<p>Customer perception and brand knowledge is the most significant market entry barrier for Chinese EVs. Despite being on par with German EVs in terms of quality, the perception of Chinese cars in Germany remains poor. Our observations showed that when customers who purchased solar panels were offered a Dacia Spring and a BYD Atto 3 at the same discounted rate, they overwhelmingly chose the Dacia Spring, despite the BYD Atto 3 being a far superior car. One customer remarked, "Well, I really can't put a Chinese car in front of my house, can I?" This sentiment highlights the deep-seated biases against Chinese vehicles. In contrast, brands like MG, which is now fully Chinese but retains an English heritage, have seen much quicker consumer acceptance, demonstrating the significant impact of brand perception on market success. Accessibility of distribution channels is the third biggest entry barrier. Service and Sales networks take long to build up therefore customers often have no contact to the brand in their daily life leading to worse perceptions. Incumbent cost advantages are less pronounced in the context of Chinese EV brands entering the German market. Although many Chinese brands offer their cars at nearly double the retail price they are sold for in China, German manufacturers' prices still tend to be higher than those of their Chinese counterparts. The elevated prices of Chinese vehicles in Europe cannot be solely attributed to import costs and taxes. A significant factor is the strategic decision by Chinese OEMs to avoid being perceived as cheap brands. By setting higher prices, they aim to convey a sense of quality and reliability, aligning their brand image with premium standards. Capital Expenditure: Chinese brands are massively investing in their expansion in new markets, brands like BYD are able to do that because of their well running business in the domestic market as well as government subsidies.</p>				
Question 4				
<p>Subscriptions can decrease negative customer perceptions. We saw that already when EVs started coming to the market. Customers were eager to test the cars but were hesitant to a longer term lease or even fully purchasing the car. Subscription meet that customer need. Partnerships with subscription providers could further mitigate this barrier. Companies like FINN and Sixt are more known in Germany than most Chinese OEMs. It would give a sense of security to the consumer when subscribing to a car from a more well-known brand.</p>				
Question 5				
<p>For a shorter term market entry and to familiarize customers to a new product, subscriptions are the right choice. However, in Germany there is still a big market for direct purchasing of cars, so companies entering the market should not disregard these Sales Channels. Moreover, there has to be a plan for returning leasing and subscription vehicles to keep the overall fleet utilization at a high average – usual duration for leasing and subscription models is max 4 years.</p>				
Question 6				
<p>When it comes to innovation especially in technological advancements, Chinese companies are in the lead. This has to do with the greater expectations towards connectivity and the</p>				

general tech savviness of Chinese customers in the domestic markets. Tech companies like Huawei and Baidu are way more invested in the production of technological advancements in the car and in the case of Huawei they even release their own cars. When comparing that to Germany many established brands like Mercedes are way more reserved when implementing 3rd party technology in their cars (Mercedes just recently denied Apple Car Play 2.0 for their cars).

Question 7

Referring to what I said previously I think that Chinese companies be faster in reacting towards future connectivity needs of their customers. However in autonomous driving I would say that chinese players are not yet in the forefront of things.

Code: IAC1	Date: 05.05.2024	Time: 11:00 am	Duration: 26 min	Type: In-Person
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Question 2

Shift in Engineering Advantage: In the ICE segment, German manufacturers led in car engineering. However, as the BEV market requires less traditional engineering, particularly in engine development, this advantage has diminished. **Chinese government support:** Backed by substantial government support, Chinese OEMs, the largest producers of EVs, are making significant inroads into European markets through major acquisitions (e.g., MG, Volvo, Polestar) and strategic partnerships (e.g., BYD with Sixt).

Question 3

Brand Perception (especially regarding quality) (Rank 1): “Made in China” in the German customers mind is still connected to mostly cheap products that cannot compare to the “Made in Germany” build quality. It is still a long way till German customers realise that their perception does not hold true when it comes to the new generation of Chinese cars. **Access to Distribution Channels (Rank 2):** especially when it comes to overall coverage of car dealerships, Chinese OEMs still lack behind established brands leading to fewer customer touchpoints to actual convince them of the quality of the cars. But also in leasing, most German OEMs have their own financial institutes to offer competitive leasing deals such as VW Financial Services. Chinese companies are eager to close up to their rivals especially in leasing and are currently searching for strong partnerships or building their own Financial Services as leasing is one of the main drivers for EV sales. **Capital Requirements (Rank 3):** Chinese OEMs are currently pouring large amounts of money into their European expansion which is due to their successful positioning in their home markets as well as strong government backing which is why capital requirements is currently no major entry barrier for Chinese OEMs. **Incumbent Cost Advantages (Non-existent):** Cost advantages for incumbents like VW are diminishing as Chinese brands such as MG can offer competitively priced alternatives, giving them a foothold in the German market.

Question 4

Bad brand perceptions can be mitigated by subscriptions as they allow customers to access with almost no long term commitments therefore removing the financial risk many customers see when buying an electric car from a Chinese OEM. In terms of distribution channels subscriptions are predominantly sold online, which is advantageous for the early entry, when dealer networks are not yet well established. Moreover, in Germany established brands like FINN and Sixt can be used as partners for subscription services to tap into an already existing markets profiting of existing customers.

Question 5

I think that subscriptions are a solution for introducing the car into the market, however offering only subscription in the long term is not very sustainable. Once the cars come back out of their subscription contracts companies need to have a plan to further utilize them. I think that from that point on leasing as well as direct purchase channels have to be integrated to upsell to the users who liked their experience during the subscription term. Moreover, to move a large volume of unutilized cars fleet Sales need to be implemented into the Sales channels of the OEMs.

Question 6

In Germany especially, I think Chinese OEMs are generally quicker to adapt to market changes as their organizations are way smaller than those of the incumbents. But also product development is quicker in their home market due to lower regulations, government funding of R&D and a higher degree of partnerships with Tech companies such as Xiaomi. Chinese OEMs can therefore develop a car in half of the time of a German OEM.

Question 7

When it comes to innovativeness I think that Chinese OEMs are way more open towards implementing new technologies into their car which is partly due to customer demand in their home market. German OEMs are way more skeptical about third party technologies. We just saw that with Mercedes that did not want to put the newest version of Apple Car Play in their car. Also when it comes to battery technology Chinese OEMs are ahead and also have a better vertical integration in their supply chain as some OEMs like BYD produce the batteries themselves. This leads to a better integration in the car as well as cheaper prices.

Code: IAC2	Date: 16.05.2024	Time: 09:30 am	Duration: 40 min	Type: Cell-phone
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Question 2

Chinese OEMs seriously improved their production quality over the last years. They are also more innovative than before, even more innovative than most of their competition, not only in Infotainment but also in battery technology. The Chinese government is heavily investing in electric vehicles and battery technology. The EU is subsidizing electric mobility making it easier for EV-entrants to get into the European market.

Question 3

When it comes to Chinese OEMs entering the German market, several barriers need to be addressed. The most significant barrier is brand identification; almost no one knows about Chinese vehicles, and their market presence is not well established. Following closely is customer loyalty; many consumers remain resistant to engaging with new vehicles, particularly seasoned drivers who are loyal to internal combustion engine (ICE) vehicles and familiar brands. The third major barrier is access to the market; building a solid car sales infrastructure in Germany takes time, and traditional sales techniques pose challenges. For instance, Tesla used small stores in urban areas and online sales as their primary sales channels, and partnering with financial institutions is crucial for competitive leasing rates. Fourth, innovations like NIO's battery swapping system require significant investments in infrastructure and development time, though feasible, as demonstrated by Tesla's Superchargers. Fifth, incumbent cost advantages are less of a barrier, as most Chinese OEMs can price their vehicles lower than German competitors with similar offerings. Finally, capital requirements are manageable for large OEMs, which benefit from substantial own and government funding and are determined to expand in Europe "no matter what."

Question 4
Subscriptions can significantly improve customer perception of Chinese cars by providing a low entry barrier, allowing German customers to experience the vehicles firsthand and potentially reducing any misconceptions they might have. However, it is still essential to build a market presence through brand stores in major cities to engage with as many customers as possible. Access to distribution channels is simplified with subscription models, as most deals are made online. Selling primarily through subscriptions can mitigate entrance barriers associated with traditional dealer networks. Partnering with companies like FINN and Sixt can further help brands establish themselves, as their websites offer easy comparability between different car brands, increasing consumer trust. Additionally, Sixt's strong brand name and existing customer base in Germany, who already trust them for car rentals and subscriptions, can encourage more consumers to try out new brands.
Question 5
Subscriptions are effective for market entry but typically, cars in subscription programs have short life cycles, usually not exceeding three years. Maintaining fleet utilization over the long term can be challenging, similar to the issues faced by electric scooter companies. Additionally, these cars remain on the company's balance sheet, impacting their financials. Companies like Volkswagen address this by having entities like Volkswagen Financial Services buy the cars from the OEM and lease them to customers. To mitigate these risks, companies might need to partner with subscription services that purchase the cars, though this results in a loss of control over the distribution channel. For long-term success, Chinese OEMs must establish their own leasing channels to increase profits and develop their B2B fleet sales to boost volume. Moreover, with potential future regulations and tariffs on Chinese cars in Europe, it will be crucial for Chinese OEMs to move their production to Europe to maintain competitive prices and avoid the impact of tariffs that will be as high as 10-25%. With the current political movements and the European election this year, I believe that there is a chance that these tariffs could already be introduced this year.
Question 6
Especially on the technological side regarding infotainment as well as battery technology Chinese OEMs are way more innovative compared to the European market which is partly because of government subsidies but also because of the Chinese customer requesting more in-vehicle entertainment
Question 7
Chinese companies outperform their European counterparts with car development times as short as 18 months, allowing them to respond much faster to market changes. This rapid development is partly due to lower safety and testing regulations in China. Although additional testing is required once these cars are released to the European market, Chinese OEMs still achieve faster delivery times than their European competitors. However, I believe that German car brands will have superior reaction times to legislative changes in the EU regarding sustainability, such as CO2 disposal in manufacturing, recyclability, and the sustainable mining of rare earth materials.

Code: IAC3	Date: 24.05.2024	Time: 09:30 am	Duration: 39 min	Type: Teams
Question 2				
The transition from ICE to BEV vehicles has significantly altered the competitive landscape in the German car market. Tesla has emerged as a strong player, positioning electric cars as lifestyle products, while German OEMs have been slow to adopt electric technology. In				

contrast, China recognized in the late 1990s that it could not compete with European and American manufacturers in combustion engines, prompting massive investments in electric technology. These early investments have paid off, giving Chinese manufacturers extensive knowledge and experience. Electric cars are less labor- and component-intensive compared to combustion engines, requiring fewer mechanics and parts, which significantly reduces costs. Chinese manufacturers have successfully scaled the electric car business model more efficiently than European manufacturers. Consequently, they are aggressively entering the German market, where there is high demand for electric vehicles that local manufacturers cannot fully meet.

Question 3

In my opinion, Chinese OEMs face several significant barriers when entering the German market. Firstly, German customers have considerable reservations about Chinese brands, which affects brand identification and customer loyalty. Many consumers do not trust Chinese car brands and cannot form an emotional connection with them. Although established German companies have competitive advantages due to their long-standing market presence, Chinese manufacturers often offer lower prices because they achieve cost advantages through economies of scale and optimized production. Therefore, I do not see the cost advantages of incumbent companies as a major market entry barrier for Chinese OEMs. Another obstacle is adapting distribution channels to the German market conditions, as sales methods in China differ significantly from those in Germany. In Germany, car dealerships are often located in rural areas and the focus is on the driving experience, whereas in China, cars are often sold in large shopping centers as lifestyle products. Additionally, it takes a long time to establish a traditional car distribution network in Germany. Finally, capital requirements represent a significant entry barrier, as substantial investments are necessary to establish a presence in the German market. Despite these challenges, some Chinese manufacturers are showing adaptability by developing new distribution strategies and forming partnerships to strengthen their market presence. A potential barrier to the market entry of Chinese OEMs in Germany could be the imposition of tariffs. These tariffs might be introduced to protect the German automotive industry from the influx of significantly cheaper, yet high-quality, Chinese electric vehicles. The German automotive sector is likely to view these competitively priced imports unfavorably, prompting measures to safeguard domestic manufacturers.

Question 4

A subscription model as a sales channel offers several advantages to mitigate the entry barriers for Chinese OEMs in the German market. First, this model aligns with a trend among younger generations like Generation X and Generation Z, who place less value on ownership and status symbols. This societal shift makes the subscription model more attractive as owning a car becomes less prioritized. Consumers also value up-to-date technology and seamless smartphone integration. A subscription allows them to stay current without long-term commitments. The subscription model can also build trust in Chinese brands, as customers can test cars without long-term obligations. The perception that a car needs to function reliably for the subscription period can enhance brand trust. Examples like Polestar demonstrate that brand identification is less of an issue when the origin of the vehicle is not highlighted. Additionally, a subscription can serve as an extended test drive, increasing the likelihood that customers will later lease or buy a car. It allows customers to engage with the vehicle's quality over time, building long-term trust. Finally, subscription models are often managed online, appealing to a young, internet-savvy audience. Online distribution allows for quick and efficient transactions, which is beneficial for short-term needs. This reduces the necessity for physical testing and dealership visits, simplifying market entry for Chinese OEMs.

Question 5

A subscription model offers short-term advantages for the market entry of Chinese OEMs by enabling rapid market penetration. However, the greatest risk lies in an oversupply of vehicles, raising questions about the product lifecycle, recycling, and residual value in the used car market. In the long term, automakers must consider a return to the ownership model, as this promotes sustainable customer retention. Regular sales cycles, longer than typical subscription periods, support customer loyalty. Especially in Germany, customers show high loyalty to established car brands, which is better supported by traditional ownership models.

Question 6

Chinese automakers have a clear strategic advantage in adapting to market changes and technological advancements, particularly in the field of electric mobility. Apart from Tesla models, Chinese vehicles dominated the list of the best-selling electric cars last year. In China, great emphasis is placed on integrating modern technology into vehicles, often referred to as "iPhones on wheels." Consumer electronics manufacturers like Xiaomi and Niu are increasingly entering the automotive market, leading to at least ten new electric OEMs annually. In contrast, Germany lacks relevant consumer electronics manufacturers that produce high-quality software for seamless vehicle integration. Cultural barriers and the pride of German manufacturers often prevent collaboration with external software providers. Porsche is the first German manufacturer to partner with Apple to protect itself against competition from China.

Question 7

Chinese OEMs have demonstrated greater innovativeness compared to German manufacturers, primarily due to their early and substantial investments in electric technology since the late 1990s. While many initial projects failed, they led to significant advancements in battery research, making China a global leader in producing high-performance, long-lasting batteries. Chinese vehicles feature not only quick charging times and extended ranges but also interchangeable batteries, supported by an established infrastructure for rapid battery swaps. In contrast, German electric vehicles lag behind, with common consumer concerns about battery life and performance under various conditions. Even other Asian manufacturers, like Toyota, acknowledge that it will take five to ten years to match the current level of Chinese battery technology. This highlights a stark difference in the innovation capabilities between Chinese and German OEMs, particularly in the crucial areas of software and hardware development for electric vehicles.

Code: IAC4	Date: 21.05.2024	Time: 14:30 am	Duration: 32 min	Type: Teams
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Question 2

The shift from ICE to BEV vehicles has drastically altered the competitive landscape in the German car market. Chinese manufacturers, once hampered by lower quality and safety standards, have now significantly improved, even winning prestigious awards for their vehicles. These advancements, driven by substantial government investments and strategic acquisitions like Volvo, have enabled Chinese OEMs to offer high-quality, technologically advanced cars at competitive prices. Electric vehicles' simpler engineering compared to combustion engines has allowed Chinese manufacturers to scale production more efficiently, meeting market demand more effectively than some German manufacturers. German OEMs, slower to adopt electric technology, face high development costs and reduced profitability on electric models.

Question 3

Brand identification and customer loyalty are the most significant barriers for Chinese OEMs in the German market. German consumers are deeply loyal to established brands, and there is a national pride associated with their automotive industry. Despite the improved quality of Chinese vehicles, these deep-seated biases persist. Distribution channels is the next big challenge, as building a comprehensive dealer network in Germany takes time. However, the willingness of some German dealerships to partner with new brands offers an opportunity for Chinese OEMs. Overall, while Chinese OEMs face several traditional barriers, they also have opportunities to leverage cost efficiencies and new distribution partnerships to penetrate the German market. Moreover, I think that tariffs once they are set up are a significant challenge for Chinese OEMs. You can see it in the US where high tariffs on Chinese companies made an entry for Chinese OEMs in the car market nearly impossible. I think Chinese OEMs have to move their production to Europe to avoid these tariffs in the long term.

Question 4

A subscription model can significantly lower entry barriers for Chinese OEMs by reducing the financial commitment required from consumers. This model allows potential customers to experience the vehicles without the long-term risk associated with purchasing or leasing, which is particularly useful for overcoming skepticism about new and lesser-known brands. Subscriptions align with the preferences of younger, tech-savvy consumers who value flexibility and up-to-date technology. Moreover, subscription services often operate online, streamlining the purchasing process and reducing the need for an extensive physical dealership network initially. Partnerships with established brands like Sixt or FINN can also enhance credibility and trust, leveraging their existing customer bases. However, it's important to note that while subscriptions can facilitate market entry, building a robust after-sales and maintenance network is essential to address customer concerns about service and reliability.

Question 5

Subscription models offer a viable entry strategy by lowering the initial commitment for consumers, which can be particularly appealing for unfamiliar brands. However, there are significant sustainability challenges. Managing a large fleet and maintaining returned vehicles can be operationally demanding. The cash flow from subscriptions may be less stable compared to outright sales, and handling depreciation and damages adds complexity. While subscriptions can help build brand awareness and trust, relying solely on this model is risky. A diversified approach, including traditional sales and leasing, is essential for long-term success. This mix ensures a stable revenue stream and supports customer retention beyond the initial trial phase.

Question 6

Chinese car manufacturers are generally more agile and quicker to adapt to market changes and technological advancements. Their leaner organizational structures and substantial government support enable them to innovate rapidly, especially in areas like electric vehicles and software integration. They can bring new models to market faster, leveraging a large pool of developers and flexible production processes. In contrast, German manufacturers, while having extensive experience and resources, tend to have longer development cycles due to their size and more traditional approach. This often results in slower adaptation to new trends and technological shifts compared to their Chinese counterparts.

Question 7

There is a distinct difference in the innovativeness of German and Chinese OEMs. Chinese manufacturers excel in rapid innovation, particularly in battery technology and software

integration, supported by significant government funding and a tech-savvy domestic market. They are more willing to experiment with new technologies and integrate third-party solutions, giving them an edge in quickly introducing advanced features. German manufacturers, on the other hand, tend to be more cautious and methodical, focusing on reliability and established processes. This conservative approach can slow down the adoption of new technologies, making Chinese OEMs appear more innovative and quicker to market with cutting-edge advancements.

Code: ISP1	Date: 24.05.2024	Time: 11:30 am	Duration: 39 min	Type: Teams
Question 2				
<p>The competitive landscape in the German car market has changed significantly with the transition from ICE to BEV vehicles. Chinese manufacturers have made substantial improvements in quality and safety, achieving five-star ratings comparable to German brands. The shift to electric vehicles has leveled the playing field, allowing Chinese OEMs to compete more effectively. Additionally, Chinese manufacturers benefit from economies of scale in battery production, which gives them a cost advantage. This shift has also opened up the market for new players, as traditional German dealerships have started to partner with Chinese brands due to the shift towards direct sales by German OEMs, leaving space for new entrants.</p>				
Question 3				
<p>I think that brand identification and customer loyalty are significant barriers for Chinese OEMs entering the German market. German consumers are loyal to established brands and have a sense of national pride in their automotive industry. However, Chinese brands like MG have successfully used existing brands to penetrate the market. I believe cost advantages are actually on the side of Chinese manufacturers due to their efficient production and vertical integration of battery production, which allows them to offer lower prices compared to European manufacturers like Volkswagen. Accessibility to distribution channels is less of a barrier, as many German dealerships, having lost contracts with local manufacturers, are now open to new brands, including Chinese ones. Additionally, the bureaucratic requirements in the European market pose a significant challenge. Each market has different regulations, and in Germany, for example, specific registration certificates (NZB 2) are needed, which are not universally available. The process involves navigating various legal and language barriers, as German authorities typically do not operate in English. Furthermore, there is a significant difference in market dynamics between China and Europe. In China, the market is predominantly for new cars with a relatively small used car segment, whereas in Europe, a significant portion of the market consists of young used cars and fleet customers. This necessitates a strategic adaptation for Chinese manufacturers entering the European market. Lastly, the need for extensive investment to build brand recognition in Europe remains a considerable barrier.</p>				
Question 4				
<p>A subscription model can reduce market entry barriers by lowering the initial commitment required from consumers. It allows potential customers to try out the vehicles with less financial risk, which can be particularly appealing given the skepticism about new brands. This model provides a pathway for customers to transition to leasing or purchasing if they are satisfied. We upsell many of our subscription customers into leasing plans. Subscription models can attract consumers who might be hesitant to fully commit to buying a Chinese car outright, thereby increasing brand exposure and acceptance over time. Partnering with</p>				

third parties to offer subscription services has its advantages and disadvantages. On the positive side, partnerships enhance credibility, broaden the customer base, and lower entry barriers for potential customers. However, using a third party platform creates dependencies on for pricing and customer interactions, potentially reducing control over the brand's market strategy.

Question 5

Subscription models pose sustainability challenges due to the high operational demands of managing returned vehicles and maintaining a large fleet. The cash flow from monthly subscription fees may not be sufficient compared to outright sales, and managing vehicle depreciation and damages can be complex. Robust processes for evaluating and refurbishing returned vehicles are needed. While subscription models can be an effective entry strategy, they may not be sustainable as the sole business model without complementary traditional sales channels.

Question 6

Chinese car manufacturers are generally quicker to adapt to market changes and technological advancements due to their more agile and startup-like nature. They can rapidly develop and implement new technologies, particularly in software integration. This agility is particularly beneficial for product development, allowing them to launch new models much faster than their German counterparts, who might take significantly longer to bring a new model to market due to more extensive and slower processes. However, they face challenges in adapting to the regulatory and bureaucratic requirements of the European market, which requires hiring local expertise and navigating complex legal landscapes. In contrast, German manufacturers have established resources and experience but are slower in their product development cycles and less flexible in adopting new technologies swiftly. Chinese OEMs operate like startups in Europe, enabling them to identify what needs to be done much faster. In China, they have a large pool of developers who can swiftly redefine and develop requirements. This makes them notably quicker in sensing and adapting to new market movements and technological advancements compared to German OEMs.

Question 7

Yes, there is a notable difference in the innovativeness of German and Chinese OEMs. Chinese manufacturers are leading in both software and hardware innovations, particularly in battery technology. They benefit from early and substantial investments in electric vehicle technology, resulting in advanced battery solutions with longer ranges and faster charging capabilities. This gives Chinese OEMs a competitive edge in introducing new, cutting-edge technologies more rapidly.

Appendix III: Interviews – Category and Subcategory definitions

Sub-Category	Code
Category I: Market Dynamics and OEM Innovation	
BEV Transition	Transition towards BEVs and how it affected the market dynamics in the global automotive market
Sensing Opportunities	OEMs ability to sense changes in the market and resulting opportunities
Seizing Opportunities	OEMs ability to capitalize on the opportunities in the market through new offerings
Ongoing reconfiguration	OEMs ability to reconfigure their assets to drive innovation
Category II: Market Entry Barriers of Chinese OEMs	
Brand Identification and Customer Loyalty	German customers perceptions towards Chinese OEMs and their effect on market entry
Distribution Channels	Challenges Chinese OEMs face in establishing comprehensive distribution channels and after-sales services in the German market
Capital Requirements	Challenges Chinese OEMs face when entering the German market that relate to capital needed
Incumbent Cost Advantages	Challenges Chinese OEMs face relating to cost advantages that incumbents have
Tariffs	Thread of possible tariffs on cars that are imported from China
Regulatory Requirements	Challenges concerning bureaucratic processes when entering the German market
Category III: Mitigation of Entry Barriers through Subscriptions	
Mitigation - Brand Identification and Customer Loyalty	Effect of car subscriptions on customer perceptions and their willingness to engage with Chinese BEVs

Mitigation - Distribution Channels	Effect of car subscriptions on the choice of distribution channels of Chinese OEMs entering the German market
Mitigation - Capital Requirements	Effect of car subscriptions on capital requirements needed for a market entry
Category IV: Implementing Subscription Services	
Financial Considerations	Financial Hurdles occurring when implementing a subscription service
Operational Hurdles	Operational hurdles occurring when implementing a subscription service
Sustainability	Long term sustainability of subscription services as a sole business model

Appendix IV: Consumer Survey

#	Question	Question Type	Answer Option
1	Which of the following Chinese car brands do you know?	Multiple Choice	BYD, Polestar, NIO, Ora, Wey, MG, Aiyways, Xpeng, Lynk&Co, GWM, Geely, None of them
2	Have you ever used a car subscription?	Single Choice	Yes, No
3	How familiar are you with car subscription models?	Single Choice	Very familiar, Somewhat familiar, Heard of it, but not familiar, Not familiar at all
Basic information about car subscription services were provided.			
4	Car subscriptions are a superior model to traditional ownership and leasing models.	7-point Likert Scale	Strongly disagree (1) – Strongly agree (7)
5	I would consider a car subscription for my next car.	7-point Likert Scale	Strongly disagree (1) – Strongly agree (7)
6	Please rank the following attributes according to their importance when choosing a car subscription.	Ranking	Vehicle Brand, Monthly Fee, Frequent Model Changes, Personalization Options, Short minimum subscription term, ability to test the car beforehand, convenient and fast online booking, variety of cars to choose from
Basic information about the VW ID4 was provided (Price, Performance, Range, Picture)			
7	Please indicate your perception of the car regarding the following attributes from 0 (worst) to 10 (best):	Scale (0-10)	Reliability, Quality, Performance, Service Network (Maintenance), Battery Service Life, Long Term Value, Social Status, Value for money, Safety
8	If you were to acquire this BEV, which of the following methods would you choose (please rank from 1 (best) to 4 (worst)) considering all had the same overall cost?	Ranking	Purchase, Leasing, Financing (acquiring the car using a credit), Subscription (3 month minimum term + flexible cancellation after)
Basic information about the BYD Atto 3 was provided (Price, Performance, Range, Picture)			
9	Please indicate your perception of the car regarding the following attributes from 0 (worst) to 10 (best):	Scale (0-10)	Reliability, Quality, Performance, Service Network (Maintenance), Battery Service Life, Long Term Value, Social Status, Value for money, Safety

10	If you were to acquire this BEV, which of the following methods would you choose (please rank from 1 (best) to 4 (worst)) considering all had the same overall cost?	Ranking	Purchase, Leasing, Financing (acquiring the car using a credit), Subscription (3 month minimum term + flexible cancellation after)
11	Which of the two cars would you rather use? (0 = i would use the BYD; 100 = i would use the VW)	Scale	0 = BYD Atto 3, 100 = VW ID4
12	Subscribing to a car is a hassle-free way to experience driving a Chinese BEV.	7-point Likert Scale	Strongly disagree (1) – Strongly agree (7)
13	A subscription model lowers the financial barrier to experiencing a Chinese BEV.	7-point Likert Scale	Strongly disagree (1) – Strongly agree (7)
14	The subscription model for Chinese BEVs is more appealing than traditional car ownership.	7-point Likert Scale	Strongly disagree (1) – Strongly agree (7)
15	Car subscriptions are a good way to compare different Chinese BEV models without long-term commitments.	7-point Likert Scale	Strongly disagree (1) – Strongly agree (7)
16	I am confident that a subscription service would provide comprehensive support and maintenance for a Chinese BEV.	7-point Likert Scale	Strongly disagree (1) – Strongly agree (7)
17	Please select "Disagree" for this statement for me to see that you are paying attention.	7-point Likert Scale	Strongly disagree (1) – Strongly agree (7)
18	Subscribing to a Chinese BEV is more cost-effective than leasing or buying a comparable model.	7-point Likert Scale	Strongly disagree (1) – Strongly agree (7)
19	I am skeptical about the reliability of Chinese BEVs available through subscription services.	7-point Likert Scale	Strongly disagree (1) – Strongly agree (7)
20	I am familiar with Chinese BEV brands.	7-point Likert Scale	Strongly disagree (1) – Strongly agree (7)
21	Chinese BEVs are easily accessible through various distribution channels in Germany.	7-point Likert Scale	Strongly disagree (1) – Strongly agree (7)
22	Chinese BEV brands effectively promote their vehicles in Germany.	7-point Likert Scale	Strongly disagree (1) – Strongly agree (7)

23	Chinese BEV brands have a good reputation in the German market.	7-point Likert Scale	Strongly disagree (1) – Strongly agree (7)
24	I feel that driving a Chinese BEV would positively influence others' perceptions of me.	7-point Likert Scale	Strongly disagree (1) – Strongly agree (7)
25	Chinese BEVs offer more innovative features compared to other brands.	7-point Likert Scale	Strongly disagree (1) – Strongly agree (7)
26	Chinese BEV manufacturers quickly adapt to market needs and trends.	7-point Likert Scale	Strongly disagree (1) – Strongly agree (7)
27	Chinese BEVs incorporate the latest technological advancements.	7-point Likert Scale	Strongly disagree (1) – Strongly agree (7)
28	Chinese BEV manufacturers effectively use customer feedback to improve their products.	7-point Likert Scale	Strongly disagree (1) – Strongly agree (7)
Demographic Questions			
29	Current vehicle Ownership	Single Choice	I own a Battery Electric Vehicle (BEV) from a Chinese producer, I own a BEV from a non-Chinese producer, I own a non-BEV vehicle, I do not own a vehicle
30	Please select your age	Single Choice	Under 20, 20-29, 30-39, 40-49, 50-59, 60 and above
31	What is your gender?	Single Choice	Female, Male, Other
32	What is your highest degree?	Single Choice	Doctor or higher education, Master's Degree, Bachelor's Degree, Advanced Secondary Education (Abitur), Secondary Education (Mittlere Hochschulreife), Basic Secondary Education (Hauptschulabschluss), No Secondary Education
33	What is your country of residence?	Single Choice	All countries in the world
34	What is your employment status?	Single Choice	Full-time employed, Part-time employed, Unemployed, Retired, Student, Prefer not to say
35	What is your annual household income?	Single Choice	Less than 25,000€, 25,000 - 75,000€, 75,000 - 125,000€, 125,000 - 175,000€, More than 175,000€, Prefer not to say

Appendix V: Regression analysis – effect of consumer perception on usage mode

Dependent variable:	
Subscription	
Reliability	-0.125* (0.057)
Quality	0.091 (0.062)
Performance	-0.062 (0.050)
Service_Network	0.140*** (0.039)
Battery_Lifetime	-0.055 (0.045)
Long_Term_Value	-0.127*** (0.037)
Social_Status	0.172*** (0.037)
Value_for_money	-0.060 (0.041)
Safety	0.062 (0.041)
Male	0.307*** (0.109)
under_30	0.211* (0.111)
Constant	0.987*** (0.314)
Observations	177
R2	0.522
Adjusted R2	0.491
Residual Std. Error	0.670 (df = 165)
F Statistic	16.407*** (df = 11; 165)

Note: *p<0.1; **p<0.05; ***p<0.01

Appendix VI: Regression analysis – effect of consumer perception on car choice

Dependent variable:

Car Choice (BYD (0), VW (100))

Familiarity	-1.601 (1.429)
Reputation	-5.535*** (1.849)
Innovativeness	-4.376*** (1.513)
Male	-0.259 (4.418)
under30	1.755 (4.424)
Constant	113.445*** (9.842)

Observations	90
R2	0.264
Adjusted R2	0.220
Residual Std. Error	18.738 (df = 84)
F Statistic	6.030*** (df = 5; 84)

Note: *p<0.1; **p<0.05; ***p<0.01