

# **The influence of personal values, brand personality, self-brand congruence and functional congruence on luxury car purchase intention: a comparison of different generational cohorts in China**

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## **Abstract**

The focus of this research is on consumer behaviour regarding the purchase of luxury passenger cars in the rapidly changing consumer landscape of China. Using generational cohorts as reference, this study explores how personal values, brand personality, self–brand congruence, and functional congruence influence car purchase intentions in China. The model assumes that self–brand congruence positively affects purchase intention indirectly through functional congruence, whereas functional congruence directly affects purchase intention.

The study consequently aims to fill the gaps in research on liking, which can be defined in this context as the feeling, inclination or preference towards a brand, and purchase intention of luxury passenger cars among consumers in China. It assesses a conceptual framework by exploring the key factors influencing Chinese consumers' perceptions, underpinned by existing literature and primary data collected from Chinese luxury passenger car consumers.

Quantitative data was collected via a survey questionnaire from 300 Chinese luxury car consumers who own, owned, or intend to own a luxury passenger car within the next six months. All genders and ages as well as three different cities – Beijing, Shanghai, and Shenzhen – were captured. Two German luxury car brands, BMW and Mercedes-Benz, were chosen, as they are the most successful luxury car brands in China from outside of the country. Confirmatory factor analysis, piecewise structural equation modeling, and response survey analysis were employed to analyse the primary data.

The findings indicate that there are few generational cohort differences in personal values, perception of brand personality, self–brand congruence, and functional congruence influencing liking and purchase intention.

However, influences on personal values; perception of brand personality; self–brand congruence; functional congruence; and moderating variables such as brand conspicuousness, brand uniqueness, brand involvement, and brand differentiation were found.

The higher-order personal value of self-enhancement in particular possesses the strongest impact on purchase intention. The brands explored in this study also differed from each other in terms of consumers' perceptions of brand personality. Moreover, the effect of self-brand congruence on liking and purchase intention revealed that Conservation\_Sincerity presents the most relevant positive impact on those two factors. Additionally, brand conspicuousness and brand uniqueness moderate BMW's and Mercedes-Benz's self-brand congruence. Further, self-brand congruence also influences functional congruence and thus purchase intention indirectly, whereas the functional congruence of BMW Warranty and Mercedes-Benz Exterior affects purchase intention the most.

Furthermore, differences in the effect of self-brand congruence and functional congruence between different genders and cities on purchase intention were limited. This study also points to liking as the antecedent to purchase intention.

The present study establishes new theoretical insights into the phenomena of liking and purchase intention regarding luxury passenger cars in China. These insights will help researchers and marketers to better understand consumers' purchase intention regarding luxury passenger cars and hence to apply appropriate marketing strategies in China.

*Keywords:* Generational cohort, purchase behaviour in China, luxury passenger cars, personal values, brand personality, self-brand congruence, functional congruence.

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## Declaration

I declare that the work in this thesis was carried out in accordance with the regulations of the University of Gloucestershire and is original except where indicated by specific reference in the text. No part of the thesis has been submitted as part of any other academic award. The thesis has not been presented to any other education institution in the United Kingdom or overseas.

Any views expressed in the thesis are those of the author and in no way represent those of the University.

Name Bettina Dorsch

Signed

A black rectangular box redacting the signature of Bettina Dorsch.

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## LIST OF ABBREVIATIONS

Abbreviation	Definition
A	Achievement
ANOVA	Analysis of variance
AOI	Activity, interest, and opinion
bc	Brand conspicuousness
BC	Benevolence-care
bd	Brand differentiation
BD	Benevolence-dependability
bi	Brand involvement
BPS	Brand personality scale
bu	Brand uniqueness
c	Constrained effects (on generational cohorts)
C	Fisher's C
c+personal value	Centered (personal value)
CCT	Consumer culture theory
CFA	Confirmatory factor analysis
CI	Conformity-interpersonal
CoA	Country-of-Assembly
CoB	Country-of-Brand
Con	Conservation
cong	congruence
CoO	Country-of-Origin
CoP	Country-of-Production
CR	Conformity-rules
Df	Degrees of freedom
F	Face
FC	Functional congruence
He	Hedonism
HOV	Higher-order value
Hu	Humility
LB	Lower Bound

<b>Abbreviation</b>	<b>Definition</b>
Im	Linear model
LOV	List of values
M	Mean
MB	Mercedes-Benz
Neg.	negative
OC	Openness-to-change
P	P-value
PD	Power-dominance
PI	Purchase intention
Pos.	Positive
PR	Power-resources
PSEM	Pairwise structural equation modeling
PV	Personal values
PVQ-RR	Portrait value questionnaires – refined values
Q	Question
R	Correlation
RQ	Research question
RSA	Response surface analysis
SBC	Self-brand congruence
SD	Standard deviation
SDA	Self-direction action
SDT	Self-direction thought
SE	Self-enhancement
SEM	Structural equation modeling
Signif.	Significance
SP	Security-personal
SS	Security-societal
ST	Stimulation
Std.	Standardised
STr	Self-transcendence
SVS	Schwartz Value Survey

<b>Abbreviation</b>	<b>Definition</b>
T	Tradition
UB	Upper Bound
UC	Universalism-concern
UN	Universalism-nature
UT	Universalism-tolerance
VALS	Values, attitudes, and lifestyles

# **Chapter 1 Introduction**

## **1.0 Introduction**

This chapter provides a general overview of the PhD thesis, which explores Chinese consumers' car purchasing behaviour regarding two German luxury car brands. The identified research problem is followed by research objectives and questions. Thereafter, the research methodology and methods are presented, followed by the research contribution. The chapter concludes with the structure of the thesis.

## **1.1 Background of research – focus and justification for this study**

The focus of the present research is on Chinese consumers' car purchasing behaviour regarding two German luxury car brands in mainland China. Having lived in Shenzhen, China, for three years, and having worked in the marketing and sales department of Mercedes-Benz (MB), I could not understand what I observed. Thus, I visited the Beijing and Hong Kong headquarters and the dealerships in Beijing, Shanghai, Shenzhen, and Hong Kong, where I observed other Chinese passenger car consumers and talked to colleagues and friends about the differences compared to the West. These personal experiences triggered the desire to better understand the Chinese consumer's purchase intention regarding German luxury passenger cars.

As one of the major emerging markets, China is a vast consumer market because of its substantial size and growth rate (McKinsey and Company, 2020; Wang, Liao, & Hein, 2010). However, countries with high economic growth, such as China, present the most differences between cohorts (Tang, 2019). The different political, economic, historical, and social events experienced by Chinese consumers during their most formative years (Hu,

2020) still influence their lifestyle, values, and attitudes. These different experiences, possibilities, and constraints lead to generational cohorts with similar needs and priorities, possibly influencing purchase intention differently.

Additionally, previous luxury passenger car research has primarily focused on Western markets. Therefore, it is of interest to explore whether studies based on a Western setting can be applied to another cultural context. Several cross-cultural studies have revealed that Chinese decision-making behaviours differ significantly from those in the West (Hofstede, 1980; Rokeach, 1973). These differences are mainly driven by the Confucian value system as well as the Chinese socioeconomic structure (Aaker & Schmitt, 2001; Hennig-Schmidt & Li, 2005; Hung, Gu, & Yim, 2007; Thun, 2018).

It is argued that emotional, social, and symbolic values play an important role in cultures such as that of China (Wong & Ahuvia, 1998) and that these values are the main triggers for the purchase of luxury goods (Atwal & Bryson, 2017; Bartikowski & Cleveland, 2017; Chevalier & Lu, 2015). For Western markets, functional value (Han & Kim, 2020; Wiedmann, Hennigs, & Siebels, 2007) has been defined as another main trigger for luxury consumption and was therefore also added in this study. A fundamental assumption underpins these personal values and the corresponding concepts of perceived brand personality, self–brand congruence, and functional congruence as well as their impact on purchase intention. That is, the conspicuous and social values for enhancing social status and establishing one's reputation by consuming luxury goods publicly is an indicator of status and wealth (Wang et al., 2010).

It is consequently critical for marketers and researchers to understand the underlying motives for why consumers buy luxury passenger cars, how they perceive Western brands in mainland China, and whether there are differences between generational cohorts.

## **1.2 Chinese economic development and passenger car consumption**

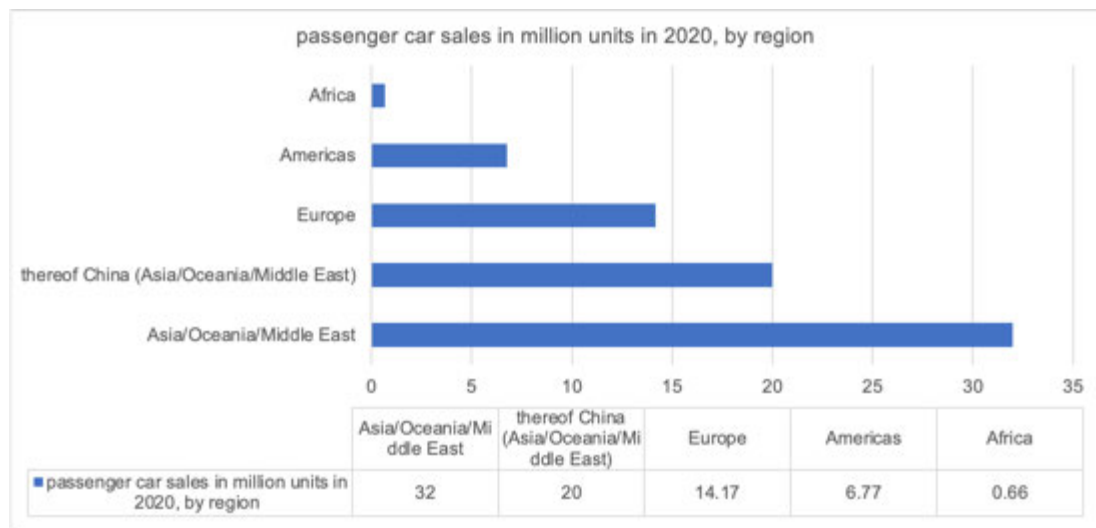
In the context of creating new market possibilities, there is growing attention on Chinese consumers and their purchase behaviours (Garner, 2005; Thun, 2018). China has moved away from being a country with a high degree of egalitarianism (Hu, 2020). Thus, there are few differences in its consumption patterns and lifestyles compared to countries with greater wealth; differentials in income, living standards, and lifestyles; and ongoing strong growth in size and diversity (Rosenbloom, Haefner, & Lee, 2012).

The 1911 Revolution marked the end of the Qing Dynasty and the start of the Republic of China; however, Mao Zedong did not officially establish the People's Republic of China until 1949. Until the 1970s, the communist government kept China closed off from the outside world. Furthermore, Mao's government was hostile towards consumption. In the late 1970s, driven by political reforms, China began to open its economy, thus changing in the subsequent years from a centrally planned economy to a market economy (Croll, 2006). Production differentiation was introduced in brands and marketing campaigns, which are nowadays omnipresent. Additionally, new concepts such as consumer credit and new shopping experiences such as e-commerce were implemented. Cui and Zhu (1998) argued that purchase power improves with economic development; therefore, preferences and consumer behaviour are constantly changing. However, China is still a developing country, and people need the majority of their salary for basic needs (McKinsey and Company, 2019i).

According to McKinsey and Company (2019c), the middle class is growing in China, especially in the quickly expanding third- and fourth-tier cities. Furthermore, they have more spending power due to lower costs of living, and they require cars for mobility. This is a significant change, since the upper middle class barely existed in China. The economic and hence consumption growth that began along the coastal area is gradually moving towards the inland.

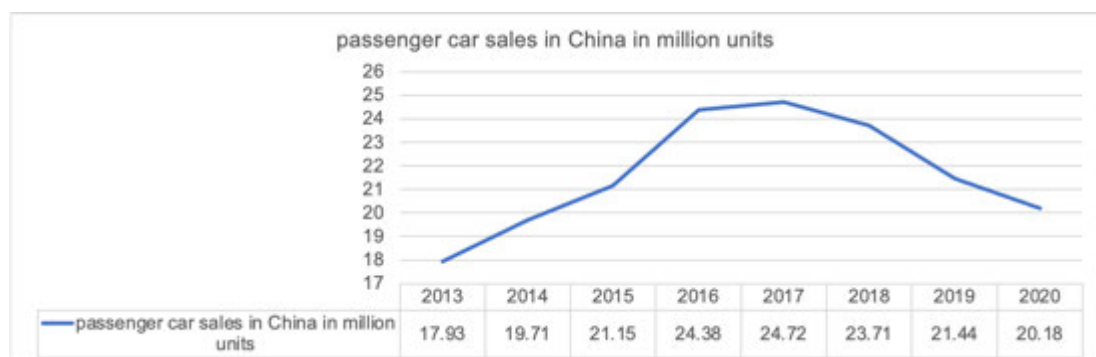
The automobile industry in particular has influenced Chinese economic growth and has become the key industrial sector. Despite Chinese passenger car retail sales having decreased since 2018 for the first time in years (Statista, 2021a), it remains the largest passenger car market in the world (see Figure 1.2.1 and Figure 1.2.2). Therefore, it is understandable that automobile manufacturers want to conquer the Chinese market.

**Figure 1.2.1 Annual car sales by region in 2020**



Source: <https://www.statista.com/statistics/257653/passenger-car-sales-by-region/>

**Figure 1.2.2 Car sales in China from 2013–2020**

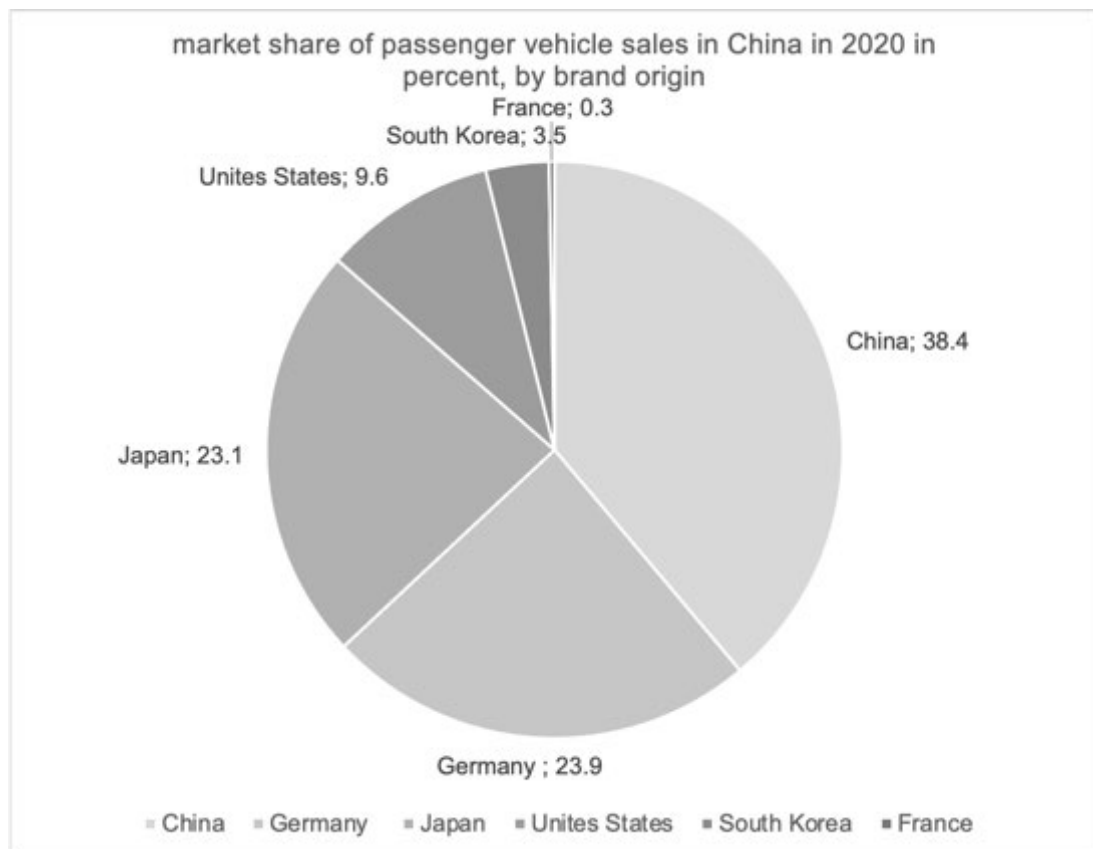


Source: <https://www.statista.com/statistics/233743/vehicle-sales-in-china/>

With 20 million passenger cars sales in 2020 (Statista, 2021a; Statista, 2021b), China offers vast potential for car manufacturers worldwide (see Figure 1.2.2). Therefore, it is crucial to understand Chinese consumers' behaviour regarding the purchase of passenger vehicles (McKinsey and Company, 2019g).

It is interesting that in the ranking of car brands sold in China in 2020, German car brands held the largest market share (23.9%) of passenger car sales in China from outside of the country (Statista, 2021c; see Figure 1.2.3).

**Figure 1.2.3 Market share of passenger car sales in China in 2020, by brand origin**



Source: <https://www.statista.com/statistics/1088589/china-market-share-of-passenger-automobile-sales-by-origin-of-brand/>

More specifically, 80.4% of the total vehicle imports in China in 2020 were luxury vehicles (Statista, 2021e). Furthermore, according to Statista (2021d),



the luxury car market will continue to grow, mostly in relation to China and its increase in consumption power. In 2020, MB was the number one luxury car brand worldwide.

Moreover, MB, BMW, and Audi are the three most successful luxury car brands worldwide (Statista, 2021d). In China specifically, BMW and MB sell more than one third of their new vehicles. The two companies sold 778,400 units (Statista, 2021f) and 758,100 units respectively in China in 2020 (Statista, 2021g) – the most units of the three aforementioned premium brands.

Given the further potential growth of the Chinese luxury car market and especially that German vehicles hold the largest market share of imported cars in China, the two most successful luxury brands in China, namely MB and BMW, are considered in this research.

### **1.3 Chinese consumer behaviour and luxury consumption**

Much research indicates that consumer behaviour in China has recently been influenced by some fundamental changes (Zhang, Cude, & Zhao, 2019) that affect the Chinese values, lifestyles, and attitudes and, in turn, their purchase behaviour (Rosenbloom et al., 2012; Schramm & Taube, 2007).

Due to the ongoing economic and social transformations, it is necessary to understand the market and the consumers. Chinese customers had restricted access to a small variety of goods during Mao Zedong's government (Sethi, 2019). With the open-door policy from the late 1970s in China's economy, growth began, and consumption increased, thus providing consumers with a greater variety of brands to choose from (Grünhagen, Dant, & Zhu, 2012; He, Zou, & Jin, 2010; Ratner, 2011). Only a few consumers were previously able to afford luxury goods such as cars. However, with economic growth, purchasing power has increased (McKinsey

and Company, 2019h; Statista, 2020), generating high demand for luxury goods, including cars.

With China's economic integration into the world economy after its accession to the World Trade Organization, Chinese consumers can nowadays choose from a large number of products; therefore, Chinese consumers' values, priorities, and purchase behaviours are also changing (Ratner, 2011). Nevertheless, studies indicate that the traditional Chinese culture still has a profound influence on Chinese customers' purchasing behaviour (Henry, 1976; Samli, 2013).

China has a history of Buddhism, Taoism, and Confucianism shaping consumers' decisions for over 5,000 years (Schuette & Ching, 1996). Confucianism especially influenced the Chinese culture with several principles, such as providing and maintaining social harmony, order, and stability (Liu, Wang, & Leach, 2012). According to Zhuo and Guang (2007), the core elements of Chinese culture include *li* (proper conduct), *guanxi* (interpersonal relationships), *renqing* (feelings or obligations), *mianzi* (face), *tiaohe* (harmony), and reciprocity (gift giving). Notably, trust (*xin*) is essential for conducting business in China. These Chinese traditions may be helpful in understanding consumer behaviour. Therefore, it is important to understand the influence of Chinese culture in daily life (Luo, 2000).

## 1.4 Research gaps

Despite extensive research on Chinese customer behaviour (Han & Uncles, 2010; Hung et al., 2007; Wang et al., 2010), much remains to be understood about what underpins consumers' purchase intentions to buy German luxury passenger cars in mainland China. Purchase intention, which is related to attitude, behaviour, and perception, is the focus of current research, as consumer behaviour is determined by purchase intention (Ajzen, 1985; Ajzen, 1987; Gupta & Zeithaml, 2006).

Au (2014) highlighted that cultural value differences should be considered not only between countries but also within them. The differences in the

importance of specific personal values of Chinese consumers are assumed to have different effects on behaviour and attitude, thus affecting purchase intention (Bardi & Schwartz, 2003; Rokeach, 1973; Wang et al., 2010). Asian consumer behaviour particularly differs from the West due to Asians' unique cultural characteristics (Hofstede, 1980). The value theory consequently allows for a better understanding of behaviour, interests, and attitudes, and hence purchase intention (Carman, 1978).

Rokeach (1973) defines values as beliefs that guide behaviour. Hofstede (1980), however, argues that culture affects personal values, which stabilise over time. Moreover, Schwartz developed a value theory in the early 1990s called the Schwartz value survey (SVS). The aim of the SVS is to measure cultural and individual differences regarding personal values (Schwartz et al., 2012). This study examines the extent to which such personal values explain purchase intention. Furthermore, in considering various influences on purchase intention, brand personality has become a significant factor that attracts attention. Brand personality is defined as a set of characteristics that consumers relate to specific brands (Aaker, 1997). It is strongly affected by beliefs and culture, and thus the embedded meaning (Aaker, Benet-Martínez, & Garolera, 2001).

Since the impact on purchase intention can vary in strength, according to Wang et al. (2010), it is assumed that stronger positive feelings towards a brand can lead to a higher purchase intention. The current research thus examines whether there is any significant congruence between the personal values of each Chinese generational cohort and their perceptions of brand personality dimensions, and how any observed congruence influences purchase intentions for luxury passenger cars (Sirgy et al., 1997). Self-brand congruence is useful for understanding and forecasting consumers' behaviour, such as their purchase intention and brand preference (Kressman et al., 2006). Additionally, it is suggested that self-brand congruence affects functional congruence (Sirgy & Johar, 1999). Functional congruence focuses on utilitarian features and explores consumers' ideal expectations, their perception or experience (Sirgy et al., 1997), and the functional dimensions. The present research attempts to investigate how self-brand congruence

may influence purchase intention indirectly through functional congruence. This model has not been explored in the Chinese context. Moreover, it is important to understand the purchase intention process regarding luxury passenger cars in mainland China.

To provide a more holistic picture, the research also considers moderating variables, such as brand involvement, brand conspicuousness, brand uniqueness (Gurel-Atay et al., 2020), and brand differentiation. As considered by Sirgy and Johar (1999), these moderating variables seem to influence both self-brand congruence and functional congruence, and therefore purchase intention.

However, with further development of the economy, the Chinese market has ceased to be homogeneous (Tang, Wang, & Zhang, 2017). Chinese consumers have experienced different economic, historic, political, and social events. The influence of generational cohorts and their perceptions have consequently become an emerging topic for considering purchase intention (Tang et al., 2017; Wang et al., 2010). These generational value differences can influence attitude and behaviour, and thus purchase intention. Therefore, Inglehart's (1997) modernisation and post-modernisation theory of generational differences in values is transferred from a Western context to a Chinese one. Nevertheless, with the exception of Han and Uncles' study (2010), there is limited discussion in the existing literature on segmenting Chinese consumers by generational cohorts. As a result of previous studies about generational differences or similarities in China, three cohorts have been identified (Hung et al., 2007): Red Guards (born before 1978), Modern Realists (born 1978–1989), and the post-reform generation (born after 1989). It has been found that these three generational cohorts differ significantly due to extreme political, cultural, and economic transformations (Tang et al., 2017).

## **1.5 Research questions and research objectives**

Based on the previously addressed gaps in the research, the present study examines the luxury passenger car purchase intentions of different generational cohorts in China. Previous investigations have shown that consumers in emerging markets are different from those in the West (Prahalad & Lieberthal, 1998). History, politics, and beliefs still affect Chinese consumers' behaviour and therefore their purchase behaviour.

Decades of socialism and the Cultural Revolution, which trampled on China's own culture, shaped Chinese characteristics (Hu, 2020). Tang et al. (2017) argue that China's social reform in recent decades has affected its social groups in different ways, leading to instability in personal identities as well as aspirations. The relationship between self-brand congruence and functional congruence in relation to luxury car purchase intention is consequently the focus of this study. Meanwhile, the segmentation of passenger car purchase users is the central component.

Based on the above elaborations, the following research objectives are laid out:

1. Identifying whether there are different personal values observable between Chinese generational cohorts in relation to their liking and intention to purchase a car. Whereas liking could be defined as the feeling, preference and inclination towards a brand in this context.
2. Examining whether differences exist in perceptions of brand personalities between Chinese generational cohorts in relation to liking and car purchase intention;
3. Exploring the most significant congruencies between specific personal values and perceptions of brand personality between generational cohorts;
4. Identifying how any observed personal values and brand-personality congruencies between generational cohorts influence liking and purchase intention;

5. Analysing how any observed difference in generational cohorts' perceptions of the functional congruence of the two German car brands, MB and BMW, positively influence liking and purchase intention;
6. Examining what other moderating variables influence self–brand congruence and functional congruence and thus liking and purchase intention in China.

To fulfil the aforementioned research objectives, the following research questions are raised:

1. Are there differences in the importance of personal values between Chinese generational cohorts in relation to liking and car purchase intention?
2. Are there different perceptions of brand personalities of MB and BMW between Chinese generational cohorts in relation to liking and car purchase intention?
3. Are there differences in generational cohorts' personal values and their perceived brand personality congruencies?
4. Do differences in generational cohorts' personal values and their perceived brand personality congruencies positively influence liking and purchase intention?
5. Do differences in generational cohorts' perceptions of the functional congruence of MB and BMW positively influence liking and purchase intention?
6. Do other moderating variables influence self–brand congruence and functional congruence and thus liking and purchase intention?

## **1.6 Intended contribution to knowledge**

This section presents the expected contribution to knowledge identified by this research. This contribution is reviewed based on the data analysis and the findings in Chapters 4 and 5 and on the conclusions in Chapter 6.

This research specifically investigates how self–brand congruence with personal value and brand personality as well as functional congruence influence the car purchase intentions of different generational cohorts in China. The paper explores this topic in relation to two luxury passenger car brands: MB and BMW. These two brands were selected because, according to Kressman et al. (2006), they are highly conspicuous, which is linked with symbolic evaluation in addition to the brand's function (Wang et al., 2010).

Although previous research has explored Chinese consumers' purchasing behaviour in different settings (Croll, 2006; Grünhagen et al., 2012; Kressman et al., 2006; Schramm & Taube, 2007), research on the congruity of generational cohorts' personal values and their brand personality perceptions as well as functional congruence in the Chinese context remains limited. Therefore, the present study endeavours to fill this gap. The results of the research are expected to provide a better understanding of purchase intention among Chinese generational cohorts.

The first intended contribution of this research is to fill the gap regarding generational cohort differences in personal values and purchase intention related to German luxury passenger cars in the Chinese setting. Wong and Ahuvia (1998) argue that purchase behaviour should be explored in the specific cultural context. This is particularly important because the Chinese value system might be more complex as the Western one due to traditional values and the influence of Western and modern values (Ma, 2004).

However, Han and Uncles' (2010) generational cohort approach covers only commodities such as toothpaste or electronics. There is no research linking segmentation using generational cohorts with other products, including passenger car users, in China. Nevertheless, segmenting such a heterogeneous market as China into homogenous subsets with common priorities and needs will aid in better understanding consumers and their

differences in values, attitudes, and perceptions (Han & Uncles, 2010; Scheuch, 1993).

Therefore, the difference in the importance of personal values would help to explain the behaviour and attitudes (Bardi & Schwartz, 2003) of different generational cohorts in the Chinese context. Thus, the present study has the potential to extend Han and Uncles' (2010) study by exploring the effect of generational cohorts' purchase intention regarding luxury passenger cars.

The next intended contribution is to fill the gap regarding generational cohorts' differences in perception of brand personality and purchase intention related to two German luxury passenger car brands in China. Brand personality is particularly relevant for brands with less differentiation, since it can increase the appeal of a brand and thus provide additional differentiation (Johar, Sengupta, & Aaker, 2005). Furthermore, consumers choose brands based on their self-expression (Sirgy, 1982). As a result, it is crucial to understand perceptions of brand personality for further insight into consumption symbols and the expression of self among Chinese consumers (Aaker et al., 2001).

A further contribution of this research pertains to filling the gap regarding self-brand congruence, functional congruence, and moderating variables on purchase intention for two German luxury passenger car brands in the Chinese context. Aaker and Fournier (1995) propose that the match between consumers' personal values and their perception of the personality of a given brand is a major purchase intention trigger. Hence, this research explores brand personality with its five dimensions, linking them with the personal values of three Chinese generational cohorts and the impact on purchase intention. Additionally, substantial evidence suggests that brand evaluation and thus the strength of luxury goods-related purchase intention is determined by symbolic, emotional, social (Wong & Ahuvia, 1998), and functional dimensions (Wiedmann et al., 2007). The symbolic and social facets are consequently examined based on brand personality perception, while the emotional and functional aspects are assessed based on personal values and functional congruence research respectively (Kressman et al., 2006; Wiedmann et al., 2007). Thus, combining these dimensions will allow



for the conceptualisation of generational cohort differences in self–brand congruence, functional congruence, and purchase intention (Aaker & Fournier, 1995; Sirgy et al., 1997).

Unlike earlier studies based on Western developed economies (e.g. Inglehart, 1997), this research focuses on Chinese consumers grouped into generational cohorts, each with its own distinctive values. The current research adds to the body of knowledge on purchase intention in the Chinese context. It explores the concepts of personal values, brand personality, self–brand congruence, and functional congruence in relation to the luxury car purchase intention of different generational cohorts in mainland China. Thus, the self–brand congruence of three different generational cohorts is examined to provide further knowledge by developing a multidimensional purchase intention model of luxury passenger car consumers in the Chinese context. The study of the emotional, symbolic, social, and functional values can contribute to a better understanding of Chinese consumer behaviour and how it affects purchase intention.

## **1.7 Research methodology**

The method chosen for the current study to test the theory and hypothesis is based on a positivist philosophical stance with a quantitative approach, namely statistical analysis. This study can be considered descriptive research because it asks “why?” and attempts to improve the current understanding of the reasons why Chinese consumers intend to buy MB or BMW luxury passenger cars. The primary data was collected through survey questionnaires, allowing for a large amount of information to be gathered, thus enabling the examination of causes and effects of variables. Survey questionnaires were administered, covering all genders and ages as well as three cities (regions, namely Beijing, Shanghai, and Shenzhen), to provide a better picture of the Chinese consumer.

## **1.8 Structure of the thesis**

This thesis consists of six chapters, which are briefly outlined in this section.

### **Chapter 1 Introduction**

This chapter presents an introduction to the research problem and the rationale for the research. It provides a first overview of the different concepts involved in analysing purchase intention in China with regard to luxury passenger cars. This leads to the formulation of research objectives and questions.

### **Chapter 2: Literature review and conceptual development**

The second chapter reviews the literature for this research. It specifically examines literature on consumer behaviour and purchase intention in China with regard to luxury cars. Theories on generational cohorts, personal values, perceptions of brand personality, self–brand congruence, and functional congruence are reviewed along with the moderating variables. All of these factors affect consumer behaviour and consequently purchase intention. Based on the literature review, 10 hypotheses are developed.

### **Chapter 3: Research methodology**

The research design and data gathering methods utilised in this study are explained in this chapter. Following the introduction to the data collection methods, the sampling method, and the pre-test, the design of the survey questionnaires and the data analysis method are outlined.

### **Chapter 4: Data analysis**

The fourth chapter describes the data preparation for the data analysis and the demographic information of the respondents. Furthermore, the theoretical and measurement models are developed. Moreover, the analysis and empirical results of the 10 tested hypotheses are presented.

## **Chapter 5: Findings**

Chapter 5 contains the findings pertaining to the hypotheses based on the empirical results of Chapter 4. Furthermore, the findings are linked to existing theories to accept or refuse them and thereby enrich and extend these existing theories.

## **Chapter 6: Discussion and conclusions**

In this chapter, the empirical results and findings are discussed in detail by linking the research objectives and the existing literature, as outlined in Chapter 2. Following detailed discussions about the findings, Chapter 6 summarises the dissertation, highlighting the main contribution of the study and the managerial implications. Furthermore, this chapter outlines the research limitations and provides recommendations for future research.

## **1.9 Chapter summary**

This chapter presented the research background of Chinese passenger car development and consumer behaviour, which provides a rationale for the research. This was followed by the identified research gaps, based on which the research objectives and questions were defined, and the structure of the thesis was described. Next, Chapter 2, provides the literature review for this research.

## **Chapter 2 Literature review and conceptual development**

### **2.0 Introduction**

The literature review covers consumer behaviour and purchase intention in China. This involves generational cohorts for segmentation, personal value, brand personality, self–brand congruence, functional congruence, and moderating variables.

Additionally, to achieve the aim of this research, it is crucial to understand what luxury brands are and to identify which factors have an impact on purchase intention regarding luxury passenger cars in general and in China in particular. After the literature review, the developed model with the research hypotheses is presented.

### **2.1 Generational cohorts**

#### **2.1.1 Generational cohorts in China**

According to Thun (2018), segmentation is one of the most important marketing strategies; it consists of dividing a heterogeneous market into subsets of relatively homogenous consumer markets with similar needs and priorities (Campbell, Campbell, Siedor, & Twenge, 2015; Cui, 1999; Cui & Liu, 2000; Hu, 2020) but with sufficient differentiation between each defined segment (Tang et al., 2017). A generational cohort can be defined as a group of consumers who are born in similar times and experience similar economic, political, historical, and social events during their most formative years (Tang et al., 2017) which then influence consumer behaviour.

China consists of many heterogeneous markets (Chan, Cui, & Zhou, 2009; Hu, 2020; Swanson, 1998); therefore, subsets of consumers with common

needs and priorities must be analysed not only to better understand the groups and the differences in the importance of their values, motivations, and perceptions (Chia, Egri, & Ralston, 2007; Corsi, Modroño, Mariel, Cohen, & Lockshin, 2020; Han & Uncles, 2010) but also to define the most efficient marketing measures (Kotler, Keller, Goodman, Brady, & Hansen, 2019).

It is argued that cohort effects can be used as a criterion for market segmentation (e.g. Fukuda 2010; Schewe & Meredith, 2004) and in various contexts, especially in sociology and psychology (Campbell et al., 2015; Hobcraft, Menken, & Preston, 1982; Rogler, 2002; Ryder, 1965). Massey (1979) observed that values are formed the most during childhood and youth. The three periods of value development are called the imprint, modeling, and socialisation periods (Massey, 1979).

Abramson and Inglehart (1995) emphasise that variances in lifestyle, values, and attitude across generational cohorts correlate with economic growth. This has also been confirmed by Han and Uncles (2010), who argue that countries with high economic growth show the most differences between cohorts; this applies to China as well (Tang, 2019). Therefore, studying generational cohorts and their effects has a high potential of validity in China (Campbell et al., 2015; Hu, 2020). Furthermore, according to Belk (1988), age is negatively associated with materialism. Thus, age and age groups such as generational cohorts might influence decision-making and hence consumption values and consumer behaviour differently.

Political, economic, historical, and social events that generations experienced during their childhood and adolescence (Kotler, Keller, & Lu, 2009; Tang et al., 2017; Thun, 2018) still influence their consumer-related lifestyle, values, and attitudes and therefore also their purchase intention (Chevalier & Lu, 2015; Schwartz et al., 2017). According to Li (2007a), Chinese consumers are affected by the rigid principles experienced during the area of deprivation and the aspirations to the unknown Western world. Personal experiences during their most formative years affect their purchase behaviours, values, and priorities, which remain relatively stable over their lifetime (Kotler et al., 2019).

Each generation is exposed to different possibilities and constraints (Campbell et al., 2015; Egri & Ralston, 2004; Han & Kim, 2020).

Generational cohorts thus most value socioeconomic resources that were scarce during their childhood and adolescence (Rogler, 2002; Tang et al., 2017; Wiedmann et al., 2007).

Schuette and Ching (1996) revealed the existence of three generational cohorts in China influenced by their experiences (Dou, Wang, & Zhou, 2006; Egri & Ralston, 2004; Hung et al., 2007). Individuals in each of these generational cohorts were born within the same time range and experienced common socioeconomic conditions during their childhood and adolescence (Rogler, 2002). Schuette and Ching's generational cohorts ended with the third generation of 1960, but after this time, many changes were made due to reforms, which might have significantly influenced the values, attitudes, and lifestyle of the younger generation.

However, Hung et al. (2007) elaborated and empirically validated the Chinese generational cohort approach (Han & Uncles, 2010) by drawing on the social institutional theory and historical generational cohort theory. Hung et al. (2007) identified three generational cohorts in China, namely Red Guards, Modern Realists, and Global Materialists; the members of each cohort behaved differently and varied in terms of values and priorities, as detailed below.

### **Red Guards (born in 1979 or earlier) – the pre-reform generation:**

The Red Guards are the pre-reform generation and came of age during the Cultural Revolution between 1951 and 1964. By then, China was locked to the outside world and had limited consumer goods (Hung et al., 2007).

Individuals in this cohort mostly moved to rural areas and had to give up education; nevertheless, they value bonding with those close to them.

Additionally, they perceive the act of making purchases as a burden.

Therefore, Red Guards are characterised as pessimistic, conservative, non-materialistic, and reluctant to change (Hu, 2020). They also have the lowest

learning speed of the three cohorts (Han & Uncles, 2010). They have endured the most social and political struggles during their prime years and are therefore called Red Guards (Hung et al., 2007).

**Modern Realists (born 1980–1991) – the reform generation:**

This cohort lived during the Economic Reform and experienced the change from a closed-door to an open-door policy (Hu, 2020; Hung et al., 2007). They had relatively comfortable lifestyles during the economic transformation, having lived near the coast or specific economic zones. This generation values monetary wealth and entrepreneurship, which leads them to novelty-seeking behaviour (Hung et al., 2007). Thus, they perceive the purchase process as a leisure activity. The reform generation is consequently characterised as individualistic, materialistic, hedonistic, and entrepreneurial.

**Global Materialists (born in 1992 or later) – the post-reform generation:**

Global Materialists were born during the period of massive globalisation and the one-child policy. Moreover, they were surrounded by the media and the outside world via the internet the most (Hu, 2020) compared to previous generations. Global Materialists are engaged in self-enhancement and exhibit more tendencies towards variety- and novelty-seeking behaviours and materialism compared to the previous two generations. Additionally, they exhibit not only the fastest learning speed but also the qualities of openness to change and risk-taking (Han & Uncles, 2010). This younger generation has been named Global Materialists because of their materialism, proclivity for foreign brands and novelty products, and conspicuous consumption preferences (Hung et al., 2007).

Nevertheless, the validity of applying generational cohorts for segmentation in China is still under debate. According to Noble and Schewe (2003), significant differences in values and priorities are limited, and it is unclear if

these differences truly lead to different purchase behaviours (Constanza & Finkelstein, 2015). Furthermore, certain studies have assumed that age is not the sole trigger for the division of generations; value differences also play a role (Tang, 2019). The crossvergence (Egri & Ralston, 2004) and stickiness (Chaisty & Whitefield, 2015) cultural approaches facilitate generational differences in consumer behaviour, as argued by Dermody, Zhao, Koenig-Lewis, and Hanmer-Lloyd (2020). Given that similar historical, socioeconomic, and political events may lead to value differences, these social cohorts with similar social characteristics imply unique values (Li, 2020).

Furthermore, particularly the reform and post-reform generations have distinct social characteristics. The historical transformation process due to Chinese reform as well as the start of the open-door policy led to these unique characteristics.

The crossvergence and stickiness theories contradict Hung et al.'s (2007) approach by distinguishing only between the pre-reform generation on the one hand and the reform and post-reform generations on the other (Li, 2020). The theories posit that the differences between the cohorts arise especially from the improved standard of living, which led to a higher degree of competition among the post-1980 generation, compared to the post-1990 generation, who experienced improved material conditions instead, leading to more self-confidence, open-mindedness, and independence. Through transformed familiar relationships with more respect, tolerance, harmony, and equality compared to the pre-reform generation, the wider environment is also affected. Therefore, intergenerational relationships allow more freedom for individuality and innovative creativity.

Particularly economic and social advancement was accelerated by the reform and post-reform generations and their higher education level. This provides an equal standing to the pre-reform generation, thus dissolving the traditional Chinese characteristics of seniority (Li, 2020). However, their personal experiences differ from those of the pre-reform generation and are in contrast to tradition and self-transcendence.



These social developments result in differences in consumer behaviour and consumption values as well as the desire for self-enhancement among the reform and post-reform generations (Tang et al., 2017). They consequently strive to be more socially visible and value more materialism than the pre-reform generation (Dermody et al., 2020).

Hence, the crossvergence theory, with its emphasis on modernity, and the stickiness theory, which concentrates on traditions among the generations (Dermody et al., 2020), influence purchase intention differently. Since socioeconomic backgrounds affect luxury consumption (Dubois, Jung, & Ordabayeva, 2020; Sun, Wang, Cheng, Li, & Chen, 2017), they also influence purchase intention in China.

In this research, generational cohorts are applied according to Hung et al. (2007), as they constitute the most elaborated approach, drawing on social institutional theory and historical generational cohort theory. Three age groups or generational cohorts were analysed to explore personal values, brand personality, self–brand congruence, and functional congruence according to Hung et al.'s (2007) suggestions.

However, the generational cohorts are named based on the key historical events of their time: Respondents born in 1979 or earlier are named the pre-reform generation, while those in 1980–1991 are called the reform generation, and individuals born in 1992 or later are referred to as the post-reform generation (Li, 2020). Pre-reform, reform and post-reform naming was chosen because the historical events led to significant generational cohort differences due to the improved living standards and material conditions (Li, 2020). Since no recent and relevant research exists in this domain, the present work seeks to comment on this proposition.

#### **2.1.1.1 Geographic segmentation**

Kotler et al. (2019) suggest a combination of common techniques for market segmentation. Geographic and psychographic segmentation combines demographic data with geographic or psychographic data (Fullerton &

Dodge, 1992; Ma, 2004; Plummer, 1984) to create a more specific profile, since demographic data alone cannot explore what people do, why they do it, and what doing it means to them and to others. Thus, the combination of other segmentation methods with demographic segmentation leads to more information (Kotler et al., 2019) about the marketing and media needed. Although different segments might overlap due to the combination of several segmentation methods, there is no perfect approach to segmentation (Kotler & Armstrong, 2017), since homogeneous segments may emerge in any scenario.

Previous research suggests that geographic regions can affect the consumption patterns of consumers of both consumable and durable products (Cui & Liu, 2000, 1998; Li, 2007b). Moreover, geographic segmentation (Kotler et al., 2019) considers location differences in several regions. China evidently does not differ from other countries except in size with 1.3 billion consumers. However, concerning economic and political developments as well as the local culture, there are rich and developed cities along the coastal area and rural poor regions in the inland area (Frank, Abulaiti, & Enkawa, 2014; Hu, 2020). China's regions have different geographic typographies, economic bases, and cultural heritage (Cui & Liu, 2000; Hu, 2020). Economic development and consumer purchasing power, (e.g. household income, local culture, climate conditions, product availability, etc.) vary greatly within these regions (Cui & Zhu, 1998; Sethi, 2019). Therefore, values, lifestyles, and the extent of contact with the world outside of Chinese consumers vastly differ.

Cui and Zhu (1998) divide China into seven regions: East, North, South, Central, Northeast, Northwest, and Southwest. The top markets are Beijing, Shanghai, Guangdong (capital: Guangzhou, including Shenzhen), Zhejiang, and Jiangsu, accounting for up to 17% of the total population.

South China (e.g. Shenzhen) has the most consumer purchasing power. The region represents the Min-Yue culture (Cui & Liu, 2000) and has long been in contact with foreign products, which contributes to its openness to new and luxury goods. Consumers of East China (e.g. Shanghai), however, are defined as the most innovative and cosmopolitan ones. They are trendsetters

(Cui & Liu, 2000) who are concerned with lifestyle products. South and East China are growing markets with the highest household income on average.

It is believed that consumers in the North (e.g. Beijing) represent the Jing-Pai culture (Cui & Zhu, 1998). They are comparatively conservative and still value Confucius' moral rules (Jap, 2010). Nevertheless, they are still open to new products. Furthermore, North China as well as Central and Southwest China (Cui & Liu, 2000) are emerging markets, whereas Northeast and Northwest China are both less accessible and relatively backward (McKinsey and Company, 2019c), and they have the lowest household income on average. However, these assumptions are in contrast to the stickiness and crossvergence theories, which are based on value differences without consideration for geographic differences (Li, 2020).

According to Kotler et al. (2019), consumption capacity differences lead to variations in consumer behaviour. Zhang, Grigoriou, and Li (2008) observed that Chinese inlanders pay more attention to social product features, whereas Chinese consumers living at the coast prefer product functionalities.

He et al. (2010) stated that although Beijing, Shanghai, and Shenzhen are similar with regard to income and size, their citizens' purchase behaviour might differ. Guangdong (thus Shenzhen) is part of the regional markets in the South, while Shanghai is in the East, and Beijing is in the North of China. The present research covers Beijing, Shanghai, and Shenzhen to provide a better picture of China.

### **2.1.2 Classifying generational cohorts**

The first step of the study involves socioeconomic segmentation according to age (e.g. generational cohorts; Campbell et al., 2015; Tang et al., 2017).

Many different generational cohort classifications exist; however, most of them focus on the Western context. Moreover, although recent research has presented different generational cohort classifications in China (Tang, 2019), the current study uses the classification given by Hung et al. (2007) because theirs is the most elaborate approach that draws on social institutional theory

and historical generational cohort theory. In this work, generational cohorts in China are thus determined based on Hung et al.'s (2007) age ranges (Figure 2.1.2.1). However, they are named based on the historical event associated with each cohort. Therefore, so-called Red Guards are named the “pre-reform generation”, Modern Realists the “reform generation”, and Global Materialists the “post-reform generation”, as suggested by Li (2020).

**Figure 2.1.2.1 Generational cohorts' age ranges**

<b>Generational cohort</b>	<b>Birth year range</b>
Pre-reform generation (age group 1)	Born 1979 and before
Reform generation (age group 2)	Born 1980 – 1991
Post-reform generation (age group 3)	Born 1992 and after

Source: Adopted from Hung et al. (2007)

## **2.2 Conceptualising luxury passenger car consumer behaviour and purchase intention in China**

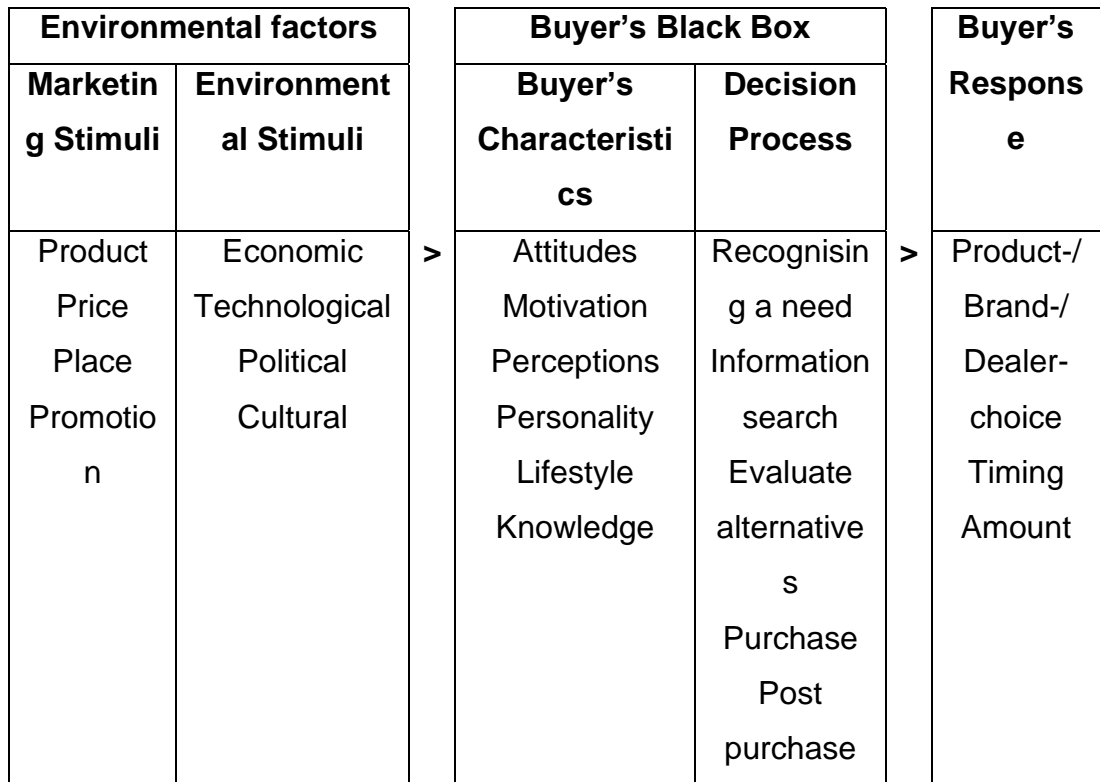
### **2.2.1 Consumer behaviour**

Consumer behaviour is the study of consumers and the process of how individuals, groups, and organisations decide what to buy and why and how to use products, brands, or services (Olson & Peter, 1994; Trommsdorff & Teichert, 2011). Therefore, consumer behaviour includes how consumers reason, think, feel, and choose between different alternatives and how they are affected by their environment and marketing activities, whereas consumer purchasing behaviour primarily focuses on the buying behaviour of end customers for personal consumption (Trommsdorff & Teichert, 2011).

According to Kotler and Armstrong (2017), the model of buying behaviour demonstrates that environmental factors such as marketing and environmental stimuli affect a buyer's black box (their characteristics and

decision process), which in turn leads to a specific buyer's response (see Figure 2.2.1.1.).

**Figure 2.2.1.1 Model of buying behaviour**



Source: Kotler and Armstrong (2017)

This model (see Figure 2.2.1.1) may be helpful in understanding buyer behaviour based on stimuli from the environment as well as consumer-related influences (Kotler & Armstrong, 2017). Although consumer behaviour is not completely under the consumer's control, the buyer's characteristics must be considered as part of consumer behaviour (Kotler et al., 2019), and they are determined by cultural, social, personal, and psychological factors, as described below.

### 2.2.1.1 Buyer's characteristics

A buyer's characteristics represent the most important factor for studying consumers' motivations behind luxury car purchase intentions (see Figure 2.2.1.1.1).

**Figure 2.2.1.1.1 Buyer's characteristics**

<b>Cultural</b>	<b>Social</b>	<b>Personal</b>	<b>Psychological</b>
Culture Subculture Social Class	Reference groups Family Roles and status	Age and lifecycle stage Occupation Economic situation Personality and self- concept	Motivation Perception Learning Beliefs and Attitudes

Source: Kotler and Armstrong (2017)

These cultural, social, personal, and psychological factors are particularly relevant in the current research, as they all affect a buyer's characteristics and hence their motivation and purchase intention (Kotler & Armstrong, 2017).

#### **Cultural factors:**

The first factors affecting a buyer's characteristics are cultural factors. These influences can be defined as learned personal values, human behaviour, perceptions, and wants (Kotler & Armstrong, 2017). However, subcultures with shared value systems and social classes with members who share similar behaviours, values, and interests are all forms of cultural influence. According to Samli (2013), culture has the largest impact on a buyer's characteristics.

#### **Social factors:**

Social factors also influence consumer behaviour, particularly social networks, which include the impact of online networks, opinion leaders, word

of mouth, and family members (Kotler et al., 2019). Furthermore, a person's roles and the corresponding statuses affect purchase behaviour.

### **Personal factors:**

Personal factors are characterised by, for example, life stage and age, economic situation, occupation, personality, and self-concept (Kotler & Armstrong, 2017). Whereas personality is a set of unique characteristics that are used not only for persons but also for brands (Aaker et al., 2001). Additionally, the so-called self-concept or self-image describes identity demonstrated through possessions (Donvito et al., 2020; Hayes, Alford, & Capella, 2008; Prentice, 1987).

### **Psychological factors:**

Psychological factors related to the motivation that needs to be satisfied, perception as the processor of information, and behavioural changes through experiences. Furthermore, a) attitude as tendencies, evaluations, and emotions regarding ideas and objects and b) belief as faith, knowledge, or opinions also influence purchase behaviour (Kotler & Armstrong, 2017). Based on the psychological factor "motivation", Maslow (1975) established the hierarchy of needs to explore motivational needs in detail. Truong (2010) extended Maslow's approach to consumption motivations and needs by the self-determination theory, which considers extrinsic and intrinsic aspirations (Shao, Grace, & Ross, 2019a) and posits that consumers' motivations are neither only externally nor only internally driven (Truong, 2010). Consumers' aspirations and motivations can consequently be clustered based on whether they are personally or socially oriented (Truong, 2010). The personal facet is triggered internally and aims for self-fulfilment, with a focus on satisfying one's own goals and needs in life. In contrast, the social facet is externally triggered and focuses on impressing others. These personally and socially oriented aspirations and motivations are the main triggers for consumption.

However, Samli (2013) argued that culture has the most significant influence on consumer behaviour such as purchase intention. Therefore, it is crucial to

understand the Chinese culture and its impact on purchase intention (Kotler et al., 2019). For conceptualising consumer behaviour and purchase intention in China, the Chinese cultural context plays a major role in further explorations.

#### **2.2.1.2 The impact of Chinese culture on consumer behaviour**

##### **Influence of religion and life philosophies**

Several researchers have uncovered that collectivistic behaviour is present in Asian cultures, meaning that group interests are considered during decision-making (Hofstede, 1980; Sethi, 2019; Triandis, McCusker, & Hui, 1990; Wong & Ahuvia, 1998). Due to the influence of Buddhism and Confucianism, individuals regard themselves and their social environment as interdependent (Zhuo & Guang, 2007). Accordingly, collectivistic cultures focus on the cultural norms and demands of others (Samli, 2013) and therefore care about the needs of others before their own (Chevalier & Lu, 2015).

Consumer behaviour within collectivistic cultures with a rather interdependent concept of self thus aims at group preferences and relationship harmony (Bartikowski & Cleveland, 2017). This explains why collectivistic cultures focus on humility and modesty in consumption. As a result, purchase choices focus on how someone relates to others (Aaker & Schmitt, 2001; Hennig-Schmidt & Li, 2005). Therefore, possessions are most likely to reflect values that an interdependent self has in relation to social conformity in a family-focused, materially oriented, and hierarchical culture (He et al., 2010).

Furthermore, collectivism can be divided into horizontal and vertical collectivism. In horizontal collectivism, members are equal, whereas in vertical collectivism, inequality (e.g. status) exists (Tang, 2019). The older Chinese generation in particular prefers vertical collectivism, whereas the younger generation leans towards horizontal collectivism and individualism.



Thus, China is no longer merely collectivistic, as suggested by Tang (2019), but embraces individualistic behaviour while considering own interests during decision-making.

### **Influence of Confucian principles**

Confucius established a social order with eight principles (Luo, 2000) that form the foundation of interpersonal relationships and social networks: *zhong* (loyalty), *xiao* (respect), *ren* (kindness), *ai* (love), *xin* or *xinren* (personal trust), *yi* (justice), *he* or *tiaohe* (harmony), and *ping* (peace). Additionally, the Chinese have *guanxi* (relationships) with different people according to their social ranks, and these relationships are respectful and cared for with humility (Sethi, 2019; Zhuo & Guang, 2007).

These principles are still dominant in the Chinese culture and affect purchase behaviour, inducing long-term orientation and emphasising values of persistence and loyalty during purchase-related decision-making (Cui & Zhu, 1998; McKinsey and Company, 2019c). Based on the Confucian impact, in the past, Chinese purchase behaviour was influenced by a preference for stable situations and the avoidance of discomfort and risks (Sethi, 2019). Thus, Chinese consumers were rather prevention-orientated in their decision-making (Hofstede, 1980; Hofstede, 2001; Kurman & Hui, 2011).

However, the reform and post-reform generations experienced a historical and social transformation, which affected consumer behaviour and consumption values, thus having an impact on traditional and social norms (Li, 2020). According to the crossvergence theory, these generations are rather modern (Egri & Ralston, 2004), valuing open-mindedness, tolerance, equality, respect, and harmonious relationships. In comparison, the pre-reform generation values tradition and social norms, according to the so-called stickiness theory (Chaisty & Whitefield, 2015). The reform and post-reform generations hence demonstrate different consumption values because of their improved living conditions, aiming to fulfil their own aspirations and needs and emphasising uniqueness (Li, 2020).

## **Influence of Chinese “face”**

Chinese consumer behaviour is further influenced by the Chinese tradition of “face” (*mianzi* or *lian*), which is important to Chinese shoppers (Au, 2014; Zhuo & Guang, 2007) because it is connected with self-identity and social status. According to Luo (2000), “face” refers to an individual’s social position or prestige recognised by others. However, *mianzi* and *lian* have slightly different meanings: *Mianzi* denotes prestige through success (i.e. social face), while *lian* refers to respect for someone with a strong reputation (i.e. moral face; Zhou & Zhang, 2017). Chinese consumers tend to prefer products and brands – especially luxury products such as cars – that give, maintain, or enhance their “face” (Bartikowski & Cleveland, 2017). Chinese consumers tend to seek approval from others through values and lifestyle choices (Au, 2014; Li & Su, 2007). This is especially relevant for the conspicuous consumption of luxury passenger cars (Huang & Wang, 2018; Jacob, Khanna, & Rai, 2020). Therefore, possessions enable consumers to achieve social acknowledgement, the so-called Chinese “face”, thus avoiding social rejections (Dermody et al., 2020).

Understanding Chinese culture is thus crucial for conducting business in China (Sethi, 2019). To approach a target market in China, Zhou and Zhang (2017) state that companies must integrate these cultural interactions into their marketing strategy. Therefore, in the present study, the identification of consumers’ values, perceptions, and motivations is extended to luxury consumption for a better understanding of luxury consumer behaviour, since MB and BMW are Western luxury brands.

### **2.2.1.3 The impact of luxury consumption on consumer behaviour**

Luxury consumption is an important factor of a modern lifestyle in both developed countries and emerging markets (Bain & Company, 2020). Kapferer and Bastien (2012) define luxury as beauty or art; it is usually researched through conspicuous luxury brand consumption (Dubois et al., 2020). Luxury goods are consumed not because of necessity alone but,

rather for indulgence or convenience (McKinsey and Company, 2019i). Luxury cannot be defined based on price or quality but by the perceptions, values, and aspirations of the consumers themselves (Gurel-Atay et al., 2020).

### **Perception effects of luxury consumption**

A previous study by Vigneron and Johnson (1999) on luxury consumption notes five motivations with specific perception effects of luxury consumption:

1. Veblen effect: the perception of conspicuous value, relating the price to the prestige effect, with the main target of improving public image (Huang & Wang, 2018);
2. Snob effect: the perception of unique value, relating the price to the exclusivity effect of differentiation from others;
3. Bandwagon effect: the perception of social value, relating the motivation to an improvement in one's public image with less consideration for the product, brand, or service's prices;
4. Hedonic effect: the perception of emotional value, relating to one's self-concept and assigning less importance to price or status (Gurel-Atay et al., 2020; Kotler & Armstrong, 2017);
5. Perfectionism effect: the perception of quality value, relating to the personal perception of quality, with price as the motivation for consumption of a specific product, brand, or service.

These underlying motives of luxury consumption help to explain not only what consumers buy but also why they buy (Kotler & Armstrong, 2017; Stępień, 2021).

Furthermore, Vigneron and Johnson (1999) observed personally and non-personally oriented perception effects of luxury consumption.

The non-personal-oriented perception effects are as follows:

- perception of conspicuousness (Huang & Wang, 2018), which is important for consumers affected by reference groups and social status;
- perception of uniqueness (Gurel-Atay et al., 2020), which is relevant for consumers to enhance their social image and personal taste;
- perception of quality, which is relevant for consumers who believe that luxury brands have a better performance and product quality.

The personal-oriented perception effects are as follows:

- perception of the extended self or self-concept, which makes consumers want to distinguish themselves from others (Wong, Hogg, & Vanharanta, 2012);
- perception of hedonism, which is relevant for consumers who value emotional benefits and sensuous gratification (Hirschman & Holbrook, 1982; Vigneron & Johnson, 1999).

### **Value effects of luxury consumption**

Luxury value is mostly addressed in relation to exclusivity, price premium, social status, quality, authenticity, and heritage (Stathopoulou & Balabanis, 2019). Despite these terms, consumers' aspirations of being unique and their perception of aesthetics also relate to luxury value. Therefore, consumption values "change with previous experiences, socioeconomic background and interpersonal influence" (Stathopoulou & Balabanis, 2019, p. 300).

Wiedmann, Hennigs, and Siebels (2009) extended Vigneron and Johnson's (1999) luxury consumption approach and identified a framework for a value-oriented segmentation of luxury consumer behaviour (Dubois, Czellar, & Laurent, 2005). The aim of their study was to provide further insights into consumers' luxury aspirations and perceptions based on Western luxury brands (Atwal & Bryson, 2017).

Wiedmann et al. (2009) observed that Western luxury brands, such as German luxury passenger cars, have individual, social, functional, and

financial value. However, in the present study, financial value is considered as part of functional value, since price consciousness related to a luxury car differs per individual (Balabanis & Stathopoulou, 2021) and is evaluated according to the functional characteristics of such vehicles. This research thus considers functional value (Han & Kim, 2020; Wiedmann et al., 2009), emotional value, symbolic value, and social value components (Wong & Ahuvia, 1998) – that is, rational benefits (i.e. functional value; Han & Kim, 2020; Wang, Hung, & Li, 2018), affections or feelings (i.e. emotional value; Chu & Sung, 2011), improvement in one's self-image through conspicuous consumption (i.e. symbolic value; Huang & Wang, 2018; Jacob et al., 2020), and social comparisons (i.e. social value; Au, 2014; Stępień, 2021).

### **Effects of luxury consumption in the Chinese context**

According to Dubois et al. (2020), luxury consumer behaviour differs; therefore, it is necessary to understand the profiles of the consumer segments for the best marketing approach. The social motivation of consumers is particularly different for luxury products, brands, and services (Gurel-Atay et al., 2020). Regarding luxury consumption, China is in the show-off stage (Bain & Company, 2020; Chadha & Husband, 2006): By acquiring status symbols, consumers display their status and wealth (Zhang et al., 2019). Furthermore, luxury consumption is linked to materialism (Sun et al., 2017).

Based on Wiedmann et al.'s (2009) and Wong and Ahuvia's (1998) framework, functional, emotional, symbolic, and social value are motivational goals for luxury consumption. However, Chinese consumers' luxury aspirations and perceptions may differ strongly from the Western context because of the impact of Chinese culture (Hu, 2020; Li, 2007a). The stickiness and crossvergence theories aid in explorations of the differences in the consumption value and consumer behaviour of different generational cohorts (Dermody et al., 2020) because consumption values are affected by former experiences, socioeconomic events, and interpersonal relationships (Stathopoulou & Balabanis, 2019).

China's luxury consumer market offers great potential for marketers. This framework is especially helpful in identifying consumers' motivations and their aspirations of owning the luxury Western brands MB and BMW in the Chinese context.

## **2.2.2 Purchase intention**

### **2.2.2.1 Influence of luxury consumption on purchase intention**

Several studies have confirmed the link between consumers' perceptions of luxury brands and their purchase intention (Holbrook, 1986; Stathopoulou & Balabanis, 2019). Purchase intention is defined as one's willingness or plan to acquire a service, a brand, or a product in the near future (Liu et al., 2011). It thus demonstrates a person's motivation for and probability of behaving in a certain way and therefore buying a specific product, brand, or service (Kotler et al., 2019). As suggested by Ajzen (1985), purchase intention is an antecedent to purchase behaviour. The compatibility of one's intentions and the perceived behavioural control leads to a specific, individual behaviour with wider implications (Dubois et al., 2020; Hung et al., 2007). Therefore, buying intention can be applied for measuring patterns of purchase behaviour to forecast actual behaviour (Fishbein & Ajzen, 1975; Liu et al., 2011).

According to Fishbein and Ajzen (1975, p. 380), the accuracy of the forecast of actual purchase behaviour might vary based on 1) specificity to buy a generic item versus a specific one, 2) the item's novelty, 3) the specific measure, and 4) the measured time difference between intention and purchase behaviour. Indeed, this implies that the correlation of intention and purchase behaviour with regard to buying a specific brand or product is higher than a certain style. Since two specific brands, namely MB and BMW, are considered in this study, the correlation between intention and purchase

behaviour should be higher, based on Fishbein and Ajzen's (1975) assumptions.

Furthermore, existing research has revealed that purchase intention is more valid than purchase behaviour in measuring consumer behaviour, since real preferences may be distorted by constraints (Gupta & Zeithaml, 2006), and purchase intention offers wider implications (Hung et al., 2007). The link between a purchase intention and the subsequent behaviour is affected by both the situational context and financial constraints, which are the two main factors among many others that influence the power of predicting purchase behaviour. Moreover, purchase behaviour is affected by a buyer's black box and therefore cannot be controlled (Kotler & Armstrong, 2017).

#### **2.2.2.2 Influence of perceived benefit**

It is important to be aware that purchase intention is affected by the perceived benefit of a brand or a product (e.g. outcome expectation) as well as the consumer's aspirations and emotional association (Atwal & Bryson, 2017; Gupta & Lehmann, 2005; Lambert-Pandraud & Laurent, 2010). Gupta and Lehmann (2005) suggest that these value benefits of a brand or product can be clustered into economic, functional, and psychological value.

Economic value refers to the monetary evaluation by the customer, whereas the functional value of a product is based on its utilitarian benefits (Batra & Ahtola, 1991) for the consumer's purchase intention. Finally, psychological value considers the intangible values of a product or brand. Psychological value, with its signalling of social status, and the benefit of differentiation from others (i.e. being unique) are the main triggers for luxury consumption (Balabanis & Stathopoulou, 2021).

Moreover, the perceived benefit may result in a personalised and subjective experience instead of presenting a luxurious lifestyle. Thus, the benefit of the brand is that it creates social meaning and therefore demonstrates the consumer's self-identity. Luxury consumption of a specific brand can be value-expressive, or it can transfer "who consumers appear to be to others"

(i.e. socially adjustive; Shao, Grace, & Ross, 2019b, p. 357). Luxury consumption thus enables Chinese consumers to express and present themselves (Shao et al., 2019b).

### **2.2.2.3 Influence of luxury value components in China**

Wiedmann et al. (2009) extended Gupta and Lehmann's (2005) theory to Western luxury brands consisting of an individual, social, functional, and financial value. However, in this work, the financial value is integrated into the functional value, since consumers' price consciousness regarding a luxury car differs per individual (Balabanis & Stathopoulou, 2021) and is evaluated according to the functional characteristics of such a vehicle. Moreover, functional (Wiedmann et al., 2009), emotional, symbolic, and social value component (Wong & Ahuvia, 1998) are considered in this study:

1. The functional value component focuses on rational benefits such as uniqueness, reliability, durability, usability, and quality (Han & Kim, 2020; Wang et al., 2018; Wiedmann et al., 2007) for consumers.
2. The emotional value component considers affections or feelings (e.g. The passion and comfort of consumers; Chu & Sung, 2011; Wong & Ahuvia, 1998).
3. The symbolic value component refers to the establishment and enhancement of the consumer's self-image through conspicuous consumption (Huang & Wang, 2018; Jacob et al., 2020) and is influenced by affordability and availability (Zhao & Zhao, 2018).
4. The social value component indicates the social status and level of belonging to a specific in-group of consumers for social comparisons (Au, 2014; Gurel-Atay et al., 2020).

These four values are relevant in China for measuring the value components of luxury passenger car consumption (Bartikowski & Cleveland, 2017). These components are likely affected by the motivations, values, and perceptions of



Chinese consumers due to the cultural impact (Chevalier & Lu, 2015; Hu, 2020; Stępień, 2021).

#### **2.2.2.4 Influence of social interactions in China**

Consumers' perceptions of a brand or product's value benefit is highly individual and influenced by environmental context (Dubois et al., 2020). After over 2,000 years of history, Taoism, Buddhism, and Confucianism are still noticeable in myths, symbols, heroes, art forms, customs, values, rites, festivals, and institutions (Hu, 2020; Stathopoulou & Balabanis, 2019).

This environmental context still affects Chinese consumers' aspirations and emotional associations during their purchase-related decision-making (Zhang et al., 2019). Fishbein and Ajzen (1975) also observed that social interactions influence perceived value benefits and, in turn, purchase intention because of self-image congruence as well as self- and social comparisons. Moreover, self-image is the match between the product and the self (Donvito et al., 2020). Furthermore, Hung et al. (2007) empirically confirmed that purchase intention and attitude formation are relevant for consumers, emphasising their self-image and thus considering value-expression products (Stathopoulou & Balabanis, 2019). This might be particularly relevant to the purchase of Western luxury passenger cars in China. Based on self-image congruence, one can achieve self-presentation by demonstrating a specific identity through possession (Fastoso & González-Jiménez, 2020). Additionally, individuals measure the self and others and classify them based on their possessions, which is defined as social comparison (Kim, 2015).

Possessions help to people to fulfil their aspirations and life goals (Dermoddy et al., 2020), thus providing happiness and well-being through luxury consumption (Sun et al., 2017). Hence, brands and products are used for self- and social identity to display who people are and to compare the self to others (Donvito et al., 2020). These exchanges of individuals and groups impact purchase intention, particularly in China where social interactions are

important (Hu, 2020; Stępień, 2021). This is especially relevant for brands and products with economically and functionally less differentiation because the emotional, social, and symbolic values are the most relevant values for these brands and products (Dubois et al., 2020). However, measuring these values is difficult because of their intangibility (Gupta & Lehmann, 2005). Therefore, the perceived value benefit might be useful for measuring purchase intention in China.

The emotional, social, and symbolic values of MB and BMW are relevant in the present study, since MB and BMW are economically and functionally similar. In addition, the functional value of rational benefits is considered in this research for a better understanding of all four luxury value components in a Chinese context.

#### **2.2.2.5 Liking as an antecedent to purchase intention**

Consumers usually purchase brands and products they like; thus, brand liking is relevant to purchase intention (Rosenbloom et al., 2012). Including liking as an antecedent to purchase intention might provide further insights into the indirect influences on purchase intention because changes in attitude induce changes in behaviour (Zhou & Wang, 2019) and thus might be helpful to increase the predictive power of purchase intention. Moreover, attitude and motivational needs are the key factors of luxury consumption (Han & Kim, 2020; Shao et al., 2019a). As a result, a favourable affective feeling implies pleasure and therefore increases purchase intention, whereas hating a brand will lead to brand rejection (Fetscherin, 2019).

The pre-reform generation in particular differs from the reform and post-reform generations in terms of attitudes and motivational needs. This is because the pre-reform generation is perceived to be more traditional, whereas the reform and post-reform generations experienced higher living conditions and are therefore more individualistic (Zhou & Wang, 2019). As a result, differences in generational cohorts' attitudes and motivations (Shao et

al., 2019a), such as liking, regarding Western luxury car brands most likely also affect purchase intention.

To understand decision-making in China, it is important to understand the cultural, social, personal, and psychological factors influencing buyers' characteristics and, in turn, their purchase intention (Kotler & Armstrong, 2017). Additionally, purchase intentions regarding luxury brands are particularly influenced by functional, emotional, symbolic, and social value. These factors affect the Chinese cultural context and aid in understanding why Chinese consumers buy (Bartikowski & Cleveland, 2017) and what it means to them and others. Furthermore, it is argued that there is always the buyer's black box, which implies an unpredictability of actual consumer behaviour (Kotler & Armstrong, 2017). However, purchase intention is not distorted by constraints (Gupta & Zeithaml, 2006); therefore, purchase intention, rather than actual purchase behaviour, is examined in this study. Furthermore, for greater predictive power, positive attitude (Ajzen, 1985) – with the affective value “liking” – is also considered in this study.

## **2.3 Influencers of purchase intention**

It is important to consider that luxury passenger cars are no longer only limited to developing countries in the West. However, China's luxury purchase behaviour is still in its formative phase, and marketers and researchers have not yet properly understood the emotional, symbolic, social, and functional values that influence purchase intention in mainland China. The insight from this research is expected to present much about how to influence the strength of purchase intention regarding luxury passenger cars.

China currently offers the largest market for luxury car consumption and passenger car sales (Statista, 2021a), such as MB and BMW, worldwide.

However, cultural factors in China differ strongly from those in the West (Bain & Company, 2020), and they affect the motivations, values, and perceptions of consumers and, in turn, purchase intention. Therefore, this section conceptualises the influences of purchase intention on luxury passenger cars in the Chinese context.

### **2.3.1 Personal values**

Culture affects aspirations and perceptions and therefore a consumer's beliefs, attitudes or customs, and values (Corsi et al., 2020; Samli, 2013; Schwartz et al., 2017). In general, culture consists of customs, beliefs, and values: Customs are culturally shaped behaviours, while beliefs refer to one's feelings and priorities towards something, and values guide behaviour (Corsi et al., 2020). These three elements influence consumer behaviour and consumption patterns (Dubois et al., 2020; Zhang et al., 2019). In general, values can be defined as:

1. Beliefs or concepts;
2. Desirable trans-situational goals;
3. Transcending in certain events;
4. Leading to selection or evaluation of behaviour as well as situations;
5. Aspects that can be ranked by relative importance (Schwartz, 2012, p. 3).

Spini (2003) redefined values by stating that there are three fundamental goals of values:

1. Meeting the individual needs of a person;
2. Providing social interactions;
3. Ensuring group survival.

Furthermore, in the purchase decision process, values are fundamental as motivational goals that differ in importance (Schwartz et al., 2017).

Differences in values are observed as relatively stable over time in

comparison to more transient characteristics such as emotions and attitudes (Giménez & Tamajón, 2019).

Cultural differences and their effects on personal values arise from traditions, religions (Buddhism), life philosophies (Confucianism), and socialisation processes. Confucianism and its respective principles are still especially present in Chinese culture, with emphasis on traditional values and social norms (Sethi, 2019; Wong & Ahuvia, 1998). However, the reform and post-reform generations emphasise modernisation, based on the crossvergence theory – instead of the stickiness theory (Egri & Ralston, 2004; Li, 2020). Since values have a direct impact on perceptions, attitudes, and behaviour (Bartikowski & Cleveland, 2017; Schwartz, 2017), consumers tend to purchase products, brands, or services for value fulfilment (Schwartz & Bardi, 2001).

In a previously mainly collectivistic culture such as China, consumers' interdependent self usually reflects the goals, values, and needs of the group (Hu, 2020; Sethi, 2019). Although this might still be relevant for the pre-reform generation (Li, 2020), the reform and post-reform generations tend to express independent goals, values, and needs.

Chinese cultural effects on personal values and, in turn, on purchase intention are consequently considered in this research.

### **2.3.1.1 Value studies**

Values across cultures have gained importance since Rokeach's (1973) and Hofstede's (1980) work, followed by more cross-sectional studies. In 1980, Hofstede developed a four-dimensional model, which was then extended to a six-dimensional model with further research of cross-cultural values. For China, Hofstede and Hofstede (2005) confirmed a high-power distance, collectivism, masculinity, low uncertainty avoidance, a long-term orientation, and low indulgence. The focus of these studies was on utilising values and the common dimensions of values to understand behaviour and attitude. Nevertheless, they showed weak validity (Fischer, Vauclair, Fontaine, &

Schwartz, 2010) instead of a universal theory of values. Notably, the present research facilitates further cross-cultural studies.

Another survey for measuring value systems was developed by Schwartz and Bilsky (1987) and was re-adjusted by Schwartz (1992). The Schwartz Value Survey (SVS) is a universal value research method that can be applied worldwide, demonstrating a validated system for measuring consumers' individual cross-cultural values, including those in China.

All these presented value surveys suggest that interests, opinions, and attitudes can help differentiate consumers (Corsi et al., 2020; Fischer, 2013; Roccas & Sagiv, 2010). The lifestyles of consumers influence purchase behaviour, thereby leading to predictable consumer decision-making (Dubois et al., 2020; Feather, 1995). These personal values help researchers to understand attitudes and behaviours and are therefore relevant in exploring purchase intention (Zhang et al., 2019).

SVS offers the most elaborated theoretical foundation (Tang et al., 2017), defining individual values as attractive transitional goals that vary in importance and serve as guiding life principles (Schwartz, 2017). It measures consumers' core personal values as an enduring effect, not the present, short-term behaviour values (Corsi et al., 2020). In the following sections 2.3.1.2, 2.3.1.3 and 2.3.1.4, SVS is explained in detail.

### **2.3.1.2 Refined personal values**

The original SVS describes 10 types of personal values: stimulation, self-direction, achievement, hedonism, power, tradition, security, conformity, universalism, and benevolence, which are culturally universal in their content and structure (Saris, Knoppen, & Schwartz, 2013; Schwartz, 2005a; Schwartz, 2005b; Schwartz & Sagie, 2000). The survey has been applied to more than 72 countries and has been empirically confirmed (Fischer et al., 2010; Schwartz, 2008).

In 2012, Schwartz refined the SVS with the Portrait Value Questionnaires (PVQ-RR), which extend 10 statistically significant personal values to 19

refined personal values (Schwartz, 2017; see Figure 2.3.1.2.1). It has been proven that all 19 personal values can be cross-culturally distinguished; they provide even more heuristic and predictive results. Thus, values can be defined more narrowly, resulting in less multicollinearity and cross-loadings. Based on the new concept, “face” and “humility” have also been added (Schwartz et al., 2017).

**Figure 2.3.1.2.1 Motivational goals of the 19 personal values**

<b>19 Basic human values</b>	<b>Conceptual definitions in terms of motivational goals</b>
Self-direction thought	Freedom to cultivate one’s own ideas and abilities
Self-direction action	Freedom to determine one’s own actions
Stimulation	Excitement, novelty, and change
Hedonism	Pleasure and sensuous gratification
Achievement	Success according to social standards
Power-dominance	Power through exercising control over people
Power-resources	Power through control of material and social resources
Face	Maintaining one’s public image and avoiding humiliation
Security-personal	Safety in one’s immediate environment
Security-societal	Safety and stability in the wider society
Tradition	Maintaining and preserving cultural, family, or religious traditions
Conformity-rules	Compliance with rules, laws, and formal obligations
Conformity-interpersonal	Avoidance of upsetting or harming other people
Humility	Recognising one’s insignificance in the larger scheme of things
Universalism-nature	Preservation of the natural environment

<b>19 Basic human values</b>	<b>Conceptual definitions in terms of motivational goals</b>
Universalism-concern	Commitment to equality, justice, and protection for all people
Universalism-tolerance	Acceptance and understanding of those who are different from oneself
Benevolence-care	Devotion to the welfare of in-group members
Benevolence-dependability	Being a reliable and trustworthy member of the in-group

Source: Schwartz et al. (2017).

Based on 57 questions, 19 motivational value types (three questions per value type) were defined and statistically confirmed by Schwartz et al. (2017). The questions were answered with a focus on how similar the described portrait is to the respondent (Schwartz, 2017), whereas the PVQ-RR has two different questionnaires designed for male and female respondents because differences in verbal communication between men and women arise from evolution and societal influences. Therefore, differences in focal value between men and women are observable (Archer, 2019; Lee, Yau, Chow, Sin, & Tse, 2004). Specifically, women apply more tentative and affiliative language, and men present more self-esteem (Archer, 2019). As a result, responses on the PVQ-RR might differ between men and women and consequently would be difficult to compare.

Due to gender response differences and focal value, the response quality increases by applying a male and a female questionnaire version (Archer, 2019) to personal values.

Based on a respondent's answer to Question 2 (Q2) "gender" of the questionnaire, as soon as "1 male" was chosen, the survey flow continued with the male version of the PVQ-RR, and if "2 female" was chosen, the survey continued with the female version. After answering the PVQ-RR male or female question, respondents followed the same survey flow again.



The 19 refined personal values are represented in a circular structure (see Figure 2.3.1.2.2).

**Figure 2.3.1.2.2 Circular motivational structure of 19 refined personal values**



Source: Schwartz et al. (2017)

The inner circle (Figure 2.3.1.2.2) demonstrates the relations among the 19 values, whereas adjacent types of values are most compatible. Compatibility decreases as distance increases, which leads to conflict, according to Corsi et al. (2020). This means that personal values on opposite sides of the circular motivational continuum should demonstrate the greatest conflict (Corsi et al., 2020). For example, the personal value “stimulation”, which refers to the search for change and novelty, is contrary to “tradition”, which involves the preservation of customs, or “security-personal”, which pertains to safety, harmony, and stability of the self (Schwartz, 2006). Since stimulation represents excitement, novelty, and challenges in life, it embraces change instead of a stable situation. Nevertheless, persons can

have opposing values as motivational goals in different settings, times, and/or acts (Schwartz, 2006). Furthermore, some values are easier to express in certain life circumstances, and vice versa. For example, values related to power are easier for richer persons to pursue (Schwartz, 2006), and self-direction values can be expressed more in free professions with freedom of choice (Schwartz & Bardi, 2001). Based on one's lifestyle, attainable values are upgraded. However, this does not apply to security and material well-being: The scarcer the security and material well-being aspects, the more important they are (Schwartz, 2006).

Additionally, security might be more important with age because it is more difficult to cope with change (Schwartz, 2012). Stimulation might consequently be less important with age due to the need to avoid risks; the same applies to hedonism, achievement, and power, as having fun and being ambitious are less important with age (Schwartz, 2006). On the other hand, tradition, conformity, and the need for control usually increase with age, which is related to the fact that known activities are less demanding and easier to cope with. Life stage also influences the importance of values: Younger generations value achievement and stimulation, whereas tradition, security, and conformity are usually less relevant. This indicates that the importance of personal values changes based on the events experienced, thus relating to generational cohorts, life stage, and aging (Schwartz, 2012).

"Schwartz's values of Universalism, Conformity and Hedonism are useful in exploring purchase intention and behaviour for cars" (Kroeber-Riel, Weinberg, & Groeppel-Klein, 2009, p. 268) due to prestige-orientation as well as benefit expectations such as quality and comfort. Hedonism is particularly relevant for luxury consumption because of sensory pleasure, fun, and excitement (Gurel-Atay et al., 2020; Kroeber-Riel et al., 2009).

### **2.3.1.3 Higher-order personal values**

The second inner circle of the circular continuum presents the four higher-order personal values, which group the 19 personal values (Cieciuch,

Davidov, Vecchione, & Schwartz, 2014; Giménez & Tamajón, 2019). These values are self-transcendence, openness to change, self-enhancement, and conservation, which are mean values of the personal values listed in Figure 2.3.1.3.1.

**Figure 2.3.1.3.1 Higher-order personal values of the 19 personal values**

<b>Higher-order value</b>	<b>Definition</b>	<b>Value type</b>
Self-transcendence	Transcending own interests for the benefit of others	Universalism-nature Universalism-concern Universalism-Tolerance Benevolence-care Benevolence-Dependability Humility (partially)
Self-enhancement	Pursuing own interests	Achievement Power-dominance Power-resources Hedonism (partially) Face (partially)
Openness-to-change	Readiness for new ideas, actions, and experiences	Self-direction-thought Self-direction action Stimulation Hedonism (partially)
Conservation	Self-restriction, order and avoiding change	Security-personal Security-societal Tradition Conformity-Rules Conformity-Interpersonal Face (partially) Humility (partially)

Source: Schwartz et al. (2012)

## **Openness to change**

The first dimension of higher-order personal values, which are positioned in the second inner circle, is openness to change; this includes self-direction thought, self-direction action, stimulation, and hedonism. Openness to change expresses the motivational goal of readiness for new experiences and actions as well as the willingness to explore, create, and choose (Schwartz et al., 2017).

**Conservation** The second dimension, conservation, consists of security-personal, security-societal, tradition, conformity-rules, conformity-interpersonal, face, and humility (Schwartz, 2017). The personal value conformity focuses on subordination to persons and tradition to objects instead. Therefore, self-restriction, customary behaviour, and the avoidance of change through established procedures and order constitute the guiding principle of this higher-order value (Schwartz et al., 2017).

**Self-enhancement** The third dimension is self-enhancement (Giménez & Tamajón, 2019), which includes achievement, power-dominance, and power-resources to pursue individual interests. According to Wilson (2005), the higher-order personal value of self-enhancement significantly correlates with materialism and narcissism. Moreover, the motivations for materialism are uniqueness, happiness, and recognition by others (Eastman, Fredenberger, Campbell, & Calvert, 1997; Gurel-Atay et al., 2020; Sun et al., 2017). Furthermore, self-enhancement correlates with a high expectation regarding the functioning of products, brands, and consumers themselves (Stathopoulou & Balabanis, 2019). Therefore, consumers who value self-enhancement also value the usability of products. Cisek et al. (2014) further argue that consumers who value self-enhancement are power-driven and status-oriented, with the goals of prestige and acknowledgement from others. Thus, uniqueness and social value are important for these consumers (Gurel-Atay et al., 2020; Stathopoulou & Balabanis, 2019). Additionally, the motivational goal of self-enhancement triggers consumers' desire for new

experiences to increase their self-esteem (Fastoso & González-Jiménez, 2020).

### **Self-transcendence**

The fourth dimension of self-transcendence embraces universalism-nature, universalism-concern, universalism-tolerance, benevolence-care, and benevolence-dependability, with the motivational goal of pursuing others' interests. Consumers with an emphasis on self-transcendence are rather against materialism; they care about the welfare of others and value the protection of the environment (Lönnqvist, Leikas, Paunonen, Nissinen, & Verkasalo, 2006; Schultz et al., 2005). Thus, possession of luxury goods and materialism is less important than economic and functional values (Giménez & Tamajón, 2019).

Furthermore, the personal value of humility demonstrates elements of the higher-order personal values self-transcendence and conservation, and hedonism partly presents openness to change and self-enhancement (Schwartz et al., 2017). Humility and face are value types that can be included in the conservation dimension or represented as individual higher-order personal values, according to Schwartz et al. (2017). To simplify the analysis further, instead of six higher-order personal values, only four are considered in the present study; humility and face are included in conservation (see Figure 2.3.1.3.2).

**Figure 2.3.1.3.2 Definitions of the value types and the values representing them**

<b>Higher-order value</b>	<b>Value type</b>	<b>Definition</b>	<b>Value</b>
1. Openness-to-change	1.1 Self-direction thought (individualistic)	Independent thought	Creativity, freedom,
	1.2 Self-direction action (individualistic)	Independent action	independent, curious
	1.3 Stimulation (individualistic)	Excitement, novelty, and challenge in life	Daring, a varied life, an exciting life
	1.4 Hedonism (individualistic)	Pleasure and sensuous gratification for oneself	Pleasure, enjoying life
2. Self-enhancement	2.1 Achievement (individualistic)	Personal success through competence	Successful, capable, ambitious, influential
	2.2 Power-dominance (individualistic)	Social status and prestige	Social power,
	2.3 Power-resources (individualistic)	Control or dominance over people and resources	Authority, wealth
3. Conservation	3.1 Security-personal (individualistic)	Safety, harmony, and stability of self	Family security,

Higher-order value	Value type	Definition	Value
	3.2 Security-societal (collectivistic)	Safety, harmony and stability of society and relationships	National security, social order, clean, reciprocation of favours
	3.3 Conformity-rules (collectivistic)	Restraint of actions likely to violate norms.	Self-discipline, obedient, politeness,
	3.4 Conformity-interpersonal (collectivistic)	Inclinations and impulses likely to upset or harm others and violate social expectations.	Honouring parents and elders.
	3.5 Tradition (collectivistic)	Respect, commitment and acceptance of customs and ideas that traditional culture or religion provide	Accepting one's life, humble, devout, respect for tradition, moderate
	3.6 Humility (collectivistic)	Recognising one's insignificance in the larger scheme of things	Avoiding self-promotion and being satisfied with what one has.
	3.7 Face (individualistic)	Security and power through maintaining one's public image and avoiding humiliation	Preserve one's reputation

Higher-order value	Value type	Definition	Value
4. Self-transcendence	4.1 Benevolence-care (collectivistic)	Preservation of the welfare of people with whom one is in frequent personal contact	Helpful, honest, forgiving,
	4.2 Benevolence-dependability (collectivistic)	Enhancement of the welfare of people with whom one is in frequent personal contact	Loyal, responsible
	4.3 Universalism-nature (collectivistic)	Protection for the welfare of all people and nature	world peace, world beauty, unity with nature, environment protection
	4.4 Universalism-concern (collectivistic)	Understanding, appreciation,	Broadminded, wisdom,
	4.5 Universalism-tolerance (collectivistic)	Tolerance	Social justice, equality,

Source: Schwartz et al. (2017)

#### 2.3.1.4 Further value dimensions

The dimensions of social (collectivistic) and personal focus (individualistic) as well as growth – anxiety-free and self-protection – and anxiety-avoidance are presented in a bipolar two-dimensional structure on the circular continuum



(see Figure 2.3.1.2.2). The outermost circle consists of two halves: the lower-half values ensure self-protection and anxiety avoidance, and the upper-half values enhance growth of the self and free the self of anxiety. In the second outer circle, values on the left side focus on outcomes for others, while on the right side, the focus is on results for the self (Schwartz et al., 2017).

The advantage of the PVQ-RR is that it presents high universal construct equivalence (Schwartz, 2017) and measures the personal core values of consumers as an enduring effect, not the present short-term behaviour values (Corsi et al., 2020). Schwartz et al.'s (2017) refined value theory with 19 personal values offer a recent and developed perspective, which has proven to be empirically significant worldwide. Therefore, in this research, personal values are used to explain the relationship between values and purchase intention (Corsi et al., 2020), since differences in the importance of personal values aid in a better understanding of consumer behaviour (Millan & Reynolds, 2014; Schwartz & Butenko, 2014).

For the market segmentation of such a heterogeneous market into homogeneous subsets, age groups (e.g. generational cohorts; see Section 2.1) are central to this research. These generational cohorts can be analysed based on the differences in the importance of personal values on purchase intention (Hung et al., 2007; Li, 2007a; Stępień, 2021). The advantage is that these differences are observed as relatively stable in comparison to more transient characteristics. Thus, they have a direct impact on perceptions, attitudes, and behaviour such as purchase intention (Bardi, Calogero, & Mullen, 2008; Bardi & Schwartz, 2003; Beatty, Kahle, Homer, & Misra, 1985; Hitlin & Piliavin, 2004; Rokeach, 1973; Schwartz & Bardi, 2001; Tai, 2008).

In this study, generational cohorts' personal values are based on Schwartz's PVQ-RR propositions. The personal values of each generational cohort are explored, assuming that each member's values result in similar needs and priorities (Tang et al., 2017). Since each generational cohort is shaped by similar political, historical, social, and economic events (Campbell et al., 2015; Hung et al., 2007), each cohort was exposed to different possibilities

and constraints (Egri & Ralston, 2004). These events affect people's experiences and thus lead to intergenerational differences in values and attitudes.

Based on the above literature review, Hypothesis 1 (H1) and Hypothesis 2 (H2) can be formulated as follows:

H1: There are differences in the importance of personal values between the three generational cohorts in China.

H2: The specific personal values of each generational cohort influence their liking and purchase intention.

## **2.3.2 Self-concept and perceived brand personality**

### **2.3.2.1 Self-concept**

Consumers choose products not only according to the product attributes but also to create and maintain a specific social identity (Dubois et al., 2020). Therefore, self-concept or self-image describes the demonstration of identity through possessions (Reimann, Castaño, Zaichkowsky, & Bechara, 2012). The extended self also refers to an enhancement of one's identity through possessions (Belk, 2004). As argued by Donvito et al. (2020), personal and social characteristics are mainly expressed to others and to oneself through material possessions (Phau, Matthiesen, & Shimul, 2020).

Chinese consumers define themselves and their respective lifestyles by the brands they possess and consume (Hennigsen & Hofmann, 2012; Huang & Wang, 2018). Thus, brands help consumers represent themselves (Chu & Sung, 2011). People consume luxury goods to reflect their financial status – to obtain and enlarge the “Chinese face” – which is defined as the Veblen effect (Huang & Wang, 2018; Reimann & Aron, 2009). By purchasing luxury brands, Chinese consumers seek to adhere to cultural meaning while establishing their self-concept or self-identity, defined as “face” or *mianzi* (Stępień, 2021; Zhou & Zhang, 2017).

Cleveland, Laroche, and Papadopoulos (2009) observed that, on the one hand, Chinese modern people (*xiandaren*) want to express their urbaneness and cosmopolitan orientation through brands (Bartikowski & Cleveland, 2017). Cosmopolitans, on the other hand, can be defined as having openness towards cultural differences and the world. By consuming specific brands, they also want to demonstrate their attachment to certain social groups (Atwal & Bryson, 2017). According to Heine, Atwal, and He (2019), global or imported brands represent prestige, status, and reliability in China. Therefore, brands – especially luxury brands – can provide social benefits (Fastoso & González-Jiménez, 2020). Furthermore, passenger cars are consumed in public; this is defined as conspicuous consumption (Huang & Wang, 2018). Given that foreign passenger cars are expensive, MB and BMW are considered to be luxury goods (McKinsey and Company, 2017).

Aaker and Schmitt (2001) conclude that consumers tend to have corresponding attitudes and preferences for consumption symbols such as products and brands according to their own self in order to be acknowledged by others (Chu & Sung, 2011). However, in China where a collectivistic culture exists, the interdependent self focuses on others instead of the self. Others in the Chinese context can be defined as family and relationships, social roles, and ethnic or national affiliations (Sethi, 2019). However, this might only be relevant to the pre-reform generation (Li, 2020) because of their stickiness (Chaisty & Whitefield, 2015; Hennigsen & Hofmann, 2012) in terms of valuing tradition and social norms.

In contrast, the reform and post-reform generations value vertical individualism (Tang, 2019) – that is, fulfilling their own aspirations and needs (Li, 2020). Their experience of historical, cultural, and political transformation, which has provided them with higher living standards, has led to diverse consumption values and consumer behaviour.

Moreover, attitudes are focused on self-verification (actual self) or, rather, self-enhancement (ideal self) and, in the social context, the social actual self and the social ideal self (Donvito et al., 2020). The actual self is based on an individual's perception of themselves or who somebody is. The ideal self is based on one's self-aspirations – who they would like to be or become (i.e.

the desired state of their self-concept; Fastoso & González-Jiménez, 2020). As a result, possessions allow consumers to establish their self-identity and the extended self.

Hence, it is crucial to explore the self-concept and symbolic value as part of consumer behaviour to better understand the personal meaning of a brand (Kim, 2015) to the consumer. Since symbolic value is related to signal effects such as social value and one's moral worthiness through brand consumption (Phau et al., 2020), Aaker (1997) extends the self-concept with the brand personality approach (Phau et al., 2020).

### **2.3.2.2 Perception of brand personality**

Based on the self-concept, personal values do not solely affect generational cohorts' intentions to buy a brand; one's perception of brand personality also greatly influences their purchase intention, as argued by Chu and Sung (2011). According to Johar et al. (2005), brand personality is a set of human characteristics that are associated with a specific brand. These associations set a brand apart from others, creating an emotional brand attachment and making a brand recognisable (Malär, Krohmer, Hoyer, & Nyffenegger, 2011; Phau et al., 2020), thereby affecting consumers' purchase intention (Chu & Sung, 2011).

Consumers in different countries evaluate brands and products – particularly foreign brands and products – differently. In fact, brand evaluation varies across cultures and individuals (Heine et al., 2019). Brand perception can be divided into brand-specific associations and the general brand impression (Jap, 2013). Brand-specific associations consider the attributes, features, or benefits that a consumer links to a brand. These can be physical features (e.g. quality) or non-utilitarian features (emotional values such as fun, etc.; Heine et al., 2019). Moreover, consumers purchase and consume brands to enhance their self- and social consistency, self-esteem, and social approval (Donvito et al., 2020).

Current marketing literature focuses on brand personality, stating that consumers prefer brands that not only satisfy their functional and emotional needs but also symbolise specific personality facets. In this regard, a brand is compared to a person, where both express certain characteristics. Hence, if a brand's personality is congruent with its actual, ideal, social-actual, or social-ideal self (Kim, 2015; Millan & Reynolds, 2014), it leads to greater satisfaction and triggers consumers' decision to purchase the brand.

### **Brand associations**

Perception of brand personality is the most important part of brand image and can be defined as the associations consumers have with a brand (Chu & Sung, 2011; Phau et al., 2020). User imagery is the source of brand perception. Therefore, these associations are linked to what a consumer expects the brand, product, or service to have and be as well as the result of its purchase and consumption (Stathopoulou & Balabanis, 2019). This is because brands likely reflect the individual's motivation, attitudes, lifestyle, personality, and behaviours (Dubois et al., 2020). According to Zhang et al. (2019), to understand consumers' various brand-related behaviours, one must understand purchase behaviour (e.g. purchase intention). A brand is seen as part of the purchase decision process (Atwal & Bryson, 2017) because it addresses consumers' personal needs as well as a specific social status (Guo, 2017; Wiedmann et al., 2007).

Phau et al. (2020) also concluded that consumers – in this case, generational cohorts – might not differentiate between their emotions towards a product, brand, or service and their beliefs, but rather based on how they are perceived by others (Donvito et al., 2020). Brand personality hence consists of symbolic values that vary across cultures (Heine et al., 2019).

## Effects of country of origin

The effects of country of origin (CoO)<sup>1</sup> and further facets of CoO, namely country of production (CoP), country of brand (CoB), and country of assembly (CoA), are strongly reflected on brand personality (Heine et al., 2019; Hsieh & Setiono, 2004; Wang & Yang, 2008). The effect of CoO relates to either the product-country image or the quality of a product's associations (Eroglu & Machleit, 1988; Phau & Prendergast, 2000). CoO is especially relevant because of its intrinsic and extrinsic cues for the evaluation of a product or brand (Heine et al., 2019). Intrinsic cues are the characteristics of a product or brand, whereas extrinsic cues are non-tangible characteristics, such as CoO and brand personality, which provide social signalling value (Jap, 2013).

The consumption of foreign products signals not only social value (Phau et al., 2020; Stępień, 2021; Zhang & Khare, 2009) but also one's moral worthiness, which is particularly relevant for the aspiration of ideal-self congruity (Ewing, Windisch, & Zeigler, 2010; Fastoso & González-Jiménez, 2020). Chinese consumers tend to prefer imported brands, as they associate these brands with higher quality and a higher social value than national brands (Bartikowski & Cleveland, 2017; Batra, Ramaswamy, Alden, Steenkamp, & Ramachander, 2000). Additionally, brands perceived as global positively affect purchase intention (Steenkamp, 2001) and are thus preferred over local ones because of their perceived prestige, quality, and global association (Holt, Quelch, & Taylor, 2004).

Similarly, consumers purchase foreign luxury passenger car brands for their social value to demonstrate prestige, status, and symbolic signals (Kapferer & Bastien, 2012; Zhang et al., 2019). Additionally, consumers want to adhere to a specific social group by consuming these vehicles (Fastoso & González-Jiménez, 2020). Therefore, luxury passenger car consumption can help

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<sup>1</sup> Country-of-origin defines where a product, brand or service had been made-in (Schramm & Taube, 2007).

consumers reflect their self-identities with the corresponding symbolic signal (Dubois et al., 2020).

In contrast, according to Rosenbloom et al. (2012), Chinese consumers generally prefer domestic brands due to ethnocentrism. However, this might differ for luxury products in China because of the “face” factor (Dubois et al., 2020). CoO, with its symbolic and social value, might thus be one of the most relevant facets affecting brand personality and hence also purchase intention (Godey et al., 2012; Heine et al., 2019).

### 2.3.2.3 Brand personality scale

Aaker and Fournier (1995) studied the big five dimensions transferred from human personality to characterise a brand as a person, a character, and a partner. It was argued that brand personality allows individuals to construct and maintain their social identity and to express their actual, ideal, or social self (Belk, 2004). In this regard, the social-actual self and the social-ideal self refer to the same differences, but in a social context. This approach was extended by Aaker (1997) based on a Brand Personality Scale (BPS) framework with five core dimensions to measure brand personality, thus linking brands with persons (George & Anandkumar, 2018). Each brand personality dimension consists of several facets, with 42 facets in total (see Figure 2.3.2.3.1).

**Figure 2.3.2.3.1 Brand personality dimensions and facets**

Brand personality dimension	Facets	
Sincerity	1. Down-to-earth, 2. Family-oriented 3. Small-town 4. Honest,	7. Wholesome 8. Cheerful 9. Sentimental 10. Friendly

<b>Brand personality dimension</b>	<b>Facets</b>	
	5. Sincere 6. Real	11. Original
Excitement	12. Daring 13. Trendy 14. Exciting 15. Spirited 16. Cool 17. Young	18. Imaginative 19. Unique 20. Up to date 21. Independent 22. Contemporary
Competence	23. Reliable 24. Hard-working 25. Secure 26. Intelligent 27. Technical	28. Corporate 29. Successful 30. Leader 31. Confident
Sophistication	32. Upper class 33. Glamorous 34. Good-looking	35. Charming 36. Feminine 37. Smooth
Ruggedness	38. Outdoorsy 39. Masculine 40. Western	41. Tough 42. Rugged

Source: Aaker (1997)

Personalising a brand provides it a more central role in consumers' lives and a chance for the consumers to project themselves to create the relationship they want with the brand (Aaker et al., 2001; Fournier, 2009). Thus, the BPS serves as a basis for measuring consumer–brand relationships and brand differentiation (Fournier, 1998; George & Anandkumar, 2018). Despite the



fact that human personality and brand personality are conceptualised similarly, they differ in their creation because brand personality is created through individuals' contact with the brand, as argued by Aaker (1997).

However, the non-generalisability, cross-cultural nature, non-replicability, and weak construct validity of the BPS have been criticised (Austin, Siguaw, & Mattila, 2003; Azoulay & Kapferer, 2003; Geuens, Weijters, & De Wulf, 2009). It may be argued that the BPS framework may not be valid in a specific product category for research at a single brand level and for cross-cultural research. Nevertheless, the BPS is widely accepted as the most elaborate research instrument for investigating how perceptions of brand personality affect consumers' preferences and purchase intentions.

Therefore, in this research, the BPS is used to identify how the five brand personality dimensions are perceived by each generational cohort. For complexity reduction, only the overall five dimensions, not their corresponding 42 facets, are investigated.

Overall, brand consumption enables consumers to express their self-identity and to integrate into or dissociate from certain social networks (Heine et al., 2019; Phau et al., 2020; Stępień, 2021), which is considered important in Chinese culture (Chu & Sung, 2011; Hu, 2020). Following this, investigating the three generational cohorts' perceptions of brand personalities in China is crucial for researching purchase intention.

Hypotheses 3 (H3) and 4 (H4) are subsequently formulated as follows:

H3: Each generational cohort has a different perception of brand personalities.

H4: Each generational cohort's perception of brand personality influences their liking of and intention to purchase a brand.

### **2.3.3 Self–brand congruence**

Furthermore, based on the self-concept and the perception of brand personality, it is argued that the greater the congruence of the self and the

perceived brand personality, the higher the purchase intention (Ekinici & Riley, 2003). Brands are thus the means to demonstrate facets of oneself and to interact with others (Belk, 1988).

The cognitive match between a brand's personality and the consumer's values is referred to as self-brand congruence (Kressman et al., 2006; Malär et al., 2011; Sagiv, Sverdlik, & Schwarz, 2011; Sirgy, 1982). This can also be described as a match between the symbolic value of a brand or product and the consumer's self (Donvito et al., 2020). The greater the model fit between the consumer's self with respect to this study's personal values and the brand personality perception, the more likely the preferences such as liking and purchase intention are generated (Kim, 2015).

Self-brand congruence, self-image congruence, and self-congruity all assess the same phenomenon (Sirgy, Grzeskowiak, & Su, 2005). Positive emotions and the feeling of belongingness with a brand can consequently be established (Donvito et al., 2020), thereby motivating consumers to purchase the brand (Aaker et al., 2001; Donvito et al., 2020). This is because of consumer satisfaction in attaining self-esteem, self- and social consistency, and social approval (Fastoso & González-Jiménez, 2020).

### **2.3.3.1 Effects of self-brand congruence**

Through the purchase and consumption of luxury brands, consumers are able to express themselves and enhance their public image (Kim, 2015; Vigneron & Johnson, 1999) because of psychological benefits such as increased self-esteem and social recognition (Gupta & Lehmann, 2005). Furthermore, hedonic value – gratification and fun (Schwartz et al., 2017) – is one of the most relevant triggers for the consumption of luxury brands. Additionally, ideal self-brand congruence is relevant for consumers whose motivational goal is self-enhancement (Fastoso & González-Jiménez, 2020). Apart from the rational and functional evaluation of products, there is also an emotional effect on the imaginary, symbolic, and consumption values (Guo, 2005) as well as a social effect on others (Phau et al., 2020). Along these

lines, a car purchase can be utilitarian (as a means for transportation), symbolic (to express social status), or hedonic (to seek pleasurable experiences; Wong & Ahuvia, 1998). Therefore, it is important to understand how consumers express themselves through luxury passenger car consumption.

Brand preferences in China are the result of cultural values and are symbols of one's success, wealth, and modernity of consumption (Dubois et al., 2020; Li, 2007a). As part of the extended self or self-concept, the Chinese concept of "face" (*mian/lian/yan*), which is a metaphor for prestige, honour, and reputation (Ho, 1976), influences consumer behaviour (Au, 2014; Schuette & Ching, 1996). It can be defined as the respect that a person can claim for themselves from others. It symbolises a person's outwardly perceived success (Zhou & Zhang, 2017), which is displayed, for example, in external status symbols such as cars. "Giving face" involves, for instance, purchasing a specific car brand to show off and attain self-respect, status, dignity, prestige (Bartikowski & Cleveland, 2017), power and influence over others, and self-expression (Kotabe & Jiang, 2006). Thus, individuals seek to obtain or improve their "face" through possessions, either for the integrity of their ego or as a symbol of prestige (Dubois et al., 2020). A brand's prestige consequently plays an important role in purchase intentions in China.

Consumers value brands with a strong reputation among the social networks to which they belong or aspire to belong. As outlined by Markus and Kitayama (1991), in individualistic cultures, consumers mostly demonstrate how they differ from others. According to the crossvergence theory, this would apply to the reform and post-reform generations (Li, 2020). In contrast, in collectivistic cultures, consumers demonstrate how similar they are to members of a specific group (Dubois et al., 2020; Hu, 2020), which, according to the stickiness theory, applies to the pre-reform generation (Li, 2020). Chinese consumers may want to demonstrate either their similarity – by using the same brand to further their social network, sense of belonging, and affiliation (Spencer-Oatey, 2005) – or their uniqueness (Li, 2020; Sun et al., 2017).

Belk (1988) stated that we are what we have and that this might be the most fundamental and powerful influence of purchase behaviour. Sirgy (1982) observed that the greater the model fit between the consumer's self – the personal values of each generational cohort here – and the perception of a brand's personality, the more motivated a consumer or generational cohort is to purchase the brand because of consumer satisfaction and the fit with self-identity (Eckhardt & Houston, 2008; Fastoso & González-Jiménez, 2020). This gives rise to high self–brand congruence, and it would be expected that a consumer within a generational cohort would be more satisfied, since they project their sense of self by consuming a specific brand and searching for a unified and coherent self (Kim, 2015; Kressman et al., 2006; Teo, Uncles, & Burford, 2010; Wong et al., 2012).

According to Donvito et al. (2020), self-congruity is a predictor of consumer behaviour, including product and brand attitude, purchase intention, and product loyalty (Malär et al., 2011). Additionally, Sirgy and Johar (1999) empirically confirmed that self–brand congruence influences purchase intention through functional congruence (Wang et al., 2018). Moreover, moderating variables such as brand conspicuousness, brand uniqueness, brand involvement, and brand differentiation are the most probable influences on these two congruencies (Zaichkowsky, 1985).

In developing countries such as China, Western brands correlate highly with status and esteem (Heine et al., 2019). Furthermore, public meanings are symbolic meanings that are mostly shared within a social context (Wiedmann et al., 2007). This symbolic value of a car depends not only on conspicuousness and status consumption but also on personal values (Eastman, Goldsmith, & Flynn, 1999; Vickers & Renand, 2003). Thus, the purchase of luxury passenger cars in China gives and enhances one's "face", thereby increasing one's social status or prestige in the eyes of others (Bartikowski & Cleveland, 2017).

Chinese consumers increasingly wish to purchase brands that fit their self-concept and granting them self-satisfaction (Donvito et al., 2020). Purchase decisions in China are therefore increasingly based on self–brand congruence (Donvito et al., 2020; Kim, 2015). People love the feeling of a

brand fitting with their self-concept and perceived brand personality, which affects purchase intention (Aaker & Schmitt, 2001). In the present study, the effects of consumption symbols, such as luxury cars, on different types of associations are explored for three generational cohorts.

Hypotheses 5 (H5) and 6 (H6) are hence formulated as follows:

H5: Each generational cohort will display significant differences in the congruencies between their higher-order personal values and their perception of a brand's personality.

H6: The congruence between a generational cohort's higher-order personal values and brand personality perceptions will influence their liking and purchase intention.

### **2.3.3.2 Other moderating variables affecting self–brand congruence**

In addition to the generational cohort's personal values and perception of brand personality, two moderating variables – brand uniqueness and brand conspicuousness – may also affect self–brand congruence and therefore purchase intention (Donvito et al., 2020; Huang & Wang, 2018; Sirgy & Johar, 1999).

**Brand conspicuousness** Vigneron and Johnson (1999) observed that the perception of conspicuousness is a non-personally oriented perception effect of luxury consumption. Brand conspicuousness is defined as brands that are visible to others and publicly consumed (Zhou & Wong, 2008).

Conspicuously consumed brands are likely to affect self–brand congruence (Huang & Wang, 2018; Jacob et al., 2020).

Sirgy, Johar, and Wood (1986) found that conspicuous consumption correlates with brand value expressiveness. Hence, personal and social characteristics are even further revealed (Huang & Wang, 2018) by conspicuous consumption because cars are displayed and consumed in public (Kressman et al., 2006; Truong, Simmons, McColl, & Kitchen, 2008).

Moreover, publicly displayed possessions are used for social comparisons (Donvito et al., 2020). According to Wong and Ahuvia (1998), the more a culture or group differs in economic status, the more it will focus on symbolic goods that correspond to these differences. Asian cultures highly emphasise symbolic values when a product is consumed in public (Huang & Wang, 2018; Phau et al., 2020). As a result, purchase behaviour is strongly linked with the cultural symbols embedded in products, brands, and services (Levy, 2005).

Since symbolic value refers to the signal effect of social value and one's moral worthiness by consuming a specific product or brand (Phau et al., 2020; Stępień, 2021), conspicuous luxury brand consumption gives and enhances the Chinese "face", thereby influencing one's social status or prestige or serving the need for social comparisons (Bartikowski & Cleveland, 2017; Zhou & Zhang, 2017). This is particularly important for consumers who are affected by reference groups and social status (Vigneron & Johnson, 1999).

Based on the Chinese concept of "face", displaying wealth and material value is important in showing one's position in a social context (Wang et al., 2010). Chinese consumers want to demonstrate their success, and further, they want to live up to the expectations of others (Vigneron & Johnson, 1999). Following this, they showcase their achievements through publicly visible possessions for maintaining a socially acceptable appearance (He et al., 2010; Wiedmann et al., 2007). This suggests that self-brand congruence is important for purchase intentions centred on status and for conspicuous consumption concerning passenger cars (Truong et al., 2008). Brand conspicuousness might consequently moderate self-brand congruence because cars are socially and publicly consumed.

Additionally, Truong et al. (2008) state that status consumption and conspicuous consumption are correlated but are not a single dimension. Brands with status may be chosen for internal or external reasons, whereas brands high in conspicuousness are chosen for external reasons only (Huang & Wang, 2018). Thus, it may be interesting to use brand

conspicuousness as a moderating variable when studying self–brand congruence in purchase intention.

**Brand uniqueness** Vigneron and Johnson (1999) observed that one's perception of uniqueness is also a non-personally oriented perception effect of luxury consumption. Therefore, exclusivity, limited supply, and rareness are likely to influence self–brand congruence, which is relevant for consumers to enhance their social image and personal taste (Vigneron & Johnson, 1999; Wiedmann et al., 2009).

For instance, owners of luxury cars with low volumes and high prices tend to express their exclusiveness and their belonging to a certain social class. Truong et al. (2008) identified that the image of a vehicle is seen not only as a means of transportation but also as a status symbol, since status, as a psychological factor, is an important determinant in car purchase decisions. Moreover, Gehring and Oswald-Chen (2012, p. 15) indicated that "...a car brand communicates an even clearer image than any other product does".

Research has revealed that limited, exclusive, or scarce access to a brand increases consumers' preferences for and intentions to purchase that brand (Wiedmann et al., 2007; Wiedmann et al., 2009). Consumers search for brands or products that are difficult to obtain in order to avoid similar consumption to others and to adhere to their own taste. However, a luxury brand cannot be owned by everyone, nor is it affordable for everyone (Wiedmann et al., 2007). Uniqueness hence serves as a consumer's differentiation from others, which is an important factor for luxury consumption (Stathopoulou & Balabanis, 2019). This is also consistent with consumers' perceptions of themselves as unique and different from others. As a result, uniqueness presents the consumer's achievements and provides social esteem (Stathopoulou & Balabanis, 2019).

With higher brand uniqueness, self–brand congruence might have a higher influence on brand attitude because of the elevated value of the uniqueness (Sirgy & Johar, 1999). Therefore, brand uniqueness might be helpful as

another moderating variable (Sirgy & Johar, 1999; Vigneron & Johnson, 1999).

In summary, the predictiveness of self–brand congruence can generally be increased by considering brand conspicuousness and brand uniqueness as moderating variables.

Hypothesis 7 (H7) is thus formulated as follows:

H7a: The moderating variable “brand conspicuousness” influences self–brand congruence.

H7b: The moderating variable “brand uniqueness” influences self–brand congruence.

### **2.3.4 Functional congruence**

To purchase a car, a consumer will evaluate not only the emotional, social, and symbolic values thereof but also the functional values and needs (Han & Kim, 2020; Wiedmann et al., 2007). Functional congruence can be defined as an alignment of a) consumers’ perception of a brand’s or product’s functional characteristics with b) consumers’ desired and expected functional characteristics (Sirgy et al., 2005; Sirgy & Su, 2000). These brand-specific associations consider the attributes, features, or benefits (e.g. quality, price, design, and value-added services) that consumers link to a brand (Jap, 2013) and that they evaluate during their purchase decision-making process (Kressman et al., 2006; Schramm & Taube, 2007; Zeithaml, 1988). The perceived benefit of a product or brand regarding outcome expectation (Atwal & Bryson, 2017) can be clustered based on motivations.

First, utilitarian motivations are mostly functional and tangible (Stathopoulou & Balabanis, 2019), with functional attributes including price, quality, performance, exterior, safety, convenience, and customer service aspects, among other things (Kressman et al., 2006; Wiedmann et al., 2007).

According to Berthon, Pitt, Parent, and Berthon (2009), this value is assessed based on the utility and features of a product or brand, such as



usability and quality. Second, hedonic and thus emotional motivations, such as value expression, are more explorative and intangible (Kotabe & Jiang, 2006); therefore, they are considered based on self–brand congruence. Consumer purchase behaviour is consequently triggered by the desire for the following: quality, convenience, value expression, exploration, entertainment, and/or savings (Kwok & Uncles, 1992; Stępień, 2021; Wang et al., 2018).

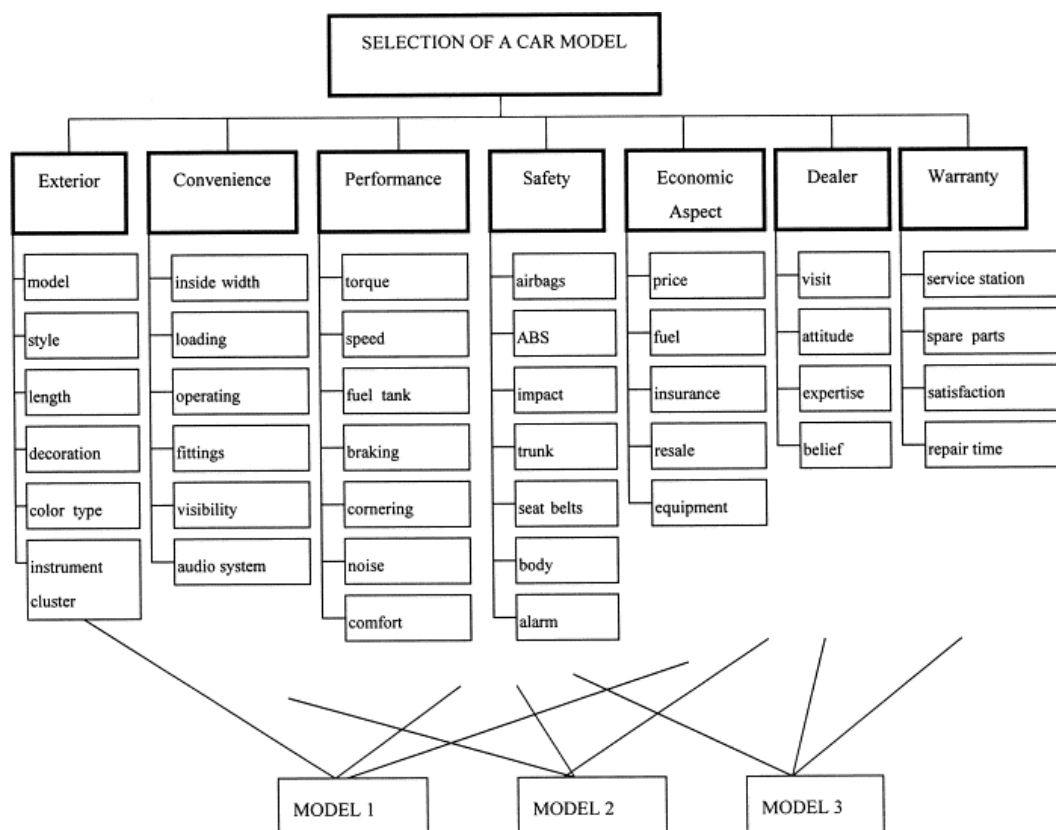
The perceived quality of a service, brand, or product and the discrepancy between perception or experience and expectation are important because of their impact on purchase intention (Jiang & Shan, 2018; Wang et al., 2018). The consumer evaluates the value benefit based on their experience or value perception as well as their expectations of a brand, product, or service (Jiang & Shan, 2018; Vigneron & Johnson, 1999; Wiedmann et al., 2007). Nevertheless, the perceived value benefit is highly individual and influenced by the environmental context (Dubois et al., 2020).

He et al. (2010) identified that wealthy Chinese consumers trust (*xin*) foreign brands even more than traditional ones, because consumers induce higher quality and are consequently willing to pay a premium price for functional features such as high-quality materials and components, safety, and desirable features (Berger, 2010; Jiang & Shan, 2018). On the contrary, other research has found that more sophisticated consumers tend to consume local brands (Deloitte, 2012). Both Chinese and foreign brands have specific advantages and disadvantages: Foreign brands are mainly associated with high prestige, excellent quality, and a cutting-edge position, but they are expensive (Heine et al., 2019). Samli (2013) indicated that German products are associated with solid engineering and a strong reputation, whereas Chinese products are evaluated as being trustworthy, being of sound quality, and offering value for money (Samli, 2013). However, if the service does not meet consumers' expectations (Liu et al., 2011), their purchase intention might be negatively influenced.

### 2.3.4.1 Functional congruence dimensions

The purchase of vehicles, particularly luxury passenger cars, involves a complex purchase decision (Kotler et al., 2019); therefore, an appropriate automobile purchase decision process is necessary (Byun, 2001). Byun (2001) developed an analytic hierarchy process with seven dimensions and 39 facets (see Figure 2.3.4.1.1) for selecting a car model or a specific brand.

**Figure 2.3.4.1.1 Automobile purchase model**



Source: Byun (2001)

The first dimension, exterior, relates to style and design, which are visible from the outside, whereas the second dimension, convenience, focuses on fittings and space for easy operation (Byun, 2001). Third, the performance dimension addresses torque and speed as well as technical ability, such as braking ability. Fourth, the safety dimension relates to all existing safety features for the protection of the driver and passengers (e.g. airbags and ABS; Byun, 2001). The fifth dimension, economic aspect, considers factors

such as price and fuel consumption, while the sixth dimension, dealer, assesses the expertise and attitude of the dealership (Byun, 2001). Finally, the seventh and last dimension, warranty, refers to repair time and spare parts service as well as after-sales processes. The analytic hierarchy process of the automobile decision process was one of the first formalised models for measuring and forecasting automobile purchase behaviour for a car model of a specific brand. It captures all the relevant functional dimensions for measuring functional congruence.

The measurement of functional congruence is similar to customer satisfaction (Wang et al., 2018). Oliver (1980) developed the disconfirmation paradigm with a similar approach of measuring actual performance based on the corresponding expectations. However, functional congruence measures the normative expectation and not the predictive or cognitive expectations. According to Allen (2001), the functional characteristics of a brand or product are assessed one at a time. Furthermore, functional congruence can be measured pre- and post-purchase (Wang et al., 2018). According to Frank et al. (2014), long-term orientation in Chinese consumers results in an even higher pre-purchase quality expectation than post-purchase. Therefore, functional congruence reflects the rational brand or product value (utilitarian, functional-related), which influences purchase intention (Sirgy & Johar, 1999; Stępień, 2021; Zhang et al., 2019).

Allen (2001) states that functional attributes match one's personal values; for example, a consumer's value for security would be correlated with the desire for car safety. However, this is also extended to the facet of consumers with high-risk avoidance; such consumers value quality and thus reliability and durability for reducing risks (Stathopoulou & Balabanis, 2019).

Functional congruence and self-brand congruence can be applied to the forecasting of consumer behaviour (Kressman et al., 2006). According to Sirgy, Johar, Samli, and Claiborne (1991), functional congruence has a stronger influence on purchase intention than self-brand congruence. In addition, self-brand congruence affects consumer behaviour due to the mediating impact on functional congruence (Sirgy & Johar, 1999), and self-

brand congruence is usually formed prior to the evaluation of functional congruence as part of the purchase decision process (Sirgy et al., 2005).

In the case of high self–brand congruence, generational cohorts would hold an initial positive attitude towards a brand. Therefore, this influences their processing of the utilitarian features of the brand (Kressman et al., 2006). This assumes, as stated by Kressman et al. (2006), that a consumer evaluates a brand based on emotional dimensions before rational dimensions. This might be due to the fact that the functional dimensions are perceived and evaluated at a more conscious level than self–brand congruence (Sirgy & Johar, 1999). As a result, based on Byun’s (2001) automobile purchase decision model, functional congruence in this study is conceptualised as the fit between the consumers/generational cohorts’ expectations and weighting of utilitarian brand features on the one hand and their experience or perception and thus possession of these features on the other hand (Sirgy & Johar, 1999; Wang et al., 2018).

Based on the above literature review, Hypothesis 8 (H8) and 9 (H9) can be formulated as follows:

H8: Self–brand congruence positively influences functional congruence.

H9: Functional congruence positively influences consumers’ liking and purchase intention.

#### **2.3.4.2 Other moderating variables affecting functional congruence**

As observed by Kotler et al. (2019), consumers have different types of purchase decision processes, depending on the level of involvement as well as brand differentiations (see Figure 2.3.4.2.1). A car purchase is considered a high-involvement purchase because it requires greater effort during the purchase decision process due to significant differences between brands as well as the financial risk involved (Wang et al., 2018).

**Figure 2.3.4.2.1 Types of purchase decisions based on consumer involvement and brand differences**

	<b>High involvement</b>	<b>Low involvement</b>
<b>Significant differences between brands</b>	Complex buying behaviour	Variety seeking
<b>Few differences between brands</b>	Dissonance reducing	Habit

Source: Kotler and Armstrong (2017)

### **Brand involvement and brand differentiation**

According to Kotler and Armstrong (2017), buying behaviours vastly differ per product category based on the level of brand or consumer involvement and brand differences (see Figure 2.3.4.2.1). A complex purchase behaviour is observable for products and brands with high involvement and significant differences. This is usually the case for luxury consumption, such as German luxury passenger cars for self-expression, and for the risky or infrequent purchase of brands and products (Kotler et al., 2019). Complex purchase behaviour is particularly influenced by functional attributes and the respective relevance of these attributes and brand benefits, which are pertinent to luxury passenger car consumption (Kotler & Armstrong, 2017).

An attractive price and convenience are usually the reasons for dissonance-reducing purchase behaviour; however, these are not applicable to luxury passenger cars. Additionally, habitual buying behaviour is characterised by few brand differentiations, low involvement, and variety-seeking buying behaviour regarding purchases with significant differences but low involvement (Kotler et al., 2019). These purchase decisions are not relevant for the purchase of luxury passenger cars. Such a purchase employs a complex purchase behaviour (Kotler & Armstrong, 2017) with high involvement and high differentiation. In this regard, Kressman et al. (2006) and Kotler et al. (2019) stated that brands with high emotional involvement (Zaichkowsky, 2012) and high differentiation are more likely to influence

functional congruence (Wang et al., 2018), since high involvement and significant differences increase consumer evaluation prior to product, service, or brand use (Kotler et al., 2019). Additionally, consumer arousal is the prerequisite for information processing, emotion, motivation and therefore purchase intention (Zaichkowsky, 2012).

## **Brand involvement**

Brand or product involvement describes the customers' feelings for a brand, product, or service, which can be measured in time or intensity (Zaichkowsky, 2012). According to Hynes and Lo (2006), there are three types of involvement: 1) involvement related to a brand or a product category, 2) involvement related to the communication message, and 3) involvement related to the buying situation. Brand or product involvement can be defined as the strength of interest in a specific brand or product (Zaichkowsky, 2012). Communication involvement refers to a consumer's level of interest in processing marketing communications, and involvement in the purchase situation relates to buying behaviour regarding the same object but in different contexts. Brand involvement, as the level of interest in a specific brand, is at the centre of this study.

High involvement is formed through a consumer's belief (cognitive) about a brand or product that will be evaluated (affect), thus leading to a specific behaviour (Kapferer & Bastien, 2012). Involvement further depends on the perceived importance of a product or brand, its hedonic value, its symbolic value, and the perceived risk concerning the purchase.

Additionally, Lin and Chen (2006) found that the impact of a brand's CoO is higher when the consumer's level of involvement is stronger (Heine et al., 2019). CoO is especially relevant for products with high involvement and visibility, such as cars (Heine et al., 2019; Roth & Romeo, 1992; Samli, 2013). Consumers' evaluation of CoO and its facets is based on their perceptions of the product characteristics associated with specific countries and may trigger positive or negative feelings during brand choice, as argued by Samli (2013) and Jap (2013). This can also relate to a positive country

image, such as the quality of German engineering and hence German cars, likely leading to higher purchase intention (Heine et al., 2019). However, perceptions of CoO may change over time (Heine et al., 2019). Based on this assumption, consumers' purchase intention related to German luxury passenger cars might be further influenced by high brand involvement.

In summary, brands and products with high involvement imply a higher requirement of effort from consumers in their decision-making and information processing (Kotler & Armstrong, 2017; Kressman et al., 2006; Samli, 2013), which may influence functional congruence. Consumers who are more involved with a brand or product are more motivated to purchase it (Zaichkowsky, 2012).

### **Brand differentiation**

Brand differentiations are described as perceivable benefit differentiations between brands (Sirgy et al., 2005). Sirgy and Johar (1999) stated that with greater brand differentiation, consumers may be more aware of the brand benefits (Kotler et al., 2019). This may influence functional congruence, since these perceived benefit differentiations serve as a competitive advantage (Han & Kim, 2020). Brand differentiation is particularly relevant for luxury consumption (Wiedmann et al., 2009) because the perceived benefit through brand differentiation evokes pleasure and excitement and therefore motivates the purchase intention (Han & Kim, 2020).

Furthermore, the social value based on brand differentiation indicates the consumer's social status and belonging to a specific in-group and enables social comparisons (Wang et al., 2010). However, according to Mittal, Ratchford, and Prabhakar (1990), many brands possess similar functional characteristics nowadays, and it is increasingly difficult to differentiate brands based solely on utilitarian features. Although there are numerous passenger car brands and many distinguishing factors between them, the difference between MB and BMW is relatively small. Nevertheless, it is important to consider that the differentiation of a brand from its competition tends to increase purchase intention (Hsieh & Setiono, 2004).

Chinese social norms imply both the avoidance of conflicts and modest behaviour, which are in contrast to differentiation. However, Chinese consumers still desire differentiation (Schuette & Ching, 1996; Stępień, 2021; Wiedmann et al., 2007), which may also moderate functional congruence. Thus, the predictiveness of functional congruence can be increased by considering the moderating variables of brand involvement and brand differentiation (Sirgy & Johar, 1999).

The above research leads to the formulation of Hypothesis 10 (H10):

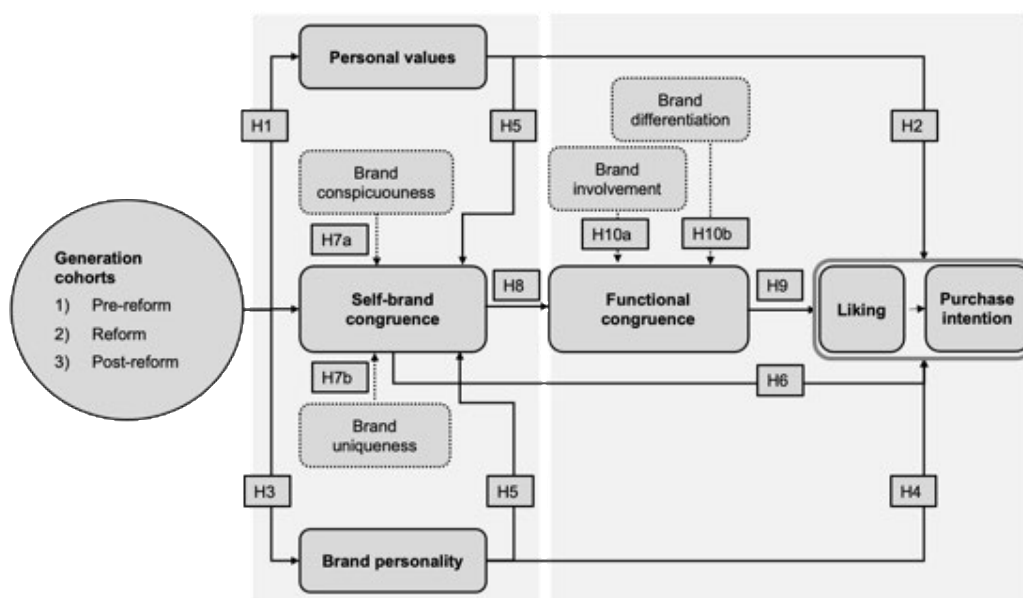
H10a: The moderating variable “brand involvement” influences functional congruence.

H10b: The moderating variable “brand differentiation” influences functional congruence.

## 2.4 Hypotheses framework

Based on the aforementioned literature review, the conceptual framework and hypotheses are summarised and presented in Figure 2.4.1.

**Figure 2.4.1 Conceptual framework of hypotheses**



Source: Author



For ease of reference, the hypotheses are listed successively below:

H1: There are differences in the importance of personal values between the three generational cohorts in China.

H2: The specific personal values of each generational cohort influence their liking and purchase intention.

H3: Each generational cohort has a different perception of brand personalities.

H4: Each generational cohort's perception of brand personality influences their liking of and intention to purchase a brand.

H5: Each generational cohort will display significant differences in the congruencies between their higher-order personal values and their perception of a brand's personality.

H6: The congruence between a generational cohort's higher-order personal values and brand personality perceptions will influence their liking and purchase intention.

H7a: The moderating variable "brand conspicuousness" influences self-brand congruence.

H7b: The moderating variable "brand uniqueness" influences self-brand congruence.

H8: Self-brand congruence positively influences functional congruence.

H9: Functional congruence positively influences consumers' liking and purchase intention.

H10a: The moderating variable "brand involvement" influences functional congruence.

H10b: The moderating variable "brand differentiation" influences functional congruence.

## **2.5 Chapter summary**

This chapter outlined the review of literature on purchase intention in China, covering generational cohorts, personal values, perceived brand personality, self–brand congruence, functional congruence, and moderating variables.

Based on the literature review, the hypotheses were developed. Next, Chapter 3 provides this study's chosen research methodology and method of testing theory.

## **Chapter 3 Research methodology**

### **3.0 Introduction**

Based on the research questions and research objectives outlined in Chapter 1 and the literature review in Chapter 2, this chapter establishes the underpinning philosophy and justifies the choice of research methodology. Section 3.1 explains the philosophy underpinning this study.

### **3.1 Research philosophy**

A research philosophy is an assumption and belief about the development of knowledge (i.e. the method of gathering, analysing, and using data), as stated by Crotty (1998). The research methodology is important for achieving a study's objectives (Layder, 1998; Saunders, Lewis, & Thornhill, 2016) and informing the research design. It also plays an important role in creating assumptions and justifying how the study will be conducted (Neuman, 2014). The research methodology thus refers to the way in which a study is systematically designed to ensure reliable and valid outcomes based on the research questions and research objectives (Saunders et al., 2016). It defines the techniques for identifying, selecting, processing, and analysing information. Therefore, the research methodology reflects the chosen research philosophy (Creswell, 2009).

#### **3.1.1 Philosophical assumptions**

Three different philosophical assumptions exist: ontology, epistemology, and axiology. Ontology and epistemology are the two main philosophical dimensions.

- **Epistemology:** Epistemology refers to philosophical assumptions about how knowledge can be created. Contemplation on acceptable knowledge (i.e. how high-quality data is defined and what contribution it can make to existing knowledge) is the focus of this philosophical assumption.
- **Ontology:** Ontology addresses, if something really exists independently of human beings (objective) or if it is a construct of the mind (subjective), according to Saunders et al. (2016). Thus, this is what the nature of reality is.
- **Axiology:** This philosophical assumption addresses how researchers deal with their own values and the values of others.

The philosophy underpinning the present research is epistemology, which is based on justified belief and knowledge, and which aims to answer questions (Crotty, 1998). Thus, epistemology refers to assumptions about acceptable knowledge (Saunders et al., 2016), which is valid and legitimate (see Figure 3.1.1.1).

**Figure 3.1.1.1 Assumption types of research philosophies**

Assumption type	Questions	Continua with two sets of extremes		
		Objectivism	vs.	Subjectivism
Ontology	<ul style="list-style-type: none"> <li>• What is the nature of reality?</li> <li>• What is the world like? •</li> </ul> For example: <ul style="list-style-type: none"> <li>– What are organisations like?</li> <li>– What is it like being in organisations?</li> </ul>	Real	⇔	Nominal/decided by convention
		External		Socially constructed
		One true reality (universalism)		Multiple realities (relativism)

Assumption type	Questions	Continua with two sets of extremes		
		Objectivism	vs.	Subjectivism
	– What is it like being a manager or being managed?	Granular (things)		Flowing (processes)
		Order		Chaos
Epistemology	<ul style="list-style-type: none"> <li>• How can we know what we know?</li> <li>• What is considered acceptable knowledge?</li> <li>• What constitutes good-quality data?</li> <li>• What kinds of contribution to knowledge can be made?</li> </ul>	Adopt assumptions of the natural scientist	⇔	Adopt the assumptions of the arts and humanities
		Facts		Opinions
		Numbers		Narratives
		Observable phenomena		Attributed meanings
		Law-like generalisations		Individuals and contexts, specifics
Axiology	<ul style="list-style-type: none"> <li>• What is the role of values in research? How should we treat our own values when we do research?</li> <li>• How should we deal with the values of research participants?</li> </ul>	Value-free	⇔	Value-bound
		Detachment		Integral and reflexive

Source: Saunders et al. (2016)

### 3.1.2 Opposing extremes of assumption types

According to Saunders et al. (2016), there are two opposing assumption types, namely subjectivism and objectivism (see Figure 3.1.1.1).

### **3.1.2.1 Subjectivism**

Subjectivism is based on the humanities and arts, asserting that social reality is related to perceptions and social actions. Ontological subjectivism focuses on nominalism, assuming that the world is a social construct with several realities. Opposing this, according to subjectivist epistemology, data is based on opinions and narratives with attributed meanings about individuals and context; therefore, it considers specifics (Saunders et al., 2016). Finally, axiological subjectivism focuses on a contemplative, integral, and value-bound research.

### **3.1.2.2 Objectivism**

Objectivism refers to the natural sciences, claiming that social reality is independent from individuals (Creswell, 2009). Therefore, ontological objectivism focuses on realism, positing that the world exists independently of social entities with an enduring effect. In objectivist epistemology, the belief is that social entities are beyond our influence and that the outcome of the research thus cannot be affected by the researcher (Neuman, 2014). The researcher can differentiate truths from illusions or myths and construct objective knowledge (Crotty, 1998). Objectivism aims at using facts and numbers for analysing observable phenomena to identify broad principles, and allowing law-like generalisations as a result (Saunders et al., 2016). New knowledge is deductively tested by applying existing theories with empirical data. In contrast, axiological objectivism aims at value-free and detached research.

Objectivist epistemology was chosen for this study because social entities demonstrate external entities beyond our influence, according to Crotty (1998). Furthermore, knowledge is acquired and validated through reasoning (Bryman & Bell, 2011), which means that the research design as well as data collection and analysis are independent of the researcher and thus objective.

### 3.1.3 Theoretical perspectives

There are five major theoretical perspectives: positivism, critical realism, interpretivism, postmodernism, and pragmatism (Saunders et al., 2016). Positivism, critical realism, and interpretivism (Crotty, 1998) are the most widely applied perspectives (see Figure 3.1.3.1).

**Figure 3.1.3.1 Comparison of research philosophies and theoretical perspectives**

<b>Ontology</b> (nature of reality or being)	<b>Epistemology</b> (what constitutes acceptable knowledge)	<b>Axiology</b> (role of values)	<b>Typical method</b>
<b>Positivism</b>			
Real, external, independent One true reality (universalism) Granular (things) Ordered	Scientific method Observable and measurable facts Law-like generalisations Numbers Causal explanation and prediction as contribution	Value-free research Researcher is detached, neutral and independent of what is researched Researcher maintains objective stance	Typically deductive, highly structured, large samples, measurement, typically quantitative methods of analysis, but a range of data can be analysed
<b>Critical realism</b>			
Stratified/layered (the empirical, the	Epistemological relativism	Value-laden research	Retroductive, in-depth historically

<b>Ontology</b> (nature of reality or being)	<b>Epistemology</b> (what constitutes acceptable knowledge)	<b>Axiology</b> (role of values)	<b>Typical method</b>
actual and the real) External, independent Intransient Objective structures Causal mechanisms	Knowledge historically situated and transient Facts are social constructions Historical causal explanation as contribution	Researcher acknowledges bias by world views, cultural experience, and upbringing Researcher tries to minimise bias and errors Researcher is as objective as possible	situated analysis of pre-existing structures and emerging agency. Range of methods and data types to fit subject matter
<b>Interpretivism</b>			
Complex, rich Socially constructed through culture and language Multiple meanings, interpretations, realities Flux of processes, experiences, practices	Theories and concepts too simplistic Focus on narratives, stories, perceptions, and interpretations New understandings and worldviews as contribution	Value-bound research Researchers are part of what is researched, subjective Researcher interpretations key to contribution Researcher reflexive	Typically inductive. Small samples, in-depth investigations, qualitative methods of analysis, but a range of data can be interpreted

Source: Saunders et al., (2016)



### **3.1.3.1 Positivism**

Positivism aims to examine the root factors of social phenomena. As argued by Saunders et al. (2016), positivists prefer an observable social reality with generalised results according to natural and physical scientists. A positivist assumes that the observations are independent from the researcher; thus, the social world exists externally. Furthermore, they believe that people and behaviour can be examined in an isolated entity, which can be empirically analysed and validated. A quantitative data approach is usually used for positivist research (Crotty, 1998). Additionally, survey and questionnaires are mainly conducted for data collection (Creswell, 2009). This approach is usually applied for the testing of hypotheses and the interpretation of findings using a deductive-driven research approach. However, the construct is first developed to identify the most important concepts before testing hypotheses. It is interesting that the unconscious thought theory (Dijksterhuis & Nordgren, 2006) not only embraces neuropsychology with economic questions and results but also delivers new and valid merits, particularly for consumer behaviour research and the validity of positivism.

### **3.1.3.2 Interpretivism**

Interpretivism is a theoretical perspective which posits that knowledge is socially constructed and accessed only through social beings via shared meanings and language. Interpretivism focuses on the personal meaning of social actions and therefore considers subjective realities, attempting to understand and recognise them by interpretative justifications, without objectifying behaviour and people (Crotty, 1998). Qualitative data is consequently employed to study the depth of phenomena (Saunders et al., 2016).

### **3.1.3.3 Realism**

The theoretical perspective of realism stands in contrast to idealism. Even though it is similar to positivism, it develops knowledge through a scientific approach. The major forms of realism are critical and empirical (Saunders et al., 2016). Empirical or naïve realism assumes that a perfect relationship exists between the real and the terms employed to present it. However, this perspective might not capture enduring structures and underlying mechanisms for producing observable phenomena (Bryman & Bell, 2011). On the contrary, critical realism understands knowledge as being layered and having different levels: the real, the actual, and the empirical knowledge (Saunders et al., 2016).

The epistemological view of this study is based on the theoretical perspective of positivism, which states that all valuable knowledge is scientific and that everything is measurable. According to Creswell (2009), this perspective assumes that everything works according to a given structure with permanent laws. Hence, positivism believes that everything that exists can be proven by observation, experiments, and mathematics as well as logic.

## **3.2 Research methodology and methods**

Based on the research philosophy of epistemology with the theoretical perspective of positivism, it is crucial to select an appropriate research methodology for developing, testing, and interpreting hypotheses (Bryman & Bell, 2011) concerning the influence of personal values, brand personality, self–brand congruence, and functional congruence on luxury car purchase intentions among different generational cohorts in China. The research methodology was developed by selecting the research philosophy with an appropriate research approach, method, and design. The research methodology guides the procedures and appropriate techniques for identifying, selecting, processing, and analysing information in an objective way, without values and beliefs.

### **3.2.1 Research strategy and methods**

There are three different types of research methods (Creswell, 2009): qualitative, quantitative, and mixed methods.

#### **3.2.1.1 Research methods**

##### **Quantitative methods**

Positivism epistemology uses quantitative methods with a deductive approach that deals with numbers (Saunders et al., 2016). This strategy is typically employed for understanding behaviour and attitudes, and it allows for theory testing with generalisable results (Creswell, 2009). A deductive approach builds hypotheses based on the theory and then gathers and analyses data to interpret the findings. Additionally, quantitative methods focus on describing and exploring variables and the relationships among them (Bell, Bryman, & Harley, 2019). It allows for the analysis of a large quantity of numbers via statistics and the interpretation of results (Creswell, 2009). Positivism epistemology is appropriate to ensure the reliability and validity of data gathered from behaviour and attitudes.

The advantage of quantitative methods is that they are more economical, better suited for a large number of respondents, and less time-consuming than qualitative methods (Bryman & Bell, 2011). Quantitative methods ensure hard and reliable data (Saunders et al., 2016).

##### **Qualitative methods**

Qualitative methods with an inductive approach are employed for interpretivism; they deal with words and the observation of meanings (Bryman & Bell, 2011). Thus, rich and deep data can be gathered (Saunders et al., 2016). Qualitative methods focus on interpreting phenomena, such as the meanings people assign to things (Kromrey, 2009), and they are utilised

in inductive or theory-development-driven research. Through an exploratory method, which is a qualitative method, relationships are observed and clustered, patterns are examined, and theories are assumed (Bryman & Bell, 2011). This results in broader conclusions about meanings (Creswell, 2009), but exploring and interpreting results is more difficult with the qualitative than the quantitative approach.

### **Mixed methods**

Mixed methods combine elements of qualitative and quantitative research (Crotty, 1998). The advantages of a mixed methods approach are flexibility and the potential to assess more complex research questions (Crotty, 1998). The need for mixed methods is mainly based on the research intention (i.e. how the research should be conducted), which provides the adequate purpose for mixing (Creswell, 2009).

The advantages of a quantitative method are 1) they allow for the analysis of facts and patterns through administration of a survey questionnaire, and 2) the results are objective, replicable, and transparent (Saunders et al., 2016). Additionally, quantitative methods focus on describing and exploring variables and the relationships among them (Bell et al., 2019). Moreover, a quantitative approach, such as survey questionnaires, allows one to analyse large statistics, after which the results are interpreted (Creswell, 2009). Thus, quantitative data establishes measurable, probable evidence that shows cause and effect (Crotty, 1998). This creates the possibility of generalisation and replication to a population, both for simplification of group comparisons and for better insight into a breadth of experiences (see Figure 3.2.1.1.1).

**Figure 3.2.1.1.1 Differences between quantitative and qualitative research methods**

<b>Quantitative</b>	<b>Qualitative</b>
Numbers	Words
Point of view of researcher	Points of view of participants
Researcher distant	Researcher close
Theory testing	Theory emergent
Static	Process
Structured	Un-structured
Generalisation	Contextual understanding
Hard and reliable data	Rich and deep data
Macro	Micro
Behaviour	Meaning
Artificial settings	Natural settings

Source: Bryman and Bell (2011)

### **3.2.1.2 Research strategy**

The research approach depends on the research philosophy. In objectivist epistemology with the theoretical perspective of positivism, quantitative methods are employed with a deductive approach (Saunders et al., 2016).

#### **Deductive approach**

A deductive approach starts with the review of existing theories for defining and testing hypotheses (Creswell, 2009). This strategy is usually implemented for understanding behaviour and attitudes, and it allows for theory testing with generalisable results (see Figure 3.2.1.2.1).

**Figure 3.2.1.2.1 Principal orientation of quantitative and qualitative research methods**

<b>Principal Orientation</b>	<b>Quantitative</b>	<b>Qualitative</b>
<b>Relation to Theory</b>	Deductive	Inductive
<b>Epistemological Orientation</b>	Natural science model, in precise positivism	Interpretivism
<b>Ontological Orientation</b>	Objectivism	Constructionism

Source: Bryman and Bell (2011).

### **Survey questionnaire for data collection**

The strategy and methodology for the study must fit the research questions and the collected data. A quantitative approach with a survey questionnaire was deemed to be most appropriate for this research. The advantage of a survey is that it is suitable for complex studies, such as research of behaviours, allowing for more detailed information to be gathered in a relatively short period of time. Survey responses have the advantage that they will not vary due to the impact of the quality of the interviewer and the involved interactions (Kumar, 2011), as an interviewer's misinterpretations may lead to wrong results. Notably, in surveys, the response is not be affected by misinterpretations or involved interactions. Furthermore, surveys are relatively easy to conduct. They can be repeated for further comparisons, and with an appropriate sampling, they allow for generalised outcomes.

Conducting an online survey through questionnaires enables relatively fast and easy data gathering with fairly low costs when compared to traditional face-to-face interviews (Fromm, 2012). Moreover, complex surveys with different response formats are accommodated by a flexible design of the online questionnaire. Online questionnaires are also flexible (Bryman & Bell, 2011), incorporating filter questions and gender-specific questionnaire flows, which are relevant to this study. Online surveys usually present the highest response rate because respondents are free to choose their own pace and timing (Fromm, 2012), and inviting respondents is relatively easy compared

to traditional surveys. The data collection is also easier because the answers are automatically stored online, which facilitates minimal transfer errors during subsequent handling of the data.

However, further meanings and misunderstandings cannot be clarified or explained with a fully standardised survey (Fromm, 2012). Particularly for online surveys, some respondents participate solely for the incentives without any particular interest in the contribution of the study, while other relevant respondents without internet access are not able to participate. Additionally, surveys with standardised questions do not allow linkages to wider issues and theories, and they provide only a one-time view without further knowledge about the changes and processes (Neuman, 2014). A survey hence focuses on breadth instead of depth. Nevertheless, according to Wang et al. (2010), a quantitative method with a survey questionnaire is mostly applied for data collection on luxury consumption in China.

Observations are not used in surveys, since attitudes, beliefs, and feelings cannot be observed (Kumar, 2011). In unstructured surveys, the interviewer guides respondents according to their answers, which yields more information about the respondent's thoughts, but data analysis is more complex and more subjective (Neuman, 2014). A structured survey was consequently chosen to collect data consistently and objectively; this is in accordance with the philosophy of epistemological positivism underpinning this research.

### **3.2.2 Justification for epistemological positivism research philosophy**

Objectivist epistemology with the theoretical perspective of positivism is the foundation for this study. It considers the epistemological assumptions for choosing the supporting research method for data collection. Objectivist epistemology is a set of general considerations about the questioning of the nature of the world (Bryman & Bell, 2011). Research epistemology questions how knowledge is acquired and what knowledge is acceptable. Furthermore,

objectivism holds that there is a single fact of what reality is because even though external social entities affect us, they cannot be influenced (Saunders et al., 2016). Researchers are thus independent of the research process, the data collection and analysis, and the outcome.

The theoretical perspective of positivism was selected as the fundamental methodology for guiding the research because it posits that everything can be proven by observation, experiments, or logical/mathematical proof through scientific methods (Crotty, 1998). Moreover, according to positivism, knowledge should be objective and without bias, and accurate and unambiguous knowledge should be free of values and beliefs (Bryman & Bell, 2011). In this regard, a phenomenon is observable and measurable, and it hence presents causal relationships, allowing for law-like generalisations. Based on this, behaviour can be explained and predicted, thus contributing to the existing body of knowledge. The reality or object truth is the focus of this study, and the belief is that science will eliminate or reduce problems (Saunders et al., 2016). Thus, an objectivist research epistemology with the theoretical perspective of positivism is appropriate for ensuring the reliability and validity of data gathered from behaviour and attitudes.

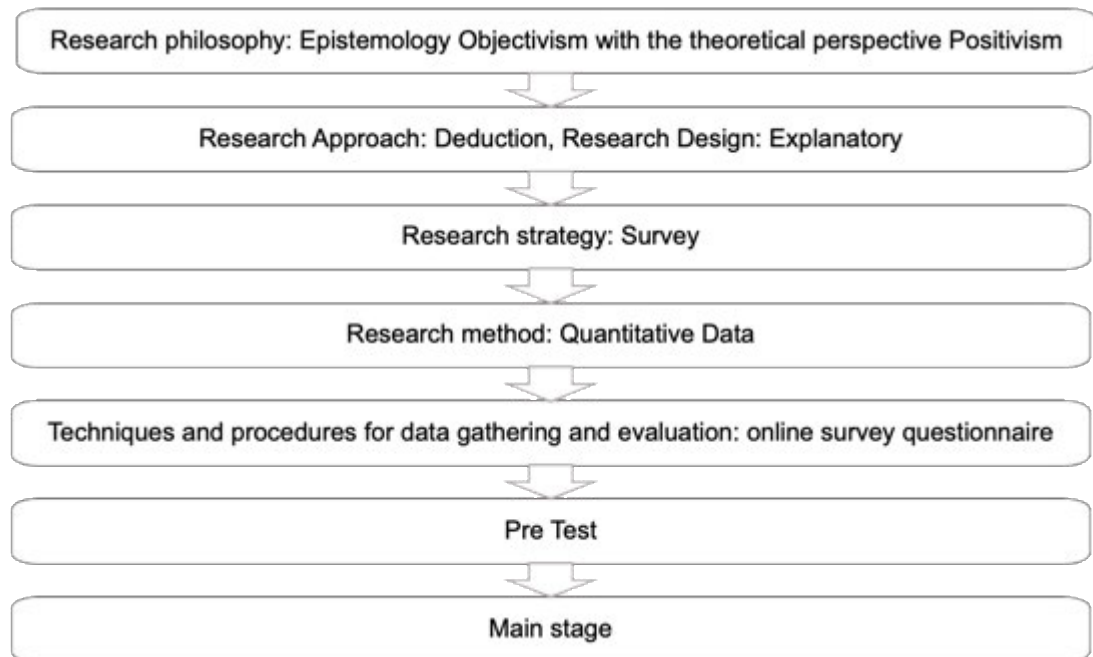
The research methodology must be adequately linked to the research questions. Based on a deductive approach in this research, it is assumed that if the premises are true, then the outcomes must also be true (Crotty, 1998). Therefore, generalisations are made from the general to the specific: The bases of this research are existing studies, with a focus on verification or falsification thereof. Furthermore, existing literature and the conceptualisation of hypotheses guide data collection through survey questionnaires and the evaluation and assessment of hypotheses.

A quantitative method was selected as the most appropriate methodology for this study because it requires a large number of respondents a) for an accurate outcome in relation to car purchase intention in China and b) to enable further generalisations of the results. A deductive approach with quantitative methods was thus chosen for this study because it is



economical, suits a large number of respondents (Bryman & Bell, 2011), and is not time-consuming (see Figure 3.2.2.1).

**Figure 3.2.2.1 Research philosophy of this study**



Source: Author

Furthermore, this research design is descriptive and seeks to provide a better understanding (Neuman, 2014) of Chinese consumers' liking and intention to purchase the German luxury passenger brands MB and BMW. Moreover, this research asks "how" and "why" questions to explain descriptive data; they allow reasons and causes to be verified, and they enable predictions of the specific phenomena for enriching and extending a theory's explanation (Bryman & Bell, 2011). Therefore, a descriptive research design was chosen for this study to support or refuse predictions or explanations of existing theories.

This is in accordance with Zhan and He's (2012) study on Chinese luxury consumer behaviour regarding the purchase of luxury brands, where the authors applied a deductive approach and a quantitative method through the use of questionnaires. Zhan and He (2012) began with a literature review of

the relevant theories for developing their hypotheses. This was followed by the supporting method, the analysis, and results. In their discussion, they explained the reasons and causes of the outcomes and made further predictions regarding the luxury consumption behaviour of Chinese consumers through the use of online survey questionnaires.

In the present study, the purpose of the deductive research approach and descriptive research design with quantitative methods is to explain the purchase intentions of Chinese consumers – particularly generational cohorts – with regard to two German luxury passenger car brands.

### **3.3 Data collection**

For data collection through survey questionnaires, the Qualtrics online survey tool was utilised. Qualtrics was chosen mainly because of the need to buy Chinese panel data.

Furthermore, the advantages of using the tool are as follows. First, Qualtrics is well known among business schools for its research platform and survey software. Second, no extensive programming knowledge is required to develop an online questionnaire through Qualtrics. Therefore, it allowed me to create a complex survey with a flexible design, integrating filter questions for entering the survey and ensuring quota sampling. The adjustable survey flow enabled integration of the male or female PVQ-RR questionnaire based on the gender selected. Third, the survey could be assessed via link or QR code on a PC and on mobile devices. The survey link and QR code were sent out through Qualtrics, and 300 complete and high-quality responses were collected. Data was downloaded afterwards as an Excel and SPSS file.

Despite these advantages, there are also disadvantages of using Qualtrics. First, although the tool offers a flexible format, the possibilities are still limited in case of individual requirements. Second, with one contact only, changes in attitude, behaviour, and opinions cannot be measured (Bell et al., 2019). Third, closed questions do not allow one to link the responses to wider theories and issues. Fourth, the cost of panel data and the licence for the

Qualtrics survey tool is high. Fifth, since Qualtrics conducted the data collection, neither clarifications nor explanations (Neuman, 2014) could be offered. Sixth, it was beyond the researcher's influence whether respondents participated only for the incentives (Neuman, 2014) without particular interest in the subject. Finally, potentially relevant respondents without internet access could not be considered in this survey.

Nevertheless, the Qualtrics online survey was chosen because it allowed for the collection of a high quantity of data relatively easily, cost-effectively, and in a short amount of time (Bryman & Bell, 2011). Additionally, a structured online questionnaire ensures the gathering of descriptive information from all respondents in an objective and consistent way, facilitating online data collection and the handling of complex questions.

### **3.3.1 Survey location**

China has the largest automotive market in the world and still offers much potential for growth (McKinsey and Company, 2019a). Additionally, Chinese consumers are the world's largest luxury consumers, and their luxury spending will increase by nearly 50% by 2025 (McKinsey and Company, 2019c). Particularly Beijing, Shanghai and Shenzhen were chosen as survey locations for the following reasons (see Figure 3.3.1.1):

1. They are Tier 1 cities,<sup>2</sup> meaning that they have a high GDP (Gehring & Oswald-Chen, 2012; Statista, 2020), which correlates with income and purchasing power. Thus, they offer more differences in values, lifestyles, and attitudes (Wang et al., 2010) compared to Tier 2, 3 or 4 cities.

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<sup>2</sup> According to the New Zealand – China Trade Association the tier classification depends on population, Provincial Gross Domestic Product (GDP), economic growth, geographically significant area, advanced transportation, infrastructure as well as historical and cultural significance.

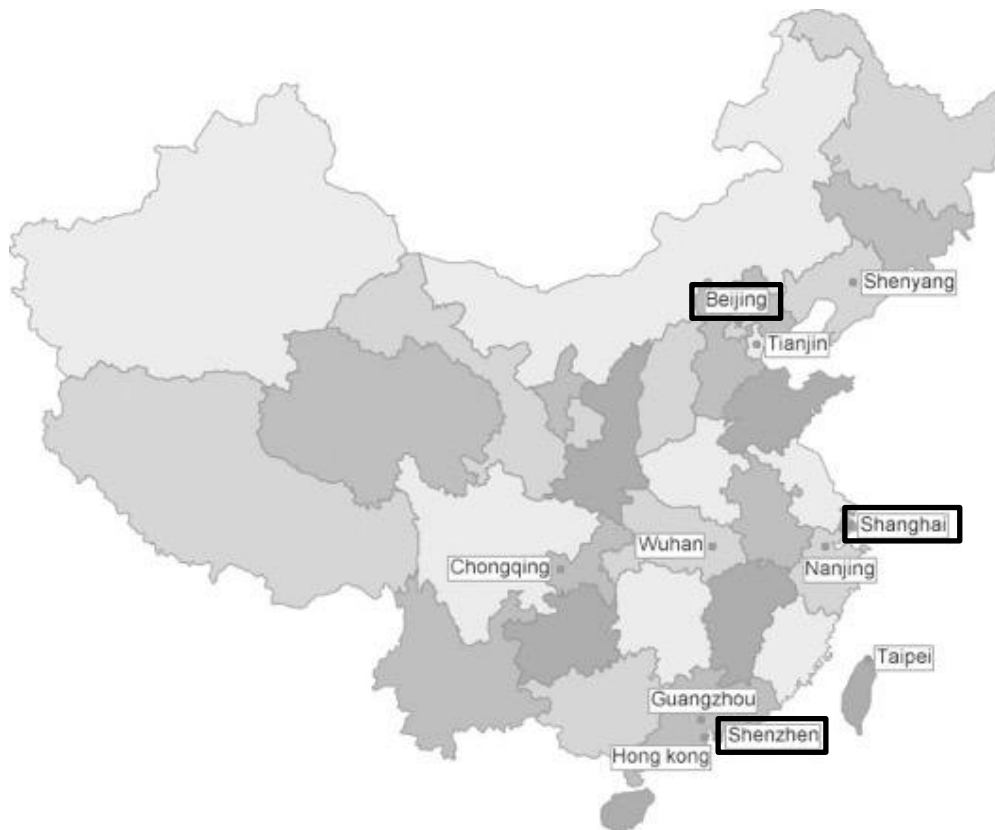
2. Since these three cities are the so-called opinion leaders and trendsetters (Cui & Liu, 2000; Li, 2007b), with further growth in consumer purchase power, other regions might follow over time.
3. Ten of the 25 most congested cities worldwide are in China. These 10 cities are Beijing, Shanghai, Shenzhen, Guangzhou, Chongqing, Chengdu, Changsha, Hangzhou, Shijiazhuang, and Tianjin. In Beijing,<sup>3</sup> Shanghai, and Shenzhen, car density has reached about 250 vehicles<sup>4</sup> (Wang et al., 2010). Hence, these three cities present a high potential for interviewing individuals who either want to buy a luxury passenger car within the next 6 months, already own one, or have owned one.
4. Beijing is located in the North, Shanghai in the East, and Shenzhen in the South of China. This should offer a prime picture of Chinese consumers across different regions (Cui & Liu, 2000), which is particularly relevant because conditions and consumer patterns might vary across regions (Wang & Zhao, 2018).

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<sup>3</sup> Beijing also has the largest floating population in China.

<sup>4</sup> This means every kilometre of road in these three cities has an average of about 250 cars.

**Figure 3.3.1.1 Map of China with locations of Beijing, Shanghai, and Shenzhen**



Source: Author

### **3.3.2 Sampling frame**

This study considers different generational cohorts' intentions to purchase luxury passenger cars in China. The sample population includes all potential luxury passenger car buyers. Data on two types of Chinese urban residents – local and internal migrants – were collected; internal migrants are consumers who float from rural to urban areas or from urban to urban ones for better standards of living, a higher income, and better infrastructure. Moreover, Beijing has one of the largest floating populations of China (Liu, Otsubo, Wang, Ichinose, & Ishimura, 2007; Taylor, 2011). As a result, a larger variation of attitudes, beliefs, and values can be captured.

Studies are typically conducted using students as respondents (Vigneron & Johnson, 1999). However, to explore luxury passenger car purchase

intentions in China, profound knowledge would be necessary to obtain the best results (Zhan & He, 2012). Therefore, the sample for this research consisted of Chinese consumers who either wished to buy a luxury passenger car within the next 6 months, currently own a luxury passenger car, or have owned one in the past. Booz and Company (2012) observed that most consumers look for detailed information before purchasing a luxury passenger car and thus present more profound knowledge.

Hence, following Wang et al. (2010), potential customers were chosen instead of students. The sampling frame was ensured by applying screening questions for entering the survey.

### **3.3.3 Sampling method**

Two sampling methods are available: probability and non-probability sampling.

#### **3.3.3.1 Probability sampling**

Probability sampling is an approach whereby an object or individual from the specific population can be equally selected. If this approach is conducted carefully, sampling errors can be reduced to a minimum. The sample is then more representative of the population, according to Bryman and Bell (2011). The sampling techniques of random probability sampling are as follows (Neuman, 2014):

- simple random sampling (one at a time);
- stratified random sampling (random samples from each category);
- systematic sampling (sampling intervals);
- multistage sampling (combination of cluster and stratified sampling);
- cluster sampling (aggregated clusters that are randomly chosen).

### **3.3.3.2 Non-probability sampling**

Non-probability sampling presents some procedures without random sampling (Bryman & Bell, 2011). Therefore, some individuals and objects are more likely to be chosen than others. Non-probability sampling offers the following sampling techniques (De Vaus, 2002; Neuman, 2014):

- purposive sampling (samples for a specific purpose);
- convenience sampling (samples that are conveniently available);
- quota sampling (samples that demonstrate proportionally specific categories);
- snowball sampling (multistage approach with stages from case to case);
- self-selection sampling (an individual offers to participate).

Overall, non-probability samples are less expensive, quicker, and easier than probability samples (Neuman, 2014). Nevertheless, probability samples are applied because of their representative strength and the reduced sampling error. However, according to Neuman (2014), if the potential respondents, budget, and time availability are difficult to assess, then non-probability sampling can be selected instead.

### **3.3.3.3 Justification for non-probability sampling extended by quota sampling**

In the quota sampling technique, a subset of respondents are selected with proportionally specific preferences or properties for saving resources and time (Neuman, 2014). Quota sampling offers the benefits of being less time- and money-consuming while still providing important information. However, non-probability sampling ignores respondents beyond the research's focus and might lead to bias. Furthermore, some groups cannot be clearly selected (De Vaus, 2002), such as gender (e.g. transsexual and transgender issues). Thus, the results cannot be generalised to all Chinese consumers (Kromrey, 2009).

According to Neuman (2014), researchers apply the quantitative method with non-probability sampling (e.g. Wang et al., 2010) extended by quota sampling, although this is statistically inferior. Additionally, Bell et al. (2019) argue that non-probability sampling with quotas ensures the correct proportion of the sample, thus making it more representative of the specific population in this study. Quota sampling can be a helpful sampling technique if handled with care. Given the lack of time and budget in this study, non-probability samples with quota sampling were chosen and effectively applied, and the advantage was more usable data as a result (Bell et al., 2019).

Non-probability sampling extended by quota sampling of all genders and ages from Beijing, Shanghai, and Shenzhen were covered as long as respondents fulfilled the eligibility of the survey. Quota sampling was required to explore generational cohort effects. For higher data quality, three cities were considered, capturing geographical differences and both genders to cover gender differences.

The split for the 300 survey responses was as follows:

- 100 samples from Beijing (one-third from each of the three age groups/generational cohorts);
- 100 samples from Shanghai (one-third from each age group);
- 100 samples from Shenzhen (one-third from each age group);
- A 50:50 men-to-women split only within the total of 300 respondents (150 each), not per city or age group.

Due to the quota sampling and the filter questions, this survey targeted luxury consumers only. Hence, these results are generalisable to the target population of potential, current, and previous luxury passenger car owners in other similar cities in mainland China, but not to all Chinese consumers (Kromrey, 2009).

Based on these justifications, non-probability sampling extended by quota sampling was chosen for this study, in accordance with Zhan and He's (2012) sampling method. If the quota sampling technique is well designed, it demonstrates a quasi-representative sample, as argued by Bell et al. (2019).



### 3.3.4 Sampling size

The sample size has a significant impact on the accuracy of the results (Hair, Black, Babin, & Anderson, 2014). The larger the sample, the more accurate the generalised representation (De Vaus, 2002). However, according to Bell et al. (2019), some factors influence sample size, such as expenses, access to respondents, and time.

Concerning minimum sample size in factor analysis, two different approaches can be used: One is based on the minimum ratio of sample size to the number of variables ( $p$ ), and the other on the number of cases ( $N$ ; Kromrey, 2009). MacCallum, Widaman, Zhang, and Hong (1999) recommended at least 100 samples, and further studies have suggested different ratios ranging from 3:1 to 10:1 (MacCallum et al., 1999). As a rule of thumb, MacCallum et al. (1999) stated that 100 samples would be poor, 200 fair, 300 good, and 500 very good.

It is noted that in factor analysis, the minimum sample size is affected by communalities (square multiple correlation) of variables, model fit, loading size, and degree of overdetermination of the number of factors/number of variables (Bell et al., 2019). Furthermore, it must be considered that in this study, the following tests were employed 1) confirmatory factor analysis (CFA) for testing whether the data fits the model, 2) piecewise structural equation modeling (PSEM) for testing significant paths for a more sophisticated analysis, and 3) response surface analysis (RSA).

The sample size is important concerning the fit indices (Hair et al., 2014). Depending on the number of factors in the model or variables, larger samples are required, according to Kline (2011). Based on this, Kline (2011) suggests at least 100 samples for conducting factor analysis and traditional SEM, whereas Hair et al. (2014) request a ratio of 10 respondents per parameter. This demonstrates that there is no general rule regarding sample size (MacCallum et al., 1999).

In this study, a sample size of 300 was chosen because MacCallum et al. (1999) suggested that the use of a minimum of 300 samples would be ideal, which is particularly relevant for conducting factor analysis. Because PSEM can also deal with smaller samples (Lefcheck, 2015), since each path is tested individually.

The sample size is also limited by the lack of budget and time. All incomplete responses were disregarded and dropped. The valid data was then transferred to the statistical software SPSS and R-project.

### **3.3.5 Questionnaire distribution**

The online survey was conducted through questionnaires with one survey contact only because it is quick and economical (Kumar, 2011). The questionnaires were programmed by the researcher, which were then distributed online through Qualtrics to potential consumers in Beijing, Shanghai, and Shenzhen with the aim of collecting 300 complete responses. Respondents could answer the questionnaire via PC, tablet, or mobile phone as long as they fulfilled the pre-requisites for entering the survey. Due to limited time, budget, and consumer accessibility, one contact only was chosen. Therefore, changes in attitude, behaviour, and opinions could not be measured (Bell et al., 2019) in this research.

### **3.4 Questionnaire design**

Based on the literature review, the conceptual development, and the research design in the previous sections, the measurement of each influencer of purchase intention and the survey questionnaire were developed.

### **3.4.1 Measurement of each influencer of purchase intention**

#### **3.4.1.1 Personal values**

To address H1 and H2, Schwartz' refined theory of basic individual values, the PVQ-RR with its 19 basic human values, and the four higher-order personal values were applied (Schwartz et al., 2012). The PVQ-RR was chosen because it is a universal value research method that can be applied worldwide and demonstrates a validated system for measuring consumers' individual values across cultures, including for China (Schwartz, 1992; Schwartz & Sagie, 2000).

The PVQ-RR with the 19 refined values consists of 57 questions – three questions for each value – with a version for male and female respondents. Participants rated these 57 survey questions on a 6-point Likert scale from 1 “not like me at all” to 6 “very much like me”. The PVQ-RR in Chinese was kindly provided by Shalom Schwartz directly.

Personal values and higher-order personal values were tested with a) CFA to verify whether the data fits the model (Schwartz & Boehnke, 2008) and b) PSEM to test generational cohorts' significant paths that influence purchase intention. Therefore, samples were first segmented into generational cohorts based on birth year, in line with Hung et al.'s (2007) approach. The results of this analysis show how generational cohort subsets vary (Neuman, 2014) in the importance they attach to different personal values and how these variances can be explained for predicting behaviour and attitude (Schwartz et al., 2012).

#### **3.4.1.2 Perception of brand personality**

To examine H3 and H4, perception of brand personality, Aaker's (1997) BPS was used because it is widely accepted as the most elaborated research instrument for investigating how perceptions of brand personality dimensions affect consumer preference and purchase intention (Aaker et al., 2001).

**Brand personality dimensions:**

1. Sincerity;
2. Excitement;
3. Competence;
4. Sophistication;
5. Ruggedness.

Since this study does not cover brand personality alone, only the five abovementioned dimensions are considered; the additional 42 facets were dropped. Furthermore, self–brand congruence, including personal values and perception of brand personality, might falsify the results of PSEM because of too many variables (Lefcheck, 2015).

A six-point Likert scale (1 = “not characteristic for the brand at all” to 6 = “very characteristic for the brand”) was applied to measure the strength of agreement or disagreement in a Chinese context with sufficient differentiation to allow the respondents’ attitudes to be measured in an objective way (Kroeber-Riel et al., 2009). The traditional five-point Likert scale has been criticised for overlooking the uniqueness of Chinese culture – the Chinese are sensitive to losing face in front of others; therefore, when answering questionnaires, if they do not understand the question, they tend to choose the neutral point (Bortz & Döring, 2006; Croll, 2006). Additionally, by using a six-point Likert scale instead of a classic five-point one, the capturing of similarities and differences for expressing the respondent’s feelings was enhanced (Kromrey, 2009). Furthermore, the application of a similar structure throughout the survey – a six-point Likert scale in this study – facilitates the answering of questions and evaluation of the responses (Kromrey, 2009).

Each of these five brand personality dimensions focus on feelings towards BMW and MB. Generational cohort differences in the perceptions of brand personality for each of these two brands and their impact on purchase intention are explored through PSEM.

### **3.4.1.3 Self–brand congruence and moderating variables**

Sirgy and Johar's (1999) scale was used for exploring H5, H6, H7a, H7b, and H8, as they offered an elaborated and validated approach of self–brand congruence, based on previous studies (Han & Kim, 2020). Furthermore, Sirgy and Johar's (1999) research is still the most widely applied approach for understanding consumer behaviour through self–brand congruence and functional congruence (Han & Kim, 2020), which is particularly relevant for luxury consumption (Wiedmann et al., 2009).

The four higher-order values, rather than the 19 personal values, were chosen for three reasons. First, this research covers more than self–brand congruence and its moderating variables. Second, self–brand congruence, including personal values and brand personality, might falsify the results of the PSEM because of too many variables (Lefcheck, 2015). Third, the fit indices of both CFAs for the four higher-order values are statistically better than for the 19 personal values for further analysis based on the empirical results (see Chapter 4). Therefore, each higher-order value combined with each brand personality dimension was tested through PSEM for significant paths.

### **Moderating variables**

It is fundamental to consider moderating variables, such as brand conspicuousness and brand uniqueness, for predicting self–brand congruence (Sirgy & Johar, 1999; Wang et al., 2010; Wong & Ahuvia, 1998).

#### Original brand conspicuousness scale

Sirgy and Johar (1999, pp. 252–256) originally suggested the following brand conspicuousness scale (Sirgy et al., 1986) for comparing the conspicuousness of two brands:

1. The user of X (e.g. Mercedes-Benz) is more of an attention-seeker than the user of Y (e.g. BMW).

2. The user of *X* is more noticeable when using it than when using *Y*.
3. People who use *X* show off; people who use *Y* do not.
4. The use of *X* draws attention from other people more than the use of *Y*.
5. The use of *X* is much more private than *Y*.
6. The use of *X* is more inconspicuous than the use of *Y*.
7. The use of *X* is more attention-getting than the use of *Y*.
8. One cannot avoid people not seeing them when they use *X*. This is not the case when one uses *Y*.

#### Adopted brand conspicuousness scale

This scale was adopted in this research with the following survey questions, which were asked for each brand respectively:

How conspicuous is it to drive an MB or a BMW?

- The user of a BMW or an MB is more of an attention-seeker. An attention-seeker is defined as a person who wants to draw attention to themselves for social approval through conspicuous consumption (Markus & Kitayama, 1991).
- The user of a BMW or an MB is more noticeable when using it. “Noticeable” expresses to others the signal value of one’s own worthiness through conspicuous consumption (Phau et al., 2020).
- People who use an MB or a BMW show off. By showing off, the consumer focuses on impressing others through conspicuous consumption (Huang & Wang, 2018).

### Original brand uniqueness scale

Additionally, Sirgy and Johar (1999, pp. 252–256) originally suggested the following brand uniqueness scale (Sirgy et al., 1986) for comparing the uniqueness of two brands:

1. X (e.g. Mercedes-Benz) is directed to a highly selected market, whereas Y (e.g. BMW) is not.
2. The majority of consumers buy X. This is not the case for Y.
3. Only a very few use X. Everyone else seems to use Y.
4. Not many people use X. This is not the case with regard to Y.
5. There is a much smaller minority of people who use X compared to those who use Y.

### Adopted brand uniqueness scale

This scale was adopted in this research with the following survey questions, which were asked for each brand respectively:

How unique is MB/BMW?

- MB/BMW is directed to a highly selected market. The market is not accessible by all and is therefore unique (Wiedmann et al., 2009).
- The majority of consumers buy an MB or a BMW. This is a negative response set and would demonstrate that all consumers can easily access the brand; therefore, the brand would not be unique (Wiedmann et al., 2009).
- Only a few people use MB/BMW. This expresses that the brand can be consumed by few consumers and is therefore unique (Wiedmann et al., 2009).

However, Sirgy and Johar (1999) applied a five-point Likert scale. As outlined in previous sections, a six-point Likert scale was chosen for the present research.

Out of all questions for each moderating variable (Sirgy & Johar, 1999), only three were chosen during the small pre-test with colleagues and friends because the survey questionnaire was long (Kumar, 2011). Since these questions had been easily understood with a clear meaning, they were easy to answer. Furthermore, according to the personal values, the approach (Schwartz et al., 2012) of three questions for one variable was continued.

One of the three questions for each moderating variable was worded negatively; thus, an answer indicating disagreement would be better than one presenting agreement (Kumar, 2011). To reduce or prevent response bias, this was incorporated to disrupt the response set, thereby ensuring that respondents could not respond only favourably or unfavourably (Kumar, 2011; Smith, 2004). By incorporating a negative response set, participants are forced to think about the question and provide more meaningful answers. However, this could also lead to wrong answers because of disruption to the response set (Kumar, 2011). The moderating variables were rated from 1 “not at all” to 6 “very much”.

#### **3.4.1.4 Functional congruence and moderating variables**

To address H8, H9, H10a, and H10b regarding functional congruence, the following seven dimensions were measured based on Byun’s (2001) automobile purchase decision model. This model was chosen because it is one of the first formalised models with an elaborated and validated approach for objectively choosing a specific car model or brand, and it covers all relevant dimensions affecting functional congruence. Furthermore, Sirgy and Johar’s (1999) approach to functional congruence is still the most widely applied approach for understanding consumer behaviour through self–brand congruence and functional congruence (Han & Kim, 2020), which is particularly relevant for luxury consumption (Wiedmann et al., 2009).



**Functional congruence dimensions:**

1. Exterior (e.g. style and design);
2. Convenience (e.g. fittings and space);
3. Performance (e.g. torque and speed);
4. Safety (e.g. airbags and ABS);
5. Economic aspect (e.g. price and fuel);
6. Dealer (e.g. expertise and attitude);
7. Warranty (e.g. repair time and spare parts).

However, since the focus of this study is not solely on functional congruence, only these seven dimensions were considered. The additional 39 facets were dropped for complexity reduction because too many variables might falsify the results of the PSEM (Lefcheck, 2015).

Each functional congruence dimension consists of two subdimensions, namely importance and possession of characteristics:

- Importance was questioned as follows: “If you were considering Mercedes-Benz (or BMW), in general, how important or unimportant are the following characteristics to you? For most people, some things are more important than others. Please circle the number which is closest to the degree of importance you would attach to that characteristic when purchasing Mercedes-Benz (or BMW).”
- Possession was questioned as follows: “Listed below are some characteristics of passenger cars. For each of these characteristics, please indicate how likely or unlikely it is that Mercedes-Benz (or BMW) would possess each of these characteristics.”

A characteristic's importance, and thus consumers' associated expectation, was measured using a six-point Likert scale, with 1 representing “not important at all” and 6 being “very important”. For possession (perception or experience) of characteristics, the scale ranged from 1 “not likely at all” to 6 “very likely”.

Based on a one-point analysis, the rating for “possession” of characteristics was deducted from “importance” for each characteristic separately. Thus, if possession of characteristics was lower than importance, the functional congruence would be negative (i.e. below the respondent’s expectation or importance; Kressman et al., 2006).

### **Moderating variables**

Additionally, it is crucial to consider moderating variables, such as brand involvement and brand differentiation, for predicting functional congruence in luxury passenger car consumption (Sirgy & Johar, 1999; Wang et al., 2010; Wong & Ahuvia, 1998; Zaichkowsky, 2012).

Out of all questions for each moderating variable (Sirgy & Johar, 1999), only three were chosen during the small pre-test with colleagues and friends to optimise the length of the questionnaire (Kumar, 2011). These questions were easily understood by the experts, clear in meaning, and therefore easy to answer. The moderating variables were rated from 1 “not at all” to 6 “very much”.

### **Original brand involvement scale**

Zaichkowsky (1985) originally suggested the following brand involvement scale (Sirgy & Johar, 1999, pp. 252–256) for analysing the level of brand involvement with bipolar scales:

1. important/unimportant;
2. of no concern / of concern to me;
3. irrelevant/relevant;
4. means a lot to me / means nothing to me;
5. useless/useful;
6. valuable/worthless;

7. trivial/fundamental;
8. beneficial / not beneficial;
9. matters to me / doesn't matter;
10. uninterested/interested;
11. significant/insignificant;
12. vital/superfluous.

#### Adopted brand involvement scale

This scale was adopted in this research with the following survey questions, which were posed for each brand respectively:

How much are you involved in passenger cars? What are your feelings towards BMW/MB?

- Is important;
- Is interesting;
- Is appealing.

#### Original brand differentiation scale

Sirgy and Johar (1999, pp. 252–256) originally suggested the following brand differentiation scale (Sirgy et al., 1986) for comparing the differences between two brands:

1. I can hardly notice the difference between X (e.g. MB) and most other brands I know; however, there is definitely a difference between Y (e.g. BMW) and the other.
2. X is much more differentiated from other brands than Y.
3. It is harder to distinguish X from its competition than Y.
4. X is very similar to the competitor brands.

#### Adopted differentiation scale

This scale was adopted in this research with the following survey questions, which were asked for each brand respectively:

How much differentiation is there in terms of exterior convenience, performance, safety, economic aspect, dealers, and warranty?

- I can hardly note the difference between MB/BMW and BMW/MB.
- MB/BMW differs greatly from BMW/MB.
- It is harder to distinguish BMW/MB from its competition.

One of the three questions was worded negatively; thus, an answer indicating disagreement would be best (Kumar, 2011). By applying a negative response set, respondents are forced to concentrate on their feedbacks. However, this could also lead to response bias (Kumar, 2011).

#### **3.4.1.5 Liking and purchase intention**

Liking BMW or MB as an antecedent to purchase intention was also captured (Rosenbloom et al., 2012) and analysed using a six-point Likert scale from 1 “strongly dislike” to 6 “like very much”.

- Do you like BMW/MB (liking, not buying), and does BMW/MB appeal to you?

Purchase intention was measured for both brands on a six-point Likert scale ranging from 1 “not intend to buy” to 6 “strongly intend to buy”.

- Do you intent to buy a BMW or an MB passenger car?

Purchase intention and liking serve as response indicators of personal values, brand personality, self–brand congruence, and functional congruity through PSEM.

#### Original PVQ-RR scale

Not like me at all (1)	Not like me (2)	A little like me (3)	Moderately like me (4)	Like me (5)	Very much like me (6)
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This is a universally validated scale for personal values (Schwartz et al., 2017). Therefore, this scale was adopted in this research with the following survey questions for liking and purchase intention respectively:

#### Adopted liking and purchase intention scale

##### Liking

Strongly dislike (1)	Dislike (2)	Like a little (3)	Moderately like (4)	Like (5)	Like very much (6)
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##### Purchase intention

Not intend to buy at all (1)	Not intend to buy (2)	Intend to buy a little (3)	Moderately intend to buy (4)	Intend to buy (5)	Strongly intend to buy (6)
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Applying a similar structure throughout the survey facilitates the answering of questions and the evaluation of responses (Kromrey, 2009). A six-point Likert scale, instead of an 11-point Juster scale, was chosen for liking and purchase intention in this research.

On the one hand, the use of a single-item measure might lead to reliability and validity problems (Sarstedt & Wilczynski, 2009), and in the case of missing values, single-items cannot be measured at all. However, since

these single items were defined as obligatory questions in the questionnaire, there were no missing items regarding liking and purchase intention.

On the other hand, single items might lead to less confounding effects compared to multi-items, if applied comprehensibly (Sarstedt & Wilczynski, 2009). Furthermore, a single-item measure demonstrates a higher response rate and fewer non-responses as compared to multi-items. Furthermore, the scale development is relatively easy, and there are low costs involved. Additionally, single items are fast, simple, and comprehensible; they avoid response fatigue; and they are relatively flexible (Sarstedt & Wilczynski, 2009).

For these reasons, single-item measures were applied for liking and purchase intention.

Furthermore, the item order of liking first and purchase intention second could affect responses. The response to liking could influence the second response to purchase intention (Greenstein & Bennet, 1974) in what is called the assimilation effect. Nevertheless, bias due to item order is relatively small (Greenstein & Bennet, 1974). As a result, questions were asked in a logical order, with positive attitude “liking” first, followed by specific behaviour regarding “purchase intention”.

### **3.4.2 Measurement scale**

Opinions and attitudes are quantified and evaluated by applying Likert scales (Kroeber-Riel et al., 2009). As stated by Bell et al. (2019), the scale expresses either an unfavourable or favourable attitude towards the specific questions or concept in the research. Each statement is assigned a numerical score. The advantages of Likert scales are that they are a universal method for data collection, are relatively easily understood and answered by respondents, and facilitate objective data analysis (Kromrey, 2009).

However, the use of the traditional five-point Likert scale has been criticised for overlooking the unique Chinese culture: the Chinese are sensitive about losing face in front of others; consequently, when answering questionnaires, if they do not understand the question, they tend to choose the neutral point (Bortz & Döring, 2006; Croll, 2006). The neutral point does not allow for any clear interpretation, since it is neither positive nor negative. Here, not offering a neutral mean or point value (e.g. 3 on a five-point Likert scale) will solve the problem. Hence, a six-point Likert scale (from 1 “do not agree” to 6 “fully agree”) was used. Additionally, through the use of a six-point Likert scale instead of a classic five-point one, the capturing of similarities and meaningful differences was enhanced (Kromrey, 2009). Respondents could discriminate the answers into a larger number of scale points, thus affording them more choice to express their feelings. As a result, the validity and reliability of the scale increased (Kromrey, 2009).

In this research, a six-point Likert scale was applied to measure the strength of agreement or disagreement in a Chinese context with enough differentiation, thus allowing for the objective measurement of respondents' attitudes (Kroeber-Riel et al., 2009).

### **3.4.3 Filter questions**

Three filter questions at the beginning of the survey ensured participants' eligibility for the study (Neuman, 2014). The aim of these filter questions was to address the targeted respondents – those who wish to own, already own, or have owned a luxury passenger car. If at least one of the three questions was answered with “yes”, the respondent was eligible to enter the survey. Schwartz (2014) pointed out that cultures do not automatically share the same meanings and personal values, and there are variations within a country. Therefore, it is important to address the target audience through filter questions because there may be value similarities in luxury consumption consumers even cross-culturally (Hennigs et al., 2012). It is

consequently crucial to consider luxury consumers' value not solely for descriptive power in this study.

As suggested by Booz and Company (2012), more than 80% of consumers look for detailed information before purchasing a luxury passenger car. Since the questions pertaining to luxury cars are specific, the respondents should possess profound knowledge of premium cars for ensuring high-quality feedback. According to Belk (1988), information processing is also influenced by the extent to which a brand or product is expected to be owned, was previously owned, or is owned. This was adopted for the filter questions accordingly, with "intend to buy within the next 6 months, owns, or owned".

Emerging markets, such as China, accept a higher price premium on foreign luxury cars because they enhance consumers' social status (Mainolfi, 2020). Stathopoulou and Balabanis (2019) also observed that luxury value is mainly interlinked with price premium. As a result, luxury consumers willingly pay premium prices although functional characteristics are equivalent to other non-luxury products (Balabanis & Stathopoulou, 2021). Therefore, the filter question for luxury car consumers was defined based on the price premium.

Moreover, the signal value of a luxury brand comes at a premium price; however, little information is available about what an acceptable price (Balabanis & Stathopoulou, 2021) for a luxury car in China would be.

McKinsey and Company (2017) stated that luxury "expensive" passenger cars cost RMB 400,000 or more in China, whereas Chinese car buyers stated that a globally acknowledged luxury car would be priced higher than this amount (McKinsey and Company, 2013).

Since there is only limited information about premium prices without further details of luxury car prices, this guiding worth was chosen. Hence, a luxury passenger car worth  $\geq$  RMB 400,000 was chosen.

Furthermore, an intention to purchase within the next 6 months was chosen, since a short time frame increases the accuracy of purchase behaviour forecasting (Morwitz, Steckel, & Gupta, 2007). To ensure a higher sampling accuracy (Belk, 1988; McKinsey and Company, 2017), three filter questions were formulated:



1. Already owning a luxury passenger car worth  $\geq$  RMB 400,000: Do you own a luxury passenger car ( $\geq$  RMB 400,000)?
2. Having already bought a luxury passenger car worth  $\geq$  RMB 400,000 in the past: Did you own a luxury passenger car ( $\geq$  RMB 400,000)?
3. Intention to buy a luxury passenger car worth  $\geq$  RMB 400,000 – approximately USD 60,000 (McKinsey and Company, 2017) – within the next 6 months: Will you buy a luxury passenger car within the next 6 months ( $\geq$  RMB400,000)?

These three filter questions were posed at the beginning of the questionnaire to avoid time wasted for both participants and the researcher, such that only meaningful data was collected.

#### **3.4.4 Questionnaire development**

For the questionnaire development, hypotheses with relevant key concepts were identified. Based on the linkage of the hypotheses, the research questions and the key concepts for the questionnaire were drafted and reviewed in an iterative process. The questionnaire was pre-tested with colleagues and friends (Kumar, 2011) and adjusted if required.

Figure 3.4.4.1 presents the linkages between the hypotheses and the corresponding research questions.

##### **Figure 3.4.4.1 Linkage to hypotheses, survey questions and key concept**

H1: There are differences in the importance of personal values between the three generational cohorts in China.

Survey questions:

- Q4 personal values male and Q36 personal values female
- Q3 age groups

<p>The design of the above questions is to explain personal values between three generational cohorts in China.</p>
<p>H2: The personal values of each generational cohort influence purchase intentions</p> <p>Survey questions:</p> <ul style="list-style-type: none"> <li>▪ Q4 personal values male and Q36 personal values female</li> <li>▪ Q3 age groups</li> <li>▪ Q6 like BMW and Q7 intend to buy BMW</li> <li>▪ Q15 like MB and Q16 intend to buy MB</li> </ul> <p>The design of the above questions is to explore generational cohort, personal values, and purchase intention towards the two passenger car brands.</p>
<p>H3: Each generational cohort has a different perception of brand personalities.</p> <p>Survey questions:</p> <ul style="list-style-type: none"> <li>▪ Q3 age groups</li> <li>▪ Q5 BMW brand personality</li> <li>▪ Q14 MB brand personality</li> </ul> <p>The design of the above questions is to analyse generational cohorts' brand personalities.</p>
<p>H4: Each generational cohort's perception of brand personality influences purchase intention.</p> <p>Survey questions:</p> <ul style="list-style-type: none"> <li>▪ Q3 age groups</li> <li>▪ Q5 BMW Brand personality</li> <li>▪ Q14 MB Brand personality</li> <li>▪ Q6 like BMW and Q7 intend to buy BMW</li> <li>▪ Q15 like MB and Q16 intend to buy MB</li> </ul> <p>The design of the above questions is to study generational cohorts' brand personalities and if they affect purchase intention.</p>

H5: The specific generational cohort will have significant differences in the congruencies displayed between their personal values and their perceived brand personality.

Survey questions:

- Q4 personal values male and Q36 personal values female
- Q3 age groups
- Q5 BMW Brand personality
- Q14 MB Brand personality

The design of the above questions is to investigate the self-brand-congruity of personal values and brand personalities of generational cohorts.

H6: The congruence between a generational cohort's personal values and brand personality perceptions will influence purchase intention.

Survey questions:

- Q4 personal values male and Q36 personal values female
- Q3 age groups
- Q5 BMW Brand personality
- Q14 MB Brand personality
- Q6 like BMW and Q7 intend to buy BMW
- Q15 like MB and Q16 intend to buy MB

The design of the above questions is to examine the self-brand-congruence of generational cohort's personal values and Brand personality and the impact on purchase intention.

H7a: The moderating variable brand conspicuousness affects Self-brand congruence.

Survey questions:

- Q12 Conspicuousness BMW
- Q21 Conspicuousness MB
- Q4 personal values male and Q36 personal values female

- Q5 BMW Brand personality
- Q14 MB Brand personality

The design of the above questions is to explore brand conspicuousness of the two brands and if there is a moderating effect on Self-brand congruence (personal value and brand personality).

H7b: The moderating variable brand uniqueness affects Self-brand congruence.

Survey questions:

- Q13 Uniqueness BMW
- Q22 Uniqueness MB
- Q4 personal values male and Q36 personal values female
- Q5 BMW Brand personality
- Q14 MB Brand personality

The design of the above questions is to measure brand uniqueness of the two brands and if there is a moderating influence on Self-brand congruence (personal value and brand personality).

H8: Self-brand congruence positively influences functional congruence.

Survey questions:

- Q4 personal values male and Q36 personal values female
- Q5 BMW Brand personality
- Q14 MB Brand personality
- Q8 functional congruence BMW possession of characteristics
- Q9 functional congruence BMW importance of characteristics
- Q17 functional congruence MB possession of characteristics
- Q18 functional congruence MB importance of characteristics

The design of the above questions is to help to investigate the impact of self-brand congruity (personal values and brand personalities) on functional congruence.

H9 Functional congruence positively influences liking and purchase intention.

Survey questions:

- Q8 functional congruence BMW possession of characteristics
- Q9 functional congruence BMW importance of characteristics
- Q17 functional congruence MB possession of characteristics
- Q18 functional congruence MB importance of characteristics
- Q6 like BMW and Q7 intend to buy BMW
- Q15 like MB and Q16 intend to buy MB

The design of the above questions is aimed to examine if functional congruence has an impact on purchase intention.

H10a: The moderating variable brand involvement affects functional congruence.

Survey questions:

- Q8 functional congruence BMW possession of characteristics
- Q9 functional congruence BMW importance of characteristics
- Q17 functional congruence MB possession of characteristics
- Q18 functional congruence MB importance of characteristics
- Q10 Involvement BMW
- Q19 Involvement MB

The design of the above questions is to help to examine, if brand involvement has a positive moderating influence on functional congruence.

H10b: The moderating variable brand differentiation affects functional congruence.

Survey questions:

- Q8 functional congruence BMW possession of characteristics
- Q9 functional congruence BMW importance of characteristics
- Q17 functional congruence MB possession of characteristics

- Q18 functional congruence MB importance of characteristics
- Q11 Differentiation BMW
- Q20 Differentiation MB

The above questions are designed to explore, if brand differentiation has a positive moderating influence on functional congruence.

### 3.4.5 Questionnaire structure

The questionnaire consists of five parts. The first part contains the filter questions (Q1), which have been explained previously. The second part (Q2, Q3, and Q42) includes basic questions regarding the background of respondents, which serve as the segmentation criteria; these include questions about gender (male or female), age group (born 1979 or earlier, born 1980–1991, or born 1992 or later), and city (Beijing, Shanghai, or Shenzhen). The third (Q4 and Q36) and fourth (Q5–Q22) parts consider personal value questions and include BMW and MB brand-specific questions respectively. Finally, the fifth part (Q23–Q29) of the questionnaire contains further questions regarding demographic background. The demographic questions of the PVQ-RR (Schwartz, 2013) are partially applied, since they aid in understand the respondents' profile in this research. These demographic questions present a well-established and developed scale. The structure of the survey questionnaire is displayed in Figure 3.4.5.1.

**Figure 3.4.5.1 Structure of questionnaire**

#### **Filter questions Q1**

- Do you own a luxury passenger car ( $\geq$  RMB 400,000)?
- Did you own a luxury passenger car ( $\geq$  RMB 400,000)?
- Will you buy a luxury passenger car ( $\geq$  RMB 400,000), within the next 6 months?

**General**

Q2 gender: one out of 2 has to be chosen

Q3 age groups: one out of 3 has to be chosen

Q42 cities: one out of 3 has to be chosen

**Personal values male**

Q4 all 57 questions must be answered with 1 to 6 -> only answered by male respondents (PVQ-RR male)

or

**Personal values female**

Q36 all 57 questions must be answered with 1 to 6 -> only answered by female respondents (PVQ-RR female)

**BMW specific questions**

Q5 BMW Brand personality: all five dimensions must be answered with 1-6.

Q6 like BMW: one out of one has to be answered with 1 – 6.

Q7 intend to buy BMW: one out of one has to be answered with 1 – 6.

Q8 functional congruence BMW possession of characteristics: all seven must be answered with 1 – 6.

Q9 functional congruence BMW importance of characteristics: all seven must be answered with 1 – 6.

Q10 Involvement BMW: all three must be answered with 1 – 6.

Q11 Differentiation BMW: all three must be answered with 1 – 6.

Q12 Conspicuousness BMW: all three must be answered with 1 – 6.

Q13 Uniqueness BMW: all three must be answered with 1 – 6;

**MB specific questions**

Q14 MB Brand personality: all five must be answered with 1 – 6.

Q15 like MB: one out of one has to be answered with 1 – 6.

Q16 intend to buy MB: one out of one has to be answered with 1- 6.

Q17 functional congruence MB possession of characteristics: all seven must be answered with 1 – 6.

Q18 functional congruence MB importance of characteristics: all seven must be answered with 1 – 6.

Q19 Involvement MB: all three must be answered with 1 – 6.

Q20 Differentiation MB: all three must be answered with 1 – 6.

Q21 Conspicuousness MB: all three must be answered with 1 – 6.

Q22 Uniqueness MB: all 3three must be answered with 1 – 6;

**Demographical questions**

Q23 age: must be answered with a number

Q25 years of education yourself, father and mother: all three must be answered with 1 – 20.

Q26 highest educational level: one out of four has to be chosen.

Q27 material status: one out of four has to be chosen.

Q28 current or last occupation: one out of sixteen has to be chosen.

Q29 monthly household income: one out of six has to be chosen.

Q30 budget for a new car: one out of six has to be chosen.

Q35 in what kind of place did you grow up: one out of four has to be chosen;

The English version was for internal use only, whereas the Chinese questionnaire was used for the survey (see appendix A1 and A2).

**3.4.5.1 Justification for closed questions**

Questions in surveys can be either closed or open. Closed questions present predefined possibilities of answers. An answer can be rated or ranked, or it



can be associated with options such as “no” or “yes”. In contrast, open questions give respondents the chance to answer in their own words.

Closed questions were used in this questionnaire (Bryman & Bell, 2011) because they help collect many types of relevant information in an objective and comparable manner, and this information is easy to code and analyse statistically (Bell et al., 2019; Kumar, 2011). Furthermore, closed questions are easier for respondents to answer and therefore are more likely to be answered than open-ended questions. However, detailed answers are not available and thus lack specific opinions and feelings (Neuman, 2014). Closed questions might consequently miss relevant information. Additionally, respondents might concentrate less on answering, and misinterpretation cannot be clarified (Kromrey, 2009).

According to Kromrey (2009), closed questions must be formulated appropriately to be understood by Chinese respondents. That is, the meaning of the questions must be clear for the specific cultural background, otherwise participants may give no answers or the wrong feedback (Neuman, 2014). The application of a similar structure throughout the survey facilitates the evaluation of responses, thereby ensuring reliable and valid feedback (Kromrey, 2009).

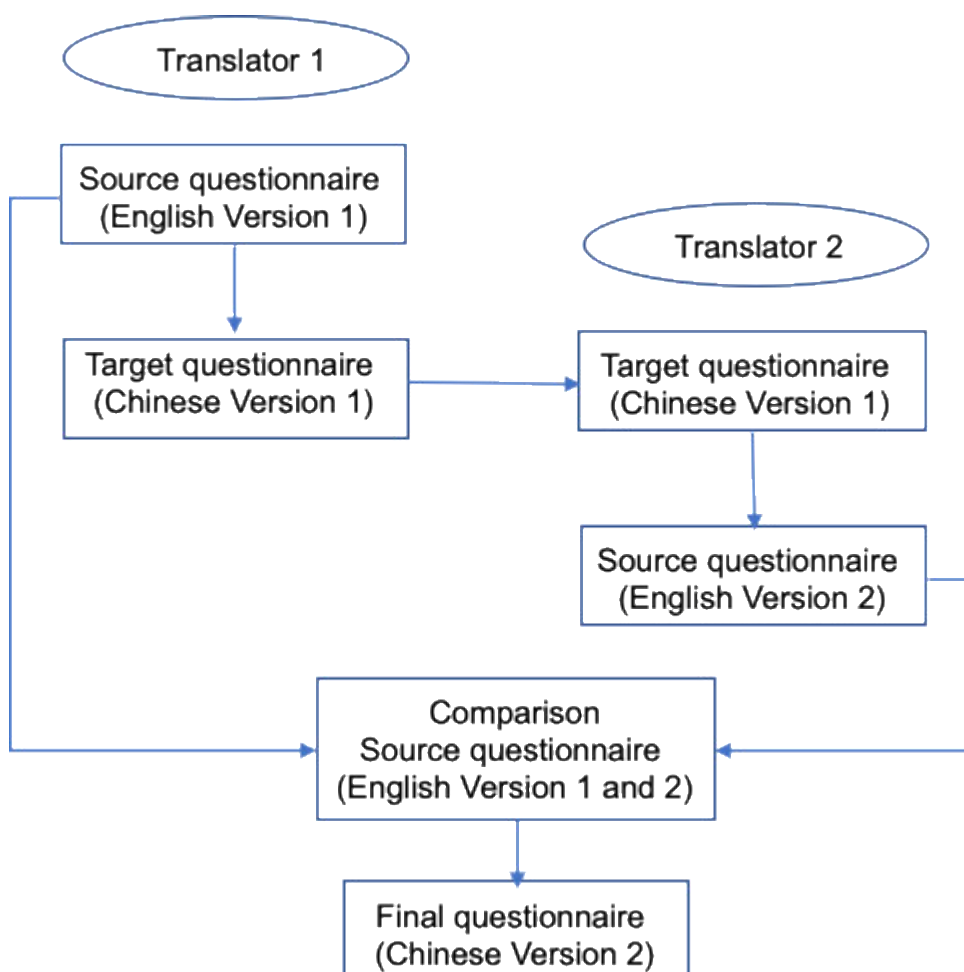
### **3.4.6 Translating the questionnaire using back translation technique**

The accuracy of the Chinese translation was verified via a back translation technique with two different translators, ensuring that local expressions and idioms are correct and equivalent (Brislin, 1970).

The back translation technique started with the source (i.e. the original English questionnaire [English Version 1]), which the first translator translated into Chinese for the target questionnaire (Chinese Version 1). The Chinese Version 1 translation was then re-translated back into English Version 2 by a second translator without prior knowledge of the English Version 1 translation. Both source translations, English Version 1 and

Version 2, were compared and corrected if they are not consistent as suggested by Brislin (1970). The final Chinese version (Chinese Version 2) was then used for the main survey\_(see Figure 3.4.6.1).

**Figure 3.4.6.1 Back translation technique**



Source: Author

Several researchers have applied this technique for quantitative research in the Chinese context (for example by Hsu, Oh, & Assaf, 2012).

The personal value questionnaire (PVQ-RR) was kindly provided by Shalom Schwartz in English and Traditional Chinese. However, compared to Traditional Chinese, the Simplified Chinese presents a simplification of characters to reduce regional and interethnic differences interethnic

differences and is widely used in the mainland China (Chen et al., 2015). Consequently Simplified Chinese is chosen as the language of the questionnaire.

Thus, the English Version 1 – without PVQ-RR - and the PVQ-RR in Traditional Chinese, were translated by the first translator into Simplified Chinese for the Chinese Version 1. The Chinese Version 1 translation was then re-translated back into English Version 2 by another, second translator. Furthermore, English Version 1 and Version 2, were compared and corrected, if needed (Brislin, 1970). The final Simplified Chinese version (Chinese Version 2) could then be implemented.

The back-translation was performed by Hanbridgemandarin, a professional translation company from Shenzhen. Hanbridgemandarin was founded in 2006 and was recommended by international company such as Mercedes-Benz AG. The company's aim is to build bridges across nations and cultures through language teaching and translation. All translators in the company are native Chinese teachers who are proficient in English. In addition to translating and interpreting, they also teaching Chinese to the expatriates. Their teachings are conducted in both English and Chinese.

The procedure for the back-translation technique was discussed with the director of Hanbridgemandarin in Shenzhen, who was also the first translator. This first translated Chinese version was handed back to the researcher, and the researcher then approached another designated Hanbridgemandarin teacher, who re-translated the first Chinese version back into English. This second English version was compared with the original, first English version, and deviating wordings were discussed with the first translator and re-adjusted accordingly. This led to the final, second Chinese version of the questionnaire which was agreed by both translators.

This study adopts the steps of back translation suggested by various authors (Chen and Boore, 2009). By employing two professional Chinese translators conducting back translation, this study emphasised the importance of the understanding of both languages as well as the wider Chinese cultural context and the research topic within China.

## **3.5 Pre-test**

### **3.5.1 Reason for pre-test**

To test the clarity and validity of the survey questions, a pre-test was conducted before the questionnaire was sent out for the main stage; hence, it was a form of preparation for the main study. It is argued that a pre-test is useful for highlighting potential data collection problems and reducing measurement errors, thus reducing response bias. Measurement scales may need to be adjusted after a pre-test (Bell et al., 2019). According to De Vaus (2002), the survey questionnaire of a pre-test should be evaluated as follows:

- Missing/skipped questions: Is the wording of the specific questions clear, understandable, and correct (Eckstein, 2012; Kromrey, 2009; Neuman, 2014)?
- Questionnaire flow: Is the questionnaire flow correct? Are categories and subcategories well chosen (Kromrey, 2009)?
- Neutral point responses: Are there many responses with a neutral point? This could indicate that the respondent does not know the answer because the question might not be understood or the meaning may not be clear (De Vaus, 2002; Kromrey, 2009).
- Response bias: Negative questions or repeated questions could indicate whether the responses show a high quality and therefore present the respondent's interest and attention (De Vaus, 2002; Neuman, 2014).
- Timing: Was the response time for the survey questionnaire smooth or much longer than expected? Long response times could indicate response problems based on misinterpretations or unclear meanings (De Vaus, 2002).

Moreover, the pre-test is useful for gathering more information about the response rate, the timing, and the costs (Kromrey, 2009).

### **Informal pre-test with colleagues**

Before the pre-test, another informal pre-test was conducted with colleagues and friends from mainland China, as suggested by Kromrey (2009). This small pre-test was quick and easy, and it did not involve further costs. It revealed that a question about the cities was missing, which was subsequently added to ensure the quota sampling of 100 samples from each of the three cities. Additionally, the wording of the three filter questions needed to be made clearer. The value of RMB 400,000 and above was consequently added in the filter question explicitly. All three questions were rectified, and the revised questionnaire was re-checked with the professional Chinese translator for correct meaning and writing.

### **Pre-test with eligible respondents**

The researcher was aware that 75–100 pre-test responses were ideal (De Vaus, 2002), but due to the lack of budget as well as the small number of eligible respondents with luxury passenger car experience, only 30 potential Chinese luxury passenger car consumers were randomly chosen as pre-test respondents from the panel data.

### **3.5.2 Evaluation of pre-test**

Once the 30 completed responses were gathered by Qualtrics, the information for downloading the data was provided. The 30 samples for the pre-test were collected within 2 days, and the pre-test samples were then verified. The response rate for the pre-test could not be tested, since 30 responses for this stage were requested and collected.

During the pre-test with eligible respondents, the following factors were evaluated:

First, a check for missed or skipped questions: Are the meanings of the questions concretely and understandably defined? Were there any

misunderstandings due to the translation from English to Chinese? Was the same meaning conveyed in Chinese as in English? As outlined in the previous section, the back-translation technique was used to ensure that the correct meanings of the questions were not lost during the translation. Pre-test results revealed that all meanings in the questionnaires were correctly captured by the Chinese translation, since all the questions were answered in a similar way.

Second, a check for the flow of the questionnaire: The questionnaire flow ensures that all categories and questions are captured (Kromrey, 2009). Pre-test results demonstrated that all categories and questions were covered by the questionnaire flow.

Third, a check for response bias: It was verified that the feedback showed a certain pattern, without too many extremes. Furthermore, the negative questions (Kromrey, 2009) were found to be answered correctly, capturing the change in response set from positively to negatively formulated questions.

Fourth, a check for timing: The time for answering the questionnaire was checked to ensure smooth response times. Pre-test results suggested that the time for answering was approximately 20 minutes, which was in line with to the expected time frame of 20–30 minutes.

Overall, a general re-check: In the pre-test, reliability issues were addressed (Sarstedt & Mooi, 2019) by checking whether data could be analysed via the coded values (Charry, Coussement, Demoulin, & Heuvinck, 2016). Since the description of the measurement and the corresponding coding is clear (Kuckartz, Raediker, Ebert, & Schehl, 2013), the data could be tracked and analysed without any problems. The measurement scales employed in the pre-test demonstrated a high level of reliability (Hair et al., 2014): Cronbach's alpha was 0.960, and thus  $\alpha > 0.7$  (Bell et al., 2019).

Since the pre-test results showed no significant data differences, no response bias, a smooth response time, and the correct survey flow, the survey continued. That is, 270 questionnaires were sent and returned, culminating in a total of 300 responses.

Overall, the response rate was 26.1% (1,150 responses) with 300 complete, high-quality responses, which were requested and collected from Qualtrics. The survey was active until all 300 samples with the correct quotas had been gathered. Within five days, the main 270 samples were collected. For data collection of the pre-test and the main stage as well as the pre-test analysis, one month was needed. The time taken to answer the questionnaire was provided for each respondent and was on average 20 minutes.

### **3.6 Method of data analysis**

This section discusses the application of statistical methods. First, descriptive statistics and then CFA, PSEM, and RSA are explained. The survey data for this research was examined using SPSS 24 for Mac and R-project 4.0.0.

#### **3.6.1 Descriptive statistics**

According to Kromrey (2009), descriptive statistics focus on summarising collected data to identify patterns and interpret data. Characteristics, phenomena, and functions are thus described (Sarstedt & Mooi, 2019). Moreover, frequency analysis demonstrates the distribution of scores in the study and thus presents the respondents' answer profiles.

#### **3.6.2 Confirmatory factor analysis**

CFA tests data against an expected factor structure for further interpretation of how well the data fits. In contrast to CFA, exploratory factor analysis (EFA) is often applied to check which items load on which construct, and these extracted factors are used to explain variations in characteristics (Kromrey, 2009).

CFA was applied in this study to test and confirm the factor structure of 19 personal values and four higher-order personal values (Sarstedt & Mooi, 2019). However, reliability is critical when assessing 19 latent variables and 57 value items with only 300 responses. Therefore, in line with Cieciuch and Schwartz (2012), separate CFAs were conducted for each higher-order value to ensure reliability. These CFAs were evaluated based on the following fit indices: comparative fit index (CFI), standardised root mean square residuals (SRMR), and root mean square error of approximation (RMSEA).



### **3.6.3 Structural equation modeling**

Structural equation modeling (SEM) is a collection of statistical methods for checking hypothesised relationships among multiple variables (Sarstedt & Mooi, 2019). It can integrate multiple correlated dependent relationships into one model (Hair et al., 2014). Furthermore, the structure of inter-relationships is assessed in a series of equations, similar to multiple regression equations (Hair et al., 2014). Hence, SEM allows for more flexible assumptions compared to factor analysis. The effects of models are tested across multiple variables through direct or indirect paths of influence.

#### **3.6.3.1 Traditional structural equation modeling**

SEM enables several functions simultaneously: construction of factors, verification of factor properties, and testing of hypotheses and model fit (Hair et al., 2014). SEM also compares alternative models for better model fit and can model error terms. However, the assumed causations of SEM are often criticised (Hair et al., 2014; Hertzog, 2019); therefore, according to Charry et al. (2016), there must be sufficient association between two variables such that one variable is undoubtedly the result of the other.

According to Hair et al. (2014), SEM is evaluated based on the following indexes: Chi-square ( $\chi^2$ ), goodness of fit (GFI), adjusted goodness of fit index (AGFI), CFI, and RMSEA. For SEM, a good model fit is achieved when  $\chi^2$  is statistically not significant (i.e.  $\geq 0.05$ ). However, SEM is sensitive to sample size (Hair et al., 2014).

#### **3.6.3.2 Piecewise structural equation modeling**

In contrast to the traditional SEM, as outlined above, PSEM is a confirmatory path analysis dealing with multivariate relationships, which offers the advantage of estimating one variance-covariance matrix. Thus, it serves as a path for each model based on incremental explanatory power (Shipley,

2009). PSEM is an alternative to SEM for exploring the structural components and measurements of models (Shipley, 2009). It also enables several functions simultaneously, namely construction of factors, verification of factor properties, and testing of hypotheses and model fit (Hair et al., 2014); compares alternative models for better model fit; and can model error terms. This alternative is preferable if the focus is on prediction rather than pure theory testing and if the sample size is smaller (Lefcheck, 2015).

In contrast to PSEM, traditional SEM observes single covariances between variables instead of multiple data values, which limits the traditional approach (see Table 3.6.3.2.1).

**Figure 3.6.3.2.1 Comparison of traditional structural equation modeling and piecewise structural equation modeling**

<b>Traditional SEM (Variance-covariance)</b>	<b>Piecewise SEM (PSEM)</b>
Single (global) variance-covariance matrix estimated	Multiple (local) variance-covariance matrices estimated (one for each endogenous variable)
Simultaneous solution (computationally intensive)	Multiple solutions (modularized)
Fit to normal distribution	Incorporates various distributions (Poisson, Gamma, etc.)
Assumes independence	Can model non-independence (blocked, temporal, spatial, etc.)
Latent & composite variables	No latent or composite variables
True correlated errors	Partial correlations
Non-recursive (feedbacks)	Only for recursive
Multi-group models	Can estimate random components, but no formal $\chi^2$ test

Author: Lefcheck (2016)

PSEM is evaluated based on the following indexes: Fisher's  $C$ , R-squared, the Akaike information criterion (AIC), and the Bayesian information criterion (BIC). For PSEM, a good model fit is achieved when  $C$  is statistically not significant (i.e.  $\geq 0.05$ ; Shipley, 2013).

### **3.6.3.3 Justification for using piecewise structural equation modeling**

PSEM offers several advantages (Shipley, 2009) compared to SEM (see Figure 3.6.3.2.1): In PSEM, numerous solutions are modularised with different distributions. Furthermore, PSEM deals with independent and non-independent variables and offers the advantage of combining individual models or constructs (Lefcheck, 2016). PSEM additionally allows non-normal data, various correlation structures, and random effects, which is advantageous for models with high complexity. According to Lefcheck (2014), in contrast to SEM, PSEM can deal with smaller samples sizes (less than five samples per estimated parameter). Nevertheless, if the sample size in PSEM increases, the probability of revealing a significant  $p$ -value is higher, but the model-fit might be poorer (Shipley, 2009). Furthermore, overfitting could be the outcome of highly complex models, resulting in less significant values (Lefcheck, 2016). In contrast to this, a small sample size could lead to type II errors, accepting a false null-hypothesis and demonstrating a good model fit. This must be checked closely during the research.

In this study, PSEM was chosen as the main statistical method for exploring personal value, brand personality, self–brand congruence, and functional congruence in the luxury car purchase intentions of different generational cohorts in China. Krukar and Dalton (2020) and Strandberg, Sivén, Hall, Johansson, and Pärnamets (2018) also applied PSEM for social sciences research. PSEM can test and explain the model through model specification and estimation, examine the model fit, and suggest alternative models with a better fit even for smaller sample sizes and complex models with many indicators (Shipley, 2013).

Moreover, the dimensions applied in this research are complex and differ among individuals and per context. Therefore, they can only be explored based on observable variables, making multiple indicators necessary. PSEM further ensures a reduction in measurement error by comparing relationships of latent variables among individuals and context for testing a theory. Additionally, the focus of this study is on predictive testing because the full model in the Chinese context should provide deep insights into predictions for future managerial recommendations.

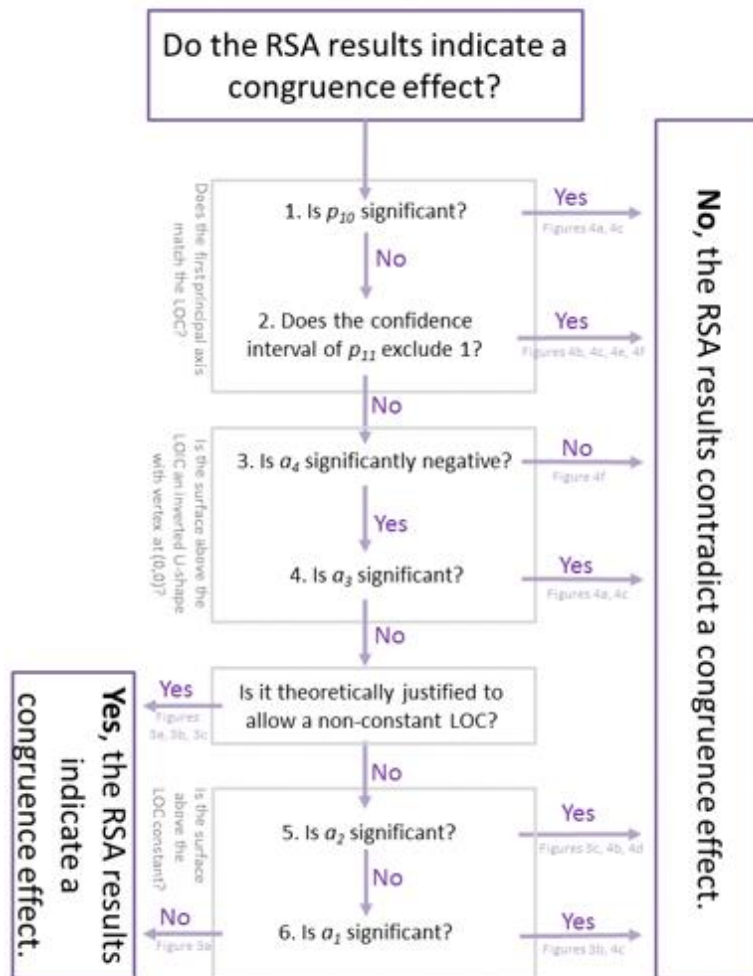
### 3.6.4 Response surface analysis

To test the congruence of two social constructs, an RSA was used (Humbert, Nestler, & Back, 2019). Congruence is defined as the effect two psychological constructs have on a result variable (Arnulf, Larsen, Martinsen, & Bong, 2014). For example, with an equation of 0, the surface would be plane. The three-dimensional graph identifies which predictor value presents the highest result.  $X$  and  $Y$  are the two predictors, and the projected  $XY$  axis can be defined as the line of congruence (LOC), where  $X$  and  $Y$  perfectly match, or, if it is not congruent, the line of incongruence (LOIC), where  $X$  is the opposite value of  $Y$  (Edwards, 2002). The congruence itself can be explained by the projected first principal axis as a linear equation:  $Y = p_{10} + p_{11}X$ . The congruence can be identified by four factors:

1. If the  $XY$  axis with the quadratic term coefficient  $\alpha_4$  is negative, then  $\alpha_4 < 0$  at the significance level  $p < 0.05$ , thus building an inverted U-shape.
2.  $\alpha_3$  differs from 0 non-significantly, with  $p \geq 0.05$ ; hence,  $\alpha_3 \approx 0$ .
3.  $p_{10} \approx 0$  non-significantly, with  $p \geq 0.05$
4.  $p_{11} \approx 1$  non-significantly, with  $p \geq 0.05$  (see Figure 4.8.5.2.6).

If the congruence is reversed, the following conditions are fulfilled instead:  $\alpha_4 > 0$ ,  $\alpha_3 \approx 0$ ,  $p_{20} \approx 0$ , and  $p_{21} \approx 1$ .

**Figure 3.6.4.1 Interpreting response surface analysis parameter**



Source: Humberg et al. (2019)

This analysis is based on an exploration of the correlations among different variables, which can be done with either squared differences, residuals, or absolute differences of the variables. In this study, the variables are the two facets "importance" and "possession of each characteristic" regarding consumers' liking of and intention to purchase BMW or MB. Here, a polynomial regression model and both a statistical and graphical coefficient interpretation will be fundamental for RSA.

However, it has been criticised that a single RSA parameter would be insufficient (Humberg et al., 2019). Therefore, a single RSA parameter

cannot be interpreted in a state of isolation, and an RSA cannot identify congruence effects where the direction of mismatch matters.

#### **3.6.4.1 Justification for use of response surface analysis**

The application of RSA for functional congruity offers additional information by revealing the relationship between two constructs on one variable (Humberg et al., 2019). As a result, one can explore not only the outcome of both constructs as one predictor variable on the response, but also the strength of impact of each of the two constructs on responses regarding BMW and MB liking and purchase intention from a three-dimensional perspective.

In this research, RSA was used instead of the absolute distance model (Sirgy & Johar, 1999) because RSA allows for the examination of effects on BMW or MB liking and purchase intention of the two facets importance and possession of each functional characteristic (Humberg et al., 2019).

#### **3.6.5 Reliability**

Reliability can be defined as the overall consistency and stability of a measure (Sarstedt & Mooi, 2019): Is the item being measured without systematic errors (Es)? Will the measure always yield the same outcome result (Hair et al., 2014), even in the case of different observers? Is the analysis transparent? Reliability can be clustered into inter-rater reliability, test-retest reliability, and internal consistency reliability (Charry et al., 2016).

Inter-rater reliability is aimed at qualitative or secondary data via ratings by experts, but such data has not been used in this study.

Test-retest reliability requires a two-points-in-time survey with exactly the same respondents and the same questions. This is difficult, time-consuming, and costly. Furthermore, it might lead to participant or subject error because variables may not be stable over time (e.g. learning from a past survey,

recollection of the past survey, influence of experiences at that point in time, etc.; Kromrey, 2009).

Internal consistency reliability refers to the application of several items for measuring a construct (Bryman & Bell, 2011). This can be proven based on correlations: the coefficient Cronbach's alpha, which is explored to evaluate the internal consistency and reliability of the survey instrument (Sarstedt & Mooi, 2019). The coefficient alpha examines how well several items present a single construct. A value of 0.7 and above shows a strong internal consistency, and Kromrey (2009) suggests that a value below 0.7 is the lowest acceptable reliability limitation (Hair et al., 2014). However, this is relevant only for CFA, since PSEM explores each path individually through a confirmatory path analysis (Shipley, 2013). Therefore, reliability was measured for personal values and higher-order personal values only.

### **3.6.6 Estimation method**

The model fit indicates how well the PSEM fits the data. PSEM was conducted through the lavaan package in R-project 4.0.0. Model fit indices commonly used for PSEM are Fisher's *C* and R-squared, and the CFIs include AIC and BIC (Lefcheck, 2015).

Moreover, for the CFA of personal values, the model fit indices RMSEA, SRMR, CFI, AIC, and BIC are commonly used (Kline, 2011). These goodness-of-fit indices were applied in this research.

## **3.7 Model building**

Based on all previous assumptions, the models for personal values, perception of brand personalities, self-brand congruence, and functional congruence on purchase intention and the moderating variables were set up.

The first step involved the CFA to analyse the model fit of the personal values and higher-order personal values. All further analyses were

performed using PSEM. Finally, the functional congruence of the two facets “importance” and “possession of each functional characteristic” in purchase intention was also investigated through RSA.

### **3.8 Ethical considerations**

It is believed that researchers are responsible for ensuring that ethical principles are followed during data collection (De Vaus, 2002).

For this research, the researcher ensured that during the survey, the respondents’ participation in the research was completely voluntary. They had to consent to participate in the study, and they could leave the survey at any time. Furthermore, the researcher committed to data protection and confidentiality. Data gathering, analysis, and storage were based on the principles of confidentiality, privacy, and anonymity. All data in this research was saved on a password-protected secure network and was only used for this study.

Additionally, based on the University of Gloucestershire’s ethical guidelines, formal ethics approval was obtained before the study was conducted.

### **3.9 Chapter summary**

This chapter outlined the research philosophy of objectivist epistemology with the theoretical perspective of positivism employed in this study. Additionally, the chapter explained the choice of a deductive approach with a quantitative method and survey questionnaires as the research strategy underpinning the research. Furthermore, data collection, questionnaire design, and the pre-test approach of the study were described, along with the ethical considerations.

I acknowledge that there are some limitations to the non-probability sampling method adopted in this research. Nevertheless, this method is widely used when the probability sampling method is not feasible. Another limitation of



this research is the sample size. To obtain valid responses from luxury passenger car consumers, specific knowledge is necessary for ensuring high-quality usable data. This, however, limits the sample size. Nevertheless, according to Kline (2011), the sample collected for this study is sufficient. Next, Chapter 4 presents the preparation of data and the data analysis.

## **Chapter 4 Data analysis**

### **4.0 Introduction**

This chapter explains the results of the data collected via online survey questionnaires and the different statistical methods employed. Specifically, this chapter discusses the application of statistical methods as well as data screening and data cleaning. Descriptive statistics for the respondents' profiles, CFA, PSEM, and RSA are used for hypotheses testing.

### **4.1 Review of the research hypotheses**

As outlined in Chapter 2, the following hypotheses were defined on the basis of the literature review and the conceptual development of this research.

These hypotheses were formulated to explore the influence of brand personality on the car purchase intentions of different generational cohorts in China:

- H1: There are differences in the importance of personal values between the three generational cohorts in China.
- H2: The specific personal values of each generational cohort influence their liking and purchase intention.
- H3: Each generational cohort has a different perception of the brand personalities of MB and BMW.
- H4: Each generational cohort's perception of brand personality influences their liking of and intention to purchase a brand.
- H5: Each generational cohort will display significant differences in the congruencies between their higher-order personal values and their perception of a brand's personality.

H6: The congruence between a generational cohort's higher-order personal values and brand personality perceptions will influence their liking and purchase intention.

H7a: The moderating variable "brand conspicuousness" affects self-brand congruence.

H7b: The moderating variable "brand uniqueness" affects self-brand congruence.

H8: Self-brand congruence positively influences functional congruence.

H9: Functional congruence positively influences consumers' liking and purchase intention.

H10a: The moderating variable "brand involvement" affects functional congruence.

H10b: The moderating variable "brand differentiation" affects functional congruence.

As presented in Chapter 3, all concepts applied in this study are from relevant existing literature. The constructs were set up for personal values, perception of brand personalities, self-brand congruence, and functional congruence in relation to purchase intention and the four moderating variables brand conspicuousness, brand uniqueness, brand involvement, and brand differentiation for BMW and MB.

## **4.2 Data examination**

Prior to data analysis, the data was verified for accuracy and missing values. All 300 responses were collected in SPSS, with the advantage of eliminating errors through manual data input.

The data was screened for missing and invalid values and then cleaned (Kline, 2011). Concerning the 57 human value questions, Schwartz (2013) suggests disregarding all responses with 15 or more missing items that had

been verified by data sorting. However, since all questions in the survey questionnaire were defined as mandatory, there were no missing values.

Furthermore, only completed questionnaires were considered for this research. Therefore, five uncompleted questionnaires had to be deleted.

There was also one mistake in the demographic section in terms of age: The respondent answered with their birth year instead of age, and this was adjusted accordingly.

#### **4.2.1 Data preparation**

Following an examination of the data, it was imported from SPSS to R-project. After reading the data in R-project, some of the variables were renamed to simplify the modeling.

For the preparation of the data, new variables were computed as centred and uncentered values based on the 57 questions for personal values and higher-order values. For uncentered personal values, the 19 personal values were calculated based on the 57 answers to the PVQ-RR as a mean value. Three of the 57 answers were used to calculate each specific personal value. These 19 personal values are the so-called raw or uncentred values (Schwartz, 2013). For centred values, the mean value of all 57 answers per respondent was calculated. Then, this mean value was subtracted from each of the 19 personal values per respondent. This centred the values around the specific mean rating and ensured a correct scale use of personal values (Schwartz, 2013).

The same calculation was used for uncentred and centred higher-order personal values (see Figure 4.2.1.1). The higher-order personal values were calculated as a mean value of the corresponding personal values.

**Figure 4.2.1.1 Calculation of 19 personal values and higher-order personal values during the research**

<b>4 Higher-order personal values</b>	<b>19 Personal values</b>	<b>PVQ-RR question number</b>
Openness-to-change (OC – cOC)	Self-direction thought (SDT – cSDT)	1, 23, 39
	Self-direction action (SDA – cSDA)	16, 30, 56
	Stimulation (St – cSt)	10, 28, 43
	Hedonism (He – cHe)	3, 36, 46
Self-enhancement (SE - cSE)	Achievement (A – cA)	17, 32, 48
	Power-dominance (PD – cPD)	6, 29, 41
	Power-resources (PR – cPR)	12, 20, 44
Conservation (Con– cCon)	Face (F – cF)	9, 24, 49
	Security-personal (SP – cSP)	13, 26, 53
	Security-societal (SS – cSS)	2, 35, 50
	Tradition (T – cT)	18, 33, 40
	Conformity-rules (CR – cCR)	15, 31, 42
	Conformity-interpersonal (CI – cCI)	4, 22, 51
	Humility (Hu – cHu)	7, 38, 54
Self-transcendence (STr – cSTr)	Universalism-nature (UN – cUN)	8, 21, 45
	Universalism-concern (UC – cUC)	5, 37, 52
	Universalism-tolerance (UT – cUT)	14, 34, 57
	Benevolence-care (BC – cBC)	11, 25, 47
	Benevolence-dependability (BD – cBD)	19, 27, 55

Source: Schwartz et al. (2012)

All congruency variables were then added. The self–brand congruencies were computed between each higher-order value for MB’s and BMW’s brand personalities separately (e.g. congruence Con\_BMW Sophistication). For functional congruence, possession of a specific characteristic was computed with the importance of this specific characteristic for MB and BMW (e.g. congruence BMW Warranty = possession BMW Warranty—importance

BMW Warranty). These congruencies (self–brand congruence and functional congruence dimensions) were incorporated using the squared difference between each possible pair. Additionally, the quadratic terms for the response surface models were built (Humbert et al., 2019), and all negatively worded items of the moderating variables were reversed.

#### **4.2.1.1 Testing the normality and for outliers**

To conduct traditional SEM, certain data criteria regarding distributional characteristics, such as normality, had to be fulfilled because data problems can cause the model fitting to fail. However, PSEM can handle normal and non-normally distributed data (Lefcheck, 2016). Thus, an assessment of normality is not required for conducting PSEM. Nevertheless, this assessment was done as preparation for the CFA for personal values and higher-order personal values.

#### **Normality**

Normality can be defined as a normal data distribution for a construct. There are two types of normality, namely univariate and multivariate; the former focuses on one variable, whereas the latter refers to two or more variables (Kline, 2011). Additionally, if a multivariate variable is normally distributed, the univariate variable is also normally distributed. However, the univariate normality of all variables might not automatically ensure multivariate normality (Hair et al., 2014). Univariate normality is hence less difficult to examine than multivariate normality. Therefore, univariate normality was checked in this research.

Several methods are available for assessing normality. The easiest one involves visually checking a statistical test or a histogram (Hair et al., 2014), but this method is subjective. Another method is the skewness and kurtosis test, which is an objective method and is thus more reliable (Hair et al., 2014). However, each of them assesses only one element of non-normality. On the one hand, skewness regards the symmetry of distribution; positive

values, for example, imply an asymmetrical distribution with a right tail. Hence, the cluster is concentrated on the left side of the scale, and vice versa. On the other hand, kurtosis assesses the peakedness of a distribution (Field, Miles, & Field, 2012; Wickham & Grolemund, 2017). If the kurtosis examination with more than 50% of the items is positive, it suggests a more-than-normal data distribution, with longer or thicker tails for a distribution that is too flat, and short and thinner tails for a distribution with too many peaks (Hair et al., 2014).

A zero value for skewness and kurtosis demonstrates a normal distribution. Furthermore, Kline (2011) indicates that absolute values of skewness and kurtosis  $\geq 10.0$  possess problematic non-normality distribution, and a value  $\geq 20.0$  demonstrates dramatic deviations from normality. Moreover, the values of skewness and kurtosis can be calculated as standardised residual values: as z-tests. This would mean that the distribution has a mean of 0 and a standard deviation of 1 (Hair et al., 2014).

$$Z_{\text{skewness}} = \text{skewness} / \text{standard error of skewness}$$

$$Z_{\text{kurtosis}} = \text{kurtosis} / \text{standard error of kurtosis}$$

As soon as a standardised residual value for skewness and kurtosis exceeds the critical value, the distribution is not normal and therefore might be problematic for conducting CFA, since the model is not able to explain most covariations (Kromrey, 2009). A critical value can be a standardised residual value between -3.29 and +3.29 at the 0.001 significance level, between -2.58 and +2.58 at the 0.01 significance level, and between -1.96 and +1.96 at the 0.05 significance level (West, Finch, & Curran, 1995).

However, according to West et al. (1995), Z-scores based on a null hypothesis tend to be rejected in smaller samples because standard errors decrease with increasing sample size, although distribution of large samples may not necessarily differ from normal distribution. Critical values should consequently vary according to sample size (West et al., 1995):

- For small samples of less than 50, if  $Z_{\text{kurtosis}}$  or  $Z_{\text{skewness}}$  exceeds  $\pm 3.29$  with alpha level 0.05, there is a non-normal distribution.

- For medium samples with  $50 < n < 300$ , if  $Z_{\text{kurtosis}}$  or  $Z_{\text{skewness}}$  exceeds  $\pm 1.96$  with alpha level 0.05, there is a non-normal distribution.
- Large samples of  $>300$  depend on histograms and the absolute values of skewness and kurtosis, and not the z-scores. If the absolute skewness and absolute kurtosis values exceed  $\pm 2$  and  $\pm 7$  respectively, there is a non-normal distribution (West et al., 1995).

Therefore, to prove the normal distribution of the samples, the absolute skewness value should not exceed  $\pm 2$ , and the absolute kurtosis value should not exceed  $\pm 7$  (see Table 4.2.1.1.1).

**Table 4.2.1.1.1 Assessment of normality**

	variable	min	max.	skew	kurtosis
<b>19 personal values</b>					
SDT	PV	1.67	6	-0.81	1.02
SDA	PV	2	6	-0.74	0.27
Stimulation	PV	1.67	6	-0.79	0.29
Hedonism	PV	1	6	-1.32	3.14
Achievement	PV	1.33	6	-0.82	0.72
Power-dominance	PV	1	6	-0.49	0.07
Power-resources	PV	1	6	-0.7	0.29
Face	PV	1	6	-0.69	0.9
Security-personal	PV	1.67	6	-1.06	1.59
Security-societal	PV	1.67	6	-0.87	0.96
Tradition	PV	2	6	-0.69	0.04
Conformity-rules	PV	1.33	6	-0.92	1.13
Conformity-interpersonal	PV	1.67	6	-0.43	-0.06
Humility	PV	1.67	6	-0.28	-0.14
Universalism-nature	PV	1.67	6	-0.8	0.54
Universalism-concern	PV	1.33	6	-0.63	0.48
Universalism-tolerance	PV	1.67	6	-0.69	0.46
Benevolence-care	PV	1.67	6	-0.95	1.04



	<b>variable</b>	<b>min</b>	<b>max.</b>	<b>skew</b>	<b>kurtosis</b>
Benevolence-dependability	PV	1.67	6	-0.83	1
<b>4 higher-order values</b>					
Self-transcendence	HOV	1.8	6	-0.73	0.87
Self-enhancement	HOV	1.33	6	-0.62	0.28
Openness-to-change	HOV	1.67	6	-0.94	1.28
Conservation	HOV	1.73	6	-0.74	0.98

As Table 4.2.1.1.1 indicates, the highest absolute skewness value for hedonism (-1.32) does not exceed  $\pm 2$ , and the absolute kurtosis value for hedonism (3.14) also does not exceed  $\pm 7$ , thus proving normal distribution.

## Outliers

Outliers can be defined as data that does not follow the pattern followed by most data. According to Hair et al. (2014), an outlier could either be a response error or a real response. As a first step, box plots should be visibly checked in terms of their shape of distribution (Sarstedt & Mooi, 2019), and the univariate and bivariate outliers (one or two variables) should then be checked by comparing z-values. Additionally, the Mahalanobis D2 measurements are recommended for multivariate variables (multiple variables; Sarstedt & Mooi, 2019). If there is no plausible explanation for an extreme value, the outlier should be retained (Hair et al., 2014).

In this study, the use of Likert scales (Kline, 2011; Kromrey, 2009) ensured that there were no out-of-range values, since all values were pre-defined to range from 1 = strongly disagree to 6 = strongly agree. Moreover, the use of a six-point Likert scale; data cleaning, with correct responses ranging from 1 to 6 only; and box plot checks helped to ensure that there were no outliers because of response errors, but rather realistic responses (Hair et al., 2014).

### 4.3 Demographic information

This section explores the profile of the 300 respondents based on the demographic data including frequencies (Kromrey, 2009). The frequencies of each score were obtained from the descriptive statistics of SPSS.

Demographic data in the form of statistical characteristics of the population was gathered as part of the questionnaire (see Appendix B1). This demographic data could be applied to compare relationships between consumer behaviour and values and between consumer behaviour and demographics (Schwartz, 2013).

Differences in demographic background determine differences in people's living circumstances (see Table 4.3.1). Thus, characteristics such as gender, income, education, and age would influence one's experiences, socialisation, and development of abilities (Schwartz, 2006; Stępień, 2021).

**Table 4.3.1 Differences in demographic background**

<p><b>Age:</b></p> <p>Conservation values such as security, tradition and conformity are supposed to be more important with age. It was found that benevolence, welfare of others and universalism increases with age but achievement and power as self-enhancement values decline (Schwartz, 2006). Schwartz (2006) also pointed out that older people are more used to habits, look less for challenges and changes and are more involved in social network. Hence their Openness-to-change values such as Stimulation, Hedonism and Self-direction decreases.</p>
<p><b>Gender:</b></p> <p>According to some studies there are some gender differences, men value more Achievement and Power whereas women aim on Universalism and Benevolence (Schwartz, 2006; Schwartz &amp; Rubel, 2005). Although there may be some significant differences in some aspects of the values, differences are small. For example, Tradition and Conformity gender differences are not consistently significant.</p>

**Education:**

Self-direction, achievement and stimulation values are triggered mostly by education. Years of education correlate positively with these values (Schwartz, 2006). But education may block Tradition, Security and Conformity values on the other hand. Universalism values are more important for those who have university level, this may be related to the broadening experiences.

**Income:**

Self-direction, Achievement, Hedonism and Stimulation values are more valued with higher incomes on one side. On the other hand, Security, Tradition and Conformity are less important for high income earners (Schwartz, 2006).

#### 4.3.1 Demographic information of the respondents

The most relevant demographic questions from the PVQ-RR were selected and added to the survey (Schwartz, 2013): age, years of education (the respondent's, their father's, and their mother's years of education), highest education level, marital status, current occupation, and environment while growing up (Schwartz, 2013). These covariates are important because they are likely to have an impact on one's purchase behaviour. Furthermore, monthly household income and budget for a new car (net price of the car, excluding any other fees such as tax, insurance, plate fee, etc.) were added to the demographic data because of the background of this study. Gender, city, and age groups were also added for segmentation reasons. Nevertheless, the age groups are the leading covariate for further analysis for segmentation by generational cohorts (see Table 4.3.1.1; see also Appendix B1–B10).

**Table 4.3.1.1 Demographic information overview**

Count								
		Which age group are you			Total	What gender are you		Total
		Born 1979 and before	Born 1980 - 1991	Born 1992 and after		male	female	
Where do you live	Beijing	32	37	31	100	45	55	100
	Shanghai	36	44	20	100	49	51	100
	Shenzhen	34	16	50	100	59	41	100
Total		102	97	101	300	153	147	300

Due to quota sampling, all three age groups, the three cities, and both genders are represented equally (see Table 4.3.1.1).

The demographic distribution of the respondents is presented in Table 4.3.1.2.

**Table 4.3.1.2 Demographic profile**

Years of education	Most respondents have 15.8 years of education with 34.7%; the majority of respondent's fathers have 12.6 years of education with 18% and mothers have 12.0 years of education also, but with 21% (see Appendix B2a and B2b).
Highest education level	The majority of respondents have a college or university degree (258 respondents, 86%) This was followed by the highest education level of a postgraduate degree and above (34 respondents). Only 8 respondents finished their educational level with senior high/technical or professional school (see Appendix B3).

Marital status	Most respondents had been married/cohabiting (236 respondents, 78.7%) or single (60 respondents) (see Appendix B4).
Current occupation	Most respondents' current or last occupation is manager or business owner (151 respondents, 50.3%) (see Appendix B5).
Monthly household income	The majority (105 respondents, 31.3%) have a monthly household income of RMB 20,000 – 39,999. This was followed by 94 respondents with a monthly household budget of RMB 40,000 – 59,999 (see Appendix B6).
Budget for a new car	The majority of respondents have a general budget for a new car (net costs, without additional fees) of RMB 400,000 – 599,999 (146 respondents, 48.7%) (see Appendix B7).
Kind of place for growing up	Most respondents grew up in a large city with 500,000 inhabitants and more (273 respondents, 91%) (see Appendix B8).

The demographic profile demonstrates that the majority of Chinese luxury passenger car (worth  $\geq$  RMB 400,000) consumers have higher education degrees and are mostly managers or business owners.

#### 4.3.2 Respondents' purchase intention information

This section examines purchase intention in general for a better understanding of the respondents' purchase intention. Liking was considered as an antecedent to purchase intention (Rosenbloom et al., 2012).

Therefore, liking might reveal indirect influences on purchase intention.

The aim was to measure liking and purchase intention on a six-point Likert scale, ranging from 1 = “do not like at all” and “no intent to buy at all” to 6 = “like very much” and “strongly intend to buy”. Liking and purchase intention were clustered according to age groups (1: born 1979 or earlier, 2: born

1980–1991, and 3: born 1992 or later; see Table 4.3.2.1; see Appendix B9 and B10 for complete Table).

**Table 4.3.2.1 Generational cohorts' liking of and purchase intention regarding BMW and Mercedes-Benz**

<b>Age group</b>		<b>BMW liking</b>	<b>BMW PI</b>	<b>MB liking</b>	<b>MB PI</b>
<b>born 1979 and before</b>	Mean	5.19	4.69	5.11	4.46
	N	102	102	102	102
	SD	0.941	1.160	0.911	1.287
	Min.	1	1	2	1
	Max.	6	6	6	6
<b>born 1980 -1991</b>	Min.	5.23	4.92	5.1	4.74
	N	97	97	97	97
	SD	0.872	0.898	0.952	0.982
	Min.	3	2	2	2
	Max.	6	6	6	6
<b>born 1992 and after</b>	Mean	5.25	4.83	5.01	4.42
	N	101	101	101	101
	SD	0.888	1.011	1.005	1.098
	Min.	3	3	2	1
	Max.	6	6	6	6
<b>Total</b>	Mean	5.22	4.81	5.07	4.54
	N	300	300	300	300
	SD	0.899	1.032	0.954	1.137
	Min.	1	1	2	1
	Max.	6	6	6	6

The descriptive statistics in Table 4.3.2.1 are summarised for age groups in Table 4.3.2.2.

**Table 4.3.2.2 Summary BMW and Mercedes-Benz liking and purchase intention of generational cohorts**

<p><u>Born 1979 and before</u></p> <p>Age group 1 (see row 1, Table 4.2.3.1) ranked BMW liking with mean = 5.19 (SD = 0.941) and BMW purchase intention with mean = 4.69 (SD = 1.160) and MB liking mean = 5.11 (SD = 0.911) and MB purchase intention mean = 4.46 (SD = 1.287) only. This age group liked MB the most out of all three age groups. Additionally, MB liking and purchase intention is ranked lower than BMW liking and purchase intention.</p>
<p><u>Born 1980 – 1991</u></p> <p>Age group 2 (see row 2, Table 4.2.3.1) rated BMW liking with mean = 5.23 (SD = 0.872) and BMW purchase intention mean = 4.92 (SD = 0.898). As a result, this age group reveals the highest BMW purchase intention mean value of all age groups.</p> <p>Additionally, MB liking was ranked with mean = 5.10 (SD = 0.952) and MB purchase intention mean = 4.74 (SD = 0.982) only. Nevertheless, they have the highest MB purchase intention mean value of all three age groups .</p>
<p><u>Born 1992 and after</u></p> <p>Age group 3 (see row 3, Table 4.2.3.1) rated BMW liking with mean = 5.25 (SD = 0.888) and purchase intention mean = 4.83 (SD = 1.011).</p> <p>Consequently, age group 3 likes BMW most out of all three age groups. MB liking was ranked with mean = 5.01 (SD = 0.954) and purchase mean = 4.54 (SD = 1.137) only.</p>

Overall, for all three age groups, BMW presents higher rankings regarding liking and purchase intention than MB.

In Section 4.4, the steps for conducting the hypotheses analysis are explained.

## 4.4 Steps for conducting piecewise structural equation modeling

In the current study, PSEM was applied because this type of modeling uses local instead of global estimations, and each path is evaluated individually, thereby enabling different correlation and sample size settings (Shipley, 2009).

The PSEM approach of directed separation (d-separation) of directed acyclic graphs (DAGs; Shipley & Douma, 2019) verifies the suggestion that all indicators are independent; thus, all relevant relationships between variables are considered. The first step in PSEM is to define the basis set, which can be transferred to several linear equations (Shipley, 2002). The basis set is the minimum set of conditionally independent claims in terms of the specific hypothesis or path (Lefcheck, 2016). The  $p$ -value of each claim can then be isolated and estimated. Thus, all  $p$ -values of the basis set are combined into the statistic test: Fisher's  $C$  (Lefcheck, 2016).

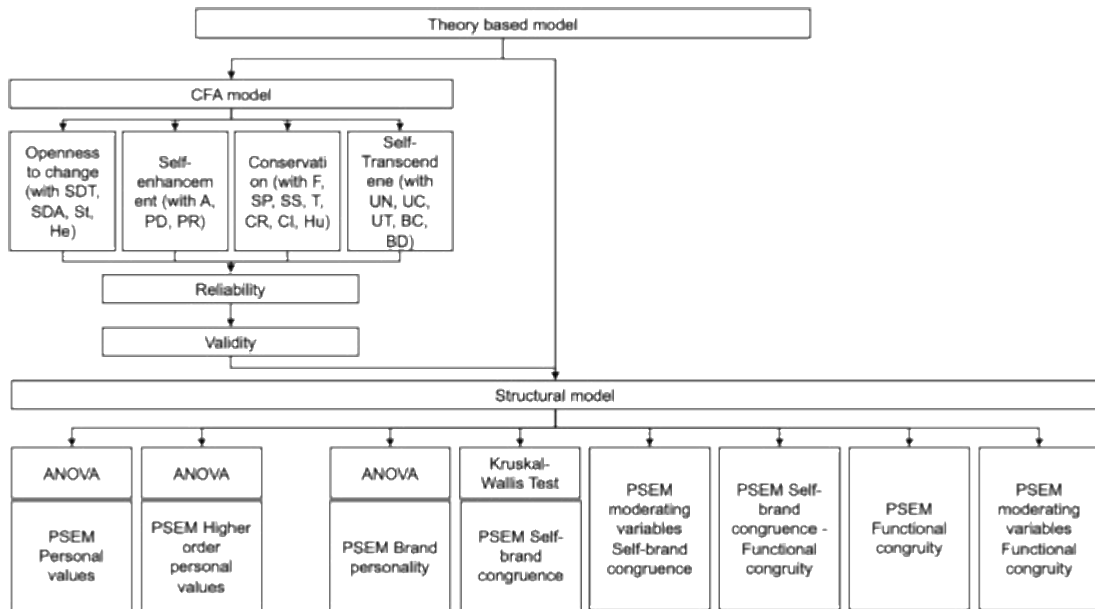
In this research, the model fit was analysed through Fisher's  $C$ , AIC and BIC. A multiple regression was conducted involving constructs, which were measured by multiple indicators. Furthermore, the indicators were examined on how well they represent the same construct.

For traditional SEM, the items of a construct must be internally consistent and reliable, according to Charry et al. (2016). The internal consistency is measured by the coefficient Cronbach's alpha. Furthermore, the factor loading of each item must be measured to test convergent validity. However, PSEM explores each path individually through a confirmatory path analysis (Shipley & Douma, 2019). Specific items are consequently eliminated during PSEM to achieve a good model fit through multiple regressions. Therefore, reliability and validity measurements for developing a model are not required when conducting PSEM.

Figure 4.4.1 illustrates the steps for implementing the CFA model, the analyses of variance (ANOVAs), and the PSEM of the structural model.



**Figure 4.4.1 Steps for implementing the confirmatory factor analysis model and the structural model**

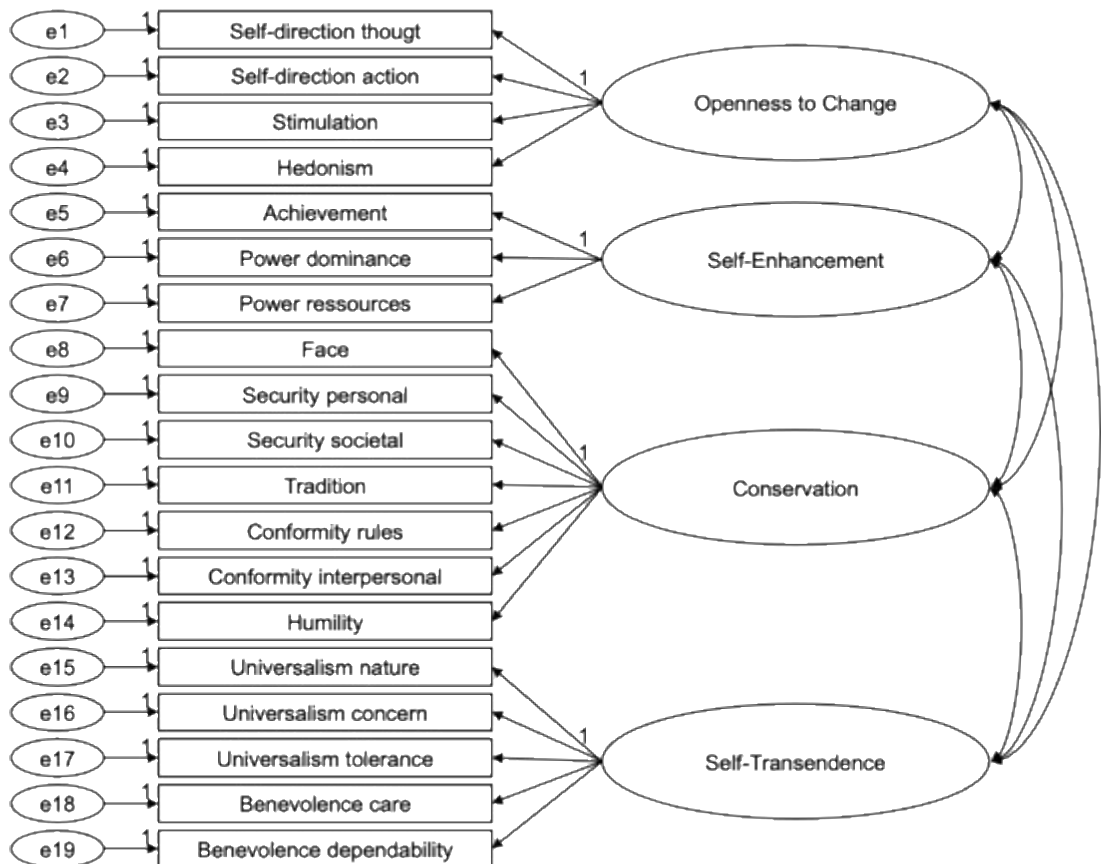


Source: Adapted from Hair et al. (2014, p. 645)

Notes: SDT – Self-direction thought; SDA – Self-direction action; St – Stimulation; He- Hedonism; A - Achievement; PD – Power-dominance; PR – Power-resources; F – Face; SP – Security-personal; SS – Security-societal; T – Tradition; CR – Conformity-rules; CI – Conformity-interpersonal, Hu – Humility; UN – Universalism nature; UC – Universalism-concern; UT – Universalism-tolerance; BC – Benevolence-care; BD – Benevolence-dependability.

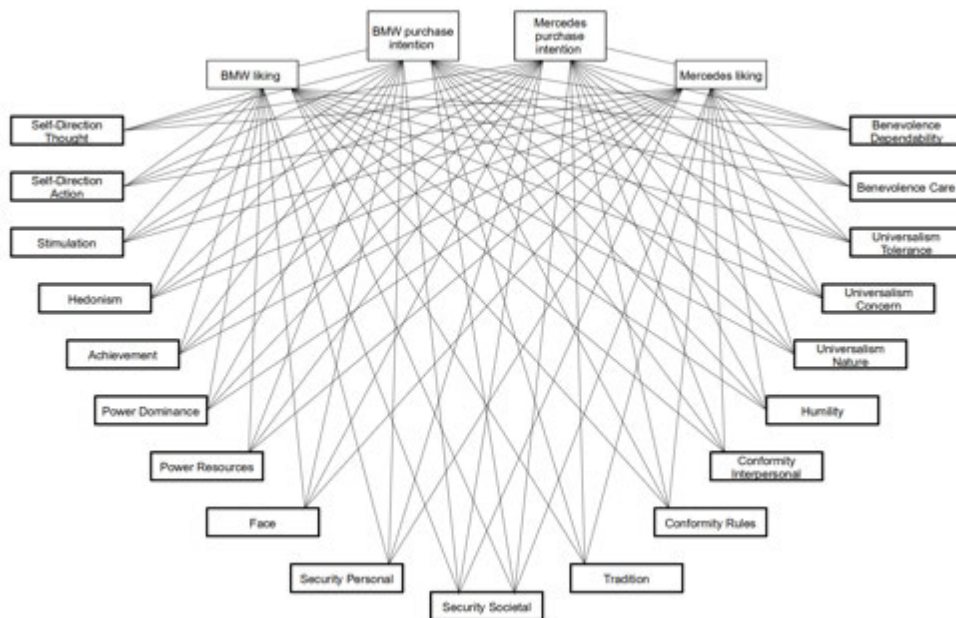
Figures 4.4.2–4.4.7 present the measurement models of each concept.

**Figure 4.4.2 Measurement model – confirmatory factor analysis:  
personal values**



In Figure 4.4.2, the construct measurement model for personal values is presented. The large ovals represent the higher-order values, while the small ovals indicate measurement errors, and the rectangles show personal values.

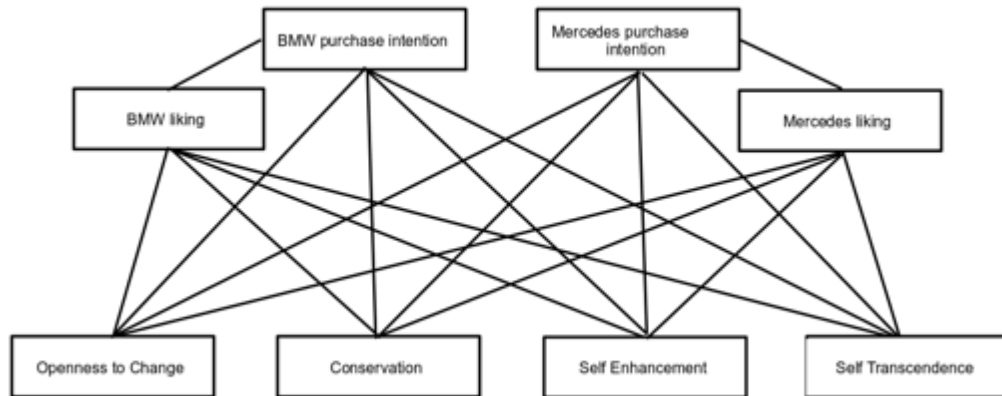
**Figure 4.4.3 Measurement model – piecewise structural equation modeling: personal values**



Source: Author

All 19 personal values (see Figure 4.4.3), namely self-direction thought, self-direction action, stimulation, hedonism, achievement, power-dominance, power-resources, face, security-personal, security-societal, tradition, conformity-rules, conformity-interpersonal, humility, universalism nature, universalism-concern, universalism-tolerance, benevolence-care, and benevolence-dependability, were individually tested on consumers' liking of and intention to purchase a BMW and an MB.

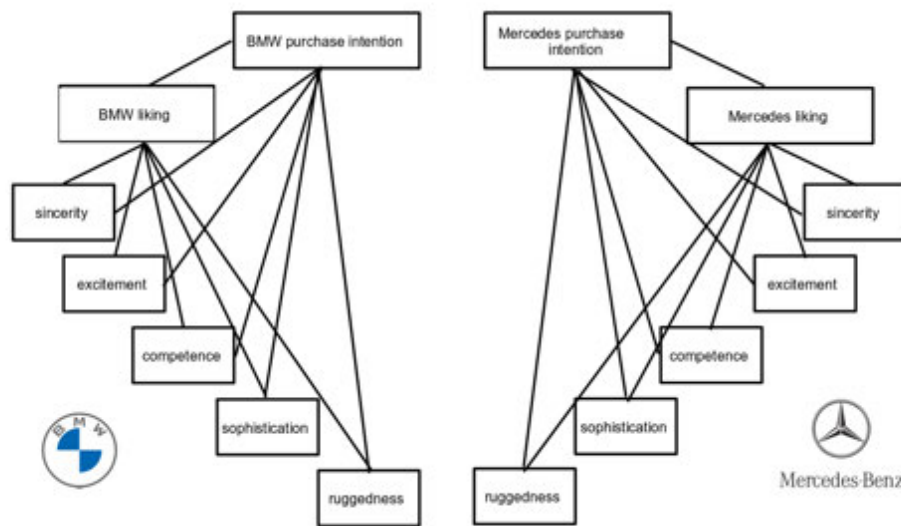
**Figure 4.4.4 Measurement model – piecewise structural equation modeling: higher-order values**



Source: Author

Additionally, in the following PSEM (see Table 4.4.4) for higher-order values, self-transcendence includes benevolence-care, benevolence-dependability, universalism-nature, universalism-concern, and universalism-tolerance; self-enhancement contains achievement, power-dominance, and power-resources; openness to change includes self-direction thought, self-direction action, stimulation, and hedonism; and conservation encompasses security-personal, security-societal, tradition, conformity-rules, conformity-interpersonal, humility, and face, as suggested by Cieciuch and Schwartz (2012). These four higher-order values were individually tested on consumers' liking of and purchase intention regarding BMW and MB.

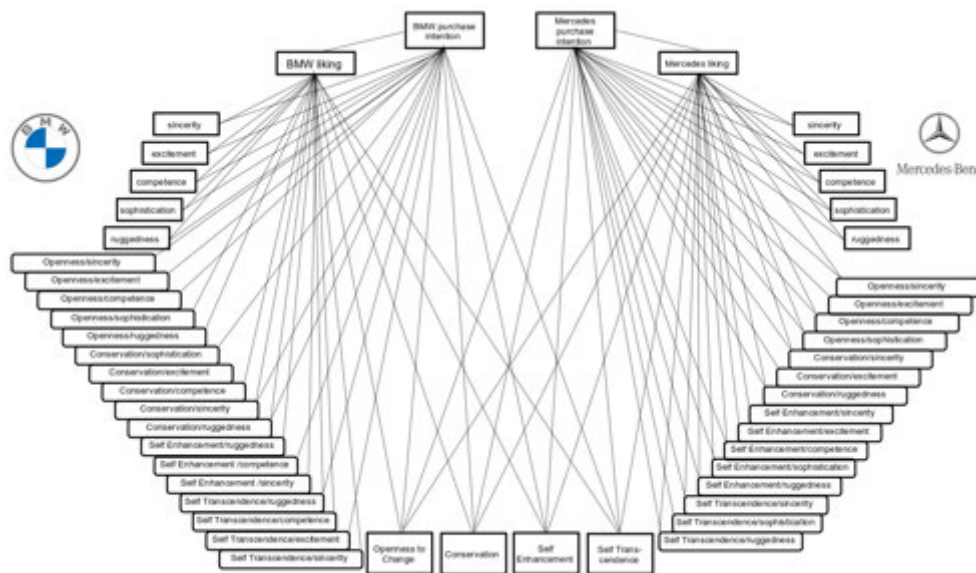
**Figure 4.4.5 Measurement model – piecewise structural equation modeling: perception of brand personality**



Source: Author

As depicted in Figure 4.4.5, all five brand personalities (sincerity, excitement, competence, sophistication, and ruggedness) were tested for both brands individually in terms of liking and purchase intention.

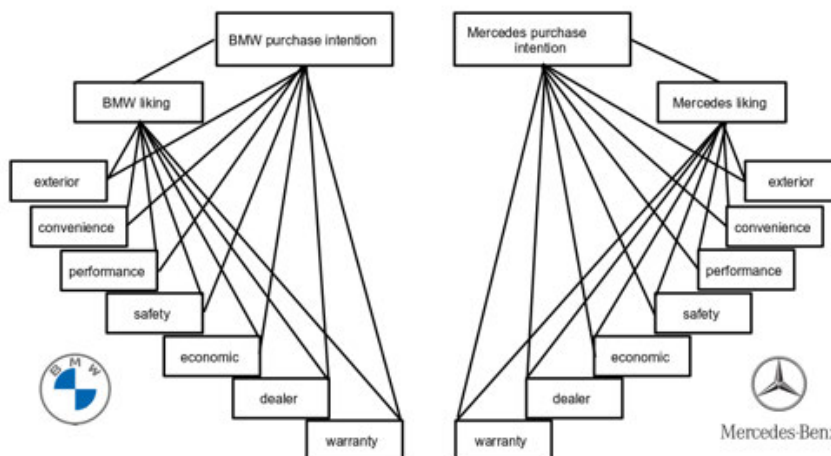
**Figure 4.4.6 Measurement model – piecewise structural equation modeling: self–brand congruence**



Source: Author

Figure 4.4.6 presents each possible combination of higher-order values and brand personality for self–brand congruence. The combinations were tested based on liking and purchase intention for each brand individually.

**Figure 4.4.7 Measurement model – piecewise structural equation modeling: functional congruity**



Source: Author

As can be derived from Figure 4.4.7, all seven functional congruencies (exterior, convenience, performance, safety, economic aspect, dealership, and warranty topics) were tested for both brands in terms of liking and purchase intention.

PSEM was done through R-project 4.0.0 because R-project is a major data analysis tool. It is open source; runs on multiple platforms, such as MacOS; and provides several packages for multiple data analysis purposes (Field et al., 2012).

## **4.5 Developing the theoretical model**

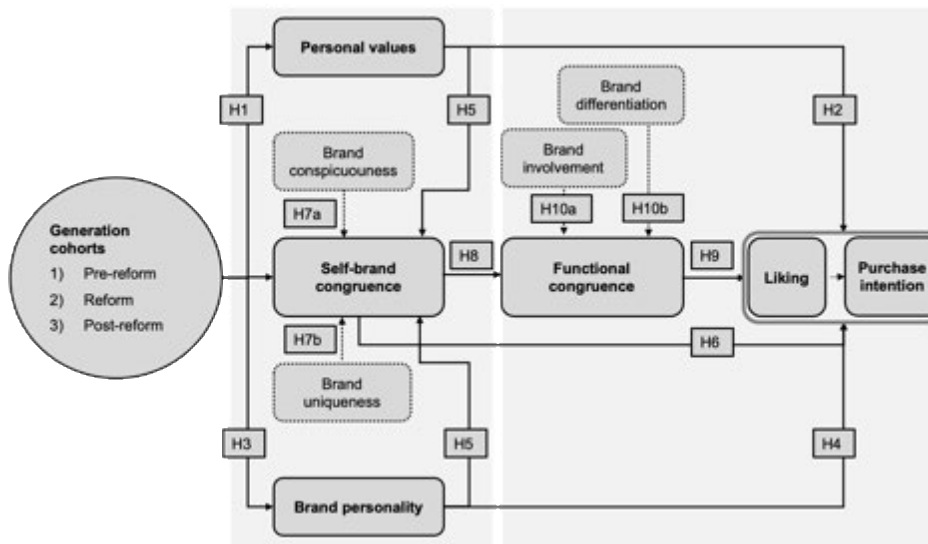
The theoretical model for conducting PSEM is established based on the 10 hypotheses. The conceptual model in Figure 4.5.1 presents a path model with arrows indicating the theoretical, causal relationships among the constructs.

Personal values as well as higher-order personal values and perception of brand personality form self–brand congruence, which in turn is the antecedent to functional congruence. Self–brand congruence is hypothesised to affect liking and purchase intention both directly and indirectly through functional congruence, whereas functional congruence is hypothesised to influence liking and purchase intention directly. Furthermore, brand conspicuousness and brand uniqueness are assumed to mediate self–brand congruence, whereas brand involvement and brand differentiation are suggested to mediate functional congruence.

Overall, liking – as an antecedent to purchase intention (Rosenbloom et al., 2012) – and purchase intention are positioned collectively as the critical relational outcome dimension (see Figure 4.5.1). Liking might contribute to a better understanding of significant indirect influences through liking on purchase intention.

Moreover, generational cohorts are the central point in this study.

**Figure 4.5.1 Conceptual model**



Source: Author

## 4.6 Developing the measurement model

PSEM was assessed through Fisher's C, R-squared, AIC, and BIC, in line with Shipley (2009). By exploring the model fit, one can define the degree to which the construct fits the sample data.

The goodness-of-fit indices outlined in this section for CFA and PSEM were applied in this research, as they are widely used to check the robustness of models (Hair et al., 2014; Shipley, 2009).

### 4.6.1 Fit indices

#### 4.6.1.1 Fit indices – confirmatory factor analysis

##### Root mean square error of approximation

RMSEA is based on information about confidence intervals and non-centrality parameters. However, if the ratio of the chi-square value to the degree of freedom is complex, the ratio is poor (Kline, 2011). Additionally,



there might be an error for low samplings and small degrees of freedom. RMSEA is applied for a good estimation of the model fit. It indicates a reasonable fit if it is  $\leq 0.08$  (Hair et al., 2014).

### **Standardised root mean square residual**

The SRMR is the standardised difference between the observed and the predicted relationship (Kline, 2011). It indicates a reasonable fit if it is  $\leq 0.08$  (Hair et al., 2014) and would be best at a value of 0.

RMSEA and SRMR are absolute fit indices and reveal how well a model replicates the data.

### **Fit indices**

The comparative fit index (CFI) focuses on the non-centrality measure. This measures the improvement of a normed fit index (Kline, 2011). If the parameter is  $>1$ , it will be adjusted to 1, and if it is  $<0$ , it will be adjusted to 0. The CFI was considered for this study, as it is the more frequently applied of the incremental fit indices. It indicates a reasonable fit if it is  $\geq 0.90$ , as stated by Hair et al. (2014). However, since the CFI is dependent on the average correlation size of the data, other fit indices were also considered.

The AIC is applied as a comparative measure (Hair et al., 2014) as soon as two different models are compared. The model with the lower AIC value would be a better model fit (Kline, 2011).

The BIC is a comparative measure that considers the sample size. The model with the lower BIC will demonstrate a better model fit (Kline, 2011).

The advantage of the AIC and BIC is that they can also be used for models with zero degrees of freedom (Kline, 2011).

#### 4.6.1.2 Fit indices – piecewise structural equation modeling

##### Fisher's C

As stated by Shipley (2009), the model fit can be assessed with Fisher's *C*. Fisher's *C* statistic is the test summarisation of the d-separation. If the *p*-value of Fisher's *C* is  $p \geq 0.05$ , the model will present a good fit, and therefore no significant paths will be missing. Fisher's *C* can be calculated as follows:

$$C = -2k \sum_{i=1} \ln(p_i)$$

- $C$  = Fisher's *C*;
- $k$  = number of independent claims in the basic model;
- $i$  = specific number of claims ( $i$ -th claim);
- $p$  = *p*-value from the significance test.

Additionally, Fisher's *C* corresponds to  $\chi^2$ , which would be applied in SEM:

$C = \chi^2$  distributed with  $2k$  degrees of freedom (*df*).

##### R-squared

In addition to the model fit index Fisher's *C*, R-squared presents the replication of the proportion of variance exhibited by the data, thus demonstrating a low residual error and an absence of missing paths. R-squared is defined as the coefficient of determination and presents the predictive strength of the model for the dependent constructs. Hence, it is used for measuring the model fit of linear regression models and reveals the percentage of the dependent variable that is explained by the independent variables (Hair et al., 2014). As a result, R-squared is used for assessing prediction accuracy.

$$R^2 = \text{Variance explained by the model} / \text{Total variance}$$

The value can range from 1 to 0, where 1 demonstrates that 100% of the model is replicated by the data, and 0 indicates no replication. According to Hair et al. (2014), an  $R^2$  value of  $>0.75$  is substantial, while a value of 0.50–

0.75 is moderate, and values of 0.25–0.50 and 0–0.25 are weak and very weak respectively. However, the recommendations vary. For example, Cohen (1988) states that an  $R^2$  value of  $>0.26$  is substantial, while 0.16–0.26 is moderate, and 0.02–0.16 and 0–0.02 are weak and very weak respectively.

Despite this fact, a low R-squared can still be identified as a good model fit (Hair et al., 2014). Some studies display more unexplained variances than others; human behaviour in particular is difficult to explain and tends to present low R-squared values (Fromm, 2012). Nevertheless, a high R-squared does not have to provide a suggestion of an adequate model fit, because the R-squared tends to increase with the increase of independent variables, which might lead to overfitting problems. This is especially relevant for a full model when all indicators are incorporated. This effect could be solved through the application of an adjusted R-squared instead of an R-squared.

In contrast to R-squared, the adjusted R-squared indicates how well a line or curve fits with an adjustment to the number of independent variables (Hair et al., 2014). If the adjusted R-squared decreases even after additional variables are incorporated, this suggests that the variable does not add any value to the model. Contrary to this, if with further incorporated independent variables, the adjusted R-squared increases, then the variable adds value to the model.

However, this is not required when conducting PSEM. Since Cohen's (1988) recommendations have been developed for behavioural science, which is in accordance with this study, the guidelines of an  $R^2$  value of  $>0.26$  being substantial, 0.16–0.26 moderate, 0.02–0.16 weak, and 0–0.02 very weak were chosen.

### **Akaike information criterion and Bayesian information criterion**

Furthermore, the AIC and BIC are applied as comparative measure as soon as two different models are compared. The AIC for PSEM can be calculated

as follows:  $AIC = C + 2K$  ( $K$  = likelihood degree of freedom). The model with the lower AIC and BIC would demonstrate a better model fit (Kline, 2011).

It has been pointed out that the more items included in the model, the worse the model fit (Lefcheck, 2016). One can consequently slightly loosen some criteria in certain circumstances (Hair et al., 2014).

In the following sections, all hypotheses are tested with all relevant statistical methods outlined in Chapter 3. Moreover, the model fit and validity assessment are provided for all models of the confirmatory path analysis, namely the PSEM.

Overall, there are several fit indices, all of which reflect another factor of the model. Therefore, researchers should apply numerous fit indices to examine the model from different perspectives (Kline, 2011).

The following Table (see Table 4.6.1.2.1) lists the fit indicators used in this research.

**Table 4.6.1.2.1 Model fit indicators**

Indicator	Definition	Value used in this study
CFI	Comparative fit index	$\geq 0.90$
RMSEA	Root-mean-square error of approximation	$< 0.08$
SRMR	Standardised root-mean-square residual	$< 0.08$
Fisher's C	Goodness-of-fit for PSEM with a good model fit if $p \geq 0.05$ , thus not significant	$\geq 0.05$

The next step involves assessing reliability and validity (Hair et al., 2014) for testing the unidimensionality of the measurement as a pre-requisite for CFA. Section 4.7 thus explores whether several indicators are explained by the specific construct.

## 4.7 Testing Reliability and Validity

### 4.7.1 Reliability for factor analysis

According to Charry et al. (2016), the items of a construct must be internally consistent and reliable. Internal consistency is measured by the coefficient Cronbach's alpha, which measures the loading of items on the same construct. Cronbach's alpha is used to measure the internal consistency. A Cronbach's alpha value of 1 means that the items of the concept (of each value) are totally consistent and explain 100% of the concept (Fromm, 2012). Kline (2011) concludes that a value of 0.70 and above demonstrates high internal consistency of the items. Therefore,  $\alpha \geq 0.70$  is the lowest acceptable value for internal consistency in this research.

CR (defined as composite or construct reliability; Hair et al., 2014) and AVE (defined as the average shared variance; Hair et al., 2014) were also tested (Fornell & Larcker, 1981) to determine reliability as a pre-requisite for the CFA. CR measures internal consistency (i.e. the extent to which the indicators present the latent construct), whereas AVE is measured complementarily to CR. AVE indicates convergence by testing the mean variance of an item's loadings on one construct. As suggested by Fornell and Larcker (1981), CR should be  $\geq 0.6$ , and AVE should be  $\geq 0.5$ .

This research verified reliability using Cronbach's alpha ( $\alpha \geq 0.7$ ), CR ( $\geq 0.6$ ), and AVE ( $\geq 0.5$ ), which are particularly relevant for the CFA in this study (see Table 4.7.2.3).

### 4.7.2 Validity for factor analysis

According to Sarstedt and Mooi (2019), validity demonstrates whether the results are really what they seem to be (i.e. it asks, "do we measure what we want to measure?"). Validity is crucial because it indicates how well a measure demonstrates its unobservable construct (Hair et al., 2014). There

are different types of validity, namely content, face, criterion, predictive, discriminant, and nomological validity, and they are collectively also called construct validity (Sarstedt & Mooi, 2019).

### **Face validity**

Face validity can be defined as a subjective evaluation. It questions whether the research measures what it should measure and, consequently, if the chosen measurements of the research properly demonstrate the construct (Sarstedt & Mooi, 2019). Face validity is usually conducted first; it is not only the simplest but also a subjective type of validity (Hair et al., 2014).

The aim of face validity is to elaborate a study as a reflection of existing theories, thus minimising subjectivity. To test this validity in the present study, a pre-test of 30 responses were evaluated to determine the following: 1) How much time was needed for completion? 2) Was the layout clear? 3) Were any questions difficult to understand? The pre-test results did not reveal any face validity problems. Therefore, it is assumed that the face validity of this study is satisfactory for complete research.

### **Content validity**

Content validity follows as the next step, where the following are defined: what should be measured, and with which definitions and concepts (Sarstedt & Mooi, 2019). However, Hair et al. (2014) argue that content validity is subjective.

For collecting primary data within a Chinese context, characteristics and meanings must be considered. This was performed through the back-translation technique with professional Chinese–English translators and adjusted accordingly (Kromrey, 2009). Furthermore, a pre-test was conducted before the main stage. As a result, it is assumed that the content of this study demonstrates sufficient content validity.

### **Discriminant validity**

Discriminant validity is based on an empirical measurement of different concepts, and the constructs should not present strong relationships (Sarstedt & Mooi, 2019). Multicollinearity was thus tested for personal values and higher-order values (see Tables 4.7.2.1–4.7.2.2). Additionally, to test the strength of correlations, the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) was employed (see Table 4.7.2.3) to test whether the data is suitable for factor analysis (Hair et al., 2014).

### **Predictive and criterion validity**

Predictive validity measures items with a strong relationship. This is the case if data collection takes place twice over time. Thus, a specific construct is tested and compared if a measure is related to a result in the future.

However, if data collection occurs at one time only, this is called criterion validity, which calculates the degree to which a measure is related to the result. (Sarstedt & Mooi, 2019). In this study, data collection took place at one time only. Therefore, criterion validity is relevant, especially because CFA was applied to personal values. Construct validity is measured based on the factor loading of each item of the constructs. According to Hair et al. (2014), a significant factor loading with at least 0.5 is required. However, 0.7 and above would be preferable (Hair et al., 2014; see Table 4.7.2.3).

However, this is only relevant when conducting CFA, not when PSEM is applied, since the confirmatory path analysis verifies each path individually.

**Table 4.7.2.1 Correlation – personal values**

				Correlation personal values																			
		M	SD		SD T	SD A	St	He	A	PD	PR	F	SP	SS	T	CR	CI	Hu	UN	UC	UT	BC	B D
SD T		4. 90	0.7 95		--																		
SD A		4. 90	0.8 26		.76 4**	--																	
St		4. 73	0.9 19		.68 7**	.69 5**	--																
He		5. 00	0.7 72		.71 3**	.72 0**	.66 4**	--															
A		4. 78	0.8 95		.59 7**	.63 3**	.68 2**	.56 9**	--														
PD		4. 43	0.9 78		.53 5**	.52 2**	.63 8**	.46 5**	.65 3**	--													
PR		4. 51	1.0 11		.48 8**	.44 2**	.57 3**	.43 8**	.65 5**	.66 4**	--												
F		4. 66	0.8 38		.61 7**	.60 4**	.64 7**	.55 1**	.64 9**	.68 7**	.59 9**	--											
SP		4. 95	0.8 17		.63 5**	.70 3**	.58 4**	.69 5**	.54 5**	.44 5**	.46 9**	.64 2**	--										
SS		4. 93	0.8 03		.64 8**	.68 9**	.65 2**	.72 7**	.55 7**	.47 1**	.40 4**	.56 3**	.67 7**	--									
T		4. 69	0.9 03		.62 6**	.59 5**	.55 5**	.52 6**	.56 1**	.58 3**	.48 6**	.56 5**	.55 4**	.60 0**	--								
C R		4. 81	0.8 69		.63 6**	.67 6**	.60 1**	.68 3**	.55 7**	.48 3**	.40 4**	.60 2**	.73 6**	.70 4**	.64 0**	--							



CI	4. 55	0.8 83	.62 7**	.57 5**	.57 5**	.55 4**	.48 9**	.52 0**	.42 3**	.60 4**	.59 6**	.57 2**	.63 2**	.64 0**	--						
Hu	4. 50	0.8 96	.60 8**	.56 2**	.56 4**	.54 0**	.46 7**	.62 5**	.44 2**	.62 9**	.59 0**	.53 5**	.62 0**	.64 9**	.64 0**	--					
U N	4. 92	0.8 24	.68 1**	.62 2**	.61 7**	.66 3**	.56 0**	.46 1**	.41 5**	.49 4**	.59 9**	.66 8**	.55 8**	.66 1**	.56 5**	.59 5**	--				
U C	4. 78	0.8 50	.64 3**	.67 3**	.64 6**	.63 3**	.56 5**	.56 1**	.41 1**	.55 9**	.61 8**	.67 1**	.59 4**	.70 4**	.63 9**	.62 8**	.68 8**	--			
UT	4. 86	0.8 32	.71 4**	.71 6**	.68 4**	.66 0**	.57 4**	.57 4**	.46 8**	.58 3**	.63 3**	.67 2**	.63 2**	.69 1**	.61 0**	.62 6**	.65 0**	.70 4**	--		
BC	4. 96	0.7 89	.65 2**	.66 5**	.66 2**	.75 9**	.62 0**	.49 5**	.42 5**	.55 3**	.67 4**	.65 7**	.57 9**	.68 5**	.55 5**	.57 5**	.66 5**	.64 3**	.64 1**	--	
BD	4. 86	0.8 04	.67 4**	.65 1**	.64 8**	.70 2**	.60 1**	.57 7**	.50 6**	.61 3**	.70 6**	.70 3**	.66 2**	.65 9**	.60 2**	.63 8**	.65 0**	.66 5**	.68 1**	.76 1**	--

\*\* Correlation is significant at the 0.01 level (2-tailed).

**Table 4.7.2.2 Correlation – higher-order values**

			Correlation			
	M	SD	STr	SE	OC	Con
STr	4.88	0.705	--			
SE	4.57	0.845	.686**	--		
OC	4.88	0.731	.878**	.708**	--	
Con	4.78	0.719	.883**	.666**	.842**	--

\*\* Correlation is significant at the 0.01 level (2-tailed).

Table 4.7.2.1 and Table 4.7.2.2 indicate that all correlations ( $r$ ) are positive, thus revealing that the identical underlying characteristic is measured. The lowest correlations are between security-societal and conformity-rules on the one hand and power-resources on the other ( $r = 0.404$ ), while the highest correlations are between self-enhancement and conservation ( $r = 0.666$ ), self-direction action and self-direction thought ( $r = 0.764$ ), and self-transcendence and conservation ( $r = 0.883$ ). All correlations are significant at the 0.01 level.

Personal values and higher-order values correlate well above 0.3 (Kline, 2011) and thus are not measuring something else. Additionally, the correlation is below the requested threshold of  $r < 0.8$  (Kline, 2011).

**Table 4.7.2.3 Reliability and validity of the constructs**

Item	KMO	Appr. X <sup>2</sup>	df	Sig.	M	SD	Cronbach's Alpha	Std. Cronbach's Alpha	No of Items	Factor loading	CR	AVE
<b>4HOV</b>	0.843	1.134.204	6	0.000			0.928	0.933	4		0.953	0.835
STr					4.876	0.705				0.948		
SE					4.573	0.845				0.942		
OC					4.883	0.731				0.932		
Con					4.784	0.719				0.828		
<b>STr</b>	0.879	976.010	10	0.000			0.912	0.912	5		0.934	0.740
UN					4.918	0.824				0.848		
UC					4.782	0.850				0.860		
UT					4.863	0.832				0.854		
BC					4.961	0.789				0.863		
BD					4.856	0.804				0.875		
<b>SE</b>	0.733	387.316	3	0.000			0.851	0.852	3		0.910	0.771
A					4.777	0.090				0.876		
PD					4.431	0.978				0.879		
PR					4.512	1.011				0.880		

Item	KMO	Appr. X <sup>2</sup>	df	Sig.	M	SD	Cronbach's Alpha	Std. Cronbach's Alpha	No of Items	Factor loading	CR	AVE
<b>OC</b>	0.850	767.844	6	0.000			0.904	0.906	4		0.935	0.781
SDT					4.903	0.795				0.898		
SDA					4.897	0.826				0.902		
St					4.726	0.919				0.859		
He					5.004	0.772				0.876		
<b>Con</b>	0.920	1,325.17	21	0.000			0.919	0.919	7		0.934	0.669
F					4.664	0.838				0.800		
SP					4.946	0.817				0.817		
SS					4.928	0.803				0.810		
T					4.689	0.903				0.801		
CR					4.807	0.869				0.869		
CI					4.549	0.883				0.815		
Hu					4.499	0.896				0.811		
<b>19 PV</b>	0.965	4,987.76	171	0.000			0.966	0.967	19		0.964	0.590
UN					4.9178	0.824				0.666		
UC					4.7822	0.850				0.685		
UT					4.8633	0.832				0.702		
BC					4.9611	0.789				0.704		
BD					4.8556	0.804				0.846		

Item		KMO	Appr. X <sup>2</sup>	df	Sig.	M	SD		Cronbach's Alpha	Std. Cronbach's Alpha	No of Items		Factor loading	CR	AVE
A						4.7767	0.895						0.762		
PD						4.4311	0.978						0.720		
PR						4.5122	1.011						0.634		
SDT						4.903	0.795						0.836		
SDA						4.897	0.826						0.835		
St						4.726	0.919						0.822		
He						5.004	0.772						0.819		
F						4.664	0.838						0.777		
SP						4.946	0.817						0.807		
SS						4.928	0.803						0.813		
T						4.689	0.903						0.767		
CR						4.807	0.869						0.828		
CI						4.549	0.883						0.758		
Hu						4.499	0.896						0.765		
<b>BD</b>		0.682	182.899	3	0.000				0.728	0.728	3			0.847	0.648
BD1						4.867	0.955						0.816		
BD2						4.8967	1.00467						0.808		
BD3						4.8033	1.03678						0.791		
<b>BC</b>		0.680	192.916	3	0.000				0.735	0.735	3			0.850	0.654
BC1						4.960	0.977						0.827		

Item	KMO	Appr. X <sup>2</sup>	df	Sig.	M	SD	Cronbach's Alpha	Std. Cronbach's Alpha	No of Items	Factor loading	CR	AVE
BC2					5.013	0.978				0.822		
BC3					4.910	0.972				0.777		
<b>UC</b>	0.671	186.327	3	0.000			0.726	0.726	3		0.846	0.647
UC1					4.730	1.129				0.834		
UC2					4.940	0.969				0.815		
UC3					4.677	1.066				0.763		
<b>UT</b>	0.701	239.546	3	0.000			0.775	0.776	3		0.870	0.691
UT1					4.833	0.977				0.839		
UT2					4.870	0.991				0.827		
UT3					4.887	1.035				0.827		
<b>UN</b>	0.685	259.33	3	0.000			0.781	0.781	3		0.873	0.696
UN1					4.977	0.973				0.866		
UN2					4.867	1.006				0.847		
UN3					4.910	0.986				0.788		
<b>PR</b>	0.705	255.64	3	0.000			0.781	0.786	3		0.875	0.701
PR1					4.380	1.276				0.843		
PR2					4.710	1.057				0.842		
PR3					4.447	1.288				0.826		

Item	KMO	Appr. X <sup>2</sup>	df	Sig.	M	SD	Cronbach's Alpha	Std. Cronbach's Alpha	No of Items	Factor loading	CR	AVE
<b>PD</b>	0.666	191.477	3	0.000			0.727	0.728	3		0.847	0.648
PD1					4.293	1.251				0.839		
PD2					4.493	1.223				0.821		
PD3					4.507	1.172				0.753		
<b>A</b>	0.693	237.847	3	0.000			0.771	0.772	3		0.868	0.687
A1					4.763	1.110				0.849		
A2					4.790	1.053				0.834		
A3					4.777	1.079				0.802		
<b>SDA</b>	0.686	199.965	3	0.000			0.743	0.743	3		0.854	0.661
SDA1					4.9067	1.02378				0.833		
SDA2					4.8133	0.98406				0.805		
SDA3					4.97	1.04214				0.800		
<b>SDT</b>	0.616	237.054	3	0.000			0.768	0.768	3		0.866	0.684
SDT1					4.983	0.938				0.853		
SDT2					4.803	1.007				0.841		
SDT3					4.923	0.938				0.785		
<b>He</b>	0.679	168.698	3	0.000			0.712	0.715	3		0.840	0.637

Item	KMO	Appr. X <sup>2</sup>	df	Sig.	M	SD	Cronbach's Alpha	Std. Cronbach's Alpha	No of Items	Factor loading	CR	AVE
He1					5.140	0.862				0.803		
He2					4.937	1.015				0.796		
He3					4.937	1.021				0.795		
<b>St</b>	0.691	209.885	3	0.000			0.750	0.752	3		0.858	0.669
St1					4.763	1.041				0.828		
St2					4.623	1.227				0.824		
St3					4.790	10.421				0.801		
<b>CR</b>	0.676	208.228	3	0.000			0.744	0.746	3		0.855	0.663
CR1					4.670	1.113				0.850		
CR2					4.830	1.064				0.811		
CR3					4.920	1.028				0.781		
<b>SP</b>	0.650	173.679	3	0.000			0.703	0.709	3		0.838	0.633
SP1					5.150	0.999				0.847		
SP2					5.027	0.967				0.782		
SP3					4.660	1.120				0.755		
<b>CI</b>	0.650	170.966	3	0.000			0.704	0.703	3		0.836	0.630
CI1					4.560	1.097				0.833		
CI2					4.500	1.120				0.821		



Item	KMO	Appr. X <sup>2</sup>	df	Sig.	M	SD	Cronbach's Alpha	Std. Cronbach's Alpha	No of Items	Factor loading	CR	AVE
CI3					4.587	1.125				0.722		
<b>Hu</b>	0.625	107.917	3	0.000			0.610	0.622	3		0.799	0.571
Hu1					4.050	1.362				0.806		
Hu2					4.850	1.051				0.767		
Hu3					4.597	1.151				0.689		
<b>SS</b>	0.661	189.606	3	0.000			0.725	0.724	3		0.845	0.646
SS1					5.020	0.964				0.837		
SS2					4.883	0.983				0.829		
SS3					4.880	1.050				0.741		
<b>T</b>	0.689	195.544	3	0.000			0.741	0.741	3		0.853	0.659
T1					4.697	1.123				0.815		
T2					4.690	1.085				0.814		
T3					4.680	1.129				0.806		
<b>F</b>	0.608	71.697	3	0.000			0.534	0.550	3		0.760	0.516
F1					4.933	1.0643				0.761		
F2					4.833	1.0468				0.760		
F3					4.227	1.3570				0.625		

As can be derived from Table 4.7.2.3, Cronbach's alpha is  $\alpha = 0.534$  for face and  $\alpha = 0.610$  for humility (see Table 4.7.2.3, column "Cronbach's alpha"); thus, the internal consistency is not satisfying. For all other personal values and higher-order values,  $\alpha \geq 0.7$  (Kline, 2011). To develop a new scale, items below the threshold of  $\alpha \geq 0.7$  should be removed. However, when applying a validated and established scale, the deletion of items would result in the findings not being comparable with other research (Kline, 2011). Therefore, despite the low Cronbach's alpha values of face and humility, all items were considered in the analysis.

CR is the lowest for humility (CR = 0.799; see Table 4.7.2.3, column "CR"), but above the requested threshold of CR  $\geq 0.6$ , and AVE is the lowest for face (AVE = 0.516; see Table 4.7.2.3, column "AVE") but also above the preferred threshold of AVE  $\geq 0.5$  (Fornell & Larcker, 1981). Reliability based on CR and AVE is hence good.

Regarding construct validity, the third question of face presents the lowest factor loading of 0.625 (see Table 4.7.2.3, column factor loading). All personal values and higher-order personal values are consequently above the requested factor loading threshold of  $\geq 0.5$  (Hair et al., 2014).

Furthermore, for face, KMO = 0.608, which is the lowest (see Table 4.7.2.3, column "KMO"). All KMO values are thus above the requested threshold of  $\geq 0.6$  (Kline, 2011), and Bartlett's test of sphericity is significant for all values ( $p = 0.000$ ); therefore,  $p < 0.05$  (see Table 4.7.2.3, column "Sig."). The factor analysis is consequently appropriate and can be conducted.

Liking and purchase intention were also explored in terms of reliability and validity (see Table 4.7.2.4).

**Table 4.7.2.4 Correlation – liking and purchase intention**

			Correlation	
Item Statistics BMW	M	SD	BMW liking	BMW PI
BMW liking	5.22	0.899	1	
BMW PI	4.81	1	0.666**	1
			Correlation	
Item Statistics MB	M	SD	MB liking	MB PI
MB liking	5.07	0.954	1	
MB PI	4.54	1	0.635**	1

\*\* Correlation is significant at the 0.01 level (2-tailed).

As Table 4.7.2.4 indicates, all correlations are positive, thus revealing that the identical underlying characteristic is measured. For BMW ( $r = 0.666$ ) and for MB ( $r = 0.635$ ), the correlation is significant at the 0.01 level. Liking and purchase intention regarding the two brands thus correlate well above 0.3 (Kline, 2011) and are therefore not measuring something else. Additionally, the correlation is below the requested  $r < 0.8$  (Kline, 2011).

Measuring Cronbach's Alpha and factor loading for two items is not recommended by Hair et al. (2014). As a result, single-item measure might lead to reliability and validity problems (Sarstedt & Wilczynski, 2009). However, this isn't critical when using PSEM and RSA.

#### **4.7.3 Reliability and validity for piecewise structural equation modeling**

Concerning PSEM, Fisher's C was used to measure the model fit, and all invalid paths were eliminated during the analysis. An exploration of the factor loading and Cronbach's alpha of each item for measuring reliability and validity is not relevant for PSEM (Lefcheck, 2016). This is because analysis with multiple regressions is internally valid if the estimated regression

coefficients are consistent and unbiased, and as long as standard errors fulfil the required confidence level (Hair et al., 2014). The confidence level in this research was chosen with a significance level of 0.05 because this level is most widely used, according to Hair et al. (2014).

However, since the 19 personal values may be highly correlated with each another, multicollinearity was checked. Multicollinearity is described as the effect of a strong correlation between multiple independent variables in multiple regression analysis (Kline, 2011). In the presence of multicollinearity, the evaluation of the impact of independent variables on the dependent variables is difficult to interpret. In such cases, it is necessary to calculate the variance inflation factor (VIF) for diagnosing multicollinearity. High multicollinearity is considered if  $VIF \geq 10$  (Hair et al., 2014), although Kline (2011) suggests a threshold  $VIF < 5$ . However, Kline's recommendation is based on SEM, which is not considered in this research. Therefore, a  $VIF < 10$  was accepted (Hair et al., 2014), variables with a  $VIF \geq 10$  were eliminated. The VIF of the 19 personal values are presented in Table 4.7.3.1.

**Table 4.7.3.1 Variance inflation factors of personal values**

<b>Multicollinearity personal values</b>	<b>VIF</b>
Self-direction thought	3.578190
Self-direction action	3.753722
Stimulation	3.214442
Hedonism	3.674096
Achievement	3.016607
Power-dominance	3.180256
Power-resources	2.352750
Face	3.037634
Security-personal	3.441218
Security-societal	3.194893
Tradition	2.583656
Conformity-rules	3.594885

<b>Multicollinearity personal values</b>	<b>VIF</b>
Conformity-interpersonal	2.424580
Humility	2.805241
Universalism-nature	2.808019
Universalism-concern	3.081402
Universalism-tolerance	3.181790
Benevolence-care	3.587680
Benevolence-dependability	3.725436

Table 4.7.3.1 indicates that with the highest VIF for SDA (3.753), all VIF values are below the requested threshold of  $VIF < 10$  (Hair et al., 2014). The PSEM can consequently be conducted for specification, identification, parameter estimation, model evaluation, and model modification.

In accordance with the 19 personal values, the brand personality dimensions for BMW and MB were also checked for multicollinearity, as these variables should be eliminated from the model due to specification error (Kline, 2011). The VIF was analysed, and high multicollinearity was given for a calculated  $VIF \geq 10$  (Hair et al., 2014), which might create problems for multiple regression analysis. In this research,  $VIF < 10$  was hence accepted (Kline, 2011; see Table 4.7.3.2), and variables with  $VIF \geq 10$  were eliminated.

**Table 4.7.3.2 Variance inflation factors of brand personality dimensions**

<b>Brand personality</b>	<b>VIF</b>
BMW Sincerity	1.638328
BMW Excitement	1.539390
BMW Competence	1.566665
BMW Sophistication	1.468175
BMW Ruggedness	1.688858
MB Sincerity	1.652490
MB Excitement	1.503814
MB Competence	1.679490

<b>Brand personality</b>	<b>VIF</b>
MB Sophistication	1.682671
MB Ruggedness	1.579611

As can be seen in Table 4.7.3.2, BMW Ruggedness has the highest VIF value (1.688858), but it is still well below the requested threshold of <10 (Hair et al., 2014). Therefore, all independent brand personality variables can be accepted for PSEM.

## **4.8 Implementing the models**

### **4.8.1 Analysis of BMW and Mercedes-Benz in terms of liking and purchase intention**

To measure liking and purchase intention, the respondents were asked to indicate their agreement level on a six point-Likert scale, with 6 being “I like very much” and “I strongly intend to buy”, and 1 being “not liking at all” and “not intend to buy at all”. Based on a paired-samples *t*-test, the means of BMW liking and MB liking as well as BMW purchase intention and MB purchase intention were compared to test whether there are significant differences between the two brands (see Table 4.8.1.1). For *t*-tests, a normal distribution is usually required; however, for a sample size of >30, a non-normal distribution is unlikely to lead to major problems (Kline, 2011).

**Table 4.8.1.1 Paired-samples test – BMW and Mercedes-Benz**

		Paired Differences					t	df	Sig. (2-tailed)
				Std. Err or Mea n	95% Confidence Interval of the Difference				
					Low er	Upp er			
Pair 1	BMW liking (L) - MB L	0.147	0.872	0.05	0.048	0.246	2.912	299	0.004
Pair 2	BMW Purchase intention (PI) - MB PI	0.273	1,053	0.061	0.154	0.393	4.496	299	0.000

As can be seen in Table 4.8.1.1, BMW liking and MB liking with  $t_L(299) = 2.912$ ,  $M_L = 0.147$  and confidence interval with  $Lower_L = 0.048$  and  $Upper_L = 0.246$  with  $p_L = 0.004$ , thus is significant with  $p < 0.05$  (see column Sig. 2-tailed). There is thus a significant difference between BMW liking and MB liking.

Whereas BMW purchase intention and MB purchase intention with  $t_{PI}(299) = 4.496$ ,  $M_{PI} = 0.273$  and confidence interval with  $Lower_{PI} = 0.154$  and  $Upper_{PI} = 0.393$  with  $p_{PI} = 0.000$  (see column Sig. 2-tailed) being significant. Therefore, a significant difference exists between BMW purchase intention and MB purchase intention.

## 4.8.2 Analysis of personal values construct

In this section, the personal values, the corresponding higher-orders values, and the influence of generational cohorts are examined. The following hypotheses are hence tested:

$H_{01}$ : There are no differences in the importance of personal values between the three generational cohorts in China.

H<sub>a1</sub>: There are differences in the importance of personal values between the three generational cohorts in China.

On a six-point Likert scale, values from 1 “not like me at all” to 6 “very much like me” could be chosen. Respondents gave their scores based the strength of the congruence between the person described in the questionnaire and the respondent themselves.

Data was analysed in this study by applying CFA, statistical techniques for group comparisons, PSEM, and RSA. CFA was chosen over EFA because EFA would have been applied to check which items load on which construct, and these extracted factors would then have been used to explain variations in characteristics (Kromrey, 2009). EFA would not have demonstrated the set of 19 personal values and the four higher-order values as such, and there would hence be no representation of the importance of these values and no further detailed insights. As a result, EFA could not be employed in this study.

#### **4.8.2.1 Factorial structure of personal values**

The first part of the hypotheses testing of H1 involved a CFA to assess the proposed measurement model.

In line with Cieciuch and Schwartz (2012), separate CFAs were conducted for each higher-order personal value: 1) self-transcendence, including benevolence-care, benevolence-dependability, universalism-nature, universalism-concern, and universalism-tolerance; 2) self-enhancement, including achievement, power-dominance, and power-resources; 3) openness to change, including self-direction thought, self-direction action, stimulation, and hedonism; and 4) conservation, including security-personal, security-societal, tradition, conformity-rules, conformity-interpersonal, humility, and face.



Several fit indices were utilised to assess the model fit: CFI, RMSEA, and SRMR.

The results of the CFA of personal values are presented in Table 4.8.2.1.1 (see Appendix C1 for complete table).

**Table 4.8.2.1.1 Confirmatory factor analysis results for personal values**

lavaan 0.6-5 ended normally after 44 iterations

Estimator	ML
Optimization method	NLMINB
Number of free parameters	30
Number of observations	300

Model Test User Model:

Test statistic	88.555
Degrees of freedom	48
p-value (Chi-square)	0.000

Model Test Baseline Model:

Test statistic	1707.931
Degrees of freedom	66
p-value	0.000

User Model versus Baseline Model:

Comparative Fit Index (CFI)	0.975
Tucker-Lewis Index (TLI)	0.966

Loglikelihood and Information Criteria:

Loglikelihood user model (H0)	-4513.870
Loglikelihood unrestricted model (H1)	-4469.592
Akaike (AIC)	9087.740
Bayesian (BIC)	9200.126

Sample-size adjusted Bayesian (BIC)	9104.975
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Root Mean Square Error of Approximation:

RMSEA	0.052
90 Percent confidence interval - lower	0.035
90 Percent confidence interval - upper	0.069
p-value RMSEA $\leq$ 0.05	0.404

Standardised Root Mean Square Residual:

SRMR	0.032
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As can be seen in Table 4.8.2.1.1, the CFA is significant at  $p < 0.05$ , with  $X^2$  (Baseline) = 1707.931,  $df$  (Baseline) = 66, and  $p$  (Baseline) = 0.000; and  $X^2$  (User) = 88.555,  $df$  (User) = 48, and  $p$  (User) = 0.000. Thus,  $\delta$  (Baseline) =  $1707.931 - 66 = 1641.931$ , and  $\delta$  (User) =  $88.555 - 48 = 88.507$ . Based on these results, the user model with the best fit can be compared against the baseline model with the worst fit.

The model fit indices for the user model versus the baseline model with CFI is good at 0.975, which is greater than the requested threshold of  $\geq 0.90$  (Hair et al., 2014); the RMSEA of 0.052 is good at  $< 0.08$  (Kline, 2011); and the SRMR of 0.032 is good at  $< 0.08$  (Hair et al., 2014). All values are below the requested thresholds. Furthermore, the CFIs for the user model versus the baseline model are AIC = 9087.740 and BIC = 9200.126. Hence, the data provides a good model fit and fits the measurement model.

#### 4.8.2.2 Testing personal values on generational cohorts

In this section, the influence of age groups on personal values and higher-order personal values is explored (see Appendix C2 for ranking of importance of personal values).

An ANOVA was applied to test H1 because this method allows for a comparison of the means of all personal values among generational cohorts

in a less sophisticated manner. Thus, it is convenient and still fulfils all requirements.

All 19 personal values and four higher-order personal values were checked for homogeneity of variances. An ANOVA is a comparison of the means of more than two samples and serves to explore whether variances between groups are significantly greater than within groups. On the one hand, a one-way ANOVA aims to compare whether two or more independent variables' means, defined by one factor, are the same. On the other hand, a two-way ANOVA compares whether the means described by two factors are the same (Sarstedt & Mooi, 2019). For this part of the study, a one-way ANOVA was chosen.

The null hypothesis ( $H_0$ ) can be confirmed if all means do not differ significantly in value, whereas the alternative hypothesis ( $H_a$ ) can be confirmed if the means demonstrate significant differences in value. For this study, the three age groups are the independent variables, and personal values or higher-order personal values are the dependent variables. The output generated from the one-way ANOVA with post hoc tests is shown below (see Tables 4.8.2.2.1–4.8.2.2.7; see Appendix C3 and Appendix C4 for descriptive statistics of stimulation and self-enhancement).

**Table 4.8.2.2.1 Test of homogeneity of variances – personal values and higher-order personal values**

	Levene-statistic	df1	df2	Sig.
SDT	.573	2	297	.564
SDA	2.563	2	297	.079
St	5.774	2	297	<b>.003</b>
He	1.632	2	297	.197
A	.165	2	297	.848
PD	2.021	2	297	.134
PR	1.496	2	297	.226
F	.302	2	297	.740

	<b>Levene-statistic</b>	<b>df1</b>	<b>df2</b>	<b>Sig.</b>
SP	.012	2	297	.988
SS	.053	2	297	.949
T	1.322	2	297	.268
CR	.691	2	297	.502
CI	1.661	2	297	.192
Hu	.066	2	297	.936
UN	.644	2	297	.526
UC	.203	2	297	.816
UT	.488	2	297	.614
BC	.472	2	297	.624
BD	.338	2	297	.714
ST	.097	2	297	.907
SE	1.909	2	297	.150
OC	1.466	2	297	.233
Con	.809	2	297	.446

**Table 4.8.2.2.2 One-way analysis of variance – personal values and higher-order personal values**

		<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
SDT	Between groups	1.044	2	.522	.826	.439
	Within groups	187.819	297	.632		
	Total	188.863	299			
SDA	Between groups	1.719	2	.860	1.261	.285
	Within groups	202.522	297	.682		
	Total	204.241	299			
St	Between groups	8.819	2	4.410	5.372	.005
	Within groups	243.807	297	.821		
	Total	252.626	299			
He	Between groups	1.195	2	.598	1.004	.368
	Within groups	176.799	297	.595		

		Sum of Squares	df	Mean Square	F	Sig.
	Total	177.994	299			
A	Between groups	4.574	2	2.287	2.890	.057
	Within groups	235.018	297	.791		
	Total	239.592	299			
PD	Between groups	5.504	2	2.752	2.913	.056
	Within groups	280.517	297	.945		
	Total	286.021	299			
PR	Between groups	5.903	2	2.951	2.927	.055
	Within groups	299.497	297	1.008		
	Total	305.400	299			
F	Between groups	2.193	2	1.097	1.567	.210
	Within groups	207.805	297	.700		
	Total	209.999	299			
SP	Between groups	.459	2	.229	.342	.710
	Within groups	198.985	297	.670		
	Total	199.444	299			
SS	Between groups	.059	2	.030	.046	.955
	Within groups	192.709	297	.649		
	Total	192.769	299			
T	Between groups	.366	2	.183	.223	.800
	Within groups	243.486	297	.820		
	Total	243.852	299			
CR	Between groups	1.137	2	.569	.751	.473
	Within groups	224.761	297	.757		
	Total	225.898	299			
CI	Between groups	2.132	2	1.066	1.370	.256
	Within groups	231.040	297	.778		
	Total	233.172	299			
Hu	Between groups	.579	2	.290	.359	.698
	Within groups	239.309	297	.806		

		Sum of Squares	df	Mean Square	F	Sig.
	Total	239.889	299			
UN	Between groups	.078	2	.039	.057	.945
	Within groups	203.005	297	.684		
	Total	203.083	299			
UC	Between groups	.267	2	.133	.184	.832
	Within groups	215.505	297	.726		
	Total	215.772	299			
UT	Between groups	.340	2	.170	.244	.784
	Within groups	206.613	297	.696		
	Total	206.952	299			
BC	Between groups	.570	2	.285	.456	.634
	Within groups	185.532	297	.625		
	Total	186.102	299			
BD	Between groups	.348	2	.174	.268	.765
	Within groups	192.948	297	.650		
	Total	193.296	299			
ST	Between groups	.180	2	.090	.180	.835
	Within groups	148.434	297	.500		
	Total	148.614	299			
SE	Between groups	5.197	2	2.598	3.708	.026
	Within groups	208.116	297	.701		
	Total	213.313	299			
OC	Between groups	1.583	2	.792	1.486	.228
	Within groups	158.268	297	.533		
	Total	159.851	299			
Con	Between groups	.048	2	.024	.046	.955
	Within groups	154.618	297	.521		
	Total	154.666	299			

**Table 4.8.2.2.3 One-way analysis of variance – stimulation**

	<b>Sum of squares</b>	<b>df</b>	<b>Mean square</b>	<b>F</b>	<b>Sig.</b>
Between group	8.819	2	4.410	5.372	.005
Within group	243.807	297	.821		
Total	252.626	299			

**Table 4.8.2.2.4 Post hoc test for multiple comparisons – stimulation**

(I) Which age group are you	(J) Which age group are you	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-.3515	.1350	.030	-.6767	-.0263
	3	-.3711	.1310	.015	-.6868	-.0554
2	1	.3515	.1350	.030	.0263	.6767
	3	-.0195	.1164	.998	-.2999	.2607
3	1	.3711	.1310	.015	.0554	.6868
	2	.0195	.1164	.998	-.2607	.2999
*. The mean difference is significant at the 0.05 level.						



**Table 4.8.2.2.5 One-way analysis of variance – self-enhancement**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.197	2	2.598	3.708	.026
Within Groups	208.116	297	.701		
Total	213.313	299			

**Table 4.8.2.2.6 Post hoc test for multiple comparisons – self-enhancement**

(I) Which age group are you	(J) Which age group are you	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-.2755	.1187	.054	-.5551	.0040
	3	-.2799*	.1175	.047	-.5567	-.0031
2	1	.2755	.1187	.054	-.0040	.5551
	3	-.0044	.1190	.999	-.2847	.2758
3	1	.2799*	.1175	.047	.0031	.5567
	2	.00444	.1190	.999	-.2758	.2847
*. The mean difference is significant at the 0.05 level.						

**Table 4.8.2.2.7 Homogeneous lower group – self-enhancement (Tukey's T-test)**

Which age group are you	N	Subset for alpha = 0.05	
		1	2
1	102	4.3899	
2	97	4.6655	4.6655
3	101		4.66996
Sig.		.054	.999

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 99.953.
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

To test the homogeneity of variances, Levene's  $F$ -test was applied (Hair et al., 2014). This helps to check the null hypothesis regarding the equality of variances for the 19 personal values and four higher-order personal values. If the  $p$ -value is  $\geq 0.05$  (see Table 4.8.2.2.1, column "Sig."), the null hypothesis can be confirmed because of homogeneity of variances. As can be seen in Table 4.8.2.2.1, Levene's test is significant for stimulation ( $t$ -statistic = 5.774,  $p = 0.03$ ) with  $p < 0.05$  (see column Sig. in Table 4.8.2.2.1). All other personal values and higher-order personal values are non-significant with  $p \geq 0.05$ ; hence, equal variances can be assumed.

As a next step, a factorial between-groups ANOVA was applied to check the significance of the independent variables as well as the meaningfulness of the model. This method separates the total variation into two parts: between-group and within-group variation (see Table 4.8.2.2.2). A factorial between-groups ANOVA was applied to compare the means of different age groups. The significance test for the ANOVA was done via an  $F$ -test, which is a ratio of two mean squares whose expectations are the same, but which would be zero if the null hypothesis is true (Sarstedt & Mooi, 2019).

The results of the ANOVA in Table 4.8.2.2.2 indicate that for the personal values stimulation ( $F = 5.372$ ,  $p = 0.005$ ) and self-enhancement ( $F = 3.708$ ,  $p = 0.026$ ), the variance between the groups is significant with  $p < 0.05$  (see Table 4.8.2.2.2, column "Sig."). All other personal values and higher-order personal values do not have significant differences. ( $p \geq 0.05$ ). Thus, a separate ANOVA was executed to explore the cohort differences in stimulation and self-enhancement (Charry et al., 2016; see Table 4.8.2.2.3).

## Stimulation

Post hoc tests for multiple comparisons, which compare two segments (see Table 4.8.2.2.4, columns “I” and “J”), were applied (Kline, 2011). While several post hoc tests exist (e.g. Tukey, Sidak, and Bonferroni), Sidak and Tukey are the most widely used, according to Kromrey (2009). In this study, Tukey’s *T*-test was chosen because its performance is better on larger samples. Additionally, Tukey’s *T*-test is applied when equal variances are assumed, whereas when there are no equal variances, Dunnett-T3 is applied instead. As can be seen in Table 4.8.2.2.1, for stimulation, no equal variances were assumed; thus, Dunnett-T3 was used (see Table 4.8.2.2.4).

Table 4.8.2.2.4 indicates that for stimulation ( $md = -0.3500$ ,  $p = 0.03$ ), Age group 1 (the pre-reform generation) differs from Age group 2 (the reform generation). Stimulation ( $md = -0.3711$ ,  $p = 0.015$ ) also differs between Age group 1 and Age group 3 (the post-reform generation; see Table 4.8.2.2.4, column “Sig.”). Both values are  $p < 0.05$ , and there are thus significant differences between these age groups. Based on the negative mean differences, Age group 1 differs significantly and the most from the other age groups. The confidence interval for the differences between the means of Age group 1 and Age group 2 is  $-0.6767$  to  $-0.263$ , and between Age group 1 and Age group 3, it is  $-0.6868$  to  $-0.0554$  (see Table 4.8.2.2.4, column “95% confidence interval”). Therefore, 0 is not included, indicating that the difference is statistically significant.

However, for stimulation, Age group 2 differs from Age group 3 with  $p = 0.998$ , which is  $\geq 0.05$  and hence not significant. That is, there are no differences between these cohorts.

## Self-enhancement

A separate ANOVA was executed for self-enhancement (see Table 4.8.2.2.5). As shown in Table 4.8.2.2.5, for the higher-order value of self-enhancement ( $F = 3.708$ ,  $p = 0.026$ ), there are significant differences in the mean scores based on the overall significance of the ANOVA. A post hoc

comparison consequently was done to understand which age groups differ significantly (Charry et al., 2016).

A post hoc Tukey's *T*-test was applied to compare the pairs (Fromm, 2012). Again, a pairwise comparison considers two segments (see Table 4.8.2.2.6, columns "I" and "J"). As can be seen in Table 4.8.2.2.1, for self-enhancement, equal variances are assumed, and Tukey's *T*-test was therefore used (see Table 4.8.2.2.6 and 4.4.5.2.7). According to Table 4.4.2.3.7, for self-enhancement ( $md = -0.2799$ ,  $p = 0.047$ ), Age group 1 differs from Age group 3. Thus, the most differences exist between these generational cohorts. The confidence interval for the differences between the means of Age groups 1 and 3 is -0.5567 to -0.0031 (see Table 4.8.2.2.6, column "95% confidence interval"). Therefore, 0 is not included, indicating that the difference is statistically significant.

As a result, for self-enhancement, Age group 1 differs from Age group 2 with  $p = 0.054$ , and Age group 2 differs from Age group 3 with  $p = 0.999$ , which is not significant ( $p \geq 0.05$ ) for both results. Hence, there are no differences between these age groups.

**H1 (stating that there are differences in the importance of personal values between the three generational cohorts in China) can be accepted for stimulation and self-enhancement.**

#### **4.8.2.3 Testing the effect of personal values on purchase intention**

This section explores the impacts of the personal values of each generational cohort on purchase intention.

The following hypotheses were tested:

H<sub>0</sub>2: The specific personal value of each generational cohort does not influence liking and purchase intention.

H<sub>a</sub>2: The specific personal value of each generational cohort influences liking and purchase intention.

The associations between 19 personal values, four higher-order personal values, consumers' behaviour regarding BMW and MB liking and purchase intention, and the influence of generational cohorts were assessed with PSEM.

PSEM was applied to test the influence of the 19 personal values on the purchase intention of Chinese luxury passenger car consumers. In the first step, a multiple regression model was developed for the four outcomes or responses, namely BMW liking, BMW purchase intention, MB liking, and MB purchase intention, with the 19 personal values as predictors.

While in SEM, relationships between variables are estimated in a variance-covariance matrix simultaneously, a PSEM estimates each relationship separately (Byrne, 2010). Therefore, it is called confirmatory path analysis. Multiple or linear regressions for every response were carried out individually, and they were later composed in the complete PSEM (Shipley, 2009).

Either the forward-wise or the backward-wise method can be applied for PSEM (Lefcheck, 2014). The forward-wise method inputs the variables one by one for the most optimised model. If  $p\text{-value} < 0.05$ , the variable is included in the regression of the PSEM. If not, the variable will be excluded. The forward-wise method can be combined with a stepwise approach for analysing and monitoring all steps of the forward-wise method. The analysis starts with the variable with the lowest significance value and the strongest relationship with the dependent variable. The adjusted R-squared of the PSEM only increases if the new variable enhances the model. Hence, in each model, the  $p\text{-value}$  of the additional variable is  $p < 0.05$ ; therefore, the model is significant for each predictor adjustment. All variables with  $p \geq 0.05$  must be removed. However, the forward-wise method can lead to a type II error, where a false null hypothesis is accepted due to suppressor effects, since even though a variable is significant, another variable remains constant.

For this research, a forward, stepwise multiple regression was conducted, since PSEM selects variables that add significance to the statistical model stepwise (Lefcheck, 2015).

The model fit index for PSEM is Fisher's  $C$ , with  $p \geq 0.05$  considered to be good (Byrne, 2010). PSEM was applied in this research to analyse the 19 personal values (the independent variables) as predictors for the responses BMW liking, BMW purchase intention, MB liking, and MB purchase intention (the dependent variables; see Table 4.8.2.3.1).

**Table 4.8.2.3.1 Model fit – piecewise structural equation modeling: personal values**

Global goodness-of-fit:

Fisher's  $C = 0$  with  $p = 1.000$  and on 0 degrees of freedom

AIC	BIC
172.000	490.525

$C = 0$  with  $p = 1.000$  and on 0  $df$  (see Table 4.8.2.3.1) is with  $p \geq 0.5$  not significant, and therefore demonstrates a good model fit (Byrne, 2010). The lower Fisher's  $C$  is, the better the model is (Lefcheck, 2021). Based on the global estimation, the degree of freedom in PSEM corresponds to the number of missing paths or known variables. As a result, the degree of freedom reveals the number of missing relationships and presents the degree of freedom of Fisher's  $C$  and not of the model – which is in contrast to SEM. In this PSEM, there are consequently no missing relationships between the predictors and responses (Lefcheck, 2021). Furthermore,  $p > 0.9995$  was rounded up to  $p = 1.000$ .

The significant paths of the adjusted PSEM are presented in Table 4.8.2.3.2. Furthermore, the most important personal values influencing purchase intention are demonstrated and ranked according to their strength of impact in Table 4.8.2.3.2 (see column “standardised estimate”).

Significant differences are shown in the column “*p*. value”. When  $p < 0.05$  (Kline, 2011), significant differences are observable. Only significant paths are displayed in Table 4.8.2.3.2 (see Appendix C5 for complete table).

**Table 4.8.2.3.2 Testing the impact of personal values on purchase intention**

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	p
BMW liking	UT	0.2855	0.0915	280	3.1209	0.002	0.2643	**
BMW liking	A	0.2012	0.0828	280	2.4302	0.0157	0.2004	*
BMW liking	PR	0.1295	0.0648	280	2.0005	0.0464	0.1457	*
BMW purchase intention	BMW liking	0.5863	0.057	279	10.2782	0.0000	0.5108	***
BMW purchase intention	SP	-0.2843	0.0926	279	-3.0686	0.0024	-0.2251	**
MB liking	F	0.2062	0.0983	280	2.0981	0.0368	0.181	*
MB purchase intention	MB liking	0.6453	0.0605	279	10.6589	0.0000	0.5416	***
MB purchase intention	St	0.2049	0.0935	279	2.1919	0.0292	0.1656	*
MB purchase intention	SS	-0.2453	0.1066	279	-2.3008	0.0221	-0.1732	*
MB purchase intention	UT	-0.2505	0.1031	279	-2.4305	0.0157	-0.1833	*

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05



The detailed explanations of Table 4.8.2.3.2 are presented below.

**Significant influences of the 19 personal values as predictors on BMW and Mercedes-Benz liking and purchase intention as responses:**

**BMW**

- BMW liking (standardised estimate = 0.5108,  $p = 0.0000$ ; thus,  $p < 0.00005$ ) has the strongest effect on BMW purchase intention.
- Universalism-tolerance (standardised estimate = 0.2643,  $p = 0.002$ ), achievement (standardised estimate = 0.2004,  $p = 0.0157$ ), and power-resources influence BMW liking (standardised estimate = 0.1457,  $p = 0.0464$ ).

Negative impact:

- Security-personal presents the strongest opposite effect on BMW purchase (standardised estimate = -0.2251,  $p = 0.0024$ ).

**Mercedes-Benz**

- MB liking (standardised estimate = 0.5416,  $p = 0.0000$ ) has the strongest impact on MB purchase intention.
- Face significantly affects MB liking (standardised estimate = 0.181,  $p = 0.0368$ ).
- The strongest effect of personal values on MB purchase intention is demonstrated by stimulation (standardised estimate = 0.1656,  $p = 0.0292$ ).

Negative impact:

- Universalism-tolerance (standardised estimate = -0.1833,  $p = 0.0157$ ) and security-societal negatively influence MB purchase intention (standardised estimate = -0.1732,  $p = 0.0221$ ).

The R-squared was also assessed.

### **R-squared**

This coefficient shows the proportion of variance in the dependent variables (BMW liking, BMW purchase intention, MB liking, and MB purchase intention), predicted through the independent variables (personal values).

The R-squared can range from 0 to 1 (Fromm, 2012), where 1 would demonstrate that 100% of the population is replicated by the model (see Table 4.8.2.3.3).

**Table 4.8.2.3.3 R-squared personal values**

<b>Response</b>	<b>R-squared</b>
BMW liking	0.37
BMW purchase intention	0.57
MB liking	0.31
MB purchase intention	0.51

As listed in Table 4.8.2.3.3, for BMW purchase intention,  $R^2 = 0.57$ , and for MB,  $R^2 = 0.51$ . Additionally, for BMW liking,  $R^2 = 0.37$ , and for MB,  $R^2 = 0.31$ . It is interesting that BMW purchase and MB purchase can be predicted even better than BMW liking and MB liking. According to Cohen (1988), all R-squared values are  $>0.26$  and thus substantial. Therefore, the model presents a satisfactory predictive power. However, R-squared only offers an estimate of the strength of the relationship between the model and the response variable. The statistical significance of the relationship is assessed by Fisher's C for PSEM (Shipley, 2009).

#### 4.8.2.4 Testing the effect of higher-order personal values on purchase intention

In the next step, another PSEM was conducted with the four higher-order personal values as predictors instead of the 19 personal values. The aim of this PSEM was to test whether the four higher-order personal values present a model fit similar to that of the 19 personal values. Thus, the AIC, BIC, and goodness-of-fit CFIs were analysed.

PSEM was applied in this research to analyse the four higher-order personal values (the independent variables) as predictors for the responses BMW liking, BMW purchase intention, MB liking, and MB purchase intention (the dependent variables; see Table 4.8.2.4.1).

**Table 4.8.2.4.1 Model fit – piecewise structural equation modeling: higher-order personal values**

Global goodness-of-fit:

Fisher's  $C = 0$  with  $p = 1.000$  and on 0 degrees of freedom

AIC	BIC
52.000	148.298

As presented in Table 4.8.2.4.1, model fit indices presented a good model fit:  $C = 0$  with  $p = 1.000$  and  $df = 0$  with  $p \geq 0.05$ , which is not significant. Moreover,  $p > 0.9995$  was rounded up accordingly. Based on  $df = 0$  in this PSEM, there is no missing relationship between the predictors and responses (Lefcheck, 2021). In PSEM, the degree of freedom refers to Fisher's  $C$  and not to the model. Furthermore, the lower Fisher's  $C$  is, the better the model is.

The individual paths of the adjusted PSEM are presented in Table 4.8.2.4.2. Higher-order personal values were interpreted regarding their strength of influence on liking and purchase intention. When  $p < 0.05$ , significant

differences are observable (Kline, 2011). Only the significant paths are displayed in Table 4.8.2.4.2 (see Appendix C6 for complete table).

**Table 4.8.2.4.2 Testing the impact of higher-order personal values on purchase intentions**

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	p
BMW liking	STr	0.4579	0.1543	295	2.9679	<b>0.0032</b>	0.3592	**
BMW liking	SE	0.2799	0.0736	295	3.8019	<b>0.0002</b>	0.2631	***
BMW purchase intention	BMW liking	0.5772	0.0559	294	10.3223	0.0000	0.5028	***
BMW purchase intention	SE	0.334	0.0724	294	4.6123	0.0000	0.2735	***
BMW purchase intention	OC	0.3082	0.1282	294	2.4035	<b>0.0169</b>	0.2185	*
BMW purchase intention	Con	-0.2859	0.1285	294	-2.2257	<b>0.0268</b>	-0.1993	*
MB liking	SE	0.1715	0.0816	295	2.1	<b>0.0366</b>	0.1517	*
MB purchase intention	MB liking	0.6376	0.0595	294	10.7138	0.0000	0.5352	***
MB purchase intention	SE	0.3338	0.0841	294	3.9695	<b>0.0001</b>	0.2479	***

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

The detailed explanations of Table 4.8.2.4.2 are presented below. Individual paths of the adjusted PSEM are significant if  $p < 0.05$  (Kline, 2011).

**Significant influences of the four higher-order personal values as predictors on BMW and Mercedes-Benz liking and purchase intention as responses:**

**BMW**

- BMW liking (standardised estimate = 0.5028,  $p = 0.0000$ ; thus  $p < 0.00005$ ) presents the strongest impact on BMW purchase intention.
- Self-transcendence affects BMW liking (standardised estimate = 0.3592,  $p = 0.0032$ ).
- Self-enhancement affects BMW purchase intention (standardised estimate = 0.2735,  $p = 0.0000$ ) and BMW liking (standardised estimate = 0.2631,  $p = 0.0002$ ). The second strongest impact on purchase intention is demonstrated by openness to change on BMW purchase intention (standardised estimate = 0.2285,  $p = 0.0169$ ).

Negative impact:

- Conservation has a negative impact on BMW purchase intention (standardised estimate = -0.1993,  $p = 0.0268$ ).

**Mercedes-Benz**

- As already presented for personal values, MB liking (standardised estimate = 0.5352,  $p = 0.0000$ ) has the strongest impact on MB purchase intention.
- Self-enhancement affects MB purchase intention (standardised estimate = 0.2479,  $p = 0.0001$ ) and MB liking (standardised estimate = 0.1517,  $p = 0.0366$ ).

Furthermore, the R-squared was assessed.

### **R-squared**

The R-squared explores how well the dependent variables BMW liking, BMW purchase, MB liking, and MB purchase intention are predicted through the independent variables (higher-order personal values; see Table 4.8.2.4.3).

**Table 4.8.2.4.3 R-squared – higher-order personal values**

<b>Response</b>	<b>R-squared</b>
BMW liking	0.33
BMW purchase intention	0.53
MB liking	0.27
MB purchase intention	0.46

As listed in Table 4.8.2.4.3, for BMW purchase intention,  $R^2 = 0.53$ , and for MB,  $R^2 = 0.46$ . Additionally, for BMW liking,  $R^2 = 0.33$ , and for MB,  $R^2 = 0.27$ . Hence, all results for  $R^2$  are  $>0.26$  and therefore substantial (Cohen, 1988).

### **Comparison model fit of 19 personal values and four higher-order personal values**

#### Global goodness-of-fit

- The model fit index for PSEM is Fisher's  $C$ , and  $p \geq 0.05$  is considered to be good (see Section 3.6). For all 19 personal values and the four higher-order personal values, Fisher's  $C$  is 0, with  $p = 1.000$  (thus,  $p > 0.9995$ ), which is very good.
- For the 19 personal values and four higher-order personal values,  $df = 0$ , which is also very good.

### AIC

- For the 19 personal values, AIC = 172.000.
- For the four higher-order personal values, AIC = 52.000, which is low. Thus, the four higher-order personal values have a better model fit.

### BIC

- For the 19 personal values, BIC = 490.525.
- For the four higher-order personal values, BIC = 148.298 only, which is low. The four higher-order personal values hence have a better model fit.

The model with the four higher-order personal values instead of the 19 personal values has a better model fit based on the result of the AIC (52.000) and the BIC (148.298). Therefore, in this study, higher-order personal values were considered for further explorations of the congruencies.

#### **4.8.2.5 Testing personal values and generational cohorts on liking and purchase intention**

As the next step, another PSEM was conducted incorporating age groups (Q3), and the model fit was assessed (see Table 4.8.2.5.1).

**Table 4.8.2.5.1 Model fit – piecewise structural equation modeling: generational cohorts**

Global goodness-of-fit:

Fisher's C = 80.825 with  $p = 0.000$  and on 8 degrees of freedom

As can be derived from Table 4.8.2.5.1 the model fit is poor:  $C = 80.825$  with  $p = 0.000$  and on 8  $df$  is  $p \geq 0.05$ , which is significant. The individual paths of the PSEM are presented in Table 4.8.2.5.2. The generational cohorts are displayed in the PSEM with the three age groups "Q3".



**Table 4.8.2.5.2 Testing the impact of higher-order personal values and generational cohorts on liking and purchase intentions – overall statistics**

Response	Predictor	Test.Stat	DF	P.Value	
BMW liking	Q3:STr	4.6	1	0.2626	
BMW liking	Q3:SE	4.6	1	0.5558	
BMW liking	Q3:OC	4.6	1	0.0323	*
BMW liking	Q3:Con	4.6	1	0.4370	
BMW purchase intention	Q3_BMW liking	53.7	1	0.7661	
BMW purchase intention	Q3:STr	53.7	1	0.9122	
BMW purchase intention	Q3:SE	53.7	1	0.6035	
BMW purchase intention	Q3:OC	53.7	1	0.2372	
BMW purchase intention	Q3:Con	53.7	1	0.5882	
MB liking	Q3:STr	0.4	1	0.6744	
MB liking	Q3:SE	0.4	1	0.0326	*
MB liking	Q3:OC	0.4	1	0.0122	*
MB liking	Q3:Con	0.4	1	0.5042	
MB purchase intention	Q3:MB liking	77.5	1	0.0083	**
MB purchase intention	Q3:STr	77.5	1	0.8899	
MB purchase intention	Q3:SE	77.5	1	0.5026	
MB purchase intention	Q3:OC	77.5	1	0.9370	
MB purchase intention	Q3:Con	77.5	1	0.7038	

Signif. codes: 0 '\*\*\*\*' 0.001 '\*\*\*' 0.01 '\*' 0.05

As can be derived from Table 4.8.2.5.2, the higher-order values openness to change (test-statistic = 4.6,  $p = 0.0323$ ) on BMW liking, self-enhancement (test-statistic = 0.4,  $p = 0.0326$ ) and openness to change (test-statistic = 0.4,  $p = 0.0122$ ) on MB liking, and MB liking (test-statistic = 77.5,  $p = 0.0083$ ) on MB purchase intention present significant paths (see Table 4.8.2.5.2, column “ $p$ . value”), with  $p < 0.05$  (Kline, 2011).

The individual paths of the adjusted PSEM are presented in Table 4.8.2.5.3. When  $p < 0.05$  and paths are not constrained, significant differences are

observable (Kline, 2011). Only the significant and non-constrained paths are displayed in Table 4.8.2.5.3 (see Appendix C7 for complete table).

**Table 4.8.2.5.3 Testing the impact of higher-order personal values and generational cohorts on liking and purchase intentions**

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	p	c
<b>Age group 1</b>									
BMW liking	OC	-0.4441	0.2013	97	-2.2064	0.0297	-0.3798	*	
MB purchase intention	MB liking	0.8622	0.1124	96	7.6696	0.0000	0.6102	***	
<b>Age group 2</b>									
MB liking	OC	0.8088	0.2454	92	3.2955	0.0014	0.5997	**	
MB purchase intention	MB liking	0.3939	0.1014	91	3.8856	0.0002	0.3818	***	
<b>Age group 3</b>									
MB liking	SE	0.4025	0.1332	96	3.0227	0.0032	0.3209	**	
MB purchase intention	MB liking	0.6443	0.1012	95	6.3663	0.0000	0.5898	***	

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

As can be noted in Table 4.8.2.5.3, although several paths are significant within the specific age group, differences from the other age groups are not significant. Thus, the path is significant (see Appendix C7, column “p”) but constrained (see Appendix C7, column “c”, where “c” means constrained). Only significant and non-constrained paths consequently demonstrate significant differences among age groups.

As a result, **Age group 1** (the pre-reform generation) presents a negative impact on BMW liking: The higher-order value openness to change (standardised estimate = -0.3798,  $p = 0.0297$ ) affects BMW liking negatively.

Additionally, Age group 1 differs from other generational cohorts in terms of the influence of MB liking (standardised estimate = 0.6102,  $p = 0.0000$ ) on MB purchase intention.

**Age group 2** (the reform generation) differs from other age groups with regard to the impact of openness to change (standardised estimate = 0.5997,  $p = 0.0014$ ) on MB liking.

Again, Age group 2 differs from other age groups in terms of the influence MB liking (standardised estimate = 0.3818,  $p = 0.0002$ ) on MB purchase intention.

**Age group 3** (the post-reform generation) differs from other generational cohorts with respect to the influence of self-enhancement (standardised estimate = 0.3209,  $p = 0.0032$ ) on MB liking.

Again, Age group 3 differs from other age groups in terms of the impact of MB liking (standardised estimate = 0.5898,  $p = 0.0000$ ) on MB purchase intention.

**H2 (stating that the specific personal values of each generational cohort influence their liking and purchase intention) can be accepted for openness to change and self-enhancement.**

### **4.8.3 Analysis of perception of brand personality construct**

#### **4.8.3.1 Testing perception of brand personality and generational cohorts**

The analysis in this section explores different age groups' (i.e. generational cohorts') perceptions of BMW and MB brand personalities (see Appendix D1 for a ranking of the perceptions of these brand personalities). Therefore, the following hypothesis pair was tested:

$H_{03}$ : Generational cohorts do not have a different perception of BMW and MB brand personalities.

$H_{a3}$ : Each generational cohort has a different perception of BMW and MB brand personalities.

An ANOVA was applied to test this hypothesis because this method allows for a comparison of the means of all personal values among generational cohorts in a less sophisticated manner. Thus, it is convenient and still fulfils all requirements.

All five perceptions of brand personalities for BMW and MB were checked for homogeneity of variances. The null hypothesis ( $H_{03}$ ) can be confirmed if all means do not have significant differences in value, whereas the alternative hypothesis ( $H_{a3}$ ) can be confirmed if the means demonstrate significant differences. For this study, the three age groups are the independent variables, and perceptions of BMW and MB brand personalities are the dependent ones. The output generated from the one-way ANOVA is shown in Tables 4.8.3.1.1–4.8.3.1.2.

**Table 4.8.3.1.1 Test of homogeneity of variances – perception of brand personality**

	Levene Statistic	df1	df2	Sig.
BMW BP Sincerity	2.549	2	297	.080
BMW BP Excitement	.139	2	297	.871
BMW BP Competence	.357	2	297	.700
BMW BP Sophisticated	.022	2	297	.978
BMW BP Ruggedness	.839	2	297	.433
MB BP Sincerity	.679	2	297	.508
MB BP Excitement	.111	2	297	.895
MB BP Competence	.390	2	297	.678
MB BP Sophisticated	.023	2	297	.978
MB BP Ruggedness	2.232	2	297	.109

**Table 4.8.3.1.2 One-way ANOVA – perception of brand personality**

		Sum of Squares	df	Mean Square	F	Sig.
BMW BP Sincerity	Between Groups	4.585	2	2.292	2.177	.115
	Within Groups	312.802	297	1.053		
	Total	317.387	299			
BMW BP Excitement	Between Groups	1.611	2	.806	.801	.450
	Within Groups	298.775	297	1.006		
	Total	300.387	299			
BMW BP Competence	Between Groups	1.154	2	.577	.580	.561
	Within Groups	295.682	297	.996		
	Total	296.837	299			
BMW BP Sophisticated	Between Groups	2.276	2	1.138	1.235	.292

		<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
	Within Groups	273.711	297	.922		
	Total	275.987	299			
BMW BP Ruggedness	Between Groups	.006	2	.003	.003	.997
	Within Groups	278.911	297	.939		
	Total	278.917	299			
MB BP Sincerity	Between Groups	.091	2	.046	.051	.950
	Within Groups	265.576	297	.894		
	Total	265.667	299			
MB BP Excitement	Between Groups	3.544	2	1.772	1.726	.180
	Within Groups	304.893	297	1.027		
	Total	308.437	299			
MB BP Competence	Between Groups	.481	2	.241	.337	.714
	Within Groups	211.769	297	.713		
	Total	212.250	299			
MB BP Sophisticated	Between Groups	2.245	2	1.122	1.283	.279
	Within Groups	259.875	297	.875		
	Total	262.120	299			
MB BP Ruggedness	Between Groups	.131	2	.066	.080	.923
	Within Groups	242.149	297	.815		
	Total	242.280	299			

To test the homogeneity of variances, Levene's *F*-test was applied (Hair et al., 2014). This helps to check the null hypothesis regarding the equality of variances regarding the perceptions of BMW and MB brand personalities. If  $p \geq 0.05$  (see Table 4.8.3.1.1, column "Sig."), the null hypothesis can be approved, thus ensuring homogeneity of variances. As can be seen in Table 4.8.3.1.1, all perceptions of brand personality are non-significant, with  $p \geq 0.05$ ; hence, equal variances can be assumed.

Next, a factorial between-groups ANOVA was applied to check the significance of the independent variables as well as the meaningfulness of the model (see Table 4.8.3.1.2). The significance test of ANOVA was performed via an  $F$ -test., which would be zero if the null hypothesis is true (Sarstedt & Mooi, 2019).

The results of the ANOVA in Table 4.8.3.1.2 revealed that for all perceptions of brand personality, the variance between the groups is non-significant, with  $p \geq 0.05$  (Charry et al., 2016). Hence, no cohort differences in perception of brand personality exist.

**H3 (stating that each generational cohort has a different perception of brand personalities) must thus be rejected.**

#### **4.8.3.2 Testing influence of generational cohorts' perception of brand personality on liking and purchase intention**

To examine the influence of BMW and MB brand personality on liking and purchase intention, PSEM was conducted first. The influence of generational cohorts' different perceptions was analysed as Step 2 of this PSEM.

The following hypothesis pair was tested:

H<sub>0</sub>4: Generational cohorts do not have a different perception of BMW and MB brand personalities, and this perception does not influence liking and purchase intention.

H<sub>a</sub>4: Each generational cohort's perception of BMW and MB brand personality influences liking and purchase intention.

#### **Testing influence of brand personality perceptions on liking and purchase intention**

To study the associations between generational cohorts' perceptions of brand personality and their purchase intention, PSEM was conducted. The



advantage of PSEM is that various models can be tested with regard to their intercorrelations. Based on multiple regression and factor analyses, the importance of the independent variables and their model fit were assessed. Additionally, alternative models were compared. The correlation between brand personality dimensions and purchase intention was assessed with the polynomial coefficient of a quadratic trend. This analysis was conducted for each brand personality dimension of BMW and MB and for each dependent variable (BMW purchase intention, BMW liking, MB purchase intention, and MB liking).

The five BMW and the five MB brand personality dimensions (the independent variables) were examined as predictors for the responses BMW liking, BMW purchase intention, MB liking, and MB purchase intention (the dependent variables). The model fit index for PSEM is Fisher's *C* and would be best if not significant (i.e.  $p \geq 0.05$ ; Byrne, 2010).

**Table 4.8.3.2.1 Model fit – piecewise structural equation modeling:  
brand personalities in relation to liking and purchase intention**

Global goodness-of-fit:

Fisher's *C* = 0 with  $p = 1.000$  and on 0 degrees of freedom

AIC	BIC
60.000	171.113

The model with  $C = 0$  with  $p = 1.000$  and on 0 *df*, thus not significant (with AIC 60.000 and BIC 171.113), demonstrates a good model fit (Byrne, 2010; see Table 4.8.3.2.1).

Consequently, BMW and MB brand personalities were examined. In case of  $p < 0.05$  (see column “*p*. value”, Table 4.8.3.2.2), significant impacts are observable. Only significant paths are displayed for complexity reduction in Table 4.8.3.2.2 (see Appendix D2 for complete table).

**Table 4.8.3.2.2 Testing the impact of perception of brand personality on liking and purchase intention**

<b>Response</b>	<b>Predictor</b>	<b>Estimate</b>	<b>Std.Error</b>	<b>DF</b>	<b>Crit.Value</b>	<b>P.Value</b>	<b>Std.Estimate</b>	<b>p</b>
BMW liking	BMW Sincerity	0.2211	0.0479	294	4.6149	0.0000	0.2535	***
BMW liking	BMW Competence	0.1991	0.0484	294	4.1095	0.0001	0.2207	***
BMW liking	BMW Sophistication	0.1538	0.0486	294	3.1623	0.0017	0.1644	**
BMW liking	BMW Ruggedness	0.1355	0.0519	294	2.612	0.0095	0.1457	**
BMW purchase intention	BMW liking	0.5686	0.0652	293	8.7217	0.0000	0.4953	***
BMW purchase intention	BMW Sincerity	0.1526	0.0555	293	2.752	0.0063	0.1524	**
BMW purchase intention	BMW Competence	0.1575	0.0557	293	2.8279	0.005	0.1521	**
MB liking	MB Sincerity	0.2727	0.0598	294	4.5646	0.0000	0.2694	***
MB liking	MB Excitement	0.18	0.0529	294	3.4036	0.0008	0.1916	***
MB liking	MB Ruggedness	0.1347	0.0612	294	2.202	0.0284	0.127	*
MB liking	MB Sophistication	0.1275	0.0607	294	2.1003	0.0366	0.1251	*
MB purchase intention	MB liking	0.6355	0.0668	293	9.5103	0.0000	0.5334	***

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

Detailed explanations of Table 4.8.3.2.2 are presented below.

### **Significant influence of perception of brand personality on liking and purchase intention**

#### **BMW**

- BMW liking (standardised estimate = 0.4953,  $p < 0.00005$ ) has the strongest impact on BMW purchase intention.
- BMW Sincerity (standardised estimate = 0.2535,  $p < 0.00005$ ), BMW Competence (standardised estimate = 0.2207,  $p = 0.0001$ ), BMW Sophistication (standardised estimate = 0.1644,  $p = 0.0017$ ), and BMW Ruggedness influence BMW liking (standardised estimate = 0.1457,  $p = 0.0095$ ).
- On the other hand, BMW Sincerity (standardised estimate = 0.1524,  $p = 0.0063$ ) and BMW Competence (standardised estimate = 0.1521,  $p = 0.005$ ) demonstrate the largest impact on BMW purchase intention.

#### **Mercedes-Benz**

- MB liking (standardised estimate = 0.5334,  $p < 0.00005$ ) has the strongest impact on MB purchase intention.
- MB Sincerity (standardised estimate = 0.2694,  $p < 0.00005$ ), MB Excitement (standardised estimate = 0.1916,  $p = 0.0008$ ), MB Ruggedness (standardised estimate = 0.127,  $p = 0.0284$ ), and MB Sophistication affect MB liking (standardised estimate = 0.1251,  $p = 0.0366$ ).

Moreover, the R-squared was assessed.

## R-squared

The R-squared was studied to explain the extent to which the dependent variables are explained by the independent variables. Here,  $R^2 = 1$  would indicate that 100% of the dependent variables (i.e. liking and purchase intention for both BMW and MB) is explained by the independent variables (i.e. BMW and MB brand personality dimensions; Fromm, 2012; see Table 4.8.3.2.3).

**Table 4.8.3.2.3 R-squared – perception of brand personalities**

Response	R-squared
BMW liking	0.46
BMW purchase intention	0.49
MB liking	0.38
MB purchase intention	0.43

As seen in Table 4.8.3.2.3, the R-squared is the highest for BMW purchase intention ( $R^2 = 0.49$ ), closely followed by MB purchase intention ( $R^2 = 0.43$ ). Additionally, purchase intention for BMW and MB is better replicated than liking BMW ( $R^2 = 0.46$ ) and liking MB ( $R^2 = 0.38$ ). According to Cohen (1988), all values are  $>0.26$  and therefore substantial.

## Testing generational cohorts' perceptions of brand personality on liking and purchase intention

In this section, differences in the generational cohorts' perceptions are researched in terms of the influence of BMW's and MB's brand personality on liking and purchase intention. To analyse generational cohorts' perception differences, PSEM was conducted.

**Table 4.8.3.2.4 Model fit – piecewise structural equation modeling:  
brand personalities in relation to liking and purchase intention**

Global goodness-of-fit:

Fisher's C = 135.951 with  $p = 0.000$  and on 48 degrees of freedom

AIC	BIC
60.000	171.113

As Table 4.8.3.2.4 indicates, the model fit is poor:  $C = 135.951$  with  $p = 0.000$  and on 48  $df$ , which is thus significant.

Additionally, BMW and MB brand personalities and generational cohorts were examined based on their strength of influence on liking and purchase intention. When  $p < 0.05$  (see column “ $p$ . value”, Table 4.8.3.2.5), significant impacts are observable. The generational cohorts are displayed in the PSEM with the three age groups “Q3”.

**Table 4.8.3.2.5 Testing the impact of perception of brand personality  
and generational cohorts on liking and purchase intention –  
overall statistics**

Response	Predictor	Test.St at	D F	P.Valu e	
BMW liking	Q3:BMW Sincerity	8.3	1	0.9787	
BMW liking	Q3:BMW Excitement	8.3	1	0.3032	
BMW liking	Q3:BMW Competence	8.3	1	0.0167	*
BMW liking	Q3:BMW Sophistication	8.3	1	0.5787	
BMW liking	Q3:BMW Ruggedness	8.3	1	0.1535	

Response	Predictor	Test.Stat	D F	P.Value	
BMW purchase intention	Q3:BMW liking	41.1	1	0.785	
BMW purchase intention	Q3:BMW Sincerity	41.1	1	0.8524	
BMW purchase intention	Q3:BMW Excitement	41.1	1	0.0849	
BMW purchase intention	Q3:BMW Competence	41.1	1	0.9235	
BMW purchase intention	Q3:BMW Sophistication	41.1	1	0.8146	
BMW purchase intention	Q3:BMW Ruggedness	41.1	1	0.8357	
MB liking	Q3:MB Sincerity	11.3	1	0.1580	
MB liking	Q3:MB Excitement	11.3	1	0.0013	
MB liking	Q3:MB Competence	11.3	1	0.8832	
MB liking	Q3:MB Sophistication	11.3	1	0.0241	*
MB liking	Q3:MB Ruggedness	11.3	1	0.4931	
MB purchase intention	Q3:MB liking	58.8	1	0.0209	*
MB purchase intention	Q3:MB Sincerity	58.8	1	0.5247	
MB purchase intention	Q3:MB Excitement	58.8	1	0.5481	*
MB purchase intention	Q3:MB Competence	58.8	1	0.0108	
MB purchase intention	Q3:MB Sophistication	58.8	1	0.6337	
MB purchase intention	Q3:MB Ruggedness	58.8	1	0.8952	*

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

Based on Table 4.8.3.2.5, perceptions of brand personality for BMW and MB and generational cohort differences influence BMW liking, MB liking, and MB purchase intention. Generational cohort differences in BMW Competence (test statistic = 8.3,  $p = 0.0167$ ) affect BMW liking, whereas generational cohort differences in MB Sophistication (test statistic = 11.3,  $p = 0.0241$ )

influence MB liking. Furthermore, generational cohort differences affect MB liking (test statistic = 58.8,  $p = 0.0209$ ), MB Excitement (test statistic = 58.8,  $p = 0.5481$ ), and MB Ruggedness (test statistic = 58.8,  $p = 0.8952$ ) in terms of MB purchase intention.

The age groups were consequently verified in detail for statistical significances. The individual paths of the adjusted PSEM are presented in Table 4.8.3.2.6. When  $p < 0.05$  and paths are not constrained, significant differences are observable (Kline, 2011). Only the significant and non-constrained paths are displayed in Table 4.8.3.2.6 (see Appendix D3 for complete table).

**Table 4.8.3.2.6 Testing the impact of perception of brand personality and generational cohorts on liking and purchase intention**

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	p	c
<b>Age group 1</b>									
BMW liking	BMW Competence	0.3469	0.0867	96	4.0009	0.0001	0.3949	***	
MB liking	MB Excitement	0.3930	0.0860	96	4.5710	0.0000	0.4498	***	
MB purchase intention	MB liking	0.8398	0.1364	95	6.1551	0.0000	0.5944	***	
<b>Age group 2</b>									
BMW liking	BMW Competence	0.2193	0.0881	91	2.4895	0.0146	0.2421	*	
MB liking	MB Excitement	0.2431	0.1023	91	2.3768	0.0196	0.2497	*	
MB purchase intention	MB liking	0.3754	0.1013	90	3.7076	0.0004	0.3639	***	
MB purchase intention	MB Competence	0.4547	0.1309	90	3.4734	0.0008	0.3621	***	
<b>Age group 3</b>									
MB liking	MB Sophistication	0.3692	0.1054	95	3.5034	0.0007	0.3406	***	
MB purchase intention	MB liking	0.6579	0.1142	94	5.7612	0.0000	0.6022	***	

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05



As can be seen in Table 4.8.3.2.6, the following perceptions of brand personality differ for **Age group 1 (the pre-reform generation)**:

- The influence of BMW Competence (standardised estimate = 0.3949,  $p = 0.0001$ ) on BMW liking differed for Age group 1.
- The impact of MB Excitement (standardised estimate = 0.4498,  $p = 0.0000$ ) on MB liking differed.
- The effect of MB liking (standardised estimate = 0.5944,  $p = 0.0000$ ) on MB purchase intention also differed from other age groups.

**For Age group 2 (the reform generation):**

- The influence of BMW Competence (standardised estimate = 0.2421,  $p = 0.0146$ ) on BMW liking differed from other age groups.
- The impact of MB Excitement (standardised estimate = 0.2497,  $p = 0.0196$ ) on MB liking was perceived differently by the reform generation.
- The effect of MB liking (standardised estimate = 0.3639,  $p = 0.0004$ ) and MB Competence (standardised estimate = 0.3621,  $p = 0.0008$ ) on MB purchase intention differed.

**For Age group 3 (the post-reform generation):**

- The influence of MB Sophistication (standardised estimate = 0.3406,  $p = 0.0007$ ) on MB liking, and MB liking (standardised estimate = 0.6022,  $p = 0.0000$ ) on MB purchase intention differed for the post-reform generation.

As a result, BMW purchase intention presented no differences in terms of brand personality perceptions and generational cohorts.

**H4 (stating that the three generational cohorts in China perceive BMW's and MB's brand personalities differently, which in turn influences their liking of and intention to purchase the two brands) can be accepted for BMW Competence, MB Excitement, MB Competence, and MB Sophistication.**

#### **4.8.4 Analysis self–brand congruence construct**

For this congruence analysis, the four higher-order personal values instead of the 19 personal values were applied because of the better model fit (see Section 4.8.2). Furthermore, the higher-order personal values are composed of the personal values (Schwartz et al., 2012); thus, there are still relevant insights, but on a higher level.

The hypotheses were reformulated accordingly:

H<sub>05</sub>: The specific generational cohort will have no significant differences in the congruencies displayed between their four higher-order personal values and their perceived brand personality dimensions.

H<sub>a5</sub>: The specific generational cohort will have significant differences in the congruencies displayed between their four higher-order personal values and their perceived brand personality dimensions.

##### **4.8.4.1 Testing self–brand congruence among generational cohorts**

A total of 40 congruencies consisting of each possible combination of the four higher-order values and the five BMW brand personality or five MB brand personality dimensions (see Appendices J1–J4 for correlation effects) were incorporated into PSEM. By computing new variables for these congruencies and using the squared difference between each possible pair for this hypothesis, the relationship between the dependent variable and the independent one was modelled as a polynomial regression because the polynomial regression fits a nonlinear model by applying the method of least squares to the data through PSEM. The advantage of the least-squares is a reduction in the variance of the coefficients' unbiased estimators (Kline, 2011). Therefore, the polynomial regression is a type of multiple linear regression. Based on these self–brand congruencies, the generational cohort effects were analysed. In this step, the Kruskal-Wallis test was applied instead of an ANOVA to test hypotheses because the former method

converts scores in ranks, and the distribution of the scores is consequently no longer relevant.

The Kruskal-Wallis test is a non-parametric rank test measuring differences based on Chi-square. If the distribution of the test variable across group samples is equal, then the null hypothesis will be assumed. However, if central tendency, dispersion, and/or variability differ, then the null hypothesis will be rejected (Sarstedt & Mooi, 2019). In the case of significant differences, the non-parametric Wilcoxon rank sum test is applied for the pairwise comparison as the second step. Pairwise comparison can be explored statistically through the following test methods: 1) McNemar's test for two nominal variables, 2) Wilcoxon test for two ordinal variables, 3) Cochran's test for  $k$  nominal variables, and 4) Friedman test for  $k$  ordinal variables (Charry et al., 2016).

In this study, the Kruskal-Wallis test and the Wilcoxon rank sum test were used to measure differences on  $X^2$  and for the pairwise comparison respectively (Charry et al., 2016). Medians from ordinal variables were tested (Sarstedt & Mooi, 2019), and if they were equal, with  $p \geq 0.05$ , then the null hypothesis was assumed (see Table 4.8.4.1.1 with significant effects; see Appendix E1 for complete results).

**Table 4.8.4.1.1 Testing the impact of generational cohorts on self-brand congruence**

MB		
congruence_ST_MB Competence by age groups		
a) Kruskal-Wallis is with $X^2 = 6.3097$ , $df = 2$ , $p = 0.04265$ , which is $< 0.05$ , hence significant.		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.687	-
3	0.126	0.047

➔ Age group 3 differs significant from age group 2 with $p = 0.047$ , thus $p < 0.05$ and therefore significant.		
congruence_OC_MB Competence by age groups		
a) Kruskal-Wallis is with $X^2 = 5.864$ , $df = 2$ , $p = 0.05329$ , thus $>0.05$ and not significant.		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.288	-
3	0.288	0.035
➔ Age group 3 differs significantly from age group 2 with $p = 0.035$ .		
congruence_Con_MB Competence by age groups		
a) Kruskal-Wallis is with $X^2 = 6.8179$ , $df = 2$ , $p = 0.03308$ , which is significant ( $p < 0.05$ ).		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.825	-
3	0.045	0.060
➔ Age group 3 differs significantly from age group 1 with $p = 0.045$ .		

The following can be derived from Table 4.8.4.1.1:

- Congruence Self-transcendence\_MB Competence differs significantly between Age group 3 and Age group 2, with  $p = 0.047$ .
- Congruence Openness-to-change\_MB Competence differs significantly between Age group 3 and Age group 2, with  $p = 0.035$ .
- Congruence Conservation\_MB Competence differs significantly between Age group 3 and Age group 1, with  $p = 0.045$ .

**H5 (stating that each generational cohort displays significant differences in self–brand congruencies) can be accepted for Self-transcendence\_MB Competence, Openness-to-change\_MB Competence, and Conservation\_MB Competence.**

#### **4.8.4.2 Testing the influence of self–brand congruence and generational cohorts on liking and purchase intention**

Following the exploration of generational cohort influences on self–brand congruence, this section further tests the self–brand congruence of each generational cohort and its influence on liking and purchase intention.

To examine the effects of self–brand congruence and generational cohorts on liking and purchase intention, the following hypothesis pair was tested:

H<sub>06</sub>: Congruence between a generational cohort's four higher-order personal values and brand personality perceptions will not influence differently liking and purchase intention.

H<sub>a6</sub>: Congruence between a generational cohort's four higher-order personal values and brand personality perceptions will influence liking and purchase intention.

#### **Testing the influence of self–brand congruence on liking and purchase intention**

To study this hypothesis, PSEM was applied again. First, the following four linear models were examined for their self–brand congruence effects: 1. BMW liking, 2. BMW purchase, 3. MB liking, and 4. MB purchase. Each linear model was fitted in the PSEM with all congruencies of BMW and MB brand personality dimensions and higher-order personal values. Thus, each linear model displays all congruence possibilities of the four higher-order personal values and BMW as well as MB brand personalities. Additionally, BMW liking and BMW purchase intention include the BMW brand personality

and higher-order congruencies, and MB liking and MB purchase intention include the MB congruencies only.

**Table 4.8.4.2.1 Model fit – piecewise structural equation modeling: self-brand congruence on liking and purchase intention**

Global goodness-of-fit:

Fisher's C = 155.861 with  $p = 0.702$  and on 166 degrees of freedom

AIC	BIC
337.861	674.905

As Table 4.8.4.2.1 indicates, the PSEM demonstrates a good model fit:  $C = 155.861$  with  $p = 0.702$  and on 166 *df* (with AIC 337.861 and BIC 674.905), thus not significant with  $p \geq 0.05$ . Therefore, no further adjustments were needed to improve the model fit of the PSEM.

Significant paths of the PSEM are presented according to their strength of impact in Table 4.8.4.2.2 (see column “standardised estimate”; see Appendix E2 for complete table).

**Table 4.8.4.2.2 Testing the impact of self–brand congruence on liking and purchase Intention**

<b>Response</b>	<b>Predictor</b>	<b>Estimate</b>	<b>Std. Error</b>	<b>DF</b>	<b>Crit. Value</b>	<b>P. Value</b>	<b>Std. Estimate</b>	<b>p</b>
BMW liking	cong Con_BMW Sincerity	0.2580	0.079	279	32.665	0.0012	0.5405	**
BMW liking	cong SE_BMW Sincerity	0.0646	0.0316	279	20.446	0.0418	0.1142	*
BMW liking	cong OC_BMW Sophistication	-0.0641	0.0243	279	-26.419	0.0087	-0.1261	**
BMW liking	cong SE_BMW Ruggedness	-0.1392	0.028	279	-49.618	0.0000	-0.3621	** *
BMW liking	cong Con_BMW Ruggedness	-0.2281	0.0813	279	-28.065	0.0054	-0.3930	**
BMW liking	cong STr_BMW Sincerity	-0.2942	0.0882	279	-33.370	0.0010	-0.5850	** *
BMW purchase intention	cong Con_BMW Sincerity	0.1722	0.0559	280	30.816	0.0023	0.3143	**
BMW purchase intention	cong STr_BMW Ruggedness	0.1593	0.0797	280	20,000	0.0465	0.2428	*

BMW purchase intention	cong OC_BMW Excitement	0.1603	0.0603	28 0	26.575	0.0083	0.2364	**
BMW purchase intention	cong OC_BMW Competence	0.0859	0.0419	28 0	20.511	0.0412	0.1311	*
BMW purchase intention	cong Con_BMW Sophistication	-0.0736	0.0299	28 0	-24.599	0.0145	-0.1141	*
BMW purchase intention	cong SE_BMW Competence	-0.1013	0.0335	28 0	-30.279	0.0027	-0.1815	**
BMW purchase intention	cong STr_BMW Excitement	-0.1742	0.0593	28 0	-29.385	0.0036	-0.2518	**
BMW purchase intention	cong OC_BMW Sincerity	-0.2017	0.0543	28 0	-37.119	0.0002	-0.3977	** *
MB liking	cong Con_MB Sincerity	0.3578	0.0816	27 8	43.837	0.0000	0.4829	** *
MB liking	cong SE_MB Ruggedness	0.1288	0.047	27 8	27.427	0.0065	0.3003	**
MB liking	cong OC_MB Sophistication	0.1613	0.0498	27 8	32.367	0.0014	0.2678	**



MB liking	cong STr_MB Ruggedness	0.1636	0.0807	27 8	20.265	0.0437	0.2594	*
MB liking	cong SE_MB Excitement	0.0666	0.0264	27 8	25.200	0.0123	0.1295	*
MB liking	cong SE_MB Sincerity	-0.0915	0.0427	27 8	-21.402	0.0332	-0.1625	*
MB liking	cong SE_MB Sophistication	-0.1729	0.0523	27 8	-33.040	0.0011	-0.3884	**
MB liking	cong Con_MB Ruggedness	-0.2499	0.0751	27 8	-33.265	0.0010	-0.4365	** *
MB liking	cong STr_MB Sincerity	-0.3509	0.0977	27 8	-35.918	0.0004	-0.4507	** *
MB purchase intention	cong Con_MB Sincerity	0.4212	0.0956	27 6	44.052	0.0000	0.4772	** *
MB purchase intention	cong SE_MB Ruggedness	0.1390	0.0534	27 6	26.000	0.0098	0.2719	**
MB purchase intention	cong Con_MB Excitement	0.1915	0.073	27 6	26.218	0.0092	0.2683	**

MB purchase intention	cong STr_MB Ruggedness	0.2003	0.0917	27 6	21.830	0.0299	0.2665	*
MB purchase intention	cong OC_MB Competence	0.2407	0.0721	27 6	33.379	0.0010	0.2460	** *
MB purchase intention	cong SE_MB Competence	-0.1412	0.0519	27 6	-27.212	0.0069	-0.2639	**
MB purchase intention	cong OC_MB Sophistication	-0.2095	0.0872	27 6	-24.024	0.0169	-0.2920	*
MB purchase intention	cong STr_MB Sincerity	-0.2791	0.131	27 6	-21.307	0.0340	-0.3010	*
MB purchase intention	cong OC_MB Excitement	-0.2419	0.0691	27 6	-34.980	0.0005	-0.3594	** *
MB purchase intention	cong Con_MB Ruggedness	-0.3856	0.0878	27 6	-43.901	0.0000	-0.5654	** *

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

Detailed explanations of Table 4.8.4.2.2 are provided below. Individual paths of the PSEM are significant if  $p < 0.05$  (Kline, 2011).

### **Significant influence of self–brand congruence on BMW and Mercedes-Benz liking and purchase intention**

#### **BMW liking**

The congruence Conservation\_BMW Sincerity (standardised estimate = 0.5405,  $p = 0.0012$ ) and congruence Self-enhancement\_BMW Sincerity (standardised estimate = 0.1142,  $p = 0.0418$ ) influence BMW liking significantly.

Negative impact: The congruence Openness-to-change\_BMW Sophistication (standardised estimate =  $-0.1261$ ,  $p = 0.0087$ ), congruence Self-enhancement\_BMW Ruggedness (standardised estimate =  $-0.3621$ ,  $p = 0.0000$ ), congruence Conservation\_BMW Ruggedness (standardised estimate =  $-0.3930$ ,  $p = 0.0054$ ), and congruence Self-transcendence\_BMW Sincerity (standardised estimate =  $-0.5850$ ,  $p = 0.001$ ) influence BMW liking significantly.

#### **BMW purchase intention**

The congruence Conservation\_BMW Sincerity (standardised estimate = 0.3143,  $p = 0.0023$ ), congruence Self-transcendence\_BMW Ruggedness (standardised estimate = 0.2428,  $p = 0.0465$ ), congruence Openness-to-change\_BMW Excitement (standardised estimate = 0.2364,  $p = 0.0083$ ), and congruence Openness-to-change\_BMW Competence (standardised estimate = 0.1311,  $p = 0.0412$ ) significantly affect BMW purchase intention.

Negative impact: The congruence Conservation\_BMW Sophistication (standardised estimate =  $-0.1141$ ,  $p = 0.0145$ ), congruence Self-enhancement\_BMW Competence (standardised estimate =  $-0.1815$ ,  $p = 0.0027$ ), congruence Self-transcendence\_BMW Excitement (standardised estimate =  $-0.2518$ ,  $p = 0.0036$ ), and congruence Openness-to-

change\_BMW Sincerity (standardised estimate = -0.3977,  $p = 0.0002$ ) influence BMW purchase intention significantly.

### **Mercedes-Benz liking**

The congruence Conservation\_MB Sincerity (standardised estimate = 0.4829,  $p = 0.0000$ ), congruence Self-enhancement\_MB Ruggedness (standardised estimate = 0.3003,  $p = 0.0065$ ), congruence Openness-to-change\_MB Sophistication (standardised estimate = 0.2678,  $p = 0.0014$ ), congruence Self-transcendence\_MB Ruggedness (standardised estimate = 0.2594,  $p = 0.0437$ ), and congruence Self-enhancement\_MB Excitement (standardised estimate = 0.1295,  $p = 0.0123$ ) affect MB liking significantly.

Negative impact: The congruence Self-enhancement\_MB Sincerity (standardised estimate = -0.1625,  $p = 0.0332$ ), congruence Self-enhancement\_MB Sophistication (standardised estimate = -0.3884,  $p = 0.0011$ ), congruence Conservation\_MB Ruggedness (standardised estimate = -0.4365,  $p = 0.001$ ), and congruence Self-transcendence\_MB Sincerity (standardised estimate = -0.4507,  $p = 0.0004$ ) affect MB liking significantly. Therefore, for example, as congruence Self-transcendence\_MB Sincerity and congruence Conservation\_MB Ruggedness increase, MB liking decreases.

### **Mercedes-Benz purchase intention**

The congruence Conservation\_MB Sincerity (standardised estimate = 0.4772,  $p = 0.0000$ , thus  $< 0.00005$ ), congruence Self-enhancement\_MB Ruggedness (standardised estimate = 0.2719,  $p = 0.0098$ ), congruence Conservation\_MB Excitement (standardised estimate = 0.2683,  $p = 0.0092$ ), congruence Self-transcendence\_MB Ruggedness (standardised estimate = 0.2665,  $p = 0.0299$ ), and congruence Openness-to-change\_MB Competence (standardised estimate = 0.2460,  $p = 0.0010$ ) influence MB purchase intention significantly.

Negative impact: The congruence Self-enhancement\_MB Competence (standardised estimate = -0.2639,  $p = 0.0069$ ), congruence Openness to Change\_MB Sophistication (standardised estimate = -0.2920,  $p = 0.0169$ ), congruence Self-transcendence\_MB Sincerity (standardised estimate = -0.3010,  $p = 0.034$ ), congruence Openness-to-change\_MB Excitement (standardised estimate = -0.3594,  $p = 0.0005$ ), and the congruence Conservation\_MB Ruggedness (standardised estimate = -0.5654,  $p = 0.0000$ ) affect MB purchase intention significantly. Hence, for example, the as Openness-to-change\_MB Excitement and congruence Conservation\_MB Ruggedness increase, MB purchase intention decreases.

Furthermore, the R-squared was assessed.

### R-squared

The R-squared was studied to explain the extent to which the dependent variables BMW and MB liking as well as purchase intention are explained by the independent variables (i.e. the self–brand congruencies; Fromm, 2012; see Table 4.8.4.2.3).

**Table 4.8.4.2.3 R-squared – self–brand congruence**

Response	R-squared
BMW liking	0.56
BMW purchase intention	0.59
MB liking	0.52
MB purchase intention	0.58

As can be seen in Table 4.8.4.2.3, BMW purchase intention has the highest R-squared with a score of  $R^2 = 0.59$ , closely followed by MB purchase with a score of  $R^2 = 0.58$ . Purchase intention is better replicated than liking (with

BMW liking  $R^2 = 0.56$  and MB liking  $R^2 = 0.52$ ) based on R-squared. All values of  $R^2 > 0.26$  and are thus sustainable and satisfactory, according to Cohen (1988).

In the next step, the impact of generational cohorts and self–brand congruence on liking and purchase intention was examined.

### **Testing the influence of self–brand congruence and generational cohorts on liking and purchase intention**

Step 2 of this PSEM tests the influence of generational cohort's differences in self–brand congruence on purchase intention. The generational cohorts are displayed in the PSEM with the three age groups "Q3".

#### **Table 4.8.4.2.4 Model fit – piecewise structural equation modeling: self–brand congruence and generational cohorts on liking and purchase intention**

Global goodness-of-fit:

Fisher's C = 200.864 with  $p = 0.731$  and on 214 degrees of freedom

As Table 4.8.4.2.4 indicates, the global goodness-of-fit (with  $C = 200.864$ ,  $p = 0.731$  and 214  $df$ ) is not significant with  $p \geq 0.05$ . Therefore, the model presents a good model fit. Thus, no further adjustments were required.

Significant differences in the influence of self–brand congruencies and generational cohorts on BMW and MB liking as well as purchase intention are shown in Table 4.8.4.2.5. Only significant paths of the PSEM with  $p < 0.05$  are displayed for further exploration.

**Table 4.8.4.2.5 Testing the impact of self–brand congruence and generational cohorts on liking and purchase intention overall statistics**

<b>Response</b>	<b>Predictor</b>	<b>Test.Stat</b>	<b>DF</b>	<b>P.Value</b>	
BMW liking	Q3:cong Con_BMW Competence	0.3	1	0.8042	
BMW liking	Q3:cong Con_BMW Excitement	0.3	1	0.3123	
BMW liking	Q3:cong Con_BMW Ruggedness	0.3	1	0.1636	
BMW liking	Q3:cong Con_BMW Sincerity	0.3	1	0.1908	
BMW liking	Q3:cong OC_BMW Ruggedness	0.3	1	0.0829	
BMW liking	Q3:cong OC_BMW Sophistication	0.3	1	0.2092	
BMW liking	Q3:cong SE_BMW Ruggedness	0.3	1	0.4047	
BMW liking	Q3:cong SE_BMW Sincerity	0.3	1	0.5682	
BMW liking	Q3:cong STr_BMW Competence	0.3	1	0.1926	
BMW liking	Q3:cong STr_BMW Ruggedness	0.3	1	0.2930	
BMW liking	Q3:cong STr_BMW Sincerity	0.3	1	0.2818	
BMW purchase intention	Q3:cong Con_BMW Ruggedness	22.4	1	0.2681	
BMW purchase intention	Q3:cong Con_BMW Sincerity	22.4	1	0.6580	

BMW purchase intention	Q3:cong Con_BMW Sophistication	22.4	1	0.0189	*
BMW purchase intention	Q3:cong OC_BMW Competence	22.4	1	0.7961	
BMW purchase intention	Q3:cong OC_BMW Excitement	22.4	1	0.8024	
BMW purchase intention	Q3:cong OC_BMW Sincerity	22.4	1	0.7989	
BMW purchase intention	Q3:cong SE_BMW Competence	22.4	1	0.0261	*
BMW purchase intention	Q3:cong STr_BMW Excitement	22.4	1	0.9402	
BMW purchase intention	Q3:cong STr_BMW Ruggedness	22.4	1	0.7294	
MB liking	Q3:cong Con_MB Ruggedness	3.2	1	0.8368	
MB liking	Q3:cong Con_MB Sincerity	3.2	1	0.5234	
MB liking	Q3:cong OC_MB Competence	3.2	1	0.4582	
MB liking	Q3:cong OC_MB Sincerity	3.2	1	0.9536	
MB liking	Q3:cong OC_MB Sophistication	3.2	1	0.8692	
MB liking	Q3:cong SE_MB Competence	3.2	1	0.0736	
MB liking	Q3:cong SE_MB Excitement	3.2	1	0.8153	
MB liking	Q3:cong SE_MB Ruggedness	3.2	1	0.9503	
MB liking	Q3:cong SE_MB Sincerity	3.2	1	0.1827	
MB liking	Q3:cong SE_MB Sophistication	3.2	1	0.4169	
MB liking	Q3:cong STr_MB Ruggedness	3.2	1	0.5892	
MB liking	Q3:cong STr_MB Sincerity	3.2	1	0.9651	



MB purchase intention	Q3:cong Con_MB Excitement	34.4	1	0.633	
MB purchase intention	Q3:cong Con_MB Ruggedness	34.4	1	0.8008	
MB purchase intention	Q3:cong Con_MB Sincerity	34.4	1	0.4945	
MB purchase intention	Q3:cong OC_MB Competence	34.4	1	0.9559	
MB purchase intention	Q3:cong OC_MB Excitement	34.4	1	0.9661	
MB purchase intention	Q3:cong OC_MB Sincerity	34.4	1	0.3371	
MB purchase intention	Q3:cong OC_MB Sophistication	34.4	1	0.0705	
MB purchase intention	Q3:cong SE_MB Competence	34.4	1	0.5731	
MB purchase intention	Q3:cong SE_MB Ruggedness	34.4	1	0.6288	
MB purchase intention	Q3:cong SE_MB Sophistication	34.4	1	0.8802	
MB purchase intention	Q3:cong STr_MB Ruggedness	34.4	1	0.9464	
MB purchase intention	Q3:cong STr_MB Sincerity	34.4	1	0.3324	
MB purchase intention	Q3:cong STr_MB Sophistication	34.4	1	0.2118	
BMW purchase intention	Q3:BMW liking	22.4	1	0.8242	
MB purchase intention	Q3:MB liking	34.4	1	0.1093	

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

As can be derived from Table 4.8.4.2.5, the self–brand congruencies Conservation\_BMW Sophistication ( $t$ -statistic = 22.4,  $p$  = 0.0189) and Self-enhancement\_BMW Competence ( $t$ -statistic = 22.4,  $p$  = 0.0261) on BMW purchase intention present significant paths.

The age groups were then verified in detail for statistical significances. The individual paths of the adjusted PSEM are presented in Table 4.8.4.2.6.

When  $p < 0.05$  and paths are not constrained, significant differences are observable (Kline, 2011). Only the significant and non-constrained paths are displayed in Table 4.8.4.2.6 (see Appendix E3 for complete table).

**Table 4.8.4.2.6 Testing the impact of self–brand congruence and generational cohorts on liking and purchase intention**

Response	Predictor	Estimate	Std. Error	D F	Crit. Value	P. Value	Std. Estimate	p	c
<b>Age group 1</b>									
BMW purchase intention	cong SE_BMW Competence	-0.2045	0.0585	82	-3.4943	0.0008	-0.4037	** *	
<b>Age group 3</b>									
BMW purchase intention	cong Con_BMW Sophistication	-0.2161	0.0689	81	-3.1364	0.0024	-0.2808	**	

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

Detailed explanations of Table 4.8.4.2.6 are presented below. Individual paths of the PSEM are significant if  $p < 0.05$  and non-constrained (see Table 4.8.4.2.6 and Appendix E3, columns “p” and “c”).

**Significant influence of generational cohorts’ self–brand congruence on purchase intention (per age group):**

- For **Age group 1** (the pre-reform generation), the self–brand congruence Self-enhancement\_BMW Competence (standardised estimate = -0.4037,  $p = 0.0008$ ) presents a negative impact on BMW purchase intention.
- For **Age group 3** (the post-reform generation), Conservation\_BMW Sophistication (standardised estimate = -0.2808,  $p = 0.0024$ ) also has a negative impact on BMW purchase intention.

**H6 (stating that the congruence between a generational cohort’s higher-order personal value and brand personality perception will influence their liking and purchase intention) can be accepted for the self–brand congruencies Self-enhancement\_BMW Competence and Conservation\_BMW Sophistication.**

**4.8.4.3 Testing moderating variables “brand conspicuousness” and “brand uniqueness” on self–brand congruence**

In this section the moderating effects of brand conspicuousness and brand uniqueness on self–brand congruence are analysed (Sirgy & Johar, 1999). Due to the length of the questionnaire (Kumar, 2011), only three questions per moderating variable were chosen. Thus, three questions per variable were used according to the method used for personal values.

### **Testing moderating variables “brand conspicuousness” and “brand uniqueness” on self–brand congruence**

To measure the effect of brand conspicuousness and brand uniqueness on self–brand congruence, PSEM was conducted to test the following hypothesis pairs:

H<sub>0</sub>7a: The moderating variable “brand conspicuousness” does not influence self–brand congruence.

H<sub>a</sub>7a: The moderating variable “brand conspicuousness” influences self–brand congruence.

H<sub>0</sub>7b: The moderating variable “brand uniqueness” does not influence self–brand congruence.

H<sub>a</sub>7b: The moderating variable “brand uniqueness” influences self–brand congruence.

All self–brand congruencies for BMW and MB were incorporated together with brand conspicuousness and brand uniqueness for BMW and MB (see Appendix F1–Appendix F4 for the descriptive statistics).

**Table 4.8.4.3.1 Model fit – piecewise structural equation modeling:  
moderating variable brand conspicuousness and brand  
uniqueness**

Global goodness-of-fit:

Fisher's C = 38484.115 with  $p = 0.000$  and on 1720 degrees of freedom

AIC	BIC
39124.115	40309.325

As can be derived from Table 4.8.4.3.1, the PSEM shows a poor model fit,  $C = 38484.115$  with  $p = 0.000$ , thus  $p < 0.0005$  and on 1720  $df$  (AIC =

39124.115 and BIC = 40309.325), significant with  $p < 0.05$ , which is poor. Some paths were consequently eliminated in the PSEM. The new model includes only the following congruencies for measuring the effect of the moderating variables “brand conspicuousness” and “brand uniqueness” on self–brand congruence:

- cong STr\_BMW Sophistication
- cong SE\_BMW Sincerity
- cong SE\_BMW Excitement
- cong SE\_BMW Competence
- cong SE\_BMW Sophistication
- cong SE\_BMW Ruggedness
- cong SE\_MB Excitement
- cong SE\_MB Competence

### **The re-specified model PSEM moderating variables: brand conspicuousness and brand uniqueness**

The following coding was applied for improved results through PSEM:

Coding brand conspicuousness:

- Bc\_BMW 1/Bc\_MB 1: if one of the three questions on brand conspicuousness was answered with “yes” (all negatively worded items of the moderating variables were reversed during data preparation)
- Bc\_BMW 2/Bc\_MB 2: if two of the three questions were answered with “yes”
- Bc\_BMW 3/Bc\_MB 3: if three out of the three questions were answered with “yes”

Coding brand uniqueness BMW/MB:

- Bu\_BMW 1/Bu\_MB 1: if one of the three questions on brand conspicuousness was answered with “yes” (all negatively worded items of the moderating variables were reversed during data preparation)
- Bu\_BMW 2/Bu\_MB 2: if two of the three questions were answered with “yes”
- Bu\_BMW 3/Bu\_MB 3: if three out of the three questions were answered with “yes”

**Table 4.8.4.3.2 Model fit – adjusted piecewise structural equation modeling: moderating variables “brand conspicuousness” and “brand uniqueness”**

Global goodness-of-fit:

Fisher's C = 5512.247 with  $p = 0.000$  and on 180 degrees of freedom

AIC	BIC
5656.247	5922.919

As can be seen in Table 4.8.4.3.2, the PSEM displays a poor model fit,  $C = 5512.247$  with  $p < 0.0005$  and on 180  $df$ , significant with  $p < 0.05$  (Byrne, 2010). However, in comparison to the original model, this PSEM fits better based on the CFIs with an AIC of 2315.401 instead of 39124.115 and a BIC of 2552.443 instead of 40309.325 (see Table 4.8.4.3.2 and 4.8.4.3.1).

Only significant paths of the adjusted PSEM are displayed according to their strength on the specific self–brand congruence in Table 4.8.4.3.3 (see Appendix F5 for complete table).

**Table 4.8.4.3.3 Testing the impact of brand uniqueness and brand conspicuousness on self–brand congruence**

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	p
<b>Brand conspicuousness</b>								
cong SE_BMW Competence	bc_BMW_3	2.288	0.7347	293	3.1142	0.0020	0.1840	**
cong SE_BMW Competence	bc_BMW_2	1.7202	0.6082	293	2.8285	0.0050	0.1677	**
cong SE_BMW Excitement	bc_BMW_2	1.8983	0.5204	293	3.6478	0.0003	0.2176	***
cong SE_BMW Excitement	bc_BMW_3	1.8564	0.6286	293	2.953	0.0034	0.1755	**
cong SE_BMW Ruggedness	bc_BMW_3	2.0689	0.8754	293	2.3634	0.0188	0.1431	*
cong SE_BMW Sincerity	bc_BMW_2	1.5208	0.4785	293	3.1781	0.0016	0.1900	**
cong SE_BMW Sincerity	bc_BMW_3	1.5705	0.5781	293	2.7167	0.0070	0.1618	**
cong SE_BMW Sophistication	bc_BMW_3	1.9682	0.8453	293	2.3283	0.0206	0.1410	*
cong SE_MB Competence	bc_MB_3	3.3875	1.0456	293	3.2396	0.0013	0.1924	**
cong SE_MB Excitement	bc_MB_3	2.4198	0.7437	293	3.2538	0.0013	0.1957	**
cong SE_MB Ruggedness	bc_MB_3	2.2375	1.0328	293	2.1665	0.0311	0.1312	*
<b>Brand uniqueness</b>								
cong SE_BMW Competence	bu_BMW_2	1.628	0.6488	293	2.5092	0.0126	0.1450	*
cong SE_BMW Competence	bu_BMW_3	2.1691	0.9683	293	2.2402	0.0258	0.1286	*
cong SE_BMW Sincerity	bu_BMW_3	1.5878	0.7619	293	2.084	0.0380	0.1206	*



Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	p
cong SE_MB Competence	bu_MB_2	1.8177	0.7735	293	2.3501	0.0194	0.1376	*
cong SE_MB Sincerity	bu_MB_2	1.2963	0.6516	293	1.9893	0.0476	0.1191	*

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

Detailed explanations of Table 4.8.4.3.3 are presented below. Individual paths of the adjusted PSEM are significant if  $p < 0.05$  (Kline, 2011).

### **Significant influence of brand conspicuousness and brand uniqueness on self–brand congruence**

#### **Brand conspicuousness BMW**

- Self–brand congruence Self-enhancement\_BMW Competence is moderated by bc\_BMW\_3 (standardised estimate = 0.180,  $p = 0.0020$ ), closely followed by bc\_BMW\_2 (standardised estimate = 0.1677,  $p = 0.0050$ ).
- Self-enhancement\_BMW Excitement is moderated by bc\_BMW\_2 (standardised estimate = 0.2176,  $p = 0.0003$ ) and bc\_BMW\_3 (standardised estimate = 0.1755,  $p = 0.0034$ ).
- Self-enhancement\_BMW Ruggedness is moderated by bc\_BMW\_3 (standardised estimate = 0.1431,  $p = 0.0188$ ).
- Self-enhancement\_BMW Sincerity is moderated by bc\_BMW\_2 (standardised estimate = 0.1900,  $p = 0.0016$ ) and bc\_BMW\_3 (standardised estimate = 0.1618,  $p = 0.0070$ ).
- Self-enhancement\_BMW Sophistication is moderated by bc\_BMW\_3 (standardised estimate = 0.1410,  $p = 0.0206$ ).

#### **Brand conspicuousness Mercedes-Benz**

- Self–brand congruence Self-enhancement\_MB Competence is moderated by bc\_MB\_3 (standardised estimate = 0.1924,  $p = 0.0013$ ).
- Self-enhancement\_MB Excitement is moderated by bc\_MB\_3 (standardised estimate = 0.1957,  $p = 0.0013$ ).
- Self-enhancement\_MB Ruggedness is moderated by bc\_MB\_3 (standardised estimate = 0.1312,  $p = 0.0311$ ).

### **Brand uniqueness BMW**

- Self–brand congruence Self-enhancement\_BMW Competence is moderated by bu\_BMW\_2 (standardised estimate = 0.1450,  $p = 0.0126$ ) and bu\_BMW\_3 (standardised estimate = 0.1286,  $p = 0.0258$ ).
- Self-enhancement\_BMW Sincerity is moderated by bu\_BMW\_3 (standardised estimate = 0.1206,  $p = 0.0380$ ).

### **Brand uniqueness Mercedes-Benz**

- Self–brand congruence Self-enhancement\_MB Competence is moderated by bu\_MB\_2 (standardised estimate = 0.1376,  $p = 0.0194$ ).
- Self-enhancement\_MB Sincerity is moderated by bu\_MB\_2 (standardised estimate = 0.1191,  $p = 0.0476$ ).

Moreover, the R-squared was assessed.

### **R-squared**

The R-squared was studied to explain the extent to which the dependent variables (i.e. self–brand congruencies), are explained by the independent variables, brand conspicuousness and brand uniqueness of BMW and MB (see Table 4.8.4.3.4).

**Table 4.8.4.3.4 R-squared – brand uniqueness and brand conspicuousness**

<b>Response</b>	<b>R.squared</b>
cong SE_BMW Competence	0.08
cong SE_BMW Excitement	0.07
cong SE_BMW Ruggedness	0.04
cong SE_BMW Sincerity	0.07
cong SE_BMW Sophistication	0.04
cong SE_MB Competence	0.07
cong SE_MB Excitement	0.05
cong SE_MB Ruggedness	0.03
cong SE_MB Sincerity	0.03

As can be seen in Table 4.8.4.3.4, the R-squared is the highest for the congruence Self-enhancement\_BMW Competence ( $R^2 = 0.08$ ). Therefore, congruence Self-enhancement\_BMW Competence can be predicted the most. This is closely followed by the congruence Self-enhancement MB Competence ( $R^2 = 0.07$ ) and Self-enhancement\_BMW Excitement as well as Self-enhancement\_BMW Sincerity ( $R^2 = 0.07$  for both). The congruence Self-enhancement\_MB Excitement presents  $R^2 = 0.05$ . Additionally, for both the congruencies Self-enhancement\_BMW Sophistication and Self-enhancement\_BMW Ruggedness,  $R^2 = 0.04$ , whereas for Self-enhancement\_MB Ruggedness and Self-enhancement\_MB Sincerity,  $R^2 = 0.03$ , thus demonstrating weak moderating effects by brand conspicuousness and brand uniqueness on self–brand congruence.

According to Cohen (1988), the values of R-squared are weak when  $R^2 < 0.16$  and  $\geq 0.02$ . However, R-squared only presents the strength of the relationship between the dependent and independent variables in the model. The statistical significance of the relationship is assessed by Fisher's C for the PSEM (Shipley, 2009).

Since the model fit is poor, the outcomes must be considered with critical reasoning.

**H7a (stating that the moderating variable “brand conspicuousness” affects self–brand congruence) can be accepted for Self-enhancement\_BMW Competence, Self-enhancement\_BMW Excitement, Self-enhancement\_BMW Ruggedness, Self-enhancement\_BMW Sincerity, Self-enhancement\_BMW Sophistication, Self-enhancement\_MB Competence, Self-enhancement\_MB Excitement, and Self-enhancement\_MB Ruggedness.**

**H7b (stating that the moderating variable “brand uniqueness” affects self–brand congruence) can be accepted for Self-enhancement\_BMW Competence, Self-enhancement\_BMW Sincerity, Self-enhancement\_MB Competence, and Self-enhancement\_MB Sincerity.**

#### **4.8.5. Analysis Functional congruence construct**

This section explores the product dimensions regarding importance and possession for better understanding of how they are influenced by the self–brand congruence of BMW and MB. Functional congruence is conceptualised as the fit between the consumer’s expectations (i.e. importance) of utilitarian product, brand, or service features as well as the experience or perception (i.e. possession) of these features (Kressman et al., 2006; Sirgy & Johar, 1999).

As the first step, the influence of self–brand congruence on functional congruence was statistically tested, as described in Section 4.8.5.1.

##### **4.8.5.1 Testing influence of self–brand congruence on functional congruence**

This part examines whether self–brand congruence positively influences functional congruence. According to Kressman et al. (2006), a high self–

brand congruence likely implies a consumer's initial positive attitude towards a brand. This will affect the evaluation of the utilitarian features of the brand.

The following hypothesis pair was tested:

H<sub>08</sub>: Self-brand congruence does not influence functional congruence positively.

H<sub>a8</sub>: Self-brand congruence influences functional congruence positively.

First, the model was fitted to conduct PSEM. The congruencies for each functional congruence dimension (exterior convenience, performance, safety, economic aspect, dealer, and warranty) were modelled by deducting the importance from the possession score of each characteristic for BMW and MB.

Functional congruence was examined for the importance (imp) of characteristics among the respondents and for BMW's and MB's possession (poss) of these characteristics as perceived by the respondents. The functional congruencies are the dependent variables, and all BMW and MB self-brand congruencies are the independent ones:

- congruence (cong)\_Exterior
- cong Convenience
- cong\_Performance
- cong\_Safety
- cong\_Economic
- cong\_Dealer
- cong\_Warranty

Each linear model was fitted in the PSEM with each of the seven BMW and seven MB functional congruities with all 40 self-brand congruencies.

However, as the first step of the PSEM, the self-brand congruencies were partially and automatically eliminated based on significance for a better

model fit. The specific functional congruence dimensions of BMW and MB thus include the following self-brand congruencies for conducting the PSEM:

- Linear model (lm) congruence (cong)\_BMW Exterior: cong STr\_BMW Competence + cong STr\_BMW Ruggedness + cong Con\_BMW Competence + cong Con\_BMW Ruggedness.
- lm cong BMW Convenience: cong STr\_BMW Sincerity + cong STr\_BMW Excitement + cong STr\_BMW Competence + cong SE\_BMW Excitement + cong OC\_BMW Sincerity + cong Con\_BMW Sincerity + cong Con\_BMW Competence.
- lm cong BMW Performance: cong STr\_BMW Excitement + cong STr\_BMW Ruggedness + cong SE\_BMW Sincerity + cong SE\_BMW Sophistication + cong SE\_BMW Ruggedness + cong OC\_BMW Excitement + cong OC\_BMW Ruggedness + cong Con\_BMW Excitement.
- lm cong BMW Safety: cong STr\_BMW Sophistication + cong SE\_BMW Excitement + cong OC\_BMW Sincerity + cong OC\_BMW Competence + cong Con\_BMW Excitement + cong Con\_BMW Competence + cong SE\_BMW Sophistication.
- lm cong BMW Economic: cong STr\_BMW Sincerity + cong STr\_BMW Excitement + cong STr\_BMW Sophistication + cong STr\_BMW Ruggedness + cong SE\_BMW Sincerity + cong SE\_BMW Excitement + cong SE\_BMW Competence + cong OC\_BMW Sincerity + cong OC\_BMW Excitement + cong Con\_BMW Sincerity + cong Con\_BMW Sophistication.
- lm cong BMW Dealer: cong STr\_BMW Sincerity + cong STr\_BMW Excitement + cong STr\_BMW Competence + cong STr\_BMW Ruggedness + cong SE\_BMW Excitement + cong SE\_BMW Sophistication + cong OC\_BMW Sincerity + cong OC\_BMW Competence + cong OC\_BMW Ruggedness.
- lm cong BMW Warranty: cong STr\_BMW Excitement + cong STr\_BMW Ruggedness + cong SE\_BMW Sincerity + cong Con\_BMW

Excitement + cong Con\_BMW Competence + cong Con\_BMW  
Sophistication + cong Con\_BMW Ruggedness.

- Im cong MB Exterior: cong STr\_MB Sincerity + cong STr\_MB  
Ruggedness + cong SE\_MB Sophistication + cong SE\_MB  
Ruggedness + cong OC\_MB Sincerity + cong OC\_MB Competence +  
cong OC\_MB Sophistication + cong OC\_MB Ruggedness + cong  
Con\_MB Competence + cong Con\_MB Sophistication.
- Im cong MB Convenience: cong STr\_MB Sincerity + cong SE\_MB  
Sincerity + cong SE\_MB Excitement.
- Im cong MB Performance: cong STr\_MB Sophistication + cong  
Con\_MB Sophistication + cong Con\_MB Competence + cong STr\_MB  
Excitement.
- Im cong MB Safety: cong STr\_MB Sincerity + cong STr\_MB  
Excitement + cong STr\_MB Competence + cong STr\_MB  
Sophistication + cong STr\_MB Ruggedness + cong SE\_MB  
Excitement + cong SE\_MB Competence + cong Con\_MB  
Sophistication.
- Im cong MB Economic: cong SE\_MB Competence + cong SE\_MB  
Sophistication.
- Im cong MB Dealer: cong STr\_MB Sincerity + cong STr\_MB  
Sophistication + cong SE\_MB Competence + cong Con\_MB Sincerity  
+ cong Con\_MB Sophistication.
- Im cong MB Warranty: cong STr\_MB Competence + cong OC\_MB  
Excitement + cong OC\_MB Competence + cong Con\_MB  
Competence + cong Con\_MB Ruggedness.



**Table 4.8.5.1.1 Model fit – piecewise structural equation modeling: self-brand congruence on functional congruence**

Global goodness-of-fit:

Fisher's C = 1096 with  $p = 0.255$  and on 1066 degrees of freedom

AIC	BIC
1332.000	1769.046

As can be noted in Table 4.8.5.1.1., the global goodness-of-fit was good because it was not significant ( $p \geq 0.05$ ),  $C = 1096$ ,  $p = 0.255$ , and on 1066  $df$  (AIC = 1332.000, BIC = 1769.046).

The significant paths of the PSEM with  $p < 0.05$  are displayed in Table 4.8.5.1.2 according to their strength of impact.

**Table 4.8.5.1.2 Testing the impact of self–brand congruence on functional congruence**

<b>Response</b>	<b>Predictor</b>	<b>Estimate</b>	<b>Std. Error</b>	<b>DF</b>	<b>Crit. Value</b>	<b>P. Value</b>	<b>Std. Estimate</b>	<b>p</b>
cong BMW Convenience	cong Con_BMW Sincerity	0.2166	0.0931	29 2	23.262	0.0207	0.4955	*
cong BMW Convenience	cong STr_BMW Competence	0.1845	0.0849	29 2	21.732	0.0306	0.4059	*
cong BMW Convenience	cong STr_BMW Sincerity	-0.3745	0.1055	29 2	-35.508	0.0004	-0.8130	** *
cong BMW Dealer	cong OC_BMW Ruggedness	0.2129	0.0828	29 0	25.725	0.0106	0.4304	*
cong BMW Dealer	cong STr_BMW Sincerity	0.1951	0.0824	29 0	23.665	0.0186	0.4004	*
cong BMW Dealer	cong SE_BMW Excitement	0.1090	0.0349	29 0	31.236	0.0020	0.2277	**
cong BMW Dealer	cong SE_BMW Sophistication	-0.0869	0.0258	29 0	-33.69	0.0009	-0.2227	** *

cong BMW Dealer	cong OC_BMW Competence	-0.1380	0.0641	29 0	-21.519	0.0322	-0.2496	*
cong BMW Dealer	cong STr_BMW Excitement	-0.1527	0.0515	29 0	-29.637	0.0033	-0.2616	**
cong BMW Dealer	cong STr_BMW Ruggedness	-0.1950	0.0955	29 0	-20.419	0.0421	-0.3522	*
cong BMW Dealer	cong OC_BMW Sincerity	-0.1677	0.0714	29 0	-23.475	0.0196	-0.3918	*
cong BMW Economic	cong OC_BMW Excitement	0.2569	0.0918	28 8	27.991	0.0055	0.3588	**
cong BMW Economic	cong Con_BMW Sophistication	0.1783	0.0841	28 8	21.193	0.0349	0.2618	*
cong BMW Economic	cong SE_BMW Competence	0.1171	0.0403	28 8	29.047	0.0040	0.1987	**
cong BMW Economic	cong SE_BMW Excitement	-0.1141	0.0511	28 8	-22.322	0.0264	-0.1906	*
cong BMW Economic	cong STr_BMW Excitement	-0.2461	0.0851	28 8	-28.903	0.0041	-0.3369	**

cong BMW Exterior	cong Con_BMW Ruggedness	0.2354	0.0776	29 5	30.347	0.0026	0.4879	**
cong BMW Exterior	cong Con_BMW Competence	-0.1406	0.0709	29 5	-19.834	0.0482	-0.3483	*
cong BMW Exterior	cong STr_BMW Ruggedness	-0.2168	0.0769	29 5	-28.211	0.0051	-0.4562	**
cong BMW Performance	cong STr_BMW Excitement	0.3655	0.0813	29 1	44.932	0.0000	0.6836	** *
cong BMW Performance	cong OC_BMW Ruggedness	0.2209	0.0712	29 1	31.038	0.0021	0.4877	**
cong BMW Performance	cong SE_BMW Sophistication	0.0909	0.0306	29 1	29.708	0.0032	0.2542	**
cong BMW Performance	cong SE_BMW Ruggedness	-0.0797	0.0325	29 1	-24.569	0.0146	-0.2339	*
cong BMW Performance	cong SE_BMW Sincerity	-0.1189	0.0328	29 1	-36.302	0.0003	-0.2372	** *
cong BMW Performance	cong OC_BMW Excitement	-0.1647	0.0618	29 1	-26.647	0.0081	-0.3142	**

cong BMW Performance	cong STr_BMW Ruggedness	-0.2514	0.0776	29 1	-32.393	0.0013	-0.4958	**
cong BMW Safety	cong Con_BMW Competence	0.1115	0.0466	29 2	23.931	0.0173	0.2762	*
cong BMW Safety	cong OC_BMW Sincerity	0.0737	0.0285	29 2	25.893	0.0101	0.2006	*
cong BMW Safety	cong SE_BMW Excitement	0.0732	0.0325	29 2	22.509	0.0251	0.1782	*
cong BMW Safety	cong STr_BMW Sophistication	0.0828	0.0397	29 2	20.845	0.0380	0.1492	*
cong BMW Safety	cong Con_BMW Excitement	-0.0856	0.041	29 2	-20.854	0.0379	-0.1919	*
cong BMW Safety	cong OC_BMW Competence	-0.1528	0.0577	29 2	-26.461	0.0086	-0.3219	**
cong BMW Warranty	cong STr_BMW Excitement	0.1764	0.08	29 2	22.059	0.0282	0.3222	*
cong BMW Warranty	cong Con_BMW Competence	0.0891	0.029	29 2	30.689	0.0024	0.2020	**

cong BMW Warranty	cong Con_BMW Sophistication	0.0880	0.0295	29 2	29.806	0.0031	0.1724	**
cong BMW Warranty	cong SE_BMW Sincerity	-0.0946	0.0312	29 2	-30.319	0.0026	-0.1842	**
cong MB Convenience	cong SE_MB Sincerity	-0.0948	0.0338	29 6	-28.023	0.0054	-0.2044	**
cong MB Dealer	cong STr_MB Sincerity	0.2063	0.0942	29 4	21.898	0.0293	0.3168	*
cong MB Dealer	cong SE_MB Competence	-0.0464	0.0219	29 4	-21.183	0.0350	-0.1236	*
cong MB Dealer	cong STr_MB Sophistication	-0.1836	0.0824	29 4	-22.296	0.0265	-0.3474	*
cong MB Economic	cong SE_MB Sophistication	0.1184	0.0358	29 7	33.091	0.0011	0.2592	**
cong MB Exterior	cong STr_MB Ruggedness	0.2106	0.0707	28 9	29.813	0.0031	0.4448	**
cong MB Exterior	cong OC_MB Sincerity	0.2072	0.0744	28 9	27.831	0.0057	0.3732	**

cong MB Exterior	cong SE_MB Ruggedness	-0.0797	0.0399	28 9	-19.986	0.0466	-0.2474	*
cong MB Exterior	cong STr_MB Sincerity	-0.1853	0.0791	28 9	-23.437	0.0198	-0.3171	*
cong MB Exterior	cong OC_MB Sophistication	-0.2110	0.0625	28 9	-33.78	0.0008	-0.4666	** *
cong MB Performance	cong Con_MB Sophistication	0.2318	0.0739	29 5	31.354	0.0019	0.4202	**
cong MB Performance	cong Con_MB Competence	-0.0893	0.0411	29 5	-21.746	0.0305	-0.1404	*
cong MB Performance	cong STr_MB Sophistication	-0.1786	0.0689	29 5	-25.934	0.0100	-0.3329	**
cong MB Safety	cong STr_MB Excitement	0.1231	0.0476	29 1	25.859	0.0102	0.2429	*
cong MB Safety	cong STr_MB Ruggedness	0.1055	0.0392	29 1	26.88	0.0076	0.2146	**
cong MB Safety	cong SE_MB Competence	0.0653	0.0285	29 1	22.968	0.0223	0.1868	*

cong MB Safety	cong SE_MB Excitement	-0.1023	0.037	29 1	-27.629	0.0061	-0.2555	**
cong MB Warranty	cong STr_MB Competence	0.2077	0.0851	29 4	24.417	0.0152	0.3105	*

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05



Detailed explanations of Table 4.8.5.1.2 are presented below.

## **Significant influences of self–brand congruence on functional congruence**

### **Functional congruence BMW**

#### BMW Convenience

Self-brand congruencies Conservation\_BMW Sincerity (standardised estimate = 0.4955,  $p = 0.0207$ ) and Self-transcendence\_BMW Competence (standardised estimate = 0.4059,  $p = 0.0306$ ) influence functional congruence BMW Convenience significantly.

Negative impact: Self-transcendence\_BMW Sincerity (standardised estimate = -0.8130,  $p = 0.0003$ ) affects BMW Convenience significantly at the 0.001 level, demonstrating the negative impact on BMW Convenience.

#### BMW Dealership

Self-brand congruencies Openness-to-change\_BMW Ruggedness (standardised estimate = 0.4304,  $p = 0.0106$ ), Self-transcendence\_BMW Sincerity (standardised estimate = 0.4004,  $p = 0.0186$ ), and Self-enhancement\_BMW Excitement (standardised estimate = 0.2277,  $p = 0.0020$ ) influence functional congruence BMW Dealership significantly.

Negative impact: Self-enhancement\_BMW Sophistication (standardised estimate = -0.2227,  $p = 0.0009$ ), Openness-to-change\_BMW Competence (standardised estimate = -0.2496,  $p = 0.0322$ ), Self-transcendence\_BMW Excitement (standardised estimate = -0.2616,  $p = 0.0033$ ), Self-transcendence\_BMW Ruggedness (standardised estimate = -0.3522,  $p = 0.0421$ ), and Openness-to-change\_BMW Sincerity (standardised estimate = -0.3918,  $p = 0.0196$ ) present a negative impact on BMW Dealership.

### BMW Economic Aspect

Self-brand congruencies Openness-to-change\_BMW Excitement (standardised estimate = 0.3588,  $p = 0.0055$ ), Conservation\_BMW Sophistication (standardised estimate = 0.2618,  $p = 0.0349$ ), and Self-enhancement\_BMW Competence (standardised estimate = 0.1987,  $p = 0.0040$ ) influence functional congruence BMW Economic Aspect significantly.

Negative impact: Self-enhancement\_BMW Excitement (standardised estimate = -0.1906,  $p = 0.0264$ ) and Self-transcendence\_BMW Excitement (standardised estimate = -0.3369,  $p = 0.0041$ ) demonstrate the opposite effects.

### BMW Exterior

Self-brand congruence Conservation\_BMW Ruggedness (standardised estimate = 0.4879,  $p = 0.0026$ ) influences functional congruence BMW Exterior significantly.

Negative impact: Conservation\_BMW Competence (standardised estimate = -0.383,  $p = 0.0482$ ) and Self-transcendence\_BMW Ruggedness (standardised estimate = -0.4562,  $p = 0.0051$ ) affect BMW Exterior significantly, thus revealing the opposite effect.

### BMW Performance

Self-brand congruencies Self-transcendence\_BMW Excitement (standardised estimate = 0.6836,  $p = 0.0000$ , thus  $p < 0.00005$ ), Openness-to-change\_BMW Ruggedness (standardised estimate = 0.4877,  $p = 0.0021$ ), and Self-enhancement\_BMW Sophistication (standardised estimate = 0.2542,  $p = 0.0032$ ) influence functional congruence BMW Performance significantly.

Negative impact: Self-enhancement\_BMW Ruggedness (standardised estimate = -0.2339,  $p = 0.0146$ ), Self-enhancement\_BMW Sincerity (standardised estimate = -0.2372,  $p = 0.0003$ ), Openness-to-change BMW

Excitement (standardised estimate = -0.3142,  $p = 0.0081$ ), and Self-transcendence\_BMW Ruggedness (standardised estimate = -0.4958,  $p = 0.0013$ ) affect BMW Performance negatively.

### BMW Safety

Self-brand congruencies Conservation\_BMW Competence (standardised estimate = 0.2762,  $p = 0.0173$ ), Openness-to-change\_BMW Sincerity (standardised estimate = 0.2006,  $p = 0.0101$ ), Self-enhancement\_BMW Excitement (standardised estimate = 0.1782,  $p = 0.0251$ ), and Self-transcendence\_BMW Sophistication (standardised estimate = 0.1492,  $p = 0.0380$ ) influence functional congruence BMW Safety significantly.

Negative impact: Conservation\_BMW Excitement (standardised estimate = -0.1919,  $p = 0.0379$ ) and Openness-to-change\_BMW Competence (standardised estimate = -0.3219,  $p = 0.0086$ ) present negative impacts on BMW Safety.

### BMW Warranty Issues

Self-brand congruencies Self-transcendence\_BMW Excitement (standardised estimate = 0.3222,  $p = 0.0282$ ), Conservation\_BMW Competence (standardised estimate = 0.202,  $p = 0.0024$ ), and Conservation\_BMW Sophistication (standardised estimate = 0.1724,  $p = 0.0031$ ) influence functional congruence BMW Warranty Issues significantly.

Negative impact: Self-enhancement\_BMW Sincerity (standardised estimate = -0.1842,  $p = 0.0026$ ) shows the opposite effect on BMW Warranty.

## **Functional congruence Mercedes-Benz**

### MB Convenience

Negative impact: Self-brand congruence Self-enhancement\_MB Sincerity (standardised estimate = -0.2044,  $p = 0.0054$ ) influences functional congruence MB Convenience significantly, thus showing the opposite effect of these two constructs.

### MB Dealership

Self-brand congruence Self-transcendence\_MB Sincerity (standardised estimate = 0.3168,  $p = 0.0293$ ) influences functional congruence MB Dealership significantly.

Negative impact: Self-enhancement\_MB Competence (standardised estimate = -0.1236,  $p = 0.0350$ ) and Self-transcendence\_MB Sophistication (standardised estimate = -0.3474,  $p = 0.0265$ ) influence MB Dealership significantly.

### MB Economic Aspect

Self-brand congruence Self-enhancement\_MB Sophistication (standardised estimate = 0.2592,  $p = 0.0011$ ) influences functional congruence MB Economic Aspect significantly.

### MB Exterior

Self-brand congruencies Self-transcendence\_MB Ruggedness (standardised estimate = 0.4448,  $p = 0.0031$ ) and Openness-to-change\_MB Sincerity (standardised estimate = 0.3732,  $p = 0.0057$ ) influence functional congruence MB Exterior significantly.

Negative impact: Self-enhancement\_MB Ruggedness (standardised estimate = -0.2474,  $p = 0.0466$ ), Self-transcendence\_MB Sincerity (standardised estimate = -0.3171,  $p = 0.0198$ ), and Openness-to-

change\_MB Sophistication (standardised estimate = -0.4666,  $p = 0.0008$ ) influence MB Exterior negatively and significantly.

### MB Performance

Self-brand congruence Conservation\_MB Sophistication (standardised estimate = 0.4202,  $p = 0.0019$ ) influences functional congruence MB Performance significantly.

Negative impact: Conservation\_MB Competence (standardised estimate = -0.1404,  $p = 0.0305$ ) and Self-transcendence\_MB Sophistication (standardised estimate = -0.3329,  $p = 0.0100$ ) affect MB Performance significantly.

### MB Safety

Self-brand congruencies Self-transcendence\_MB Excitement (standardised estimate = 0.2429,  $p = 0.0102$ ), Self-transcendence\_MB Ruggedness (standardised estimate = 0.2146,  $p = 0.0076$ ), and Self-enhancement\_MB Competence (standardised estimate = 0.1868,  $p = 0.0223$ ) influence functional congruence MB Safety significantly.

Negative impact: Self-enhancement MB Excitement (standardised estimate = -0.2555,  $p = 0.0061$ ) negatively influences MB Safety.

### MB Warranty Issues

Self-brand congruence Self-transcendence\_MB Competence (standardised estimate = 0.3105,  $p = 0.0152$ ) influences functional congruence MB Warranty Issues significantly.

Furthermore, the R-squared was examined.

## R-squared

As the next step, the R-squared was studied to explain the extent to which the dependent variables, BMW and MB functional congruencies, are explained by the independent variables, BMW and MB self-brand congruencies (see Table 4.8.5.1.3).

**Table 4.8.5.1.3 R-squared – self-brand congruence on functional congruence**

Response	R.squared
cong BMW Exterior	0.03
cong BMW Convenience	0.05
cong BMW Performance	0.12
cong BMW Safety	0.04
cong BMW Economic	0.17
cong BMW Dealer	0.13
cong BMW Warranty	0.12
cong MB Exterior	0.07
cong MB Convenience	0.03
cong MB Performance	0.04
cong MB Safety	0.07
cong MB Economic	0.04
cong MB Dealer	0.04
cong MB Warranty	0.05

As can be seen in Table 4.8.5.1.3, the R-squared is the highest for functional congruence BMW Economic ( $R^2 = 0.17$ ), closely followed by functional congruence BMW Dealership ( $R^2 = 0.13$ ) and BMW Performance and BMW Warranty ( $R^2 = 0.12$  for both). In addition, the functional congruencies MB Exterior and MB Safety demonstrate  $R^2 = 0.07$ ; BMW Convenience and MB Warranty,  $R^2 = 0.05$ ; MB Performance, BMW Safety, MB Economic, and MB Dealership,  $R^2 = 0.04$ ; and MB Convenience and BMW Exterior,  $R^2 = 0.03$ .

Functional congruence BMW Economic Aspect can consequently be predicted the most and presents with  $R^2 = 0.17$ , which is moderate, according to Cohen (1988). All other values of R-squared are weak (Cohen, 1988). Nevertheless, the significance of the results of the model are assessed based on Fisher's C.

**H8 (stating that self–brand congruence positively influences functional congruence) can be accepted for all BMW and MB functional congruencies except MB Convenience.**

#### **4.8.5.2 Testing the influence of functional congruence on liking and purchase intention**

After exploring the effect of self–brand congruence on functional congruence, this part analyses the impact of the functional congruities on BMW and MB liking and purchase intention (see Appendix G1 for ranking of functional congruence for BMW and MB). Functional congruence was examined for importance (imp) of characteristics to the respondents and for BMW's and MB's possession (poss) of these characteristics as perceived by the respondents.

This section further explores whether functional congruence positively influences BMW and MB liking and purchase intention.

The following hypothesis pair was tested:

H<sub>09</sub>: Functional congruence does not positively influence liking and purchase intention.

H<sub>a9</sub>: Functional congruence positively influences liking and purchase intention.

The functional congruence dimensions consider possession and importance of characteristics as discussed during H8 (see Section 4.8.5.1). These

functional congruencies were modelled first. Thereafter, a stepwise regression was run to identify the necessary terms to model the response, and the regression was then added in PSEM.

**Table 4.8.5.2.1 Model fit – piecewise structural equation modeling: functional congruence**

Global goodness-of-fit:

Fisher's  $C = 52.782$  with  $p = 0.597$  and on 56 degrees of freedom

AIC	BIC
128.782	269.526

As can be seen in Table 4.8.5.2.1, the model fit is good,  $C = 52.782$  with  $p = 0.597$  and on 56  $df$ ; thus,  $p \geq 0.05$  and not significant.

The next step included studying the strength of effect of functional congruence on liking and purchase intention. Significant paths are presented in Table 4.8.5.2.2 (see column “ $p$ . value”). When  $p < 0.05$ , there are significant observable effects. Only significant paths are displayed in the table (see Appendix G2 for complete table).



**Table 4.8.5.2.2 Testing the impact of functional congruence on liking and purchase intention**

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	p
BMW liking	cong BMW Warranty	-0.1519	0.0639	292	-2.3777	0.0181	-0.1380	*
BMW liking	cong BMW Exterior	-0.1850	0.0687	292	-2.6921	0.0075	-0.1538	**
BMW liking	cong BMW Economic	-0.1369	0.0477	292	-2.8706	0.0044	-0.1659	**
BMW purchase intention	cong BMW Warranty	-0.1481	0.0556	291	-2.6661	0.0081	-0.1173	**
BMW purchase intention	cong BMW Economic	-0.1545	0.0417	291	-3.7092	0.0002	-0.1631	***
MB purchase intention	cong MB Economic	-0.1158	0.0516	291	-2.2465	0.0254	-0.0998	*
MB purchase intention	cong MB Warranty	-0.1778	0.0657	291	-2.7046	0.0072	-0.1199	**

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

Detailed explanations of Table 4.8.5.2.2 are presented below.

### **Significant influences of functional congruence on liking and purchase intention**

#### BMW liking

Negative impact: Functional congruence BMW Warranty (standardised estimate = -0.1380,  $p = 0.0181$ ), BMW Exterior (standardised estimate = -0.1538,  $p = 0.0075$ ), and BMW Economic Aspect (standardised estimate = -0.1659,  $p = 0.0044$ ) influence BMW liking significantly.

#### BMW purchase intention

Negative impact: Functional congruence BMW Warranty (standardised estimate = -0.1173,  $p = 0.0081$ ) and BMW Economic Aspect (standardised estimate = -0.1631,  $p = 0.0002$ ) influence BMW purchase intention significantly.

#### MB liking

None of the functional dimensions influence MB liking significantly, neither positively nor negatively.

#### MB purchase intention

Negative impact: Functional congruence MB Economic Aspect (standardised estimate = -0.0998,  $p = 0.0254$ ) and MB Warranty topics (standardised estimate = -0.1199,  $p = 0.0072$ ) influence MB purchase intention significantly.

The negative impacts might be due to the incorporation of the results of the one-point analysis of important characteristics and possession of characteristics, which had to be done for a better model fit of the PSEM.

The R-squared was also assessed.

### **R-squared**

The R-squared was examined to explain the extent to which the dependent variables, BMW and MB liking and purchase intention, are explained by the independent variables, functional congruencies BMW and MB (see Table 4.8.5.2.3).

**Table 4.8.5.2.3 R-squared – functional congruence on liking and purchase intention**

<b>Response</b>	<b>R-squared</b>
BMW liking	0.09
BMW purchase intention	0.49
MB liking	0.04
MB purchase intention	0.44

As presented in Table 4.8.5.2.3, the R-squared is the highest for BMW purchase intention ( $R^2 = 0.49$ ), closely followed by MB purchase intention ( $R^2 = 0.44$ ). However, for BMW liking ( $R^2 = 0.09$ ) and MB liking ( $R^2 = 0.04$ ), the strength of replication is weak, with  $R^2 < 0.16$  (Cohen, 1988). According to Cohen (1988),  $R^2 > 0.26$  for BMW and MB purchase intention is substantial and therefore satisfactory.

In addition to the PSEM, another statistical method, the RSA, was applied. This was done to explore functional congruence in more detail with a three-dimensional perspective instead of only a two-dimensional one.

### **Testing functional congruence on liking and purchase intention based on response survey analysis**

Although the model fit of the PSEM is good (Shipley, 2009), and  $R^2 > 0.26$  for BMW and MB purchase intention is substantial (Cohen, 1988), the results incorporating functional congruities without the two facets “importance” and “possession of characteristics” by BMW and MB, but only with the result of both, do not provide many insights. Therefore, RSA was applied additionally because the functional congruence construct with two facets might provide further insights via an analysis of both facets and their relationship with liking and purchase intention, instead of a condensed functional congruity resulting from both facets. The three-dimensional method was added to the PSEM. This method offers the advantage of a multidimensional view (Humberg et al., 2019) of importance and possession, which explains the relationship between importance and possession of functional characteristics on the one hand and liking and purchase intention on the other.

First, RSA requires that the data fits a polynomial regression. Following this, the estimated regression coefficients in the graph are interpreted (Humberg et al., 2019).

The first step in the analysis (see Table 4.8.5.2.4) involved testing the significance of all linear models of each functional congruency in the polynomial regression, where  $p < 0.05$  is significant (Edwards, 2002).

**Table 4.8.5.2.4 Testing the impact of functional congruence on liking and purchase intention**

	<b>R<sup>2</sup></b>	<b>adj. R<sup>2</sup></b>	<b>statistic</b>	<b>p.value</b>	<b>df</b>	<b>AIC</b>	<b>BIC</b>
MB liking: MB_poss_Exterior + MB_imp_Exterior	0.428066	0.422269	73.84738	1.11E-35	4	664.7757	683.2946
BMW liking: BMW_poss_Exterior + BMW_imp_Exterior	0.40977	0.403788	68.49969	1.14E-33	4	638.0917	656.6106
BMW liking: BMW_poss_Dealer + BMW_imp_Dealer	0.394767	0.384474	38.35273	3.00E-30	6	649.6216	675.5481
BMW liking: BMW_poss_Convenience + BMW_imp_Convenience	0.393049	0.386897	63.89441	7.00E-32	4	646.4724	664.9913
BMW purchase intention: BMW_poss_Warranty + BMW_imp_Warranty	0.383739	0.373259	36.61414	4.09E-29	6	737.7787	763.7051
BMW liking: BMW_poss_Warranty + BMW_imp_Warranty	0.383653	0.373171	36.60079	4.17E-29	6	655.0809	681.0073
BMW liking: BMW_poss_Performance + BMW_imp_Performance	0.356471	0.349949	54.65461	3.85E-28	4	664.0279	682.5468
BMW purchase intention: BMW_poss_Exterior + BMW_imp_Exterior	0.345716	0.339084	52.13421	4.41E-27	4	751.7402	770.2591
BMW purchase intention: BMW_poss_Convenience + BMW_imp_Convenience	0.341635	0.334962	51.19949	1.10E-26	4	753.6055	772.1244

	<b>R<sup>2</sup></b>	<b>adj. R<sup>2</sup></b>	<b>statistic</b>	<b>p.value</b>	<b>df</b>	<b>AIC</b>	<b>BIC</b>
BMW purchase intention: BMW_poss_Dealer + BMW_imp_Dealer	0.338734	0.327488	30.1204	1.08E-24	6	758.9242	784.8507
BMW liking: BMW_poss_Safety + BMW_imp_Safety	0.336013	0.329283	49.93056	3.84E-26	4	673.4167	691.9356
MB liking: MB_poss_Convenience + MB_imp_Convenience	0.32001	0.313119	46.43359	1.27E-24	4	716.6918	735.2108
BMW purchase intention: BMW_poss_Economic + BMW_imp_Economic	0.314453	0.305158	33.82834	3.10E-23	5	767.7426	789.9653
MB liking: MB_poss_Warranty + MB_imp_Warranty	0.307243	0.302578	65.86087	2.12E-24	3	720.2724	735.0875
MB purchase intention: MB_poss_Exterior + MB_imp_Exterior	0.299198	0.292095	42.12433	1.07E-22	4	830.7842	849.3031
MB liking: MB_poss_Dealer + MB_imp_Dealer	0.289393	0.282191	40.18182	8.21E-22	4	729.9043	748.4232
MB liking: MB_poss_Performance + MB_imp_Performance	0.271371	0.266464	55.30736	3.82E-21	3	735.4181	750.2332
BMW purchase intention: BMW_poss_Performance + BMW_imp_Performance	0.262247	0.249701	20.90151	7.18E-18	6	791.7601	817.6866
MB purchase intention: MB_poss_Dealer + MB_imp_Dealer	0.245129	0.234893	23.94875	3.60E-17	5	855.0806	877.3033

	<b>R<sup>2</sup></b>	<b>adj. R<sup>2</sup></b>	<b>statistic</b>	<b>p.value</b>	<b>df</b>	<b>AIC</b>	<b>BIC</b>
MB purchase intention: MB_poss_Warranty + MB_imp_Warranty	0.239126	0.226185	18.4795	5.86E-16	6	859.4569	885.3834
BMW liking: BMW_poss_Economic + BMW_imp_Economic	0.225566	0.217717	28.73826	2.45E-16	4	719.5774	738.0963
BMW purchase intention: BMW_imp_Safety + BMW_poss_Safety	0.224181	0.216318	28.51081	3.19E-16	4	802.8532	821.3721
MB liking: MB_poss_Safety + MB_imp_Safety	0.218991	0.211075	27.66556	8.46E-16	4	758.2448	776.7637
MB liking: MB_poss_Economic + MB_imp_Economic	0.211613	0.206304	39.85916	4.63E-16	3	759.0655	773.8806
MB purchase intention: MB_poss_Economic + MB_imp_Economic	0.198339	0.19294	36.7403	5.53E-15	3	869.1223	883.9374
MB purchase intention: MB_poss_Convenience + MB_imp_Convenience	0.184714	0.176451	22.35427	4.49E-13	4	876.178	894.697
MB purchase intention: MB_poss_Performance + MB_imp_Performance	0.173937	0.168374	31.26835	4.75E-13	3	878.1177	892.9329
MB purchase intention: MB_poss_Safety + MB_imp_Safety	0.116673	0.104695	9.741117	2.06E-07	5	902.2252	924.4479

As can be seen in Table 4.8.5.2.4,  $p < 0.05$  and is thus significant for all linear models of each functional congruency in the polynomial regression. The R-squared was consequently tested, and if it no longer increased, the equation was retained.

BMW liking is significantly influenced by the following functional congruencies:

- BMW Exterior ( $R^2 = 0.41$ ,  $p = 1.00.14E-33$ )
- BMW Dealership ( $p = 3.00E-30$ ) and BMW Convenience ( $p = 7.00E-32$ ), both with  $R^2 = 0.39$
- BMW Warranty Issues ( $R^2 = 0.38$ ,  $p = 4.17E-29$ )
- BMW Performance ( $R^2 = 0.36$ ,  $p = 3.85E-28$ )
- BMW Safety ( $R^2 = 0.34$ ,  $p = 3.84E-26$ )
- BMW Economic Aspect ( $R^2 = 0.23$ ,  $p = 2.45E-16$ )

BMW purchase intention is significantly influenced by the following functional congruencies:

- BMW Warranty ( $R^2 = 0.38$ ,  $P = 4.09E-29$ )
- BMW Exterior ( $p = 4.41E-27$ ) and BMW Convenience ( $p = 1.10E-26$ ), with  $R^2 = 0.35$  for both
- BMW Dealership ( $R^2 = 0.34$ ,  $p = 1.08E-24$ )
- BMW Economic Aspect ( $R^2 = 0.32$ ,  $p = 3.10E-23$ )
- BMW Performance ( $R^2 = 0.26$ ,  $p = 7.18E-18$ )
- BMW Safety ( $R^2 = 0.22$ ,  $p = 3.19E-16$ )



MB liking is influenced by the following functional congruencies significantly:

- MB Exterior ( $R^2 = 0.43$ ,  $p = 1.11\text{E-}35$ )
- MB Convenience ( $R^2 = 0.32$ ,  $p = 1.27\text{E-}24$ )
- MB Warranty Issues ( $R^2 = 0.31$ ,  $p = 2.12\text{E-}24$ )
- MB Dealer ( $R^2 = 0.29$ ,  $p = 8.21\text{E-}22$ )
- MB Performance ( $R^2 = 0.27$ ,  $p = 3.82\text{E-}21$ )
- MB Safety ( $R^2 = 0.22$ ,  $p = 8.46\text{E-}16$ )
- MB Economic Aspect ( $R^2 = 0.21$ ,  $p = 4.63\text{E-}16$ )

MB purchase intention is influenced by the following functional congruencies significantly:

- MB Exterior ( $R^2 = 0.30$ ,  $p = 1.07\text{E-}22$ )
- MB Dealer ( $R^2 = 0.25$ ,  $p = 3.60\text{E-}17$ )
- MB Warranty ( $R^2 = 0.24$ ,  $p = 5.86\text{E-}16$ )
- MB Economic ( $R^2 = 0.20$ ,  $p = 5.53\text{E-}15$ )
- MB Convenience ( $R^2 = 0.19$ ,  $p = 4.49\text{E-}13$ )
- MB Performance ( $R^2 = 0.18$ ,  $p = 4.75\text{E-}13$ )
- MB Safety ( $R^2 = 0.12$ ,  $p = 2.06\text{E-}07$ )

According to Cohen (1988),  $R^2 > 0.26$  is substantial, while  $R^2 = 0.16\text{--}0.26$  is moderate, and  $R^2 = 0.02\text{--}0.16$  is weak. Therefore, BMW Exterior ( $R^2 = 0.41$ ), BMW Dealer and BMW Convenience (both with  $R^2 = 0.39$ ), BMW Warranty Issues ( $R^2 = 0.38$ ), BMW Performance ( $R^2 = 0.36$ ), and BMW Safety ( $R^2 = 0.34$ ) on BMW liking are substantial. Furthermore, BMW Warranty ( $R^2 = 0.38$ ), BMW Exterior and BMW Convenience ( $R^2 = 0.35$  for both), BMW Dealership ( $R^2 = 0.34$ ), BMW Economic Aspect ( $R^2 = 0.32$ ), and BMW Performance ( $R^2 = 0.26$ ) on BMW purchase intention are substantial. Additionally, MB Exterior ( $R^2 = 0.43$ ), MB Convenience ( $R^2 = 0.32$ ), MB

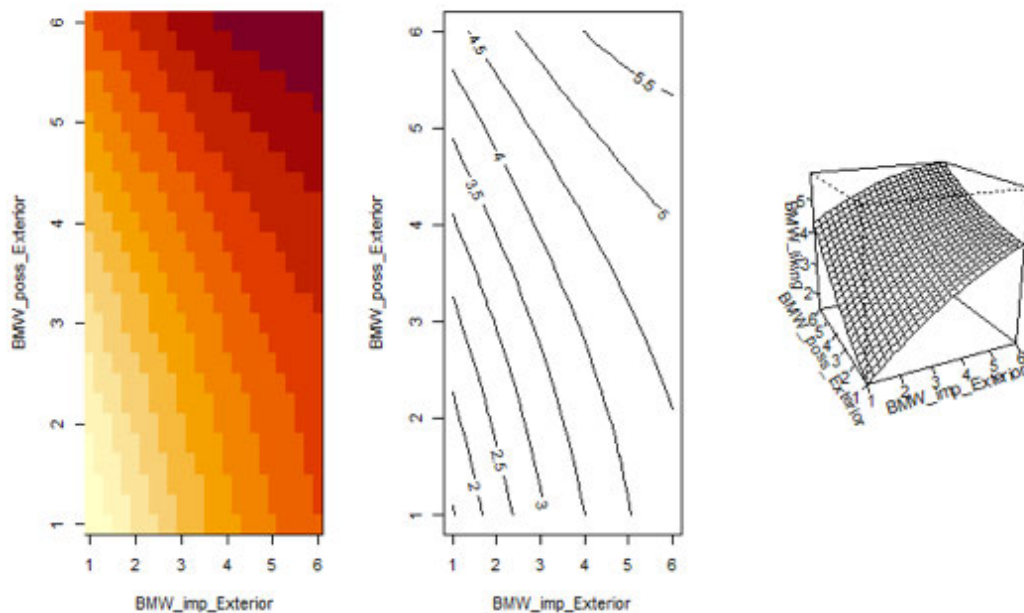
Warranty Issues ( $R^2 = 0.31$ ), MB Dealer ( $R^2 = 0.29$ ), and MB Performance ( $R^2 = 0.27$ ) on MB liking and MB Exterior ( $R^2 = 0.30$ ) on MB purchase intention are substantial.

Furthermore, BMW Economic Aspect ( $R^2 = 0.23$ ) on BMW liking and BMW Safety ( $R^2 = 0.22$ ) on BMW purchase intention are moderate, and MB Safety ( $R^2 = 0.22$ ) and MB Economic Aspect ( $R^2 = 0.21$ ) on MB liking are also moderate. Finally, MB Dealer ( $R^2 = 0.25$ ), MB Warranty ( $R^2 = 0.24$ ), MB Economic ( $R^2 = 0.20$ ), MB Convenience ( $R^2 = 0.19$ ), and MB Performance ( $R^2 = 0.18$ ) on MB purchase intention are moderate.

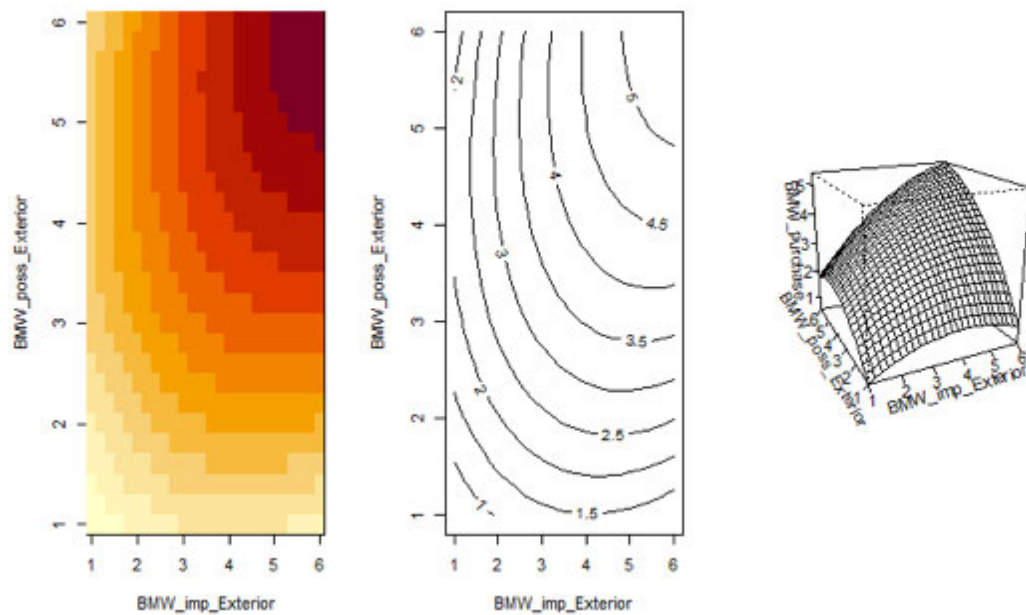
In contrast, MB Safety ( $R^2 = 0.12$ ) on MB purchase intention is weak.

The estimated regression coefficients in the graph are presented in Tables 4.8.5.2.5–4.8.5.2.32. However, the interpretation of the outcomes is examined through the response surface and its shape rather than through the regression effects (Edwards, 2002).

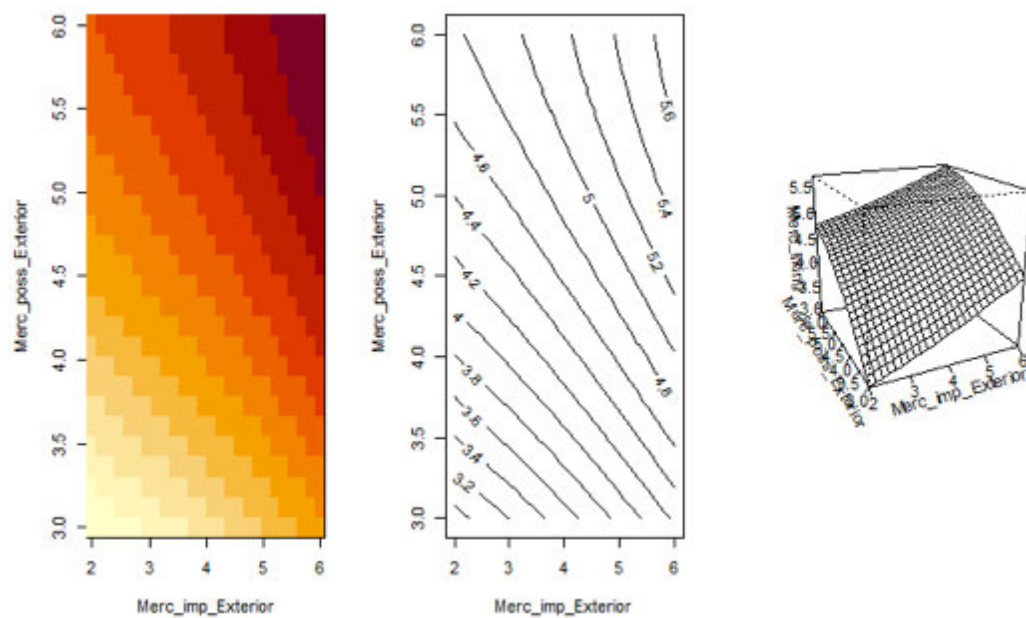
**Table 4.8.5.2.5 Response surface analysis plot: BMW liking–BMW Exterior**



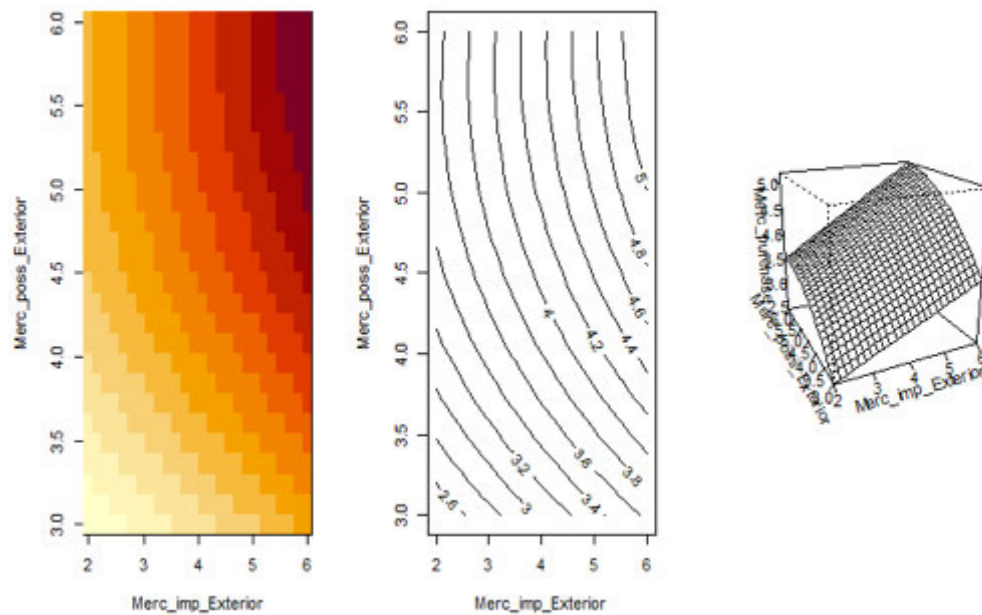
**Table 4.8.5.2.6 Response surface analysis plot: BMW purchase intention–BMW Exterior**



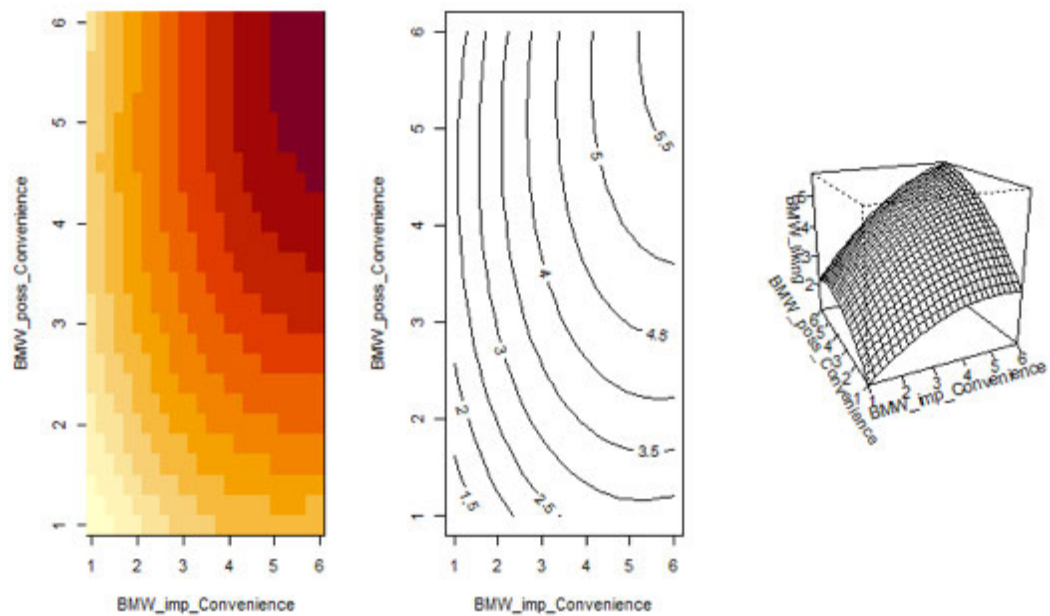
**Table 4.8.5.2.7 Response surface analysis plot: MB liking–MB Exterior**



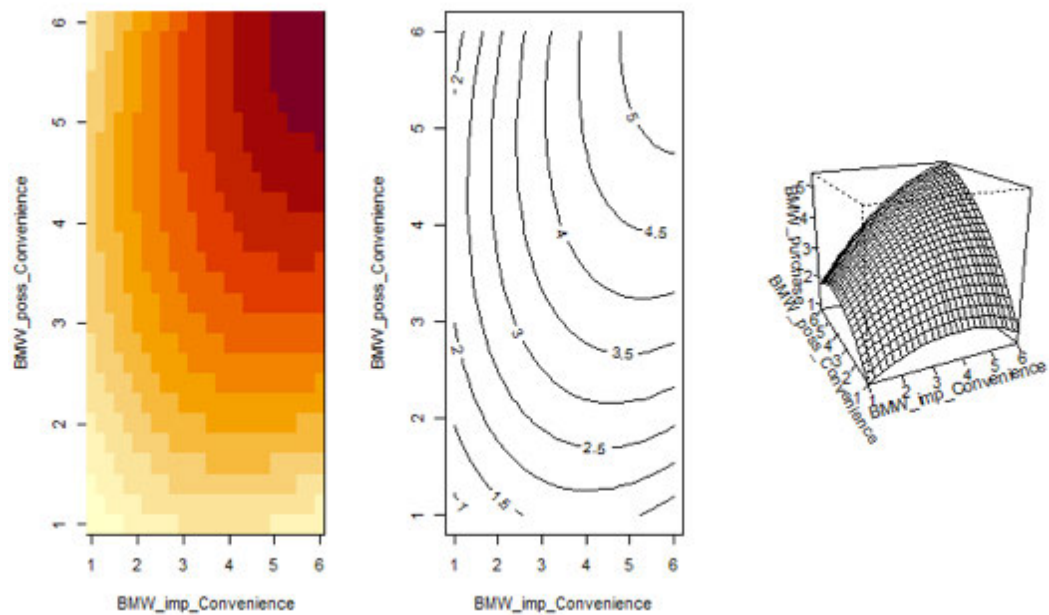
**Table 4.8.5.2.8 Response surface analysis plot: MB purchase intention–  
MB Exterior**



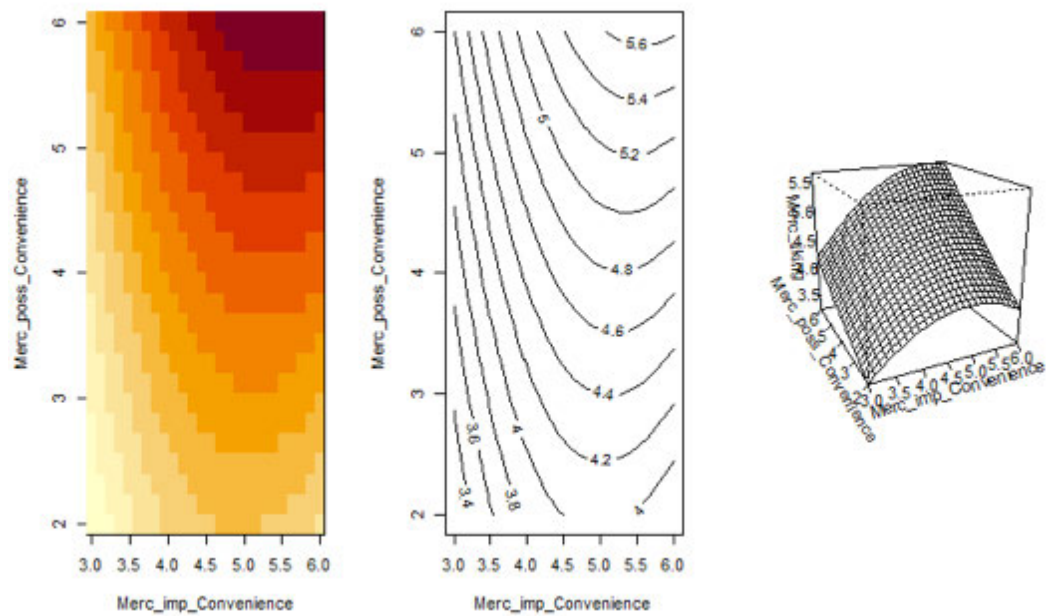
**Table 4.8.5.2.9 Response surface analysis plot: BMW liking–BMW  
Convenience**



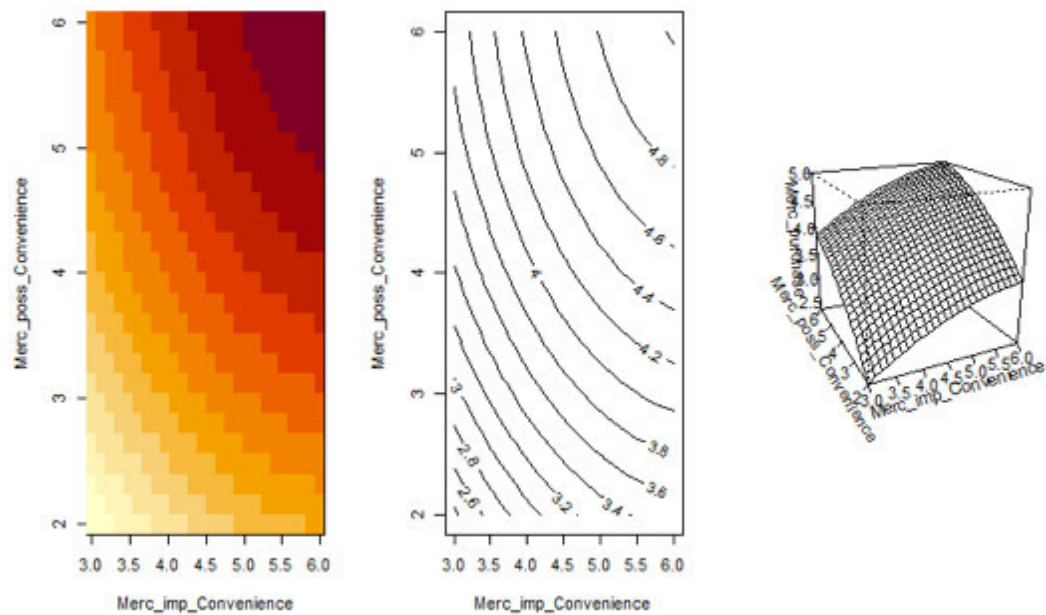
**Table 4.8.5.2.10 Response surface analysis plot: BMW purchase intention–BMW Convenience**



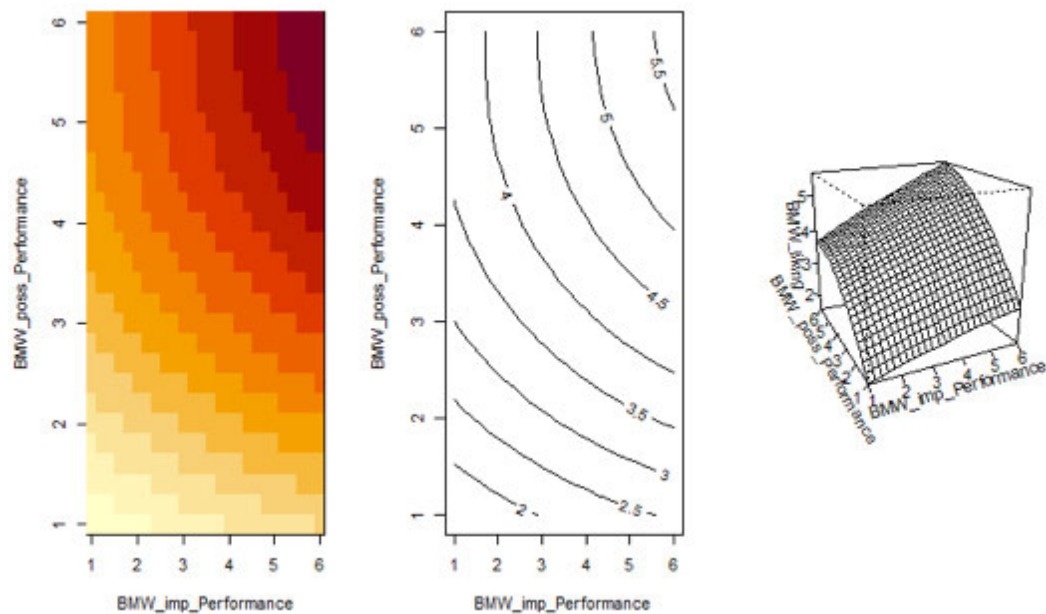
**Table 4.8.5.2.11 Response surface analysis plot: MB liking–MB Convenience**



**Table 4.8.5.2.12 Response surface analysis plot: MB purchase intention–MB Convenience**

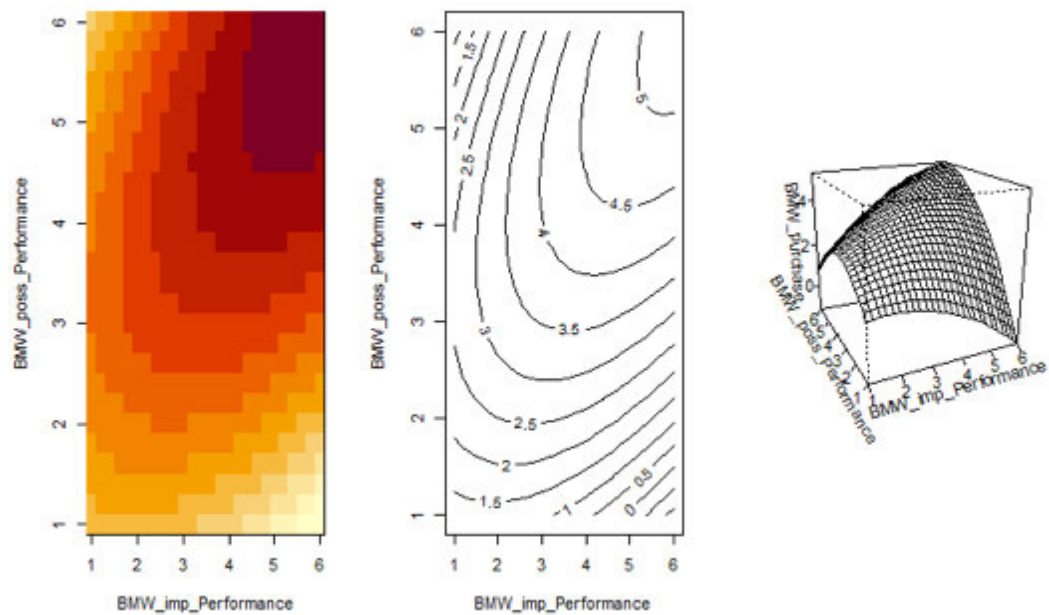


**Table 4.8.5.2.13 Response surface analysis plot: BMW liking–BMW Performance**

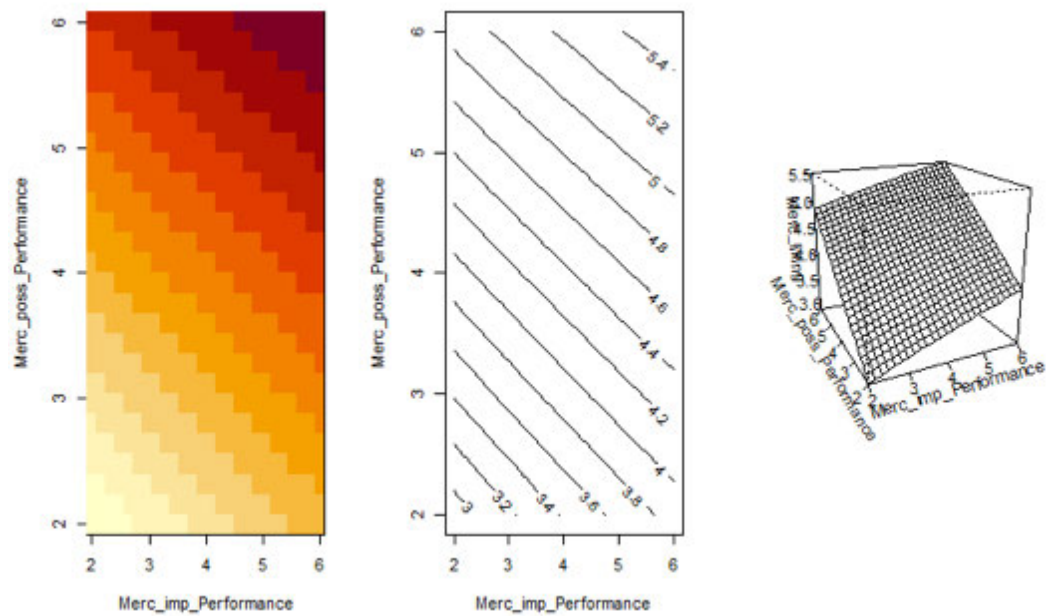




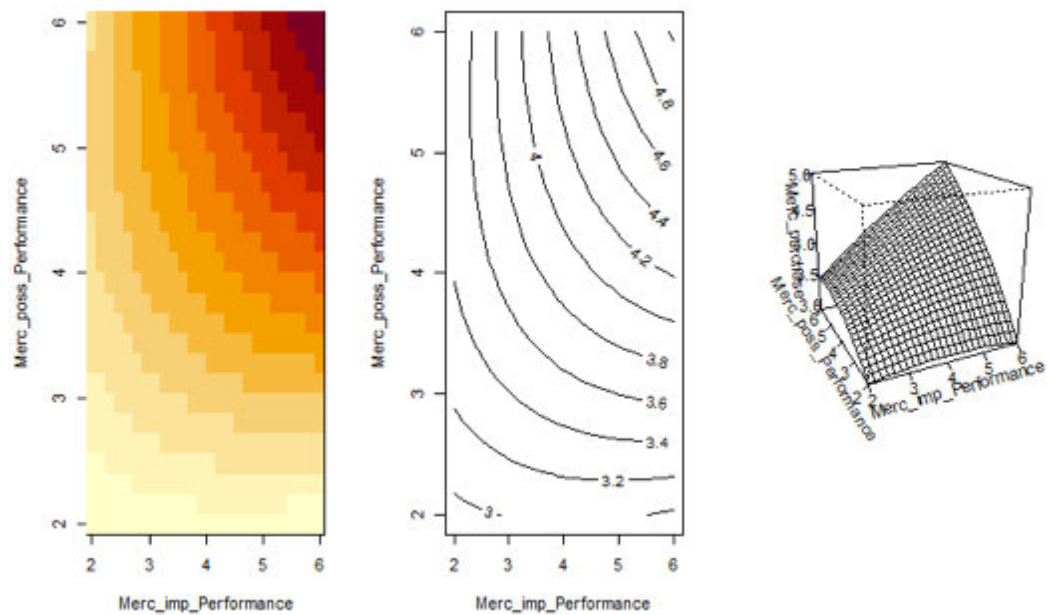
**Table 4.8.5.2.14 Response surface analysis plot: BMW purchase intention–BMW Performance**



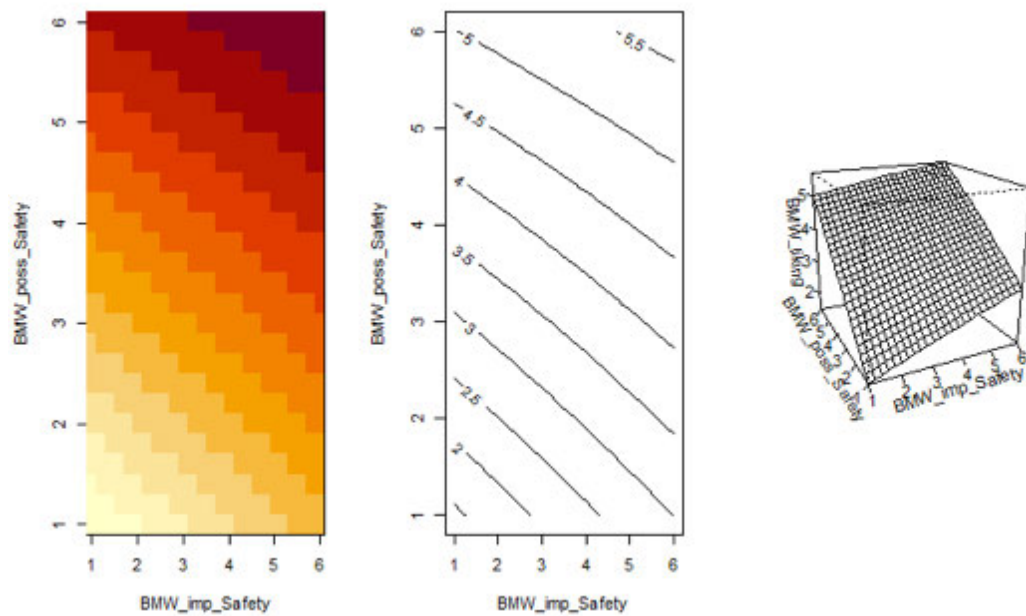
**Table 4.8.5.2.15 Response surface analysis plot: MB liking–MB Performance**



**Table 4.8.5.2.16 Response surface analysis plot: MB purchase intention–MB Performance**

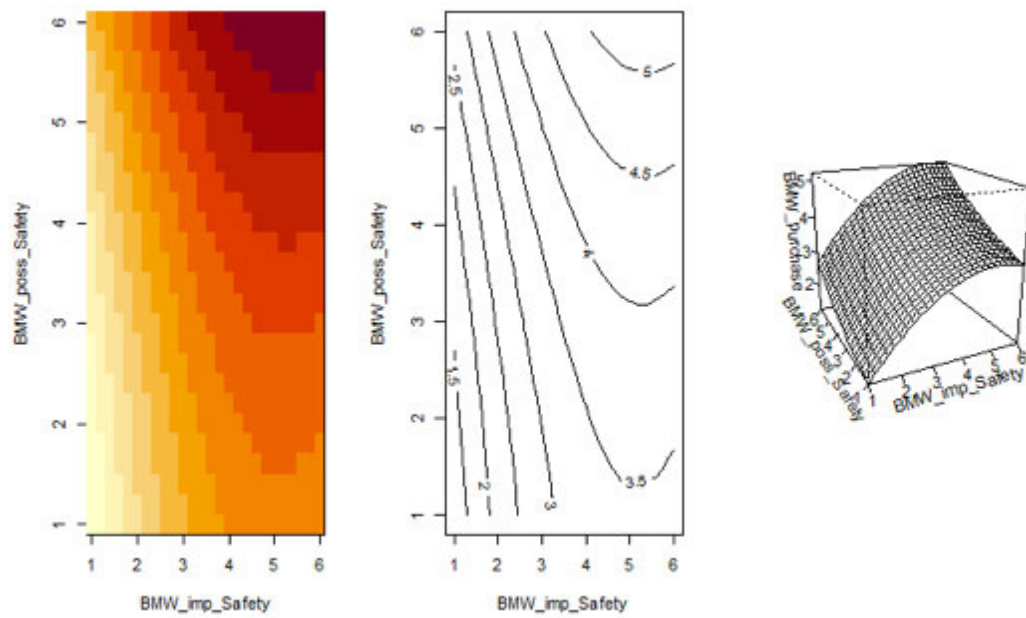


**Table 4.8.5.2.17 Response surface analysis plot: BMW liking–BMW Safety**

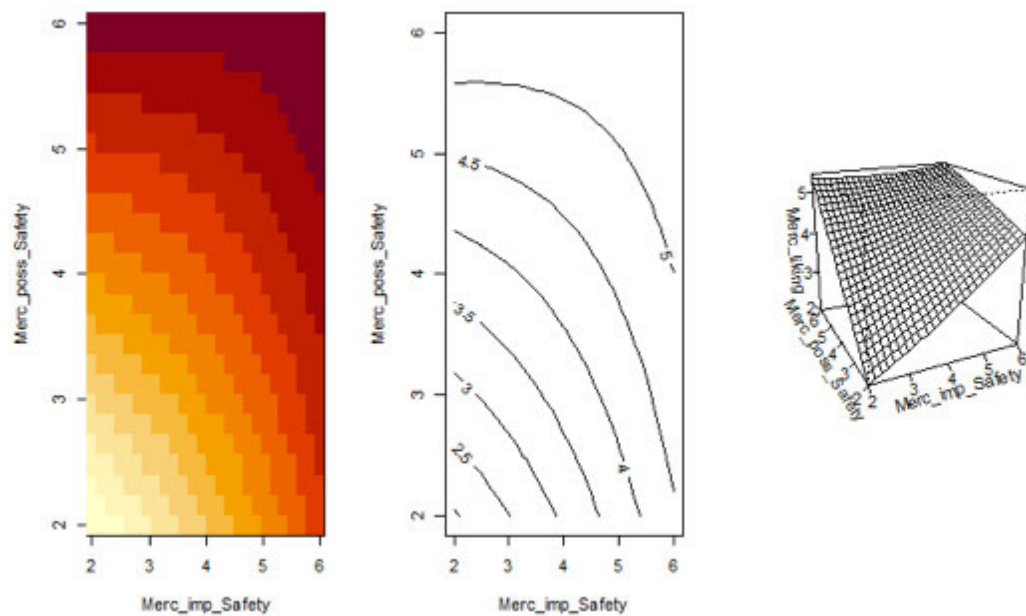




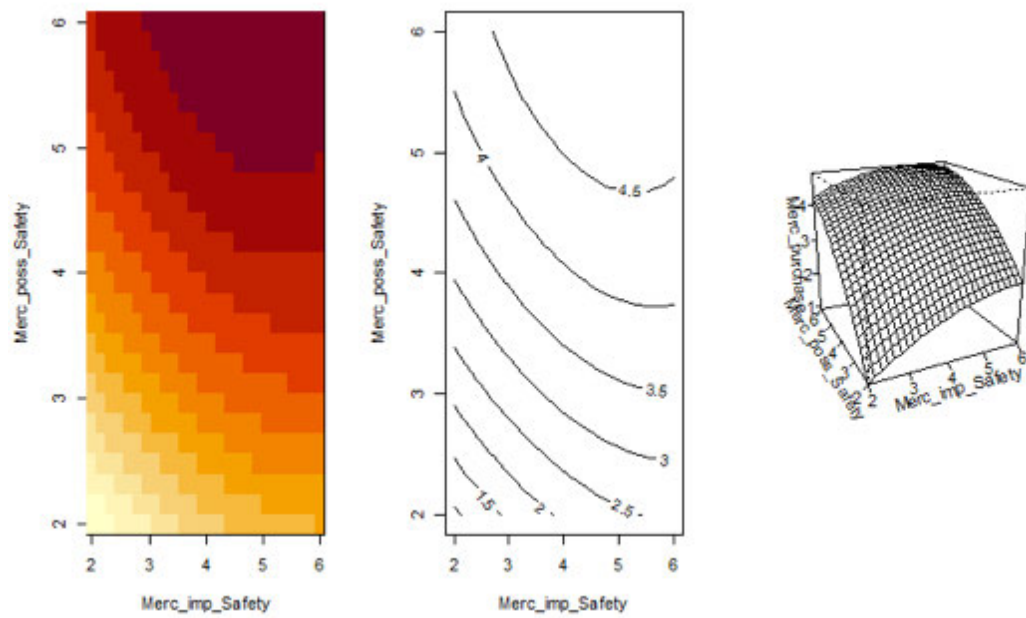
**Table 4.8.5.2.18 Response surface analysis plot: BMW purchase intention–BMW Safety**



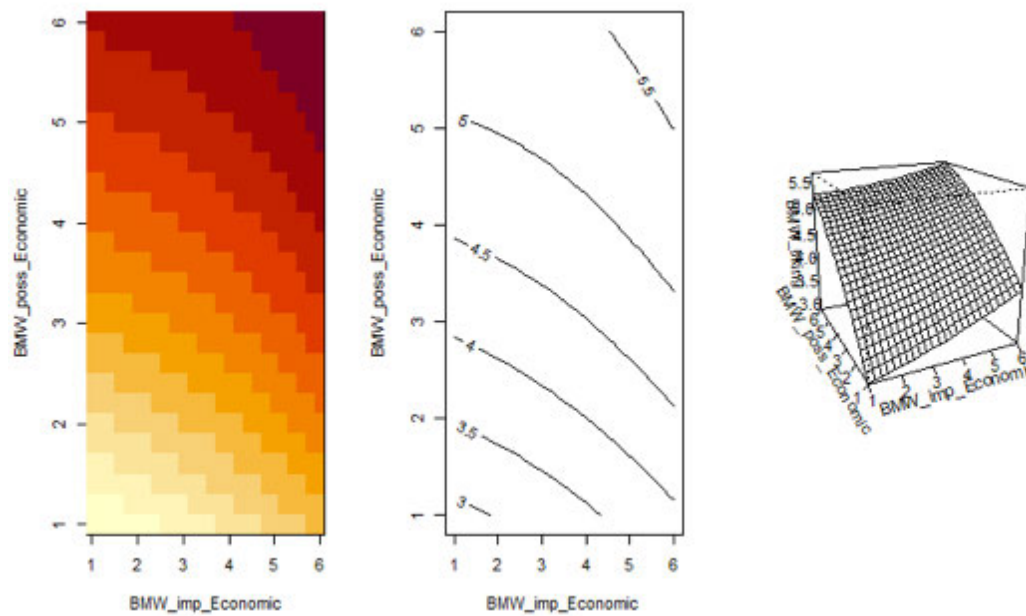
**Table 4.8.5.2.19 Response surface analysis plot: MB liking–MB Safety**



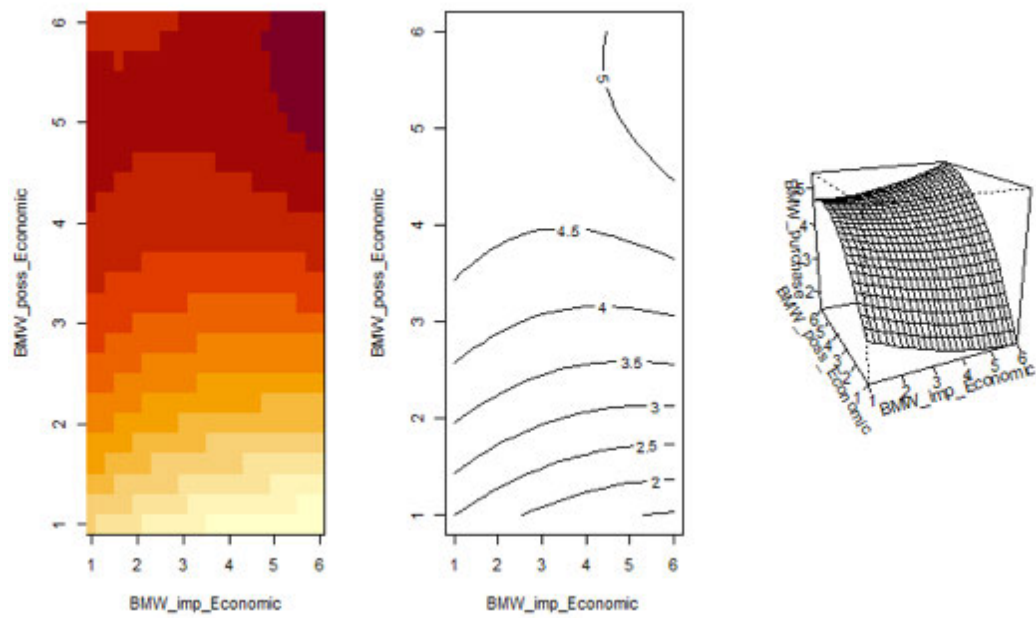
**Table 4.8.5.2.20 Response surface analysis plot: MB purchase intention–MB Safety**



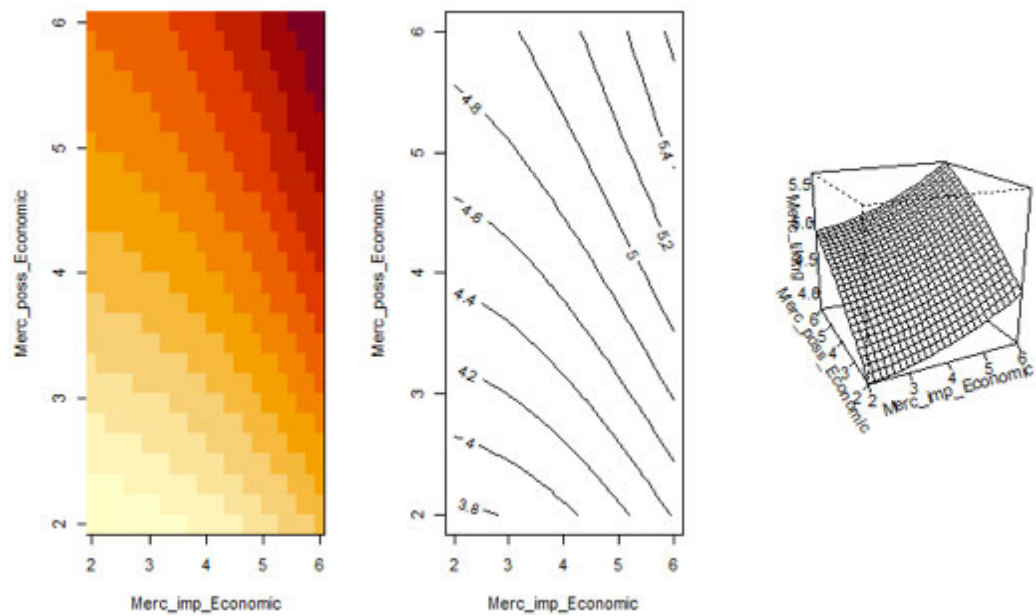
**Table 4.8.5.2.21 Response surface analysis plot: BMW liking–BMW Economic Aspect**



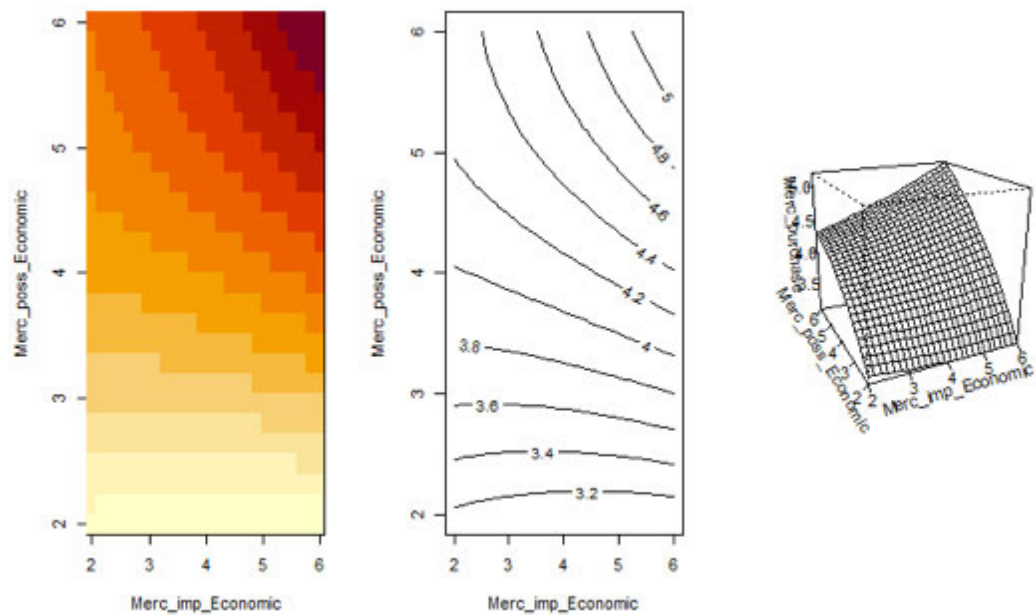
**Table 4.8.5.2.22 Response surface analysis plot: BMW purchase intention–BMW Economic Aspect**



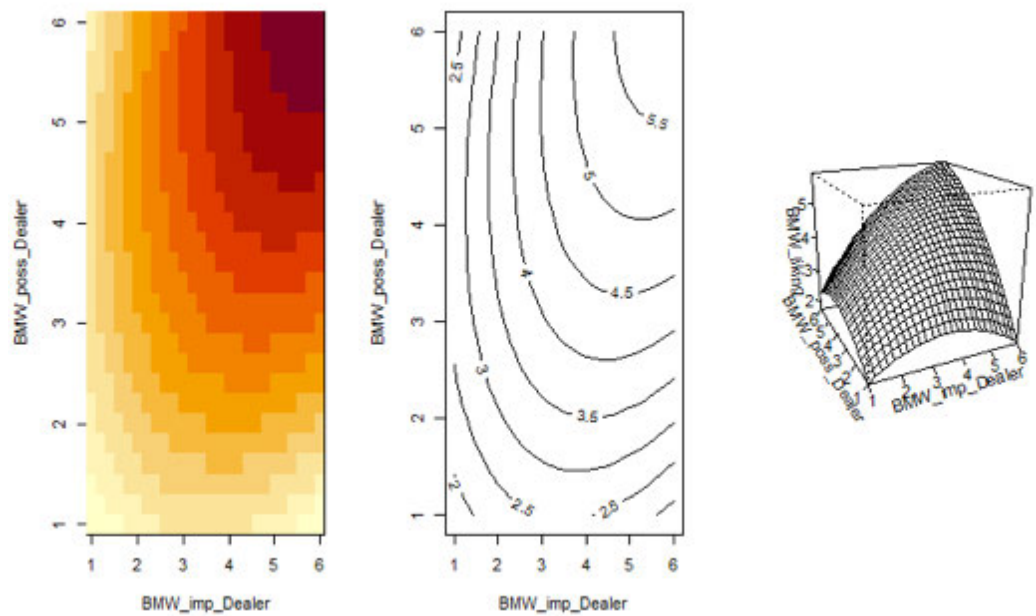
**Table 4.8.5.2.23 Response surface analysis plot: MB liking–MB Economic Aspect**



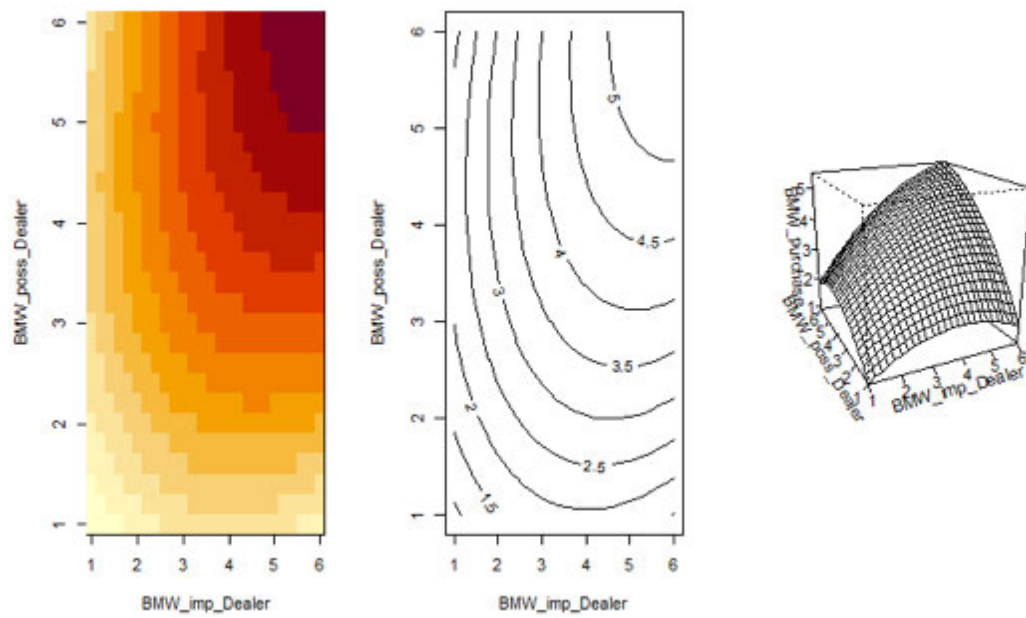
**Table 4.8.5.2.24 Response surface analysis plot: MB purchase intention–MB Economic Aspect**



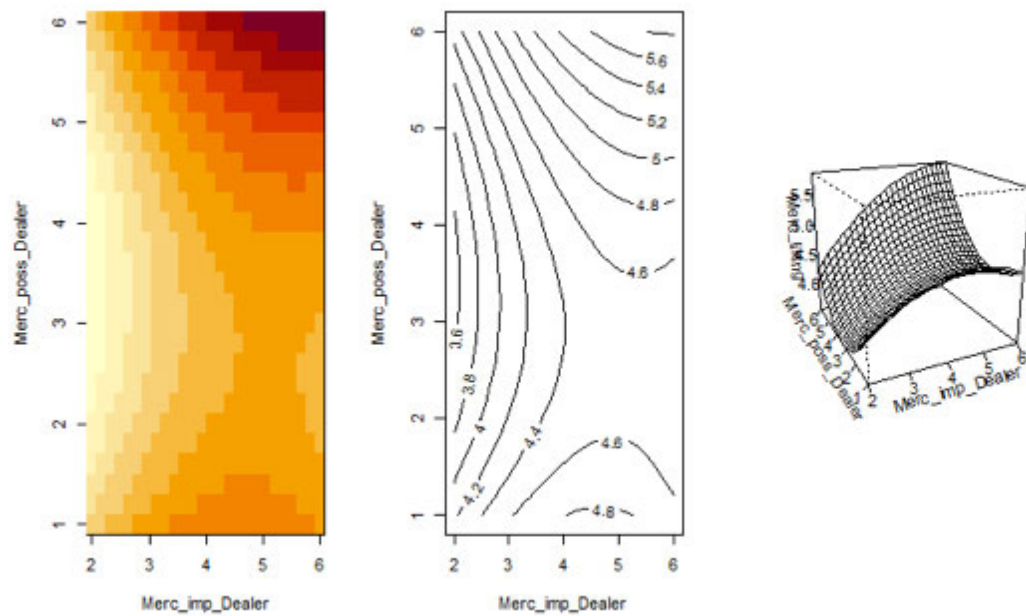
**Table 4.8.5.2.25 Response surface analysis plot: BMW liking–BMW Dealership**



**Table 4.8.5.2.26 Response surface analysis plot: BMW purchase intention–BMW Dealership**

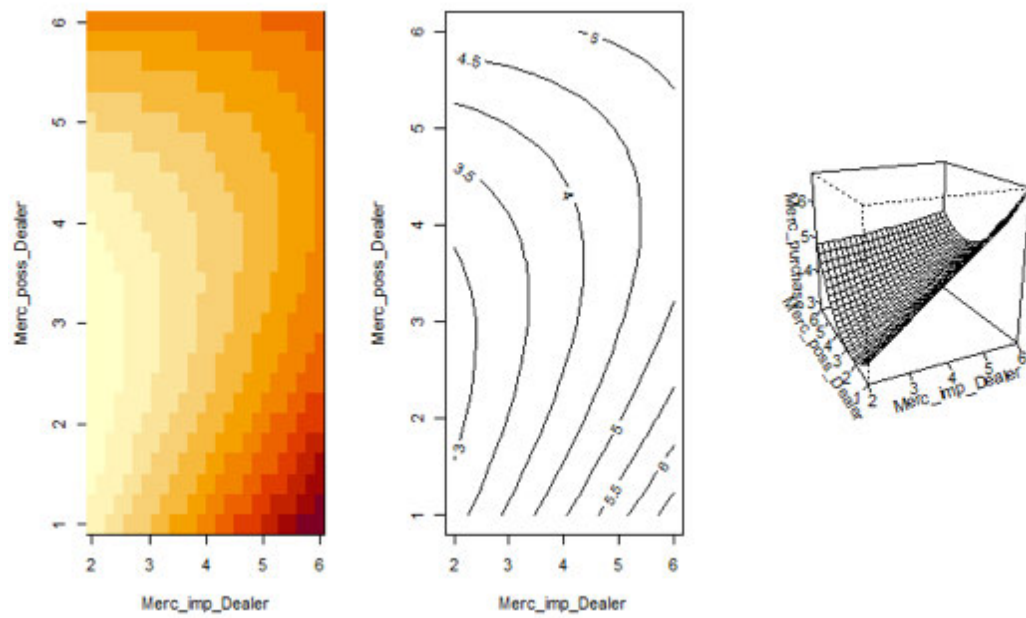


**Table 4.8.5.2.27 Response surface analysis plot: MB liking–MB Dealership**

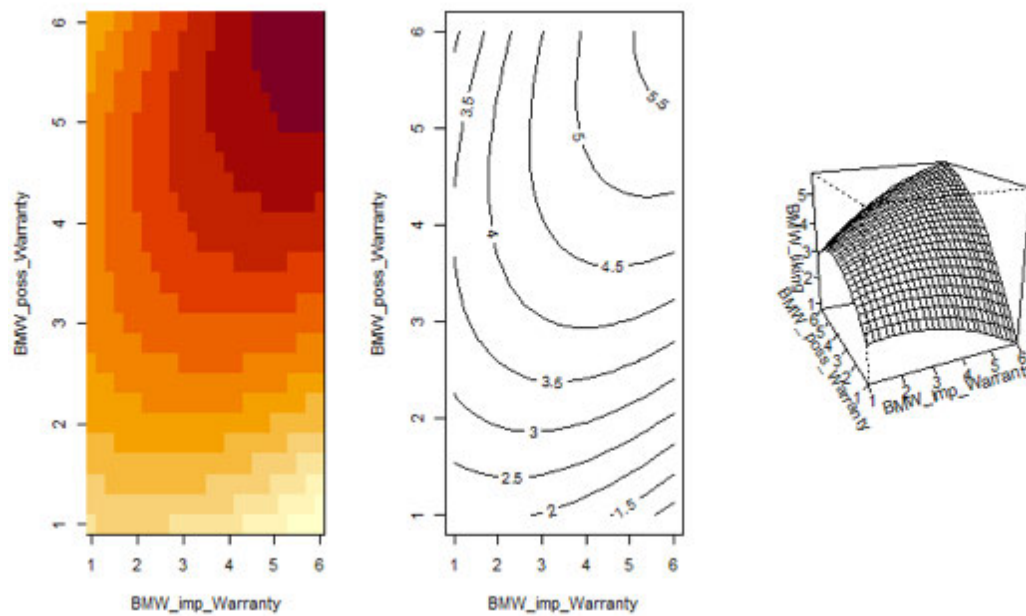




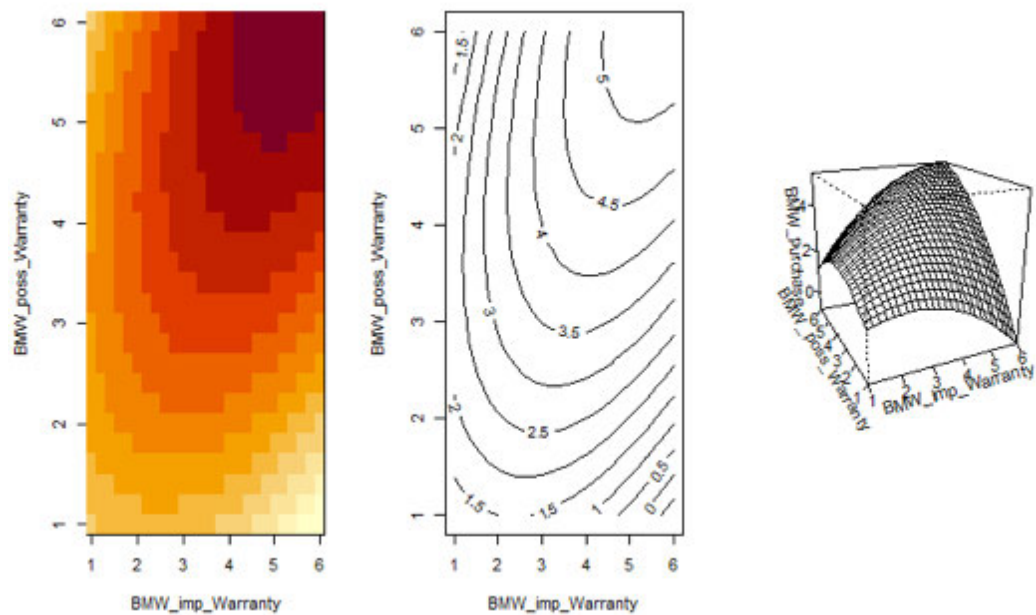
**Table 4.8.5.2.28 Response surface analysis plot: MB purchase intention–MB Dealership**



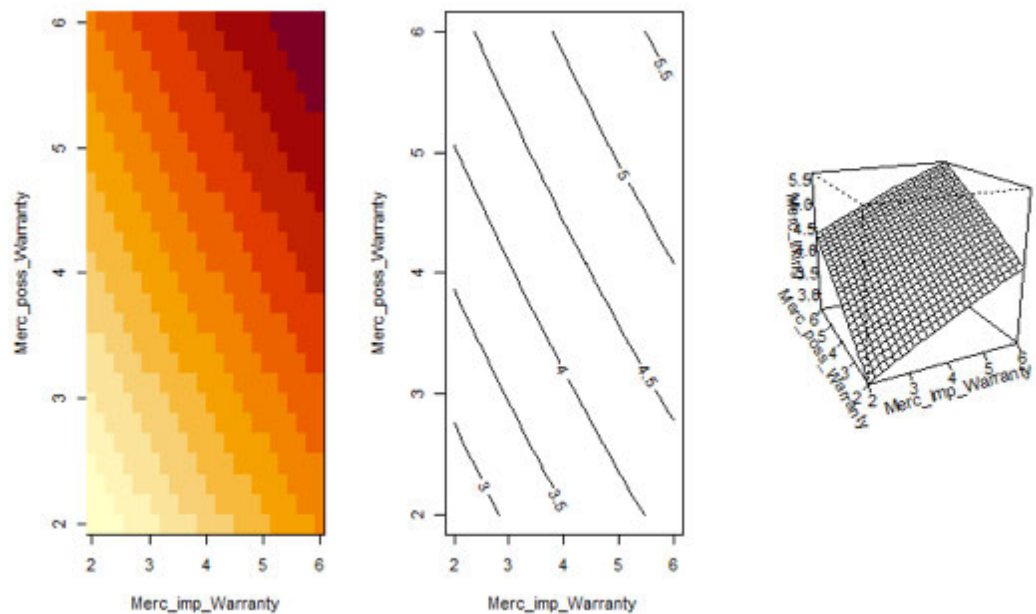
**Table 4.8.5.2.29 Response surface analysis plot: BMW liking–BMW Warranty Issues**



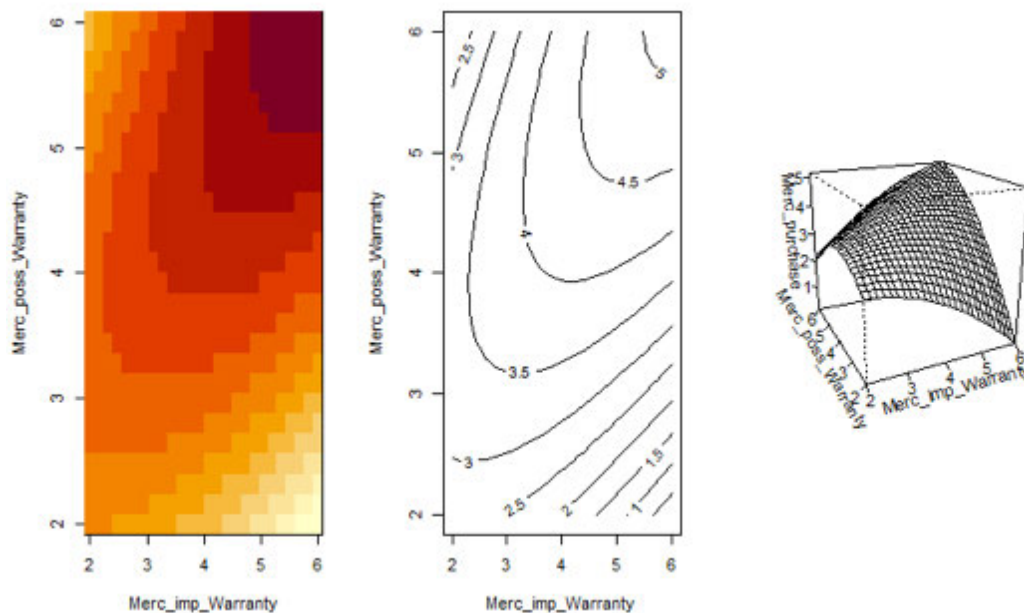
**Table 4.8.5.2.30 Response surface analysis plot: BMW purchase intention–BMW Warranty Issues**



**Table 4.8.5.2.31 Response surface analysis plot: MB liking–MB Warranty Issues**



**Table 4.8.5.2.32 Response surface analysis plot: MB purchase intention–MB Warranty Issues**



It is interesting that in Tables 4.8.5.2.5 to 4.8.5.2.2.32, the surface is not plain, which it should be for an equation of 0 (Humberg et al., 2019). Additionally, there is no LOC based on the projected XY axis. The three-dimensional graph identifies which predictor value presents the highest result: X (importance of functional characteristic) and Y (possession of the same functional characteristic) are the two predictors, and the outcome Z (purchase intention or liking) is the response (Moody, Lowry, & Galletta, 2017). The interpretation of the surface slope starts at the point where X and Y = 0 or at the lowest score. Based on the shape of the result and the direction of the slopes, each response surface can be interpreted (Edwards, 2002).

The response surface curvatures demonstrate whether the response “purchase intention” or “liking” decreases or increases more sharply as the predictors “importance” and “possession” of the same functional characteristic diverge. This information can be seen on the left side and in the middle of Tables 4.8.5.2.5–4.8.5.2.32. Therefore, positive effects result in



a convex (i.e. upward) curve, and negative effects are presented with a concave (i.e. downward) curve.

- For BMW liking–BMW Exterior, the upward curve is almost linear, which denotes that the higher the importance (X) and possession (Y) of MB Exterior, the higher the BMW liking (Z; see the left side and the middle of Table 4.8.5.2.5).
- For BMW purchase intention–BMW Exterior, the response “purchase intention” increases more sharply as the predictors “importance” and “possession” of the functional congruence BMW Exterior diverge. Nevertheless, it shows a convex curve (see Table 4.8.5.2.6).
- For MB liking–MB Exterior, the upward curve is almost linear, which suggests that the higher the importance and possession of MB Exterior, the higher the MB liking (see Table 4.8.5.2.7), which is similar to BMW liking–BMW Exterior.
- For MB purchase intention–MB Exterior, the response “purchase intention” increases slightly and more sharply as the predictors “importance” and “possession” of the functional congruence MB Exterior diverge, but still with a convex curve (see Table 4.8.5.2.8).
- For BMW liking–BMW Convenience, the response “liking” increases more sharply as the predictors “importance” and “possession” of the functional congruence BMW Convenience diverge, albeit with a convex curve (see Table 4.8.5.2.9).
- For BMW purchase intention–BMW Convenience, the response “purchase intention” increases more sharply as the predictors “importance” and “possession” of the functional congruence BMW Convenience diverge, but it still has a convex curve (see Table 4.8.5.2.10).
- For MB liking–MB Convenience, the response “liking” increases more sharply as the predictors “importance” and “possession” of the functional congruence MB Convenience diverge, albeit with a convex curve (see Table 4.8.5.2.11).

- For MB purchase intention–MB Convenience, the response “purchase intention” increases slightly more sharply as the predictors “importance” and “possession” of the functional congruence MB Convenience diverge, but still with a convex curve (see Table 4.8.5.2.12).
- For BMW liking–BMW Performance, the response “liking” increases more sharply as the predictors “importance” and “possession” of the functional congruence BMW Performance diverge, albeit with a convex curve (see Table 4.8.5.2.13).
- For BMW purchase intention–BMW Performance, the response “purchase intention” increases more sharply as the predictors “importance” and “possession” of the functional congruence BMW Performance diverge. However, BMW purchase intention is high, and although possession and importance of BMW Performance present values of 1, presenting a convex curve (see Table 4.8.5.2.14).
- For MB liking–MB Performance, the upward curve is almost linear, which indicates that the higher the importance and possession of MB Performance, the higher the MB liking (see Table 4.8.5.2.15).
- For MB purchase intention–MB Performance, the response “purchase intention” increases more sharply as the predictors “importance” and “possession” of the functional congruence MB Performance diverge, but still with a convex curve (see Table 4.8.5.2.16).
- For BMW liking–BMW Safety, the upward curve is almost linear, demonstrating that the higher the importance and possession of BMW Safety, the higher the BMW liking. However, although possession of BMW Safety has a value of 1, BMW liking has a value of 5 (see Table 4.8.5.2.17).
- For BMW purchase intention–BMW Safety, the response “purchase intention” increases more sharply as the predictors “importance” and “possession” of the functional congruence BMW Safety diverge. However, the effect of possession of BMW Safety on purchase

intention is almost linear, but the effect of the importance of BMW Safety on purchase intention presents a sharp increase instead. Nevertheless, it has a convex curve (see Table 4.8.5.2.18).

- For MB liking–MB Safety, the response “liking” decreases more sharply as the predictors “importance” and “possession” of the functional congruence BMW Safety diverge. Therefore, the table presents a concave curve and thus a negative impact (see Table 4.8.5.2.19).
- For MB purchase intention–MB Safety, the response “purchase intention” increases more sharply as the predictors “importance” and “possession” of the functional congruence MB Safety diverge. However, a low value of possession of MB Safety (with a value of 2) still results in a high purchase intention (with a value of 5; see Table 4.8.5.2.20).
- BMW liking–BMW Economic Aspect starts with a linear function, but the response “liking” then decreases slightly more sharply as the predictors “importance” and “possession” of the functional congruence BMW Economic diverge. Therefore, the table presents a concave curve, thus indicating a slightly negative impact (see Table 4.8.5.2.21).
- For BMW purchase intention–BMW Economic Aspect, the response “liking” first increases slightly more sharply as the predictors “importance” and “possession” BMW Economic Aspect, but the positive effect turns into a negative one with the response decreasing more sharply as the predictors “importance” and “possession” of the functional congruence BMW Economic diverge. Therefore, the table presents a convex first, and then a concave curve (see Table 4.8.5.2.22).
- MB liking–MB Economic Aspect starts with the response “liking” decreasing slightly more sharply as the predictors “importance” and “possession” of the functional congruence MB Economic diverge and then turning into a linear function with a positive effect instead.

Therefore, the table presents a concave and then a convex curve (see Table 4.8.5.2.23).

- MB purchase intention–MB Economic Aspect starts with a linear effect. However, although possession of functional congruence MB Economic Aspect is low (with a value of 2), purchase intention is high (value of 4.5), and the response “purchase intention” then decreases slightly more sharply as the predictors “importance” and “possession” of the functional congruence MB Economic diverge. Therefore, the table presents a convex and then a concave curve (see Table 4.8.5.2.24).
- For BMW liking–BMW Dealership, the response “liking” increases more sharply as the predictors “importance” and “possession” of the functional congruence BMW Dealership diverge. Nevertheless, it shows a convex curve (see Table 4.8.5.2.25).
- For BMW purchase intention–BMW Dealership, the response “purchase intention” increases more sharply as the predictors “importance” and “possession” of the functional congruence BMW Dealership diverge, albeit with a convex curve (see Table 4.8.5.2.26).
- For MB liking–MB Dealership, the response “liking” decreases more sharply as the predictor “importance” of the functional congruence MB Dealership diverges. Furthermore, the predictor “possession” does not increase MB liking. Then, the response “liking” increases more sharply as the predictor “importance” of the functional congruence MB Dealership diverges. These events are represented as a concave curve turning into a convex one (see Table 4.8.5.2.27).
- For MB purchase intention–MB Dealership, the response “purchase intention” decreases more sharply as the predictor “importance” of the functional congruence MB Dealership diverges. Moreover, the predictor “possession” does not increase MB purchase intention, representing a concave curve with a negative impact (see Table 4.8.5.2.28).

- For BMW liking–BMW Warranty, the response “liking” increases more sharply as the predictors “importance” and “possession” of the functional congruence BMW Warranty diverge. As can be seen, these two predictors (with a value of 1 each) result in higher liking (with a value of 2) and therefore present a convex curve (see Table 4.8.5.2.29).
- For BMW purchase intention–BMW Warranty, the response “purchase intention” increases more sharply as the predictors “importance” and “possession” of the functional congruence BMW Warranty diverge. As can be seen, these two predictors (with a value of 1 each) result in a higher purchase intention (with a value of 2), resulting in a convex curve (see Table 4.8.5.2.30).
- For MB liking–MB Warranty, the upward curve is almost linear, which illustrates that the higher the importance and possession of MB Warranty, the higher the MB liking (see Table 4.8.5.2.31).
- For MB purchase intention–MB Warranty, the response “purchase intention” increases more sharply as the predictors “importance” and “possession” of the functional congruence MB Warranty diverge. As can be seen, these two predictors (with a value of 1 each) result in a higher purchase intention (with a value of 3), culminating in a convex curve (see Table 4.8.5.2.32).

Further to the effects of functional congruence on liking and purchase intention, the impact of generational cohorts and functional congruence on purchase intention are explored in the next section.

**Based on the results of the PSEM, H9 (stating that functional congruence positively influences consumers’ liking and purchase intention) must be rejected. However, based on the results of the RSA of all BMW and MB functional congruencies except MB Safety and MB Dealership, H9 can be accepted.**

#### 4.8.5.3 Testing the influence of functional congruence and generational cohort on purchase intention

The influence of age group differences on BMW and MB functional congruencies were analysed through PSEM.

**Table 4.8.5.3.1 Model fit – piecewise structural equation modeling: functional congruence and generational cohort on purchase intention**

Global goodness-of-fit:

Fisher's C = 215.725 with  $p = 0.000$  and on 64 degrees of freedom

As can be seen in Table 4.8.5.3.1, the model fit is poor, which may be due to the number of variables of the functional congruities ( $C = 215.725$  with  $p = 0.000$ ; thus,  $p < 0.0005$ , and on 64  $df$ ; thus, not significant with  $p < 0.05$ ). The results are consequently not satisfactory and must therefore be interpreted with a critical eye. Additionally, only significant paths with  $p < 0.05$  (Kline, 2011) are displayed in Tables 4.8.5.3.2 and 4.8.5.3.3.

**Table 4.8.5.3.2 Testing the impact of functional congruence and generational cohort on purchase intention – overall statistics**

Response	Predictor	Test.Stat	DF	P.Value	p
<b>BMW</b>					
BMW purchase intention	Q3:cong BMW Safety	105.6	1	0.0133	*
<b>MB</b>					
MB purchase intention	Q3:cong_ MB Exterior	134.3	1	0.0459	*

Response	Predictor	Test.Stat	DF	P.Value	p
MB purchase intention	Q3:cong_ MB Warranty	134.3	1	0.0001	***

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

As Table 4.8.5.3.2 indicates, generational cohort differences significantly influence the functional congruence BMW Safety with regard to BMW purchase intention ( $p = 0.0133$ ) at the 0.05 level, whereas generational cohort differences influence the functional congruencies MB Warranty ( $p = 0.0001$ ) significantly at the 0.001 level and MB Exterior ( $p = 0.0459$ ) significantly at the 0.05 level with respect to MB purchase intention. The age groups were thus checked in detail for statistical significances (see Table 4.8.5.3.3).

**Table 4.8.5.3.3 Testing the impact of functional congruence and generational cohort on functional congruence**

**Age group 1**

Response	Predictor	Estimate	Std. Error	DF	Crit. Value	P. Value	Std. Estimate	
MB Purchase intention	cong MB Warranty	-0.5217	0.1231	93	-4.2367	0.0001	-0.2982	** *

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

As can be seen in Table 4.8.5.3.3, only the functional congruence MB Warranty presents statistically significant differences for Age group 1 (standardised estimate = -0.2982,  $p = 0.0001$ ) on MB purchase intention at the 0.001 level and therefore is opposite to MB purchase intention. The more the functional congruence MB Warranty increases, the more MB purchase intention decreases.

Thereafter, the effects of moderating variables on functional congruence were tested for BMW and MB, as explained next.

#### **4.8.5.4 Testing moderating variables “brand involvement” and “brand differentiation” on functional congruence**

For this test, the moderating effect of the two variables, brand involvement and brand differentiation, were explored (see Appendices H1–H3 for descriptive statistics). Sirgy (1982) suggests that these variables demonstrate a moderating effect, but this is related to the Western world and to another product category (Sirgy & Johar, 1999). Therefore, the effects of brand involvement and brand differentiation were tested for significant influences on functional congruence.

The following hypothesis pairs were tested:

H<sub>0</sub>10a: The moderating variable “brand involvement” does not influence functional congruence positively.

H<sub>a</sub>10a: The moderating variable “brand involvement” influences functional congruence.

H<sub>0</sub>10b: The moderating variable “brand differentiation” does not influence functional congruence positively.

H<sub>a</sub>10b: The moderating variable “brand differentiation” influences functional congruence.

#### **Testing moderating variables “brand involvement” and “brand differentiation” on functional congruence**

To study the moderating effects of brand involvement and brand differentiation on functional congruence, PSEM was conducted.



Coding brand involvement BMW/MB:

- Bi\_BMW 1/Bi\_MB 1: if one of the three questions on brand conspicuousness was answered with “yes” (all negatively worded items of the moderating variables were reversed during data preparation)
- Bi\_BMW 2/Bi\_MB 2: if two of the three were answered with “yes”
- Bi\_BMW 3/Bi\_MB 3: if all three questions were answered with “yes”

Coding brand differentiation BMW/MB:

- Bd\_BMW 1/Bd\_MB 1: if one of the three questions on brand conspicuousness was answered with “yes” (all negatively worded items of the moderating variables were reversed during data preparation)
- Bd\_BMW 2/Bd\_MB 2: if two of the three were answered with “yes”
- Bd\_BMW 3/Bd\_MB 3: if all three questions were answered with “yes”

All functional congruencies for BMW and MB were incorporated together with BMW and MB brand involvement and brand differentiation (see Table 4.8.5.4.1).

**Table 4.8.5.4.1 Model fit – piecewise structural equation modeling:  
brand differentiation and brand involvement influence on  
functional congruity**

Global goodness-of-fit:

Fisher's C = 10.051 with p = 0.123 and on 6 degrees of freedom

AIC	BIC
46.051	112.719

As can be seen in Table 4.8.5.4.1, the model fit is good,  $C = 10.051$  with  $p = 0.123$  and on 6  $df$  (AIC = 46.051 and BIC = 112.719) and thus not significant ( $p \geq 0.05$ ).

Only significant paths with  $p < 0.05$  are displayed in Table 4.8.5.4.2 (see Appendix H4 for complete table).

**Table 4.8.5.4.2 Testing the impact of brand differentiation and brand involvement on functional congruence**

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	p
<b>Brand involvement</b>								
cong BMW Warranty	bi_BMW	-0.1441	0.0603	295	-2.3896	0.0175	-0.1405	*
cong BMW Economic	bi_BMW	-0.2593	0.0808	295	-3.2088	0.0015	-0.1895	**
<b>Brand differentiation</b>								
cong BMW Warranty	bd_BMW_3	-0.9083	0.3463	295	-2.6225	0.0092	-0.1560	**
cong BMW Safety	bd_BMW_3	-1.1731	0.3153	295	-3.7205	0.0002	-0.2202	***

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

Table 4.8.5.4.2 is explained in detail below.

### **Significant influence of brand involvement and brand differentiation on functional congruence**

#### **Brand involvement BMW**

Negative impact

- Functional congruence BMW Warranty: Brand involvement influences congruence BMW Warranty (standardised estimate = -0.1405,  $p = 0.0175$ ) significantly.
- BMW Economic Aspect: Brand involvement (bi\_BMW; standardised estimate = -0.1895,  $p = 0.0015$ ) influences congruence BMW Economic Aspect significantly.

#### **Brand involvement MB**

MB brand involvement does not influence MB functional congruencies significantly.

#### **Brand differentiation BMW**

Negative impact:

- Functional congruence BMW Warranty: Brand differentiation, bd\_BMW\_3, (standardised estimate = -0.1560,  $p = 0.0092$ ) influences congruence BMW Warranty significantly.
- BMW Safety: bd\_BMW\_3 (standardised estimate = -0.2202,  $p = 0.0002$ ) influences congruence BMW Safety significantly.

## **Brand differentiation MB**

MB brand differentiation does not influence MB functional congruencies significantly.

Furthermore, the R-squared was assessed.

## **R-squared**

The R-squared was analysed to determine the extent to which the dependent variables (functional congruencies) are explained by the independent variables (brand involvement and brand differentiation of BMW and MB; see Table 4.8.5.4.3).

**Table 4.8.5.4.3 R-squared – brand involvement and brand differentiation on functional congruence**

<b>Response</b>	<b>R-squared</b>
cong BMW Safety	0.05
cong BMW Economic	0.03
cong BMW Warranty	0.04

As can be derived from Table 4.8.5.4.3, the R-squared is the highest for congruence BMW Safety ( $R^2 = 0.05$ ), closely followed by congruence BMW Warranty topics ( $R^2 = 0.04$ ) and congruence BMW Economic Aspect ( $R^2 = 0.03$ ). However, the R-squared is low for all three functional congruencies. According to Cohen (1988),  $R^2 < 0.16$  is weak, and  $R^2 < 0.02$  would be very weak. Therefore, the results are not satisfactory. However, the model fit was assessed through Fisher's C (Shipley, 2009).

**H10a (stating that the moderating variable “brand involvement” affects functional congruence) can be accepted for BMW Warranty and BMW Economic Aspect.**

**H10b (stating that the moderating variable “brand differentiation” affects functional congruence) can be accepted for BMW Warranty and BMW Safety.**

#### **4.8.6 Testing the effects of different genders and cities on liking and purchase intention**

During hypotheses testing, only age group differences were explored. Since the study was conducted with quota sampling, ensuring that both genders, the three age groups, and the three cities are equally distributed, it might also be interesting to examine the effects based on gender and city. The influences of gender and city on BMW and MB liking and purchase intention were hence assessed (see Appendices I1–I4 for complete tables).

##### **Gender-related differences**

To explore the effects of gender and city difference, PSEM was conducted. For the modeling, higher-order values, brand personalities, and self–brand congruencies were incorporated together with BMW and MB purchase intention as well as gender.

**Table 4.8.6.1 Model fit – piecewise structural equation modeling: gender differences**

Global goodness-of-fit:

Fisher's C = 155.861 with  $p = 0.702$  and on 166 degrees of freedom

Table 4.8.6.1 indicates a good model fit,  $C = 155.861$ ,  $p = 0.702$  and on 166  $df$ , which is not significant (with  $p \geq 0.05$ ; see Appendices I1–I2 for complete tables).

## **Significant gender-related differences**

### Gender-related differences: Male respondents (see Appendix I2)

BMW liking: The effect of higher-order personal value self-transcendence (standardised estimate = 0.588;  $p = 0.0006$ ) and the perception of brand aspect personality BMW Sincerity (standardised estimate = 0.2601;  $p = 0.0022$ ) on BMW liking in male respondents differs significantly from that in female respondents.

MB liking: The effect of self–brand congruence Self-transcendence\_MB Ruggedness (standardised estimate = 0.4216;  $p = 0.0015$ ) and the perception of brand personality aspect MB Ruggedness (standardised estimate = 0.2003;  $p = 0.0093$ ) on MB liking in male respondents differs significantly from that in male respondents.

### Gender-related differences: Female respondents (see Appendix I2)

BMW liking: The effect of self–brand congruence Openness to Change\_BMW Ruggedness (standardised estimate = 0.6371;  $p = 0.0233$ ) and the perception of brand personality aspect BMW Ruggedness (standardised estimate = 0.512;  $p = 0$ ) on BMW liking in female respondents differs significantly from that in male respondents.

MB liking: The effect of self–brand congruence Self-enhancement\_MB Ruggedness (standardised estimate = 0.6845;  $p = 0.0004$ ), congruence Openness to Change\_MB Sophistication (standardised estimate = 0.5889;  $p = 0$ ), and the perception of brand personality aspect MB Sophistication (standardised estimate = 0.3935;  $p = 0.0001$ ) on MB liking differs significantly for female respondents.

Negative impact on MB liking: However, for congruence, the effect of Self-enhancement\_MB Sophistication (standardised estimate = -0.7666;  $p = 0.0001$ ) on MB liking differs significantly for female respondents.

Negative impact on MB purchase intention: The effect of the perception of the brand personality aspect MB Sophistication (standardised estimate = -

0.258;  $p = 0.014$ ) on MB purchase intention differs significantly for female respondents.

To conclude, no statistically significant effects of gender-related differences on BMW purchase intention are observable.

### **City-related differences**

To study the differences in terms of city (Beijing, Shanghai, and Shenzhen), another PSEM was conducted. For the modeling, higher-order values, brand personalities, and self–brand congruencies were incorporated together with BMW and MB purchase intention as well as the three cities.

**Table 4.8.6.2 Model fit – piecewise structural equation modeling: city differences**

Global goodness-of-fit:

Fisher's  $C = 200.038$  with  $p = 0.745$  and on 214 degrees of freedom

As can be seen in Table 4.8.6.2, the model presents a good model fit,  $C = 200.038$ ,  $p = 0.745$  and on 214  $df$ , which is not significant (with  $p > = 0.05$ ); (see Appendices I3–I4 for complete tables).

### **Significant city-related differences**

#### Respondents from Shanghai (see Appendix I4)

Negative impact on BMW purchase intention: The effect of self–brand congruence Conservation\_BMW Ruggedness on BMW purchase intention (standardised estimate =  $-0.7357$ ;  $p = 0.0012$ ) differs significantly in Shanghai.



#### Respondents from Shenzhen (see Appendix I4)

MB liking: The effect of self–brand congruence Openness to Change\_MB Sincerity on MB liking (standardised estimate = 0.685;  $p = 0.0006$ ) differs significantly in Shenzhen.

However, there are no significant differences regarding liking or purchase intention in Beijing.

**Summary: Gender- and city-related differences**Based on the results, gender-and city-related differences exist. It is interesting to note that gender-related differences influence BMW and MB liking and MB purchase intention. However, no effects of gender-related differences on BMW purchase intention are observable. Furthermore, city differences influence BMW purchase intention in Shanghai and MB liking in Shenzhen, but no influence was found in Beijing.

## **4.9 Chapter summary**

In Chapter 4, the descriptive information about the respondents was presented. It is assumed that the profiles are in accordance with previous luxury purchase behaviour observed in China.

The participant profiling identified that most respondents had 16 years of education, which is more than their parents, who have 12 years of education. Most (258 out of 300) respondents graduated from college/university, and most of them are either married or cohabiting (236 out of 300 respondents). Additionally, most respondents (151 out of 300) are managers or business owners, with an average monthly household income of RMB 20,000–39,000 (105 out of 300 respondents) and a budget for a new car of RMB 400,000–599,999 (146 out of 300 respondents). It is interesting to note that most (273 out of 300) respondents grew up in a large city, and none grew up on a farm.

Based on the data analysis, the outcomes were evaluated and are presented for each of the hypotheses. Chapter 5 presents the findings related to the hypotheses.

## Chapter 5 Findings

### 5.1 Introduction

This chapter presents the main findings based on the results of the data analysis in Chapter 4. Chapter 5 discusses whether the outcomes of the data analysis support empirically existing theories and hence the hypotheses.

### 5.2 Assessment of hypotheses

**H1: There are differences in terms of the importance given to personal values among the three generational cohorts in China.**

H<sub>a1</sub> can be accepted for stimulation and self-enhancement; differences exist in terms of the importance given to the personal value stimulation and higher-order value self-enhancement among the three generational cohorts in China (see Section 4.8.2.2).

Generational cohort differences in terms of the importance given to stimulation might be due to the age gap among the groups. It is believed that conservation values such as conformity, tradition, and security gain more importance with an increase in age (Schwartz, 2006). Particularly the crossvergence and the stickiness theories aid in understanding the differences in importance of values and their effect (Dermody et al., 2020). Since the pre-reform generation was born before the reform generation and differed especially in terms of living standards and material conditions, they developed differences in importance of values. Given the importance they assign to tradition and conservation, stimulation is rather opposite to their stickiness. The pre-reform generation have been described as conservative and change-averse (Hung et al., 2007), whereas the reform generation is seen as hedonistic and individualistic (Dermody et al., 2020; Li, 2020), with a value for monetary wealth. In contrast, the post-reform generation is open to

change (Han & Uncles, 2010), exhibits the fastest learning speed, and is the most variety- and novelty-seeking generation (Hung et al., 2007; Li, 2020). Each age group is more likely to present differences in terms of importance given to stimulation, with the post-reform generation valuing it the most, and the pre-reform generation, the least.

Generational cohort differences in terms of the importance given to self-enhancement between the pre-reform and post-reform generations is likely because the former generation is seen as non-materialistic (Hu, 2020; Hung et al., 2007; Li, 2020). While self-enhancement strongly correlates with materialism (Gurel-Atay et al., 2020; Wilson, 2005), age is negatively associated with materialism (Belk, 1988). It is found that the post-reform generation engages in self-enhancement and values materialism more than the other two generational cohorts (Hung et al., 2007; Li, 2020). Self-enhancement consists of achievement, power-dominance, and power-resources and is therefore particularly relevant for power-driven and status-oriented consumers with the goal of securing prestige and acknowledgement from others (Fastoso & González-Jiménez, 2020; Leung, 2008; Stathopoulou & Balabanis, 2019). Sirgy and Johar (1999) observed that self-enhancement focuses on the ideal self instead of the actual self, and this might be the key reason for the difference between the two age groups. Based on the crossvergence theory (Egri & Ralston, 2004), the younger generation has a desire for self-enhancement, strives to be more socially visible, and values materialism (Li, 2020), which is in contrast to the pre-reform generation and their stickiness (Chaisty & Whitefield, 2015). Thus, the youngest age group might differ significantly from the oldest one in terms of the importance they place on self-enhancement (Li, 2020; Tang et al., 2017).

Although Han and Uncles (2010) have confirmed the differences in terms of importance given to values among the generational cohorts in China regarding durable goods, this is only partially supported by the empirical results for German luxury passenger cars in this study. This confirms Noble and Schewe's (2003) statement that the effects of generational cohort differences may not be as relevant as assumed for luxury passenger car consumption. Therefore, the assumption regarding the effects of

generational cohort differences in China cannot be confirmed based on the empirical results of this study, and Abramson and Inglehart's (1995), Han and Uncles' (2010), Hung et al.'s (2007), Rogler's (2002), and Schuette and Ching's (1996) suggestion is only partially accepted.

In conclusion, stimulation (with the motivational goals of living an exciting life, experiencing novelty, and undergoing change; Schwartz et al., 2017) and self-enhancement (with the leading principle of pursuing one's own interests; Schwartz et al., 2012) are the generational cohort differences found in terms of importance given to values.

## **H2: The specific personal values of each generational cohort influence their liking and purchase intention.**

H<sub>a2</sub> can be accepted for openness to change and self-enhancement; the claim that each generational cohort's specific personal values influence liking and purchase intention is supported by the empirical results for openness to change and self-enhancement (see Section 4.8.2.5).

The pre-reform generation revealed a negative impact of openness to change on BMW liking. This generation especially values tradition and social norms (Li, 2020), according to the so-called stickiness theory (Chaisty & Whitefield, 2015); therefore, its members are not open to change.

In contrast, the reform generation presents a positive effect of openness to change on BMW liking. As suggested by Li (2020), the experience of historical, cultural, and political transformation, accompanied by higher living standards, has led to diverse consumption values and consumer behaviours. This crossvergence (Egri & Ralston, 2004) is in contrast to the stickiness of the pre-reform generation (Dermody et al., 2020) and might still differ from the post-reform generation, who not only experienced higher living standards but also better material conditions (Li, 2020).

Finally, the post-reform generation indicates a positive effect of self-enhancement on MB liking. According to Tang et al. (2017), this generation strives to be more socially visible and values materialism, which correlates

with self-enhancement (Gurel-Atay et al., 2020; Wilson, 2005). Members of this generation might consequently differ in self-enhancement from the other age groups.

The empirical results of the reform and post-reform generations confirm Tang et al.'s (2017) suggestion that these generations embrace individualistic behaviour and the pursuit of their own interests.

Nevertheless, as Noble and Schewe (2003) state, there are a few generational cohort differences in terms of values and priorities. It is not clear whether these differences lead to any differences in purchase behaviours.

#### Effects of personal values on purchase intention without considering generational cohort differences (see Section 4.8.2.3)

Based on the findings of this study, personal values influence purchase intention with respect to BMW and MB when generational cohort differences are not taken into consideration. The empirical results indicate that differences in terms of the importance assigned to personal values as motivational goals influence purchase intention (Bardi, Lee, Hofmann-Towfigh, & Soutar, 2009; Bardi & Schwartz, 2003; Beatty et al., 1985; Carman, 1978; Hitlin & Piliavin, 2004; Rokeach, 1973; Schwartz & Bardi, 2001; Wiedmann et al., 2007).

The effects of personal values on purchase intention are as follows:

**For BMW**, BMW liking has the strongest impact on BMW purchase intention. Additionally, universalism-tolerance, achievement, and power-resources affect BMW liking. Universalism-tolerance, meaning equality and social justice (Schwartz et al., 2017); achievement, meaning personal success through competence; and power-resources, meaning control or dominance over people and resources (Schwartz et al., 2012), consequently affect BMW liking positively. Since BMW liking creates the strongest impact on BMW purchase intention, this might indirectly affect BMW purchase intention. Negative impact of personal values: Security-personal, meaning safety, harmony, and stability of the self (Schwartz et al., 2012), presents the most

contrasting effect on BMW purchase intention. As can be derived from the empirical results, tolerance for the welfare of others positively impacts BMW liking; this might result in a opposite effect of security-personal, which focuses on the self instead. Regarding BMW, consumers place importance on security over personal values in terms of safety, harmony, and stability of the self.

**For MB**, MB liking has the strongest impact on MB purchase intention, and “face” affects MB liking. Zhuo and Guang (2007) stated that “face” is important in China – maintaining and enhancing “face” (i.e. maintaining one’s public image without humiliation) thus has an impact on MB liking (Au, 2014; Luo, 2000). As a result, “face” might influence MB purchase intention through MB liking. However, the strongest effect on MB purchase intention is exerted by stimulation. Excitement, novelty, and challenge in life thus affect MB purchase intention.

However, universalism-tolerance (meaning equality and a tolerance for the welfare of others) and security-societal, including stability, harmony, and safety in society, influence MB purchase intention negatively. Hence, the more importance someone places on the equality, welfare, and harmony of others, the lower their MB purchase intention is. To conclude, when Chinese consumers assign importance to personal values instead of social values, they present a higher MB purchase intention.

Universalism-tolerance, which affects MB purchase intention negatively, affects BMW liking positively. Therefore, the importance given to tolerance for the welfare of others positively impacts BMW liking. Moreover, achievement (defined as an active demonstration of personal success and the consequent attainment of social approval; Schwartz, et al., 2017), and power-resources (in the form of control of resources for independent influence) affect BMW liking. These values focus on the advantages for oneself (Schwartz, 2015).

Furthermore, the influence of higher-order personal values on purchase intention BMW and MB were tested.

#### Effect of higher-order values on purchase intention without considering generational cohort effects (see Section 4.8.2.4)

The effects of higher-order personal values on purchase intention are as follows:

In the case of **BMW**, when higher-order values are considered, BMW liking influences BMW purchase intention the most. This is closely followed by self-transcendence, with the transcendence of one's own interests for the benefit of others affecting BMW liking. Schultz et al.'s (2005) suggestion that consumers who place importance on self-transcendence are rather non-materialistic (Hu, 2020) is therefore not supported by the empirical results.

Notably, self-enhancement in the form of pursuing one's own interests affects BMW purchase intention and BMW liking. Thus, consumers who place importance on self-enhancement are power-driven and status-oriented, and they aim to secure acknowledgement and prestige to increase their self-esteem (Fastoso & González-Jiménez, 2020; Leung, 2008; Stathopoulou & Balabanis, 2019).

Moreover, openness to change (implying a readiness to explore new experiences and actions) influences BMW purchase intention. Thus, BMW purchase intention presents a conflict between a social focus (self-transcendence) and a personal focus (openness to change and self-enhancement), as well as between growth and anxiety (with self-transcendence and openness to change) and self-protection and anxiety-avoidance (with self-enhancement), according to the circular continuum (Lindeman & Verkasalo, 2005; Lönnqvist, Verkasalo, Wichardt, & Walkowitz, 2013; Schwartz et al., 2012).

The empirical results indicated a negative impact of conservation on BMW purchase intention. Hence, the more important conservation is – meaning the motivational goal of self-restriction, order, and change avoidance (Schwartz et al., 2017) – the lower the BMW purchase intention is.

In the case of **MB**, MB liking has the strongest impact on MB purchase intention. Self-enhancement affects MB purchase intention and MB liking. Therefore, for MB purchase intention, the motivational goal of self-



enhancement is linked to a personal focus (Schwartz et al., 2017), correlating with materialism and narcissism (Gurel-Atay et al., 2020; Wilson, 2005), particularly expressing the importance of social value with conspicuous consumption (Fastoso & González-Jiménez, 2020; Leung, 2008; Stathopoulou & Balabanis, 2019).

This finding is similar to the research work by Leung (2008), Li (2020), and Stathopoulou and Balabanis (2019). In conclusion, this study confirms that personal values influence behaviours such as purchase intention.

### **H3: Each generational cohort has a different perception of brand personalities.**

H<sub>a</sub>3 must be rejected. Based on the outcomes presented in Chapter 4, it can be said that no significant differences exist in terms of each generational cohort's perceptions of BMW and MB brand personalities. Therefore, the influence of generational cohorts' personal values on BMW and MB brand personalities is not significant. Hence, the influence of generational cohorts and their perceptions of brand personalities was not confirmed by the results, as suggested by Wang et al. (2010). This means that Han and Uncles' (2010) generational cohort approach cannot be extended to study luxury passenger car consumption in China (see Section 4.8.3.1).

#### Effect of perception of brand personality without considering generational cohort effects

Differences in perception of brand personality were observable for both brands when generational cohort differences were not taken into consideration.

**For BMW**, ruggedness was found to be the most important brand personality aspect, closely followed by competence and sophistication. According to Aaker (1997), each of these brand personalities represents specific attributes; for instance, ruggedness is associated with words such as tough, masculine, and Western, while competence represents success, intelligence

and reliability, and sophistication demonstrates qualities such as upper-class, feminine, and smooth.

Similarly, **for MB**, ruggedness was considered to be the most important brand personality dimension, closely followed by competence and sophistication. However, it is interesting to note that all the respondents rated MB's brand personality dimensions higher than BMW's.

With the highest importance being placed on ruggedness, Chinese consumers may select luxury passenger cars to relate these characteristics to their self-concept as being, for instance, tough, masculine, and Western (Aaker, 1997). As stated by Aaker (1997), consumers usually choose brands that are consistent with their perception of self. This study indicates that Chinese respondents show a stronger association with MB, which explains the higher ranking.

#### **H4: Each generational cohort's perception of brand personality influences their liking of and intention to purchase a brand.**

H<sub>a4</sub> can be accepted for BMW Competence, MB Excitement, MB Competence, and MB Sophistication. The generational cohorts have different perceptions regarding BMW's and MB's brand personality that influence purchase intention (see Section 4.8.3.2).

**For BMW**, the influence of the perception of BMW Competence on BMW liking differs between the pre-reform and reform generations. BMW Competence signifies qualities such as reliable, hard-working, intelligent, and successful (Aaker, 1997). The cohort differences might stem from the fact that the pre-reform generation experienced the Cultural Revolution, when China was locked within itself and only had limited consumer goods. Therefore, luxury goods were rare during their childhood and adolescence (Campbell et al., 2015; Egri & Ralston, 2004), which is why they are non-materialistic and have the lowest education level (Hu, 2020). They might perceive the BMW brand personality of competence differently due to their low education level. This results in the higher perception of BMW Competence with a higher BMW liking. However, BMW purchase intention

presented no direct differences in the influence of perception of brand personality and generational cohorts.

**For MB**, the influence of the perception of MB Excitement on MB liking the differs between the pre-reform and reform generations. Specifically, there is a significant difference between the pre-reform generation and the reform generation in their perception of MB Excitement, which relates to being daring, trendy, cool, and independent (Aaker, 1997). The reform generation has a greater desire for materialism (Hung et al., 2007) and places more importance on variety and novelty. Perception of MB Competence on MB purchase intention differs between the reform generation and the other generations. The difference from the pre-reform generation is likely due to this generation's low education level (Hu, 2020), whereas members of the post-reform generation have the fastest learning speed. As a result, MB Competence might be perceived differently by the reform generation in terms of valuing materialism and entrepreneurship (Hung et al., 2007). This results in the effect of a higher perception of MB Competence with a higher MB purchase intention. MB Sophistication on MB liking differed for the post-reform generation. Its members were born during the period of globalisation and the one-child policy, and they were thus indulged the most. Being fast learners, open to change, willing to take risks (Hung et al., 2007), and the most individualistic (Li, 2020), they believe in expressing glamour and class differently.

Furthermore, brand personality affects purchase intention but without generational cohort differences as follows.

#### Effect of perception of brand personality on purchase intention without considering generational cohort effects

Based on the results, it can be concluded that **BMW** is perceived as sincere, competent, sophisticated, and rugged (ranked according to the strength of impact on BMW liking) and sincere and competent in relation to BMW purchase intention.

In contrast, **MB** is perceived as sincere, exciting, rugged, and sophisticated (according to the strength of impact on MB liking).

**H5: Each generational cohort will display significant differences in the congruencies between their higher-order personal values and their perception of a brand's personality.**

In this study, each of the four higher-order values and each of the five BMW and MB brand personalities exhibit self–brand congruencies.

H<sub>a5</sub> can be accepted for Self-transcendence\_MB Competence, Openness-to-change\_MB Competence, and Conservation\_MB Competence; each generational cohort shows significant differences from the others in terms of the congruencies displayed between the four higher-order personal values and their perceptions of BMW and MB brand personalities (see Section 4.8.4.1):

Age difference consequently affects self–brand congruencies, especially the brand personality aspect MB Competence. This result may be explained by Aaker's argument that the facets "reliable", "intelligent", and "successful" (Aaker, 1997) in combination with the higher-order personal values might be expressed differently by different generational cohorts. This might be because the pre-reform generation presents the lowest education level (Hung et al., 2007), and their definition of intelligence and success is hence different due to the social and political struggles they had to endure (Han & Uncles, 2010). In contrast, the reform generation experienced the open-door policy and lived a relatively comfortable life. They value wealth, entrepreneurship, and variety in life. The post-reform generation seeks novelty (Hung et al., 2007) and is the most individualistic of the three groups (Li, 2020). Individuals from this generation are most attracted to foreign products and conspicuous consumption. Hence, they might value the signal of social value the most (Phau et al., 2020), which is particularly relevant for the aspiration to achieve an ideal self-congruity (Fastoso & González-Jiménez, 2020) and be unique (Li, 2020).

However, the differences in congruencies displayed in terms of the four higher-order personal values and their perceived brand personality dimensions among the generational cohorts are only pertinent for MB. As supported by the empirical results, the self–brand congruence of MB Competence and MB Self-transcendence in terms of transcending own interests for the benefit of others (Schwartz et al., 2012) differs between the post-reform and reform generations. This is because the post-reform generation is engaged in fulfilling their own aspirations and needs (Li, 2020), which is the exact opposite of self-transcendence. Regarding the self–brand congruence of MB Competence and MB Openness-to-change (implying a readiness for new experiences; Schwartz et al., 2012), the post-reform generation differs from the reform generation in that the former displays the most openness to change (Hung et al., 2007), whereas the latter is less open. Regarding the self–brand congruence of MB Competence and MB Conservation in terms of avoiding change and self-restriction, the post-reform generation differs from the pre-reform generation: The pre-reform generation is described as reluctant to change and conservative (Hung et al., 2007) – that is, they demonstrate a so-called stickiness (Dermody et al., 2020) – which is in contrast with the crossvergence of the post-reform generation (Egri & Ralston, 2004). To conclude, there are few effects of generational cohort differences.

**H6: The congruence between a generational cohort's higher-order values and brand personality perceptions will influence their liking and purchase intention.**

H<sub>a6</sub> can be accepted for Self-enhancement\_BMW Competence and Conservation\_BMW Sophistication. The self–brand congruence between a generational cohort's higher-order personal values and perceptions regarding BMW brand personalities influence purchase intention (see Section 4.8.4.2).

For BMW, the self–brand congruence Self-enhancement\_BMW Competence in the pre-reform generation affects BMW purchase intention, but with a

negative impact. The pre-reform generation tends to be conservative and strive for self-restriction (Hung et al., 2007). Based on their stickiness (Chaisty & Whitefield, 2015), their motivational goal of self-enhancement might differ from the crossvergence-motivated reform and post-reform generations (Egri & Ralston, 2004). Therefore, BMW Competence, signifying reliability, hard work, and intelligence (Aaker, 1997), might be perceived differently by the pre-reform generation due to their lowest education level (Hung et al., 2007).

Additionally, Conservation\_BMW Sophistication in the post-reform generation influences BMW purchase intention differently, but with a negative impact. This is likely because the post-reform generation is engaged in pursuing their own interests, showing more appreciation for variety and novelty than most (Hung et al., 2007), and fulfilling their own aspirations and needs (Li, 2020). The post-reform generation engages in self-enhancement, which is the opposite of conservation, according to the circular structure of personal values (Schwartz et al., 2017). Therefore, conservation is likely to have a negative impact on their BMW purchase intention. Thus, the signal of social value (Phau et al., 2020) and ideal self-congruity (Fastoso & González-Jiménez, 2020) are the opposites of conservation. As a result, BMW Sophistication, including language such as upper-class, feminine, and smooth, might be perceived differently by the post-reform generation in terms of self-confidence and independence (Li, 2020).

#### Self-brand congruence on purchase intention without considering generational cohort effects

This section discusses self-brand congruencies of the higher-order personal values and how brand personalities influence BMW and MB purchase intention when the generational cohort differences are not taken into consideration.

**Table 5.2.1 Effects of self–brand congruence (SBC) on purchase intention (PI)**

<b>FC BMW liking</b>	<b>FC MB liking</b>
congruence Con_BMW Sincerity congruence SE_BMW Sincerity	congruence Con_MB Sincerity congruence SE_MB Ruggedness congruence OC_MB Sophistication congruence STr_MB Ruggedness congruence SE_MB Excitement
<b>FC BMW liking negative impact (neg.)</b>	<b>FC MB liking neg.</b>
congruence STr_BMW Sincerity congruence OC_BMW Sophistication congruence SE_BMW Ruggedness congruence Con_BMW Ruggedness	congruence STr_MB Sincerity congruence SE_MB Sincerity congruence SE_MB Sophistication congruence Con_MB Ruggedness
<b>FC BMW PI</b>	<b>FC MB PI</b>
congruence Con_BMW Sincerity congruence STr_BMW Ruggedness congruence OC_BMW Excitement congruence OC_BMW Competence	congruence Con_MB Sincerity congruence SE_MB Ruggedness congruence Con_MB Excitement congruence STr_MB Ruggedness congruence OC_MB Competence
<b>FC BMW PI neg.</b>	<b>FC MB PI neg.</b>
congruence OC_BMW Sincerity congruence Con_BMW Sophistication congruence SE_BMW Competence congruence STr_BMW Excitement	congruence Con_MB Ruggedness congruence SE_MB Competence congruence OC_MB Sophistication congruence STr_MB Sincerity congruence OC_MB Excitement

**For BMW**, the self–brand congruence Conservation\_BMW Sincerity and Self-enhancement\_BMW Sincerity influence **BMW liking** significantly. Thus, a) conservation, which includes change-avoidance and order (Schwartz et al., 2012) along with sincere, real, and honest (Aaker, 1997) behaviour, and

b) self-enhancement, which includes the pursuit of one's own interests with sincere, real, and honest (Aaker, 1997) behaviour, affect BMW liking positively (see Table 5.2.1).

The self-brand congruencies Openness-to-change\_BMW Sophistication, Self-enhancement\_BMW Ruggedness, Conservation\_BMW Ruggedness, and Self-transcendence\_BMW Sincerity **influence BMW liking negatively**. This may be explained by the fact that specific self-brand congruencies are opposite to BMW liking. For instance, based on the empirical results, the following are opposite to BMW liking: the self-brand congruence of the higher-order value expressing openness to new experiences (Schwartz et al., 2012) in combination with the BMW brand personality sophistication, such as smooth, feminine, and glamorous (Aaker, 1997); the self-brand congruence pursuing own interests (Schwartz et al., 2012), combined with the perception of it being masculine, tough, and Western (Aaker, 1997); the self-brand congruence avoiding change (Schwartz et al., 2012), combined with the perception of it being masculine, tough, and Western (Aaker et al., 2001); and the self-brand congruence transcending own interests for the benefit of others (Schwartz et al., 2017), combined with the perception of it being real, honest, and sincere (Aaker, 1997). This may be because consumers' specific motivational goals and their specific perception of the brand personalities might be in conflict which each other in terms of their liking towards BMW.

Furthermore, the match between the perceived brand personality and the consumer's values with self-brand congruence Con\_BMW Sincerity, Self-transcendence\_BMW Ruggedness, Openness-to-change\_BMW Excitement, and Openness-to-change\_BMW Competence significantly affect **BMW purchase intention**. As a result, the following congruencies demonstrate significant matches between the symbolic value of a brand and consumers' self-concept: avoiding change (Schwartz et al., 2017), with qualities of honesty, realness, and sincerity (Aaker et al., 2001); transcending own interests for the benefit of others (Schwartz et al., 2012), with qualities of being masculine, tough, and Western (Aaker, 1997); ready for new experiences (Schwartz et al., 2012), with daring, cool, and independent



(Aaker, 1997); and open to new challenges (Schwartz et al., 2012), with reliable, successful, and intelligent (Aaker, 1997). These congruencies thus affect BMW purchase intention positively.

The self–brand congruencies Conservation\_BMW Sophistication, Self-enhancement\_BMW Competence, Self-transcendence\_BMW Excitement, and Openness-to-change\_BMW Sincerity **negatively influence BMW purchase intention**. Therefore, for instance, the more the congruence Openness-to-change\_BMW Sincerity increases, the more the BMW purchase intention decreases. Thus, the congruencies of the specific motivational goal and specific perception of brand personality also affect BMW purchase intention negatively. The following congruencies might be in conflict, thereby affecting BMW purchase intention negatively: avoiding change (Schwartz et al., 2012), with qualities of being upper-class, feminine, and smooth (Aaker et al., 2001); pursuing own interests (Schwartz et al., 2017) with qualities of being reliable and hard-working (Aaker, 1997); transcending own interests for the benefit of others (Schwartz et al., 2012), with qualities of being daring, trendy, and independent (Aaker, 1997); and ready for new experiences (Schwartz et al., 2012), with down-to-earth and honest qualities (Aaker, 1997).

**For MB**, the self–brand congruence Conservation\_MB Sincerity, Self-enhancement\_MB Ruggedness, Openness-to-change\_MB Sophistication, Self-transcendence\_MB Ruggedness, and Self-enhancement\_MB Excitement affect **MB liking** significantly. The congruence of the motivational goal avoiding change and the perception of MB brand personality consequently influence MB liking positively. The following congruencies might fit with the symbolic value of a brand and one's self-concept, thereby influencing MB liking positively: avoiding change (Schwartz et al., 2012), with qualities of honesty and realness (Aaker, 1997); pursuing own interests (Schwartz et al., 2017), with qualities of being Western, tough, and masculine (Aaker, 1997); ready for new experiences (Schwartz et al., 2012), with qualities of being upper-class, feminine, and smooth (Aaker et al., 2001), transcending own interests for the benefit of others (Schwartz et al., 2012), with qualities of being Western, tough, and masculine (Aaker, 1997);

and pursuing own interests (Schwartz et al., 2012), with qualities of daring, trendiness, and independence (Aaker, 1997).

The self–brand congruencies Self-enhancement\_MB Sincerity, Self-enhancement\_MB Sophistication, Conservation\_MB Ruggedness, and Self-transcendence\_MB Sincerity **affect negatively MB liking**. Therefore, the more the self–brand congruencies increase, the more MB liking decreases. The following guiding principles in life are in conflict with the perception of brand personality and thus with the self-concept; therefore, they influence MB liking negatively: pursuing own interests (Schwartz et al., 2012), which expresses the ideal self (Sirgy & Johar, 1999), with qualities of honesty and realness (Aaker, 1997); pursuing own interests (Schwartz et al., 2017), with qualities of being upper-class, feminine, and smooth (Aaker et al., 2001); avoiding change (Schwartz et al., 2012), with qualities of being tough, masculine, and Western (Aaker, 1997); and transcending own interests (Schwartz et al., 2012) for the benefit of others, with realness and honesty (Aaker, 1997).

The self–brand congruencies Conservation\_MB Sincerity, Self-enhancement\_MB Ruggedness, Conservation\_MB Excitement, Self-transcendence\_MB Ruggedness, and Openness-to-change\_MB Competence significantly influence **MB purchase intention**. As a result, the following specific congruencies or guiding principles in life with brand personality perception influence MB purchase intention positively: avoiding change (Schwartz et al., 2012), with qualities of realness and honesty (Aaker, 1997); pursuing own interests (Schwartz et al., 2012), with qualities of being masculine, tough, and Western (Aaker, 1997); avoiding change (Schwartz et al., 2017), with qualities of being daring, up to date, and independent (Aaker et al., 2001); transcending own interests for the benefit of others (Schwartz et al., 2012), with qualities of being tough, masculine, and Western (Aaker, 1997); and ready for new challenges (Schwartz et al., 2012), with qualities of reliability, intelligence, and success (Aaker, 1997). These self–brand congruencies fit with the symbolic value of a brand and the self-concept, hence affecting MB purchase intention.

However, the self–brand congruencies Self-enhancement\_MB Competence, Openness to Change\_MB Sophistication, Self-transcendence\_MB Sincerity, Openness-to-change\_MB Excitement, and Conservation\_MB Ruggedness **affect MB purchase intention negatively**. Hence, for instance, the more congruence Openness-to-change\_MB Excitement and congruence Conservation\_MB Ruggedness increase, the more MB purchase intention decreases. However, the following specific congruencies or guiding principles in life with perception of MB brand personality influence MB purchase intention negatively: pursuing own interests (Schwartz et al., 2012), with qualities of reliability, success, and intelligence (Aaker, 1997); ready for new experiences (Schwartz et al., 2012), with qualities of being upper-class, feminine, and smooth (Aaker, 1997); ready for new challenges (Schwartz et al., 2017), with qualities of being daring, up to date, and independent (Aaker et al., 2001); and avoiding change (Schwartz et al., 2012), with qualities of being tough, masculine, and Western (Aaker, 1997) seem to be in conflict with the self-concept.

Moreover, these congruencies influence purchase intention positively and negatively, as assumed by Sirgy et al. (1997).

#### **H7a: The moderating variable “brand conspicuousness” influences self–brand congruence.**

Ha7a can be accepted for Self-enhancement\_BMW Competence, Self-enhancement\_BMW Excitement, Self-enhancement\_BMW Sophistication, Self-enhancement\_BMW Ruggedness, Self-enhancement\_BMW Sincerity, Self-enhancement\_MB Competence, Self-enhancement\_MB Excitement, and Self-enhancement\_MB Ruggedness. The moderating variable “brand conspicuousness” moderates the aforementioned self–brand congruencies as follows (see Section 4.8.4.3):

**For BMW**, the self–brand congruencies Self-enhancement\_BMW Competence, Self-enhancement\_BMW Excitement, Self-enhancement\_BMW Sophistication, Self-enhancement\_BMW Ruggedness, and Self-enhancement\_BMW Sincerity are moderated by brand

conspicuousness. Thus, the fit between pursuing own interests (Schwartz et al., 2012) and the following qualities are moderated positively by brand conspicuousness: reliable, successful, and intelligent (Aaker, 1997); daring, up to date, and independent; upper-class, feminine, and smooth (Aaker et al., 2001); tough and Western; and down to earth, honest, and real.

**For MB**, Self-enhancement\_MB Competence, Self-enhancement\_MB Excitement, and Self-enhancement\_MB Ruggedness are moderated by brand conspicuousness. The fit between pursuing own interests (Schwartz et al., 2012) and the qualities of being reliable, successful, and intelligent; daring, up to date, and independent; and tough and Western are significantly moderated by brand conspicuousness for MB.

As a result, Sirgy and Johar's (1999) suggestion that the predictiveness of self-brand congruence can be increased by considering moderating variables such as brand conspicuousness can be confirmed for BMW and MB. BMW and MB self-brand congruencies are affected by brand conspicuousness and the motivation either to show off one's position in a social context (Wang et al., 2010) or to live up to the expectation of others (Vigneron & Johnson, 1999) and gain social approval (Fishbein & Ajzen, 1975).

#### **H7b: The moderating variable “brand uniqueness” influences self-brand congruence.**

H<sub>a</sub>7b can be accepted for Self-enhancement\_BMW Competence, Self-enhancement\_BMW Sincerity, Self-enhancement\_MB Competence, and Self-enhancement\_MB Sincerity. The moderating variable “brand uniqueness” moderates self-brand congruencies (see Section 4.8.4.3).

**For BMW**, the self-brand congruencies Self-enhancement\_BMW Competence and Self-enhancement\_BMW Sincerity are moderated by BMW brand uniqueness.

**For MB**, the self–brand congruencies Self-enhancement\_MB Competence and Self-enhancement\_MB Sincerity are also moderated positively by brand uniqueness.

The above-mentioned empirical results highlight the identical self–brand congruencies for both brands being moderated. Particularly self-enhancement, in combination with qualities of being reliable, successful, and intelligent as well as down to earth, honest, and real, are moderated by brand uniqueness. The outcome confirms that the rareness of products affects self–brand congruence. This is because luxury consumption is affected by consumers' perceptions of uniqueness for enhancing their self-image and expressing personal taste (Sirgy & Johar, 1999; Vigneron & Johnson, 1999).

As a result, Sirgy and Johar's (1999) and Vigneron and Johnson's (1999) suggestion that the predictiveness of self–brand congruence can be increased by considering moderating variables such as brand uniqueness is confirmed by the empirical result of this study.

#### **H8: Self–brand congruence positively influences functional congruence.**

H<sub>a</sub>8 can be accepted for all BMW and MB self–brand congruencies except MB Convenience. The following self–brand congruencies influence functional congruence (see Table 5.2.2), both positively and negatively (see Section 4.8.5.1):

**Table 5.2.2 Effects of self–brand congruence on functional congruence**

<b>FC BMW Convenience</b>	<b>FC MB Convenience</b>
SBC Con_BMW Sincerity SBC STr_BMW Competence	None
<b>FC BMW Convenience negative impact (neg.)</b>	<b>FC MB Convenience neg.</b>
SBC STr_BMW Sincerity	SBC SE_MB Sincerity
<b>FC BMW Dealer</b>	<b>FC MB Dealer</b>
SBC OC_BMW Ruggedness SBC STr_BMW Sincerity SBC SE_BMW Excitement	SBC STr_MB Sincerity
<b>FC BMW Dealer neg.</b>	<b>FC MB Dealer neg.</b>
SBC SE_BMW Sophistication SBC OC_BMW Competence SBC STr_BMW Excitement SBC STr_BMW Ruggedness SBC OC_BMW Sincerity	SBC SE_MB Competence SBC STr_MB Sophistication
<b>FC BMW Economic</b>	<b>FC MB Economic</b>
SBC OC _BMW Excitement SBC Con_BMW Sophistication SBC SE_BMW Competence	SBC SE_MB Sophistication
<b>FC BMW Economic neg.</b>	<b>FC MB Economic neg.</b>
SBC SE_BMW Excitement SBC STr_BMW Excitement	None
<b>FC BMW Exterior</b>	<b>FC MB Exterior</b>
SBC Con_BMW Ruggedness	SBC STr_MB Ruggedness SBC OC_MB Sincerity
<b>FC BMW Exterior neg.</b>	<b>FC MB Exterior neg.</b>
SBC Con_BMW Competence SBC STr_BMW Ruggedness	SBC SE_MB Ruggedness SBC STr_MB Sincerity SBC OC_MB Sophistication
<b>FC BMW Performance</b>	<b>FC MB Performance</b>

SBC STr_BMW Excitement SBC OC_BMW Ruggedness SBC SE_BMW Sophistication	SBC Con_MB Sophistication
<b>FC BMW Performance neg.</b>	<b>FC MB Performance neg.</b>
SBC SE_BMW Ruggedness SBC SE_BMW Sincerity SBC OC_BMW Excitement SBC STr_BMW Ruggedness	SBC Con_MB Competence SBC STr_MB Sophistication
<b>FC BMW Safety</b>	<b>FC MB Safety</b>
SBC Con_BMW Competence SBC OC_BMW Sincerity SBC SE_BMW Excitement SBC STr_BMW Sophistication	SBC STr_MB Excitement SBC STr_MB Ruggedness SBC SE_MB Competence
<b>FC BMW Safety neg.</b>	<b>FC MB Safety neg.</b>
SBC Con_BMW Excitement SBC OC_BMW Competence	SBC SE_MB Excitement
<b>FC BMW Warranty</b>	<b>FC MB Warranty</b>
SBC STr_BMW Excitement SBC Con_BMW Competence SBC Con_BMW Sophistication	SBC STr_MB Competence
<b>FC BMW Warranty neg.</b>	<b>FC MB Warranty neg.</b>
SBC SE_BMW Sincerity	None

**For BMW**, the functional congruence **BMW Convenience** is influenced by self-brand congruencies Conservation\_BMW Sincerity and Self-transcendence\_BMW Competence. However, BMW Convenience is affected negatively by self-brand congruence Self-transcendence\_BMW Sincerity (see Table 5.2.2).

**BMW Dealership** is affected by self-brand congruencies Openness-to-Change\_BMW Ruggedness, Self-transcendence\_BMW Sincerity, and Self-enhancement\_BMW Excitement. However, BMW Dealership is influenced negatively by self-brand congruencies Self-enhancement\_BMW Sophistication, Openness-to-Change\_BMW Competence, Self-

transcendence\_BMW Excitement, Self-transcendence\_BMW Ruggedness, and Openness-to-Change\_BMW Sincerity.

**BMW Economic Aspect** is influenced by self–brand congruencies Openness-to-Change \_BMW Excitement, Conservation\_BMW Sophistication, and Self-enhancement\_BMW Competence. On the other hand, BMW Economic Aspect is influenced negatively by self–brand congruencies Self-enhancement\_BMW Excitement and Self-transcendence\_BMW Excitement.

**BMW Exterior** is affected by self–brand congruence Conservation\_BMW Ruggedness, but BMW Exterior is influenced negatively by self–brand congruencies Conservation\_BMW Competence and Self-transcendence\_BMW Ruggedness.

**BMW Performance** is influenced by self–brand congruencies Self-transcendence\_BMW Excitement, Openness to Change\_BMW Ruggedness, and Self-enhancement\_BMW Sophistication. In contrast, BMW Performance is affected negatively by self–brand congruencies Self-enhancement\_BMW Ruggedness, Self-enhancement\_BMW Sincerity, Openness-to-Change\_BMW Excitement, and Self-transcendence\_BMW Ruggedness.

**BMW Safety** is affected by self–brand congruencies Conservation\_BMW Competence, Openness-to-Change\_BMW Sincerity, Self-enhancement\_BMW Excitement, and Self-transcendence\_BMW Sophistication. However, BMW Safety is influenced negatively by self–brand congruencies Conservation\_BMW Excitement and Openness-to-change\_BMW Competence.

**BMW Warranty** is influenced by self–brand congruencies Self-transcendence\_BMW Excitement, Conservation\_BMW Competence, and Conservation\_BMW Sophistication. Moreover, BMW Warranty is affected negatively by self–brand congruence Self-enhancement\_BMW Sincerity.

**For MB**, the functional congruence **MB Convenience is affected negatively only** by self–brand congruence Self-enhancement\_MB Sincerity.



**MB Dealership** is influenced by self–brand congruence Self-transcendence\_MB Sincerity. However, MB Dealership is affected negatively by self–brand congruencies Self-enhancement\_MB Competence and Self-transcendence\_MB Sophistication.

**MB Economic Aspect** is affected by self–brand congruence Self-enhancement\_MB Sophistication.

**MB Exterior** is influenced by self–brand congruence Self-transcendence\_MB Ruggedness and congruence Openness-to-Change\_MB Sincerity. MB Exterior is also affected negatively by self–brand congruencies Self-enhancement\_MB Ruggedness, Self-transcendence\_MB Sincerity, and Openness-to-Change\_MB Sophistication.

**MB Performance** is affected by self–brand congruence Conservation\_MB Sophistication. In contrast, MB Performance is influenced negatively by self–brand congruencies Conservation\_MB Competence and Self-transcendence\_MB Sophistication.

**MB Safety** is influenced by self–brand congruence Self-transcendence\_MB Excitement, Self-transcendence\_MB Ruggedness, and Self-enhancement\_MB Competence. Additionally, it is affected negatively by self–brand congruence Self-enhancement MB Excitement.

**MB Warranty** is influenced by self–brand congruence Self-transcendence\_MB Competence

Based on these outcomes, it can be noted that self–brand congruence affects purchase intention through functional congruence, as suggested by Sirgy and Johar (1999). All seven BMW and MB functional congruencies, with the exception of MB Convenience, are positively influenced by self–brand congruence. Furthermore, there are not only positive but also negative impacts.

**H9: Functional congruence positively influences consumers' liking and purchase intention.**

H<sub>a</sub>9 must be rejected based on the results of the PSEM. Nevertheless, based on the results enriched by RSA, H<sub>a</sub>9 can be accepted for all BMW and MB functional congruencies except MB Safety and MB Dealership (see Section 4.8.5.2).

In terms of generational cohort differences, the functional congruence MB Warranty on MB purchase intention differs for the pre-reform generation. The results of the generational cohort effects of MB Warranty showed a negative effect on MB purchase intention. Thus, the more important MB Warranty is, the less the pre-reform generation intends to buy MB cars. The pre-reform generation is conservative, which is in contrast to self-enhancement because self-enhancement correlates with valuing the usability of a product and demonstrating high expectations towards the functioning of products and brands (Stathopoulou & Balabanis, 2019). It may consequently be inferred that the pre-reform generation might value a brand more than the usability of the brand (see Section 4.8.5.3).

Effects of functional congruence on purchase intention without considering generational cohort effects

The following functional congruencies affect BMW and MB liking and purchase intention (see Table 5.2.3):

**Table 5.2.3 Effects of functional congruence on purchase intention**

<b>BMW liking negative (neg.)</b>	<b>MB liking neg.</b>
congruence BMW Warranty congruence BMW Exterior congruence BMW Economic	None
<b>BMW purchase intention neg.</b>	<b>MB purchase intention neg.</b>
congruence BMW Warranty congruence BMW Economic	congruence MB Economic congruence MB Warranty

**For BMW**, BMW Warranty, BMW Exterior, and BMW Economic Aspect influence BMW liking negatively. Furthermore, BMW Warranty and BMW Economic Aspect affect BMW purchase intention negatively (see Table 5.2.3).

**For MB**, MB Economic Aspect and MB Warranty Topics affect MB purchase intention negatively.

Therefore, for both brands, the more important the functional congruities “warranty” and “economic aspect” are, the lower the purchase intention is. For BMW, the exterior, and for both BMW and MB, warranty (with value for the usability of a product) and economic aspect, such as paying premium prices (Berger, 2010), seem less relevant for Chinese luxury consumers.

However, results derived from the RSA revealed that the higher the importance and the higher the possession of the functional congruencies, the higher BMW and MB liking and purchase intention, respectively. Thus, functional congruence affects BMW and MB liking and purchase intention, although the effects are positive and negative. As a result, if consumers’ ideal expectations (referring to importance) and their perception or experience (referring to possession; Sirgy et al., 1997) are observed as two constructs instead of the result between them (based on the one-point analysis through PSEM), the effect on purchase intention is more evident: The higher the expectation and the higher the perception, possession, or experience of the functional characteristic of the brand, the higher BMW and MB liking and purchase intention.

The following functional congruencies demonstrate a positive effect:

**For BMW liking**, the higher the importance and possession of BMW Exterior, BMW Convenience, BMW Performance, BMW Safety, BMW Dealership, and BMW Warranty, the higher the response in terms of BMW liking. Additionally, although possession of BMW Safety has a value of 1, BMW liking has a value of 5 at  $y = 0$ . Moreover, importance and possession

of BMW Warranty (with a value of 1 each) result in a higher BMW liking (with a value of 2). BMW liking is consequently mostly independent of BMW Safety and BMW Warranty.

**For BMW purchase intention**, the higher the importance and possession of BMW Exterior, BMW Convenience, BMW Performance, BMW Safety, BMW Dealership, and BMW Warranty, the higher the response in terms of BMW purchase intention. However, possession and importance of BMW Performance and BMW Warranty result in relatively higher BMW purchase intention. Therefore, BMW purchase intention is mostly independent of BMW Performance and BMW Warranty.

**For MB liking**, the higher the importance and possession of MB Exterior, MB Convenience, MB Performance, and MB Warranty, the higher the response in terms of MB liking.

**For MB purchase intention**, the higher the importance and possession of MB Exterior, MB Convenience, MB Performance, MB Safety, and MB Warranty, the higher the response in terms of MB purchase intention. Moreover, MB purchase intention is mostly independent of possession of MB Safety and importance and possession of MB Warranty.

The following functional congruencies present a negative effect:

**For MB liking**, the higher the importance and possession of MB Safety, the lower the response in terms of MB liking.

**For MB purchase intention**, the higher the importance and possession of MB Dealership, the lower the response in terms of MB purchase intention. Additionally, MB purchase intention is mostly independent of the predictor possession of MB Dealership.

The following functional congruencies demonstrate varying effects:

**For BMW liking**, the effect of importance and possession of BMW Economic Aspect on BMW liking first presents a linear function and thus a positive

effect, but the response “liking” then decreases and therefore has a negative effect.

**For BMW purchase intention**, importance and possession of BMW Economic Aspect on BMW purchase intention starts with a positive effect, but the positive effect turns into a negative one.

**For MB liking**, importance and possession of MB Economic Aspect on MB liking starts with a slightly negative effect first and then turns into a linear function with a positive effect. The same effect is present for MB Dealership. However, MB liking is mostly independent of the predictor possession of MB Dealership.

**For MB purchase intention**, importance and possession of MB Economic Aspect on MB purchase intention starts with a positive effect and then turns into a negative one. Additionally, MB purchase intention is mostly independent of the predictors (importance and possession of MB Economic Aspect).

If the actual brand service does not measure up to consumers’ expectations (Liu et al., 2011), the purchase intention might be negatively affected, which is the case for MB Dealership on MB purchase intention, as seen from the empirical results. Nevertheless, the functional congruities exterior (BMW  $R^2 = 0.38$  and MB  $R^2 = 0.30$ ) and warranty (BMW  $R^2 = 0.35$  and MB  $R^2 = 0.24$ ) affect BMW and MB purchase intention the most.

All seven BMW functional congruities present stronger effects on BMW purchase intention from  $R^2 = 0.38$  to  $R^2 = 0.22$  than MB functional congruities from  $R^2 = 0.30$  to  $R^2 = 0.12$ . The effects range from  $R^2 = 0.41$  to  $R^2 = 0.23$  for BMW liking and from  $R^2 = 0.43$  to  $R^2 = 0.21$  for MB liking. Therefore, BMW functional congruities demonstrate an even stronger effect on BMW purchase intention than MB functional congruencies on MB purchase intention. In contrast, MB functional congruencies present an even stronger effect on MB liking than BMW functional congruencies on BMW liking.

Sirgy et al.’s (1997) assumption can hence be confirmed: Purchase intention is affected by functional characteristics. Chinese luxury passenger car

consumers evaluate their experience or perception with their expectations of a brand, product, or service (Sirgy et al., 1997; Vigneron & Johnson, 1999; Wiedmann et al., 2007; Zhou & Wong, 2008), which in turn influences purchase intention.

**H10a: The moderating variable “brand involvement” influences functional congruence.**

H<sub>a</sub>10a can be accepted for BMW Warranty and BMW Economic Aspect. The hypothesis that the moderating variable “brand involvement” influences functional congruence can be accepted for BMW (see Section 4.8.5.4).

**For BMW**, the functional congruencies BMW Warranty and BMW Economic Aspect are influenced negatively by brand involvement.

In conclusion, Sirgy and Johar’s (1999) suggestions can only be confirmed for BMW Warranty and BMW Economic Aspect, but with a negative impact. For MB, there is no moderating effect of brand involvement on MB functional congruities, as suggested by Zaichkowsky (1985). Thus, Kressman et al.’s (2006) and Kotler et al.’s (2008) assumption that brands with a high emotional involvement are more likely to affect functional congruence positively cannot be confirmed.

**H10b: The moderating variable “brand differentiation” influences functional congruence.**

H<sub>a</sub>10b can be accepted for BMW Warranty and BMW Safety. The hypothesis that the moderating variable “brand differentiation” influences functional congruence can be accepted for BMW (see Section 4.8.5.4).

**For BMW**, the functional congruencies BMW Warranty and BMW Safety are affected negatively by brand differentiation.

Therefore, Sirgy and Johar’s (1999) assumption can only be confirmed for BMW functional congruencies, but with a negative impact.

Thus, the claim that perceivable brand differentiations may benefit brands (Kotler et al., 2019) and influence functional congruence, thereby increasing the purchase intention (Hsieh & Setiono, 2004; Schuette & Ching, 1996; Wiedmann et al., 2007), is not supported by the empirical results. Brand differentiation moderates BMW Warranty and BMW Safety, but with a negative effect. The claim that luxury brands with high brand differentiation are more likely to influence functional congruence positively thus cannot be confirmed.

**Summary: gender- and city-related differences** The following gender-related differences were identified (see Section 4.8.6):

**For male respondents, for BMW**, the influence of higher-order value self-transcendence and brand personality trait BMW Sincerity on BMW liking differ significantly from female respondents. Moreover, **for MB**, the self-brand congruence Self-transcendence\_MB Ruggedness and brand personality trait MB Ruggedness on MB liking differ significantly.

**For female respondents, for BMW**, the self-brand congruence Openness to Change\_BMW Ruggedness and brand personality trait BMW Ruggedness influence BMW liking in a significantly different manner. Additionally, **for MB**, self-brand congruencies Self-enhancement\_MB Ruggedness and Openness to Change\_MB Sophistication as well as the brand personality trait MB Sophistication affect MB liking in a significantly different manner. However, Self-enhancement\_MB Sophistication affects MB liking negatively, and brand personality trait MB Sophistication ( $p = 0.014$ ) influences MB purchase intention negatively, thus differing significantly from male respondents.

To conclude, men's perception of self-transcendence, BMW Sincerity, and MB Ruggedness affects liking only. According to Schwartz (2006), men value achievement and power, and these personal values are the opposite of the higher-order value self-enhancement. Furthermore, males' perception of BMW Sincerity as sincere and honest and MB Ruggedness as Western and tough (Johar et al., 2005) differ from the female respondents. On the other hand, women perceive openness to change, self-enhancement, BMW

Ruggedness, MB Ruggedness, and MB Sophistication differently. This might be related to the fact that women focus on universalism and benevolence, according to Schwartz (2006), which are the opposites of the higher-order values openness to change and self-enhancement. Moreover, BMW and MB Ruggedness and MB Sophistication, involving traits such as tough and Western as well as upper-class and smooth (Johar et al., 2005), are perceived differently.

The following city-related differences were revealed (see Section 4.8.6):

**For respondents from Shanghai**, the influence of the self–brand congruence Conservation\_BMW Ruggedness on **BMW purchase intention** differs significantly but with a negative effect. Consumers from Shanghai are trendsetters and are described as the most innovative and cosmopolitan individuals (Cui & Liu, 2000). However, conservation, including qualities such as avoiding change (Schwartz et al., 2017), are in opposition to innovation, and BMW Ruggedness (Aaker, 1997), with qualities of being tough and Western, was found to be perceived differently in Shanghai, as seen from the results.

**For respondents from Shenzhen**, the influence of the self–brand congruence Openness-to-Change\_MB Sincerity on MB liking differs significantly. This is because consumers from Shenzhen have been in contact with foreign products for a long time and are open to new and luxury goods (Cui & Liu, 2000). Therefore, openness to change might differ. Furthermore, MB Sincerity, with qualities such as sincerity and honesty (Aaker, 1997), might be perceived differently in Shenzhen.

In conclusion, gender-related differences influence BMW and MB liking for male respondents and BMW and MB liking as well as MB purchase intention for female respondents. City-related differences influence BMW purchase intention in Shanghai and MB liking in Shenzhen.



### **5.3 Chapter summary**

Based on the data analysis in Chapter 4, the findings pertaining to the hypotheses were presented in Chapter 5. The findings support or reject the theories present in existing literature regarding luxury passenger car purchase intention in China. However, only a few generational cohort differences were found.

Chapter 6 presents the summary of the findings linked with the research objectives and the contribution to the existing knowledge base. Furthermore, the managerial implications, recommendations for future research, and limitations of this study are described.

## **Chapter 6 Discussion and conclusions**

### **6.0 Introduction**

This chapter summarises the research objectives and links them with the existing literature. The chapter also highlights the contribution study's to the existing body of knowledge. This is followed by managerial impacts and recommendations for future research. Finally, the strengths and limitations of this research are outlined.

### **6.1 Research summary**

This study chose objectivist epistemology with the theoretical perspective of positivism because it is believed that everything can be proven by observation, experiments, or logical proof, and this knowledge is objective without values and beliefs. The basis of this work and the hypotheses is existing literature, and the study focused on verification or falsification of these existing studies. A deductive approach with a quantitative method was employed. Online survey questionnaires were administered to gather a large amount of data in an economical and time-efficient manner. This descriptive research design sought to provide a better understanding of the effects of generational cohort differences on self-brand congruence and functional congruence influencing BMW and MB purchase intention in China.

To gain deep insights, the survey was conducted in Beijing in the North, Shanghai in the East, and Shenzhen in the South of China. Only potential luxury passenger car consumers who intended to buy a luxury passenger car within the next six months, currently own such a vehicle, or had owned one in the past were considered for the survey. Furthermore, non-probability sampling extended by quota sampling was used to cover the cities, genders, and age groups equally distributed for the responses.

In total, 300 responses were collected using the online questionnaire with closed questions. By using a six-point Likert scale throughout the survey, the strength of agreement or disagreement was measured objectively.

Additionally, a back-translation technique verified the accuracy of the Chinese translation. Before the main survey, an informal pre-test was conducted with colleagues from China, followed by another pre-test with 30 potential Chinese luxury passenger car consumers who were randomly chosen out of the panel data to verify the questionnaire.

The collected data was examined, and the respondents' profiles were analysed before testing all key concepts of this study through PSEM. For the personal value assessment, CFA was utilised, and to test the functional congruence and the hypotheses, RSA was carried out.

### **6.1.1 Linking research objectives and hypotheses**

The discussion in this section outlines the suggested relationships among the hypotheses, the research questions, and the research objectives presented in Chapter 1 (see Table 6.1.1.1).

**Table 6.1.1.1 Linking research questions, research objectives, and hypotheses**

Research question	Research objectives	Hypotheses
Are there different personal values observable between Chinese generational cohorts in relation to car liking and purchasing intention?	To identify whether there are differences in importance of personal values between Chinese generational cohorts in relation to car liking and purchase intention.	H1: There are differences in the importance of personal values between the three generational cohorts in China can be accepted for personal value Stimulation and higher-order value Self-enhancement. H2: Specific personal values of each generational cohort influence liking and purchase intention can be accepted for Openness-to-change on BMW liking and Self-enhancement on MB liking.
Are there perceptions of brand-personalities observable between Chinese generational cohorts in relation to car liking and purchasing intention?	To identify whether there are different perceptions of brand-personalities between Chinese generational cohorts in relation to car liking and purchase intention.	H3: Each generational cohort has a different perception of brand personalities has to be rejected. There aren't differences in perception of BMW and MB brand personalities between the three generational cohorts in China H4: There are differences in perception of BMW and MB Brand personality between the three generational cohorts in China influencing BMW and MB liking and purchase intention can be accepted for BMW Competence, MB Excitement, MB Competence and MB Sophistication.

Research question	Research objectives	Hypotheses
What are the most significant congruencies between specific personal values and dimensions of Brand personality between generational cohorts?	To explore the most significant higher-order personal values and perceived Brand personality congruity between generational cohorts.	H5: Each generational cohort has significant differences in the Self-brand congruencies can be accepted for Self-transcendence-MB Competence, Openness-to-change_MB Competence and Conservation_MB Competence.
How do any observed personal values and brand-personality congruencies between generational cohorts influence liking and purchasing intentions?	To identify whether higher-order personal values and perceived brand-personality congruencies between generational cohorts influence liking and purchasing intentions.	H6: The congruence between a generational cohort's higher-order values and Brand personality perceptions will influences their liking and purchase intention can be accepted for c Self-enhancement_BMW Competence and Conservation_BMW Sophistication.  H8: Self-brand congruence positively influences Functional congruence can be accepted for all BMW and MB Functional congruencies but MB Convenience. However Self-brand congruence also affects negatively Functional congruence.
How does any observed difference in generational cohorts' perceptions of	To analyse whether differences in generational cohorts' perceptions of	H9 Functional congruence positively influences liking and purchase intention can be accepted for all BMW and MB Functional

Research question	Research objectives	Hypotheses
Functional congruence of MB and BMW influence liking and purchasing intentions?	Functional congruence of MB and BMW influence positively liking and purchase intentions.	congruencies except MB Safety and MB Dealership based on Response Survey Analysis results.
What other moderating variables influence Self-brand-congruency and Functional congruence, and thus liking and purchase intention?	To examine whether other moderating variables affect self-brand-congruence and Functional congruence, and thus liking and purchase intention in China.	<p>H7a: The moderating variable brand conspicuousness affects self-brand-congruence can be accepted for Self-enhancement_BMW Competence, Self-enhancement_BMW Excitement, Self-enhancement_BMW Sophistication, Self-enhancement_BMW Ruggedness, Self-enhancement_BMW Sincerity, Self-enhancement_MB Competence, Self-enhancement_MB Excitement and Self-enhancement_MB Ruggedness.</p> <p>H7b: The moderating variable brand uniqueness affects self-brand-congruence can be accepted for Self-enhancement_BMW Competence, Self-enhancement_BMW Sincerity, Self-enhancement_MB Competence and Self-enhancement_MB Excitement.</p>

Research question	Research objectives	Hypotheses
		<p>H10a: The moderating variable brand involvement affects Functional congruity can be accepted for BMW Warranty and BMW Economic aspects.</p> <p>H10b: The moderating variable brand differentiation affects Functional congruence can be accepted for BMW Warranty and BMW Safety .</p>

### **6.1.2 Summary of the research objectives**

In this section, the research objectives outlined in Chapter 1 are linked with the findings and the existing literature in the previous chapters.

#### **The first overall research objective of “liking” as an antecedent to purchase intention**

BMW and MB liking have strong impacts on BMW and MB purchase intention, respectively, and therefore might reveal relevant indirect influences of liking on purchase intention. Attitude and motivational needs are the main triggers of luxury consumption (Han & Kim, 2020; Shao et al., 2019a). As a result, a favourable affective feeling implies pleasure and hence increases purchase intention, which in turn might be influenced differently by each generational cohort's experience of historical and social transformation (Li, 2020).

The effect of liking as an antecedent to purchase intention (Rosenbloom et al., 2012) is empirically supported for all constructs of this work and is not solely based on personal values. Impacts on liking consequently provide further important insights into purchase intention.

#### **Research Objective 1: To identify whether there are different personal values observable between Chinese generational cohorts in relation to car purchase intention**

Although countries with a high economic growth rate, such as China, exhibit the most differences among cohorts (Tang, 2019), the empirical results only supported this effect for stimulation and self-enhancement.

Regarding the effects of generational cohort differences on stimulation and self-enhancement, the pre-reform generation displays significant differences in both values. The stickiness and crossvergence theories are supported by the result in terms of value differences due to historical events leading to



distinct social characteristics (Dermody et al., 2020; Li, 2020). Moreover, consumption values change with previous experiences, socioeconomic background, and interpersonal influence, as argued by Stathopoulou and Balabanis (2019, p. 300).

Social and economic advancements were accelerated by the reform and post-reform generations and their higher education level, as posited by the crossvergence theory, whereas the pre-reform generation places importance on self-transcendence and conservation, according to the stickiness theory (Li, 2020). The crossvergence theory (Egri & Ralston, 2004) consequently argues that modernity is valued, while the stickiness theory (Chaisty & Whitefield) states that tradition is valued.

These value differences seem to be the reason for the division between the pre-reform generation on the one hand and the reform and post-reform generations on the other. As a result, historical, socioeconomic, and political events may have led to value differences that correspond to the different life courses (Li, 2020). These social cohorts with similar social characteristics present unique values (Dermody et al., 2020) that affect purchase behaviour and purchase intention.

Previous events (Tang et al., 2017; Thun, 2018) still influence Chinese' consumers' lifestyles (Chevalier & Lu, 2015; Schwartz et al., 2017) and purchase intention. Each generation had been exposed to different possibilities and constraints (Campbell et al., 2015; Han & Kim, 2020). According to Li (2020), Chinese consumers can be divided based on the rigid principles experienced during times of deprivation and the aspirations to enter the unknown Western world. These personal experiences during their most formative years still affect their values and priorities and remain relatively stable throughout their lifetime. Thus, these personal values help to understand attitudes and behaviours and hence purchase intention (Zhang et al., 2019).

Despite the significant effect of generational cohort differences on stimulation and self-enhancement, there are no generational cohort differences affecting other personal values, nor higher-order personal values significantly

influencing BMW or MB purchase intention. Thus, segmenting a group of consumers who were born during the same period and experienced similar economic, political, historical, and social events during their most formative years (Tang et al., 2017) into generational cohorts might not be applicable for analysing luxury consumption. However, by applying filter questions in the survey, only potential luxury passenger car consumers were allowed to respond as part of the study. This value-based segmentation of luxury consumers (Wiedmann et al., 2007) revealed a subset of consumers with common needs and priorities (Kotler & Armstrong, 2017), but none based on age or age groups. In conclusion, lifestyle segmentation might provide better results for luxury passenger cars studies to support a deeper understanding of the consumers and their differences in terms of importance placed on values (Corsi et al., 2020; Stępień, 2021).

#### Effect of personal values on purchase intention without considering generational cohort effects

There are significant effects of personal values and higher-order personal values on purchase intention when generational cohort effects are not considered.

For BMW, the qualities of tolerance, success, materialistic satisfaction, and conspicuous consumption might be expressed through possession of BMW passenger cars.

For MB, the qualities of establishing one's self-identity and social status as well as excitement- and novelty-seeking might be expressed through possession of MB passenger cars.

Overall, according to Vigneron and Johnson (1999), the most significant difference between purchase intentions regarding MB versus BMW pertains to a) the establishment of the aforementioned four qualities, which relate to the personal perception effect of luxury consumption (Vigneron & Johnson, 1999), for MB and b) tolerance, a dominant position, and the demonstration of wealth and status, which relate to the non-personal perception effect of luxury consumption, for BMW.

### Effect of higher-order personal values on purchase intention without considering generational cohort effects

For both brands, self-enhancement in the form of pursuit of one's own interests presents the strongest impact on purchase intention. Objectives of self-enhancement are linked with materialism and narcissism, as well as high expectations of the functioning of a brand or product (Gurel-Atay et al., 2020; Stathopoulou & Balabanis, 2019; Wilson, 2005). In comparison, the motivation for materialism is uniqueness, happiness, and recognition by others (Gurel-Atay et al., 2020). Furthermore, consumers who place importance on self-enhancement are particularly power-driven and status-oriented, with the goal of securing prestige and acknowledgement from others (Cisek et al., 2014). In particular, self-enhancement expresses one's ideal self-identity (Sirgy & Johar, 1999).

The historical and social transformation consequently affects consumer behaviour and consumption values. These social advancements imply that China is no longer merely collectivistic but embraces individualistic behaviour through the pursuit of one's own aspirations and needs (Tang, 2019).

Based on the results self-enhancement presents the most relevant higher-order value for predicting BMW and MB purchase intention.

### **Research Objective 2: To identify whether different perceptions of brand personalities are observable among Chinese generational cohorts in relation to car liking and purchasing intention**

Based on the empirical outcomes, there are no generational cohort differences in terms of perceptions of BMW and MB brand personality. However, this research found a few significant generational cohort differences in terms of the influence of brand personality perception on purchase intention, with the pre-reform generation differing from the reform or post-reform generation. This difference might be related to the historical and social transformation with the reform. The post-reform generation is based on the stickiness theory, valuing tradition and social norms, whereas the post-reform generation is based on the crossvergence approach, valuing

open-mindedness, tolerance, equality, and vertical individualism (Tang, 2019) due to the experience of higher living standards and better material conditions (Li, 2020).

#### Differences in brand personality perception and influence on liking and purchase intention without considering generational cohort effects

The brand personality dimension of sincerity presents the strongest impact for both brands. This implies that Chinese consumers want to be perceived as honest, sincere, and real (Johar et al., 2005). Hence, sincerity is most relevant in relation to purchase intention for both brands, which might be due to the CoO effect and a country's image of high-quality engineering (Phau et al., 2020). Chinese consumers likely associate BMW and MB with a higher quality and a higher social value than national brands (Bartikowski & Cleveland, 2017). These international brands allow them not only to demonstrate their "sincere" prestige, status (Kapferer & Bastien, 2012; Zhang et al., 2019), and adherence to a specific social group (Fastoso & González-Jiménez, 2020) but also to reflect their self-identities through the corresponding symbolic signal (Donvito et al., 2020; Dubois et al., 2020). The symbolic value is related to the signal effect, such as social value and one's moral worthiness emanated through possession (Phau et al., 2020) of BMW and MB luxury passenger cars.

Although the results are similar – because both brands are luxury brands from a foreign country, namely Germany – they still vary slightly in all dimensions and exhibit differences in terms of Chinese consumers' perceptions of the brand personalities. BMW is perceived as sincere, competent, sophisticated, and rugged, whereas MB is perceived as sincere, exciting, rugged, and sophisticated.

**Research Objective 3: To identify the most significant congruencies between specific personal values and dimensions of brand personality between generational cohorts**

For all three studied generational cohort's self-brand congruencies, MB – with the brand personality dimension competence – demonstrates a difference in perception of the signal value (Phau et al., 2020). MB Competence was found to be the most important for the post-reform generation, and least important – but significant – for the pre-reform generation when expressing their self-concept (Donvito et al., 2020).

In conclusion, generational cohort effects are exerted on self-brand congruence. However, these differences are limited for German luxury passenger car purchase intention.

**Research Objective 4: To identify how any observed personal values and brand personality congruencies between generational cohorts influence liking and purchasing intentions**

The claim that self-brand congruencies affect BMW purchase intention differently holds true only in the case of the pre-reform and post-reform generations. Despite the significant differences for BMW purchase intention, there are no significant generational cohort differences for MB purchase intention.

Influence of self-brand congruence on purchase intention without considering generational cohort effects

There are effects of self-brand congruence on purchase intention when generational cohort differences are not considered. The cognitive fit between the brand personality and the consumer's values and thus the fit between the symbolic and social value of a brand and consumer's self-concept (Donvito et al., 2020) affect BMW and MB purchase intention. The greatest fit for BMW and MB purchase intention is represented by the self-brand congruence Conservation\_Sincerity. Conservation has a social focus, and

the interdependent self of consumers usually demonstrates the goals, values, and needs of the group (Sethi, 2019); this guiding principle is expressed in a sincere and honest manner. This is because of consumers' desire to seek self-esteem, self- and social consistency, and social approval (Fastoso & González-Jiménez, 2020). Luxury brands help consumers to establish and express themselves and their social identity as well to enhance their self-esteem and social recognition (Gupta & Lehmann, 2005; Kim, 2015; Stathopoulou & Balabanis, 2019; Vigneron & Johnson, 1999). These social interactions have an impact on purchase intention. They are particularly important for Chinese consumers, as they emphasise the symbolic value associated with a brand within a social context because of the signal value. This is because public meanings are symbolic meanings, which are mostly shared within a social context. These empirical results help to explain the relevant triggers for consuming Western luxury passenger cars.

Although self–brand congruence Conservation\_Sincerity has the strongest positive impact on BMW and MB liking and purchase intention, the impact of the self–brand congruencies on liking and purchase intention are positive and negative.

#### Influence of self–brand congruence on functional congruence without considering generational cohort effects

According to Sirgy and Johar (1999), self–brand congruence affects consumer behaviour due to the mediating impact on functional congruence, and this is supported by the empirical results. The higher-order value of self-transcendence as part of self–brand congruence has the largest impact, which could be due to Chinese social norms of avoiding conflicts, receiving approval from others (Hu, 2020; Sethi, 2019), and thus preferring modest and humble consumption.

In conclusion, an initial positive attitude towards a brand, and hence a high self–brand congruence, influences the processing of utilitarian features (i.e. functional congruence). Thus, self–brand congruencies mediate liking and

purchase intention through functional congruence; however, the effect can be either positive or negative.

**Research Objective 5: To analyse how any observed differences in generational cohorts' perceptions of functional congruence of the German brands MB and BMW influence liking and purchasing intentions**

Only the functional congruence MB Warranty presents generational cohort differences for the pre-reform generation regarding MB purchase intention, with a negative impact. This result might be explained by self-enhancement, which is linked to high expectations of the functioning of the brand. The pre-reform generation is opposed to self-enhancement compared to the reform and post-reform generations. The generational cohort differences are limited in terms of the influence of differences in perceptions of functional congruence on BMW and MB liking and purchase intention.

Influence of functional congruence on purchase intention without considering generational cohort effects

Functional congruence BMW Warranty has the strongest effect on BMW purchase intention, and MB Exterior has the strongest effect on MB purchase intention. Moreover, BMW Exterior and MB Exterior have the highest impact on BMW and MB liking, respectively. Furthermore, Allen (2001) states that functional attributes match one's personal values. Thus, for MB Exterior, consumers' appearance and their perception of aesthetics (Gurel-Atay et al., 2020) might be most important. In contrast, for BMW Warranty, consumers have a high expectation of the functioning of products, brands, and consumers themselves, and they are highly risk-avoidant (Stathopoulou & Balabanis, 2019).

In conclusion, functional congruence – the fit between consumers' expectations of utilitarian brand features and their experience or perception of these features – affects purchase intention. However, if the service does

not measure up to their expectations (Liu et al., 2011), their purchase intention might be negatively influenced, which is the case for functional congruence MB Dealership in relation to MB purchase intention, and MB Safety in relation to MB liking. The discrepancy between perception or experience and expectation is thus important (Wang et al., 2018). However, the perception of value benefit is highly individual and influenced by the environmental context (Dubois et al., 2020).

For BMW, consumer behaviour is triggered by the following values: exterior, convenience, performance, safety, dealership, and warranty. For MB, that behaviour is triggered by exterior, convenience, performance, and warranty. Therefore, these functional congruencies can be applied for forecasting purchase intention.

**Research Objective 6: To examine what other moderating variables influence self–brand congruence and functional congruence and thus purchase intention in China**

Effect of brand conspicuousness on self–brand congruence

It is interesting that for both brands, self–brand congruencies with the higher-order value self-enhancement are significantly influenced by brand conspicuousness. Conspicuous consumption also correlates with brand value expressiveness (Veblen, 2005), which is important for consumers who are affected by social status and reference groups. Symbolic goods serve to display group differentiation and economic status (Mason, 1984; Veblen, 2005; Wong & Ahuvia, 1998) through conspicuous consumption, thus presenting the personal characteristics of their users (Zhou & Wong, 2008). Furthermore, according to Truong et al. (2008), brands high in conspicuousness are chosen for external reasons (Huang & Wang, 2018). Thus, BMW and MB consumers show their achievements through publicly visible possessions for maintaining a socially acceptable appearance.

As a result, conspicuous consumption of BMW and MB among Chinese consumers is particularly relevant for achieving an ideal self-congruity (Fastoso & González-Jiménez, 2020), which is derived from the moderating



effect on self-enhancement. Notably, German luxury passenger car consumption satisfies the ideal self–brand congruence with the corresponding symbolic signal.

#### Effect of brand uniqueness on self–brand congruence

For both brands, brand uniqueness as a consumer's means of differentiation from others during luxury consumption (Stathopoulou & Balabanis, 2019; Wiedmann et al., 2007) is significantly observable. This finding is also consistent with consumers' perceptions of themselves as being different from others and unique. Thus, the effect of uniqueness is to present the consumer's achievements in front of others and to provide social esteem (Stathopoulou & Balabanis, 2019).

However, for both brands, the higher-order value self-enhancement is only moderated by brand uniqueness. Chinese consumers want to differentiate themselves from others through possession, thereby demonstrating that they are part of a specific group (Sethi, 2019). Status, with its psychological impact, is thus a highly important determinant in car purchase decisions, and the uniqueness of BMW and MB consequently serves as a consumer's point of differentiation from others (Stathopoulou & Balabanis, 2019).

A brand's exclusivity, rareness, and limited supply increase a consumer's preference for that brand (Gurel-Atay et al., 2020) and moderate self–brand congruence. Hence, uniqueness – meaning the avoidance of similar consumption – can be confirmed.

Therefore, the predictiveness of self–brand congruence can be increased by brand conspicuousness and brand uniqueness for BMW and MB.

#### Effect of brand involvement on functional congruence

Although luxury passenger cars usually require high involvement from consumers and lead to a higher effort of decision-making and information processing, this does not moderate MB functional congruencies and moderates only BMW functional congruencies negatively. This is interesting

because cars are high in involvement. High involvement increases evaluation prior to brand use (Kotler & Armstrong, 2017), and if BMW's functional congruence is evaluated, these characteristics might not measure up (Liu et al., 2011), which would negatively affect consumers' purchase intention (Zaichkowsky, 2012). Furthermore, Lin and Chen (2006) stated that purchase intention might be even more influenced by high brand involvement through functional congruencies for German luxury passenger cars because the impact of a brand's CoO strengthens with higher involvement. However, the effect of brand involvement moderating functional congruence is confirmed only for BMW, and with a negative impact.

#### Effect of brand differentiation on functional congruence

The moderating effect of brand differentiation on BMW functional congruence is negative; however, there is no moderating effect on MB. The perceived benefit through brand differentiation motivating pleasure and excitement and therefore purchase intention thus does not affect MB's functional congruence, and it affects BMW negatively. For BMW, this might be because Chinese social norms include avoiding conflicts and receiving approval from others, which are in opposition to differentiation.

Moreover, the purchase decision model demonstrates purchases with low involvement and low differentiation as habitual purchases (Kotler & Armstrong, 2017). This might be the case for Chinese consumers purchasing a BMW and an MB.

In conclusion, brand conspicuousness and brand uniqueness moderate certain BMW and MB self-brand congruencies, but brand involvement and brand differentiation only negatively moderate BMW functional congruence. Notably, MB congruencies are not affected by brand involvement and brand differentiation, as per the empirical outcomes.

### **Summary: self–brand congruence and functional congruity on purchase intention.**

Purchase intention regarding luxury brands in China is influenced by functional, emotional, symbolic, and social value, which in turn are affected by the Chinese cultural context. Notably, these values are considered through self–brand congruencies and functional congruencies. After discussing the effects of these concepts on purchase intention, the strength of impact of self–brand congruence and functional congruence on purchase intention is compared:

**For BMW**, on the one hand, purchase intention can be predicted through self–brand congruence ( $R^2 = 0.60$ ) and BMW liking ( $R^2 = 0.56$ ). On the other hand, BMW purchase intention can be predicted through functional congruence ( $R^2 = 0.63$ ) and BMW liking ( $R^2 = 0.62$ ).

**For MB**, purchase intention can be predicted through self–brand congruence ( $R^2 = 0.58$ ) and MB liking ( $R^2 = 0.52$ ). Moreover, MB purchase intention can be predicted through functional congruence ( $R^2 = 0.52$ ) and MB liking ( $R^2 = 0.50$ ).

Therefore, the predictive power of BMW purchase intention and liking is slightly higher when using functional congruence as compared with self–brand congruence. In contrast, the predictive power of MB purchase intention and liking is slightly higher with self–brand congruence. Although the influence of BMW self–brand congruence and BMW functional congruence on BMW purchase intention and liking can be predicted better for BMW than for MB, the strength of impact of both self–brand congruence and functional congruence on purchase intention is similar. Purchase intention is consequently affected by the perceived benefit of a brand and the consumer's aspirations and emotional associations.

In conclusion, functional congruence and self–brand congruence can be applied for forecasting purchase intention. The assumption that functional congruence exerts a stronger influence on liking and purchase intention than self–brand congruence (Sirgy, 1982) can only be confirmed for BMW. For

MB, self–brand congruence presents a stronger impact on purchase intention than functional congruence.

## **6.2 Contribution to knowledge**

This study explored the influence of personal values, brand personality, self–brand congruence, and functional congruence on the luxury car purchase intentions of three different generational cohorts in China. It investigated the effects of generational cohort differences, personal values, and brand personality perception – and consequently self–brand congruence and functional congruence – on liking and purchase intention. This research contributes knowledge that is useful for marketers and researchers alike by presenting theoretical, conceptual, and practical insights into luxury passenger car purchase intention in China. These insights are important for studying the vast Chinese consumer market, particularly in the areas of luxury consumption and passenger cars (McKinsey and Company, 2019a; McKinsey and Company, 2019c; McKinsey and Company, 2019g).

The first insight was derived from the empirical analysis and from existing studies conducted in a Western setting (Grünhagen et al., 2012; Kressman et al., 2006) that were extended to China. Therefore, this research combined the concept of personal values (Schwartz et al., 2017) and brand personality aspects (Aaker et al., 2001) as antecedents to self–brand congruence, functional congruence, and moderating variables (Sirgy & Johar, 1999) to analyse German luxury passenger car purchase intentions among different generational cohorts (Hung et al., 2007) in China. This research extended the existing studies by testing the generational cohort differences and their effects on, as well as the antecedents to, luxury passenger car purchase intention in China, which has not been researched before in this context. This study consequently enriches the existing field of knowledge with information assessing self–brand congruence and functional congruence as the most important determinants of luxury car purchase intention and by providing a Chinese luxury car consumer profile.

### **6.2.1 Contribution to knowledge on generational cohorts**

The second contribution of the empirical analysis is evidence that generational cohort effects are present but less relevant in the case of luxury car purchase intention. Although existing theories have contributed to the knowledge regarding generational cohort effects in China (Dermody et al., 2020; Han & Uncles, 2010; Hung et al., 2007; Li, 2020; Tang, 2019; Tang et al., 2017) and the effects on luxury consumption purchase intention in the Western context (Heine et al., 2019; Wiedmann et al., 2009), this study has confirmed the factors that influence purchase intention regarding German luxury passenger cars in China; however, it suggests few generational cohort effects only.

Despite the ongoing economic and social transformations in mainland China (Hu, 2020), they presented only limited effects on generational cohort differences in terms of German luxury passenger car liking and purchase intentions. These generational cohorts' personal experiences during their most formative years affect their purchase behaviours, values, and priorities (Kotler, et al., 2019; Zhang et al., 2019), but only a few effects were observable in this study. Based on the empirical result, Hung et al.'s (2007) approach with three generational cohorts seems to be less relevant, whereas the crossvergence and stickiness theories (Chaisty & Whitefield, 2015; Dermody et al., 2020; Egri & Ralston, 2004; Li, 2020; Tang, 2019;), which provide generational cohorts in terms of value differences, seem to fit better for analysing generational cohort differences. Similar historical, socioeconomic, and political events such as the Chinese reform have led to social cohorts with similar social characteristics (Li, 2020).

These findings demonstrate that for German luxury passenger car purchase intention and for the antecedents to personal values, brand personalities, self-brand congruence, and functional congruence, there are few generational cohort differences. A generational cohort approach provides only limited insights into luxury car purchase intention. However,

generational cohort segmentation for better understanding the differences in terms of the importance of values, perceptions, and motivations as well as for defining the most efficient marketing measures in a Chinese context is not relevant for purchase intention in the case of German luxury passenger cars.

Nevertheless, it is crucial to target luxury consumers. By using filter questions in this research work, only potential luxury passenger car consumers were allowed to enter the survey. Based on the empirical results, it can be seen that the respondents revealed a subset of consumers with common needs and priorities (Kotler & Armstrong, 2017; Stępień, 2021). Therefore, a psychographic segmentation based on lifestyle seems more relevant for assessing consumers' intentions to purchase German luxury passenger cars in China.

### **6.2.2 Contribution to knowledge on personal values**

This study demonstrates that personal values as an antecedent to self-brand congruence have an important impact on German luxury passenger car purchase intention. Moreover, the higher-order value self-enhancement in the form of pursuing one's own interests with a personal focus (Schwartz et al., 2017) acts as a trigger for the purchase of German luxury passenger cars.

In conclusion, Chinese luxury passenger car consumption is not primarily based on consumers' moral obligation to ensure group consistency, but on their desire to express their wealth and improve their social image (Vigneron & Johnson, 1999).

### **6.2.3 Contribution to knowledge on perception of brand personality**

The next contribution made by this empirical analysis concerns the perception of brand personality as an antecedent to self–brand congruence and its importance in determining its influence on German luxury passenger car purchase intention. Perceptions of brand personality provide insights into consumption symbols and the expression of Chinese consumers sense of self (Johar et al., 2005). This is because consumers prefer to consume brands that fit their self-concept (Donvito et al., 2020).

Based on the outcomes, it can be said that BMW liking and BMW purchase intention are influenced the most by the brand personality aspect BMW Sincerity. On the other hand, MB brand personality traits influence MB liking only, and MB liking is affected the most by MB Sincerity. This highlights that sincerity is the most important brand personality trait for the two German luxury passenger car brands.

### **6.2.4 Contribution to knowledge on self–brand congruence**

This study illustrates that self–brand congruence, with its antecedents (personal values and brand personality perception), is a key determinant of German luxury passenger car purchase intention. Although a few studies cover self–brand congruence in China (Donvito et al., 2020; Fastoso & González-Jiménez, 2020), none is in relation to luxury car purchase intention. Notably, the self–brand congruence factor conservation-sincerity was the most important one for both brands. Thus, it can be said that this study extends and enriches existing research regarding emotional, social, and symbolic value (Thun, 2018) as one of the main triggers for the purchase of luxury goods (Atwal & Bryson, 2017; Bartikowski & Cleveland, 2017), particularly luxury cars in mainland China. Furthermore, regarding MB, the finding that self–brand congruence has the most important impact on MB purchase intention is new. For BMW, self–brand congruence has the second most important impact. Based on the empirical results, it can also be said

that self–brand congruence influences functional congruence, both positively and negatively.

These findings are interesting, since this impact of self–brand congruence on both purchase intention and functional congruence has never been tested on luxury passenger cars in a Chinese context. Therefore, these results are relevant for marketers, considering that the impact of self–brand congruence is one of the key success factors affecting German luxury passenger car purchase intention in China.

Finally, based on the empirical results, brand conspicuousness and brand uniqueness demonstrate a positive moderating effect on self–brand congruence for BMW and MB. The higher-order value self-enhancement in particular is moderated by brand conspicuousness and brand uniqueness. Thus, perceptions of uniqueness and conspicuousness are relevant to Chinese consumers for enhancing not only their social image and their extended self but also their belonging to a social group.

### **6.2.5 Contribution to knowledge on functional congruence**

This study analysed the functional value (Han & Kim, 2020; Wiedmann et al., 2007); that is, it explored consumers' expectations (i.e. importance) and perceptions or experiences (i.e. possession) as the antecedents to functional congruence (Wang et al., 2018) and their influence on liking and purchase intention. The results revealed that BMW Warranty has the strongest effect on BMW purchase intention, and MB Exterior has the strongest effect on MB purchase intention, whereas BMW and MB Exterior display the highest impact on BMW and MB liking, respectively.

Furthermore, functional congruence has the most important impact on BMW purchase intention, whereas it has the second most important impact on MB. Functional congruence is thus another key factor for analysing consumers' purchase intention regarding German luxury passenger cars, especially BMW. These findings are also relevant for marketers, considering that the



impact of functional congruence is one of the key success factors affecting German luxury passenger car purchase intention in China.

Additionally, with the exception of except MB Convenience, all BMW and MB functional congruencies are influenced positively and significantly by self–brand congruencies. However, functional congruencies are also affected negatively by self–brand congruencies. Thus, this research confirms that consumers' expectations and their perceptions or experiences influence purchase intention, and both purchase intention and functional congruence are affected by self–brand congruence.

Finally, the moderating effects of brand involvement and brand differentiation on functional congruence cannot be confirmed for both brands, as they moderate BMW functional congruence only, but with a negative impact. Moreover, no effects were observed on MB functional congruencies.

### **6.2.6 Contribution to knowledge on effects of culture on luxury passenger car consumption in China**

An important contribution of this study is evidence supporting the effect of Chinese culture on emotional, symbolic, social, and functional values and in turn on Chinese luxury car purchasing intention. Chinese consumers might associate cultural meaning, establish their ideal self-identity (Fastoso & González-Jiménez, 2020), and express wealth and status (Bartikowski & Cleveland, 2017) through the possession of German luxury passenger cars.

The Chinese tradition of “face” is particularly important (Au, 2014; Zhuo & Guang, 2007) because it is connected with self-identity and social status. In the Chinese culture, “face” denotes a person's social position or prestige, as recognised by others. This social signal value (Phau et al., 2020), especially because of the CoO effect, is even more relevant for MB purchase intention. Furthermore, the significance of self-enhancement indicates that Chinese consumers tend to strive for their ideal self (Fastoso & González-Jiménez, 2020) through the possession of BMW and MB. Hence, it is important for brands to be aware of the Chinese cultural impact on German luxury

passenger car purchase intentions in the largest passenger car market in the world.

Additionally, although existing theories having contributed knowledge regarding the effects of different genders (Schwartz et al., 2017) and different cities, and thus regions (Cui & Liu, 2000), on purchase intention, this study provides evidence of how gender affects personal values, perception of brand personality, and self–brand congruence differently in relation to BMW and MB liking and MB purchase intention. Furthermore, the effects of different cities provide evidence regarding how Shanghai and Shenzhen affect self–brand congruence differently in relation to BMW purchase intention and MB liking. However, there are few effects of different genders and cities only.

This research considered self–brand congruence, with its antecedents (personal values and brand personality perception); functional congruence; and moderating variables within China and their effects on luxury car purchase intention. The findings can be applied for appropriate luxury passenger car purchase intention assessment in China. However, Chinese generational cohort effects on purchase intention are limited. A better understanding of German luxury passenger car purchase intention in China, with new insights and further contributions to the existing body of knowledge, could be gained through empirical testing.

Although the outcomes are relevant in the case of Tier 1 cities, they can also be applied to Tier 2 and Tier 3 cities because consumption capacity is predicted to grow within the next few years, and purchase behaviour will likely follow accordingly (McKinsey and Company, 2019i). Therefore, this study would aid in understanding the underlying motives for why consumers buy luxury passenger cars and how they perceive Western brands in China.

To conclude, this research revealed significant outcomes and made an important contribution to existing knowledge about the key values that influence luxury passenger car purchase behaviour in China.

### 6.3 Managerial implications of the study

The contribution outlined in the previous section provides substantial insights for managers and academicians dealing with the Chinese luxury passenger car market. The findings highlight that Chinese luxury passenger car purchase intentions are influenced by the following:

- Generational cohort differences are less relevant for Chinese luxury passenger car purchase intentions.
- Liking as an antecedent to purchase intention provides further important insights into purchase intention.
- Universalism-tolerance, achievement, and power-resources influence BMW liking, whereas “face” affects MB liking, thereby indirectly influencing purchase intention. The strongest direct effect is demonstrated by stimulation on MB purchase intention, whereas; security-personal presents a negative effect on BMW purchase intention, and universalism-tolerance and security-societal on MB purchase intention.
- The higher-order personal value self-enhancement is most relevant for BMW and MB liking and purchase intention. However, self-transcendence also affects BMW liking, and openness to change affects BMW purchase intention, whereas the higher-order value conservation presents a negative effect on BMW purchase intention.
- Based on the brand personalities, BMW is perceived as sincere, competent, sophisticated, and rugged, while MB is perceived as sincere, exciting, rugged, and sophisticated.
- The self–brand congruence Conservation\_Sincerity presents the strongest impact on BMW and MB liking and purchase intention. The strongest negative impact on BMW liking is caused by Self-transcendence\_BMW Sincerity and Conservation MB Ruggedness on MB purchase intention, by Self-transcendence\_MB Sincerity on MB liking, and by Openness-to-Change\_BMW Sincerity on BMW purchase intention.

- Self–brand congruencies influence purchase intention directly and indirectly through functional congruence.
- Functional congruence “exterior” has the largest effect on BMW and MB liking as well as on MB purchase intention, and BMW Warranty on BMW purchase intention.
- For MB, self–brand congruence has a stronger impact on purchase intention than functional congruence. For BMW, the opposite is the case.
- Brand conspicuousness and brand uniqueness moderate BMW and MB self–brand congruence.
- Brand involvement and brand differentiation negatively affect functional congruence in the case of BMW only.

These findings help practitioners to better understand Chinese luxury car consumers’ purchase intention and serve as a basis to successfully create, market, and monitor luxury brands in a Chinese context. Furthermore, these outcomes provide additional insights into Chinese consumers’ underlying motivations and aspirations.

The findings suggest that the generational cohort differences according to Hung et al. (2007) are less relevant for German luxury passenger car purchase intentions. A more adequate approach would be to address the target market either with a focus on common needs and priorities – hence, a value or lifestyle segmentation – or in terms of value differences among social cohorts with similar social characteristics, as suggested by Li (2020).

For MB, the establishment of self-identity and social status and the creation of excitement, and for BMW, the demonstration of wealth and a dominant position should be considered in the respective marketing activities to enhance liking and thus purchase intention. Furthermore, for both brands, the importance of self-enhancement relates to the ideal self-identity and the demonstration of a cosmopolitan, urban lifestyle, which should also be integrated into marketing activities. For marketers, this personal value

correlates with a high expectation of the functioning of products, brands, and consumers themselves (Stathopoulou & Balabanis, 2019). Therefore, marketers must ensure the usability and functioning of the products.

Although BMW and MB are similar in terms of consumers' perceptions of their respective brand personality, they still vary slightly. BMW is perceived as sincere, competent, sophisticated, and rugged (ranked according to the strength of impact), while MB is perceived as sincere, exciting, rugged, and sophisticated. Thus, marketing activities should focus on the respective brand personality perceptions and customers' goal of securing prestige, quality, and a global association.

Furthermore, the self-brand congruence Conservation\_Sincerity presents the strongest impact on BMW and MB purchase intention. Moreover, the self-brand congruence is affected by brand conspicuousness and brand uniqueness. It is consequently critically for marketers to consider portraying the values of honesty (Aaker, 1997) social conformity (Schwartz et al., 2017) while also demonstrating uniqueness and conspicuousness. These characteristics of being different from others and unique should be highlighted through marketing communication.

Additionally, MB purchase intention, MB liking and BMW liking is affected the most by the functional congruence Exterior and for BMW purchase intention, it is Warranty. These functional congruencies can be applied for forecasting purchase intention.

Overall, the predictive power of MB liking and purchase intention is slightly higher when using self-brand congruencies as compared with functional congruence. The predictiveness of self-brand congruence can be increased by conspicuousness and uniqueness for both BMW and MB. In contrast, the predictive power of BMW liking and purchase intention is slightly higher with functional congruence. For marketers, it is important to understand that functional congruence and self-brand congruence can be applied to forecast purchase intention and thus also to strengthen liking and purchase intention. The identification of key drivers towards German luxury car purchase

intention can consequently be integrated into marketing activities to strengthen liking and purchase intention regarding those brands.

Furthermore, this multidimensional purchase intention model that considers self–brand congruence and functional congruence provides valuable insights into the potential interactions for marketers and academicians, including the cultural impact of the Chinese culture on German luxury passenger car purchases.

China currently offers the largest market for luxury brands and passenger cars worldwide (McKinsey and Company, 2019i). However, cultural factors in China differ strongly from the West (Bain & Company, 2020), and they affect consumers' motivations, aspirations, perceptions, and thus purchase intention. The results of this research work demonstrate how to influence the strength of purchase intention regarding luxury passenger cars. These findings can help marketers and academicians to reassess luxury products to gain further insights for designing adequate marketing strategies and product positionings. Additionally, the findings provide marketers with a better understanding of Chinese consumers and reveal the key factors in self–brand congruence and functional congruence for luxury passenger car purchase intention.

These insights aid researchers and marketers in better understand the concepts of liking and purchase intention regarding luxury passenger cars, which would help them to apply appropriate marketing strategies in China.

## **6.4 Limitations and recommendations for future study**

The study attempted to gain a better understanding of luxury passenger car purchase intention in China. Nevertheless, there were research limitations, which indicate future research directions.

The first limitation of this research is the relatively short time span of the data collection. Brands and the novel variety of products are still relatively new to Chinese consumers (Grünhagen et al., 2012); hence, brand and product preferences are still evolving, which affects purchase intentions. Long-term data collection could provide more in-depth knowledge. Second, a mixed methods approach instead of the applied quantitative method could yield additional valuable insights.

A third limitation of this study is the relatively small sample size and the sample location of three Chinese Tier 1 cities only. This may affect the generalisability of the outcomes. The purchasing power and consumer behaviour in the Coastal Belt region differs dramatically from other urban and rural areas in the hinterland (McKinsey and Company, 2019c). According to Berger (2012), consumers especially from Tier 2 cities pay more attention to purchasing automobiles, and Tier 4 cities consumers value more brands. Thus, it would be useful to conduct further studies on Chinese Tier 2, Tier 3, and Tier 4 cities for further insights into Chinese luxury passenger car purchase intention.

Fourth, applying single items for measuring liking and purchase intention implies reliability problems. Therefore, it would be helpful to measure liking and purchase intention with several questions and to consider the question flow of both constructs. Fifth, the scale was aligned to the PVQ-RR and thus presented an imbalance towards the positive answering of liking and purchase intention. In this regard, the application of a balanced scale would be useful.

Sixth, based on the empirical results, the use of Hung et al.'s (2007) three generational cohorts approach for measuring generational cohort effects may not have been an adequate approach. It might be helpful to apply the crossvergence and stickiness approaches instead because previous events,

socioeconomic background, and interpersonal influence likely affect consumption values, as suggested by Li (2020).

Seventh, as part of the self-concept, the perception of brand personality, and the influence of Chinese culture, questions regarding the CoO might provide further important insights when considering German luxury car purchase intention.

The final limitation is that this research focuses on the Chinese luxury market only. The outcomes might consequently not be generalisable to other countries. In future research, luxury passenger car purchase intentions in other Asian countries could be explored. This would be helpful because China and other Asian countries have unique social characteristics, and the purchase behaviour regarding luxury passenger car consumption might thus be similar. That is, other Asian cultures may demonstrate similar attitudes, values, and beliefs towards luxury passenger car brands. Insights into these consumers might be useful considering that Asia hosts the largest luxury brand market in the world (McKinsey and Company, 2019h).

## **6.5 Chapter summary**

This chapter discussed the research objectives and linked the results of the data analysis and corresponding findings with existing literature. Based on these discussions, the research work's contribution was outlined. New insights were gleaned, and the study added to existing knowledge by identifying the influence of self–brand congruence and functional congruence on German luxury passenger car purchase intention and generational cohort differences within the Chinese setting. Furthermore, managerial implications, limitations, and recommendations for further research were suggested based on these results.

In conclusion, the study has achieved its aim and objectives by identifying generational cohort differences in terms of BMW and MB purchase intentions in China. Moreover, the key factors affecting BMW and MB purchase intentions in China have been identified and explained.



## Appendices

### Appendix A1 English questionnaire (for internal use)

#### Filter questions

Q1 Luxury passenger car

	yes (1)	no (2)
Do you own a luxury passenger car ( $\geq$ RMB 400,000) (Q1_1)	<input type="radio"/>	<input type="radio"/>
Did you own a luxury passenger car ( $\geq$ RMB 400,000) (Q1_2)	<input type="radio"/>	<input type="radio"/>
Will you buy a luxury passenger car ( $\geq$ RMB 400,000) within the next 6 months (Q1_3)	<input type="radio"/>	<input type="radio"/>

#### Gender

Q2 What gender are you (please choose)

- ☐ Male (1)
- ☐ Female (2)

#### Age group

Q3 Which age group are you

- ☐ born 1979 and before (1)
- ☐ born 1980 - 1991 (2)
- ☐ born 1992 and after (3)

#### City

Q42 Where do you live

- ☐ Beijing (1)
- ☐ Shanghai (2)
- ☐ Shenzhen (3)

#### PVQ-RR Male

Q4 Please read each description and think about how much that person is or is not like you. Put an X in the box to the right that shows how much the person described is like you. **HOW MUCH LIKE YOU IS THIS PERSON?**

	Not like me at all (1)	Not like me (2)	A little like me (3)	Moder ately like me (4)	Like me (5)	Very much like me (6)
1. It is important to him to form his views independently. (Q4_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. It is important to him that his country is secure and stable (Q4_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. It is important to him to have a good time. (Q4_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. It is important to him to avoid upsetting other people. (Q4_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. It is important to him that the weak and vulnerable in society be protected. (Q4_5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. It is important to him that people do what he says they should. (Q4_6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. It is important to him never to think he deserves more than other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.It is important to him to care for nature.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. It is important to him that no one should ever shame him.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. It is important to him always to look for different things to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11.It is important to him to take care of people he is close to. (Q4_11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12.It is important to him to have the power that money can bring. (Q4_12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13.It is very important to him to avoid disease and protect his health. (Q4_13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not like me at all (1)	Not like me (2)	A little like me (3)	Moder ately like me (4)	Like me (5)	Very much like me (6)
14.It is important to him to be tolerant toward all kinds of people and groups. (Q4_14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15.It is important to him never to violate rules or regulations. (Q4_15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16.It is important to him to make his own decisions about his life. (Q4_16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.It is important to him to have ambitions in life. (Q4_17)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18.It is important to him to maintain traditional values and ways of thinking. (Q4_18)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19.It is important to him that people he knows have full confidence in him. (Q4_19)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20.It is important to him to be wealthy. (Q4_20)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21.It is important to him to take part in activities to defend nature. (Q4_21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22.It is important to him never to annoy anyone. (Q4_22)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23.It is important to him to develop his own opinions. (Q4_23)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24.It is important to him to protect his public image. (Q4_24)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25.It is very important to him to help the	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not like me at all (1)	Not like me (2)	A little like me (3)	Moder ately like me (4)	Like me (5)	Very much like me (6)
people dear to him. (Q4_25)						
26.It is important to him to be personally safe and secure. (Q4_26)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. It is important to him to be a dependable and trustworthy friend. (Q4_27)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. It is important to him to take risks that make life exciting. (Q4_28)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. It is important to him to have the power to make people do what he wants. (Q4_29)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. It is important to him to plan his activities independently. (Q4_30)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. It is important to him to follow rules even when no-one is watching. (Q4_31)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. It is important to him to be very successful. (Q4_32)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. It is important to him to follow his family's customs or the customs of a religion. (Q4_33)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. It is important to him to listen to and understand people who are different from him. (Q4_34)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. It is important to him to have a strong state that can defend its citizens. (Q4_35)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not like me at all (1)	Not like me (2)	A little like me (3)	Moder ately like me (4)	Like me (5)	Very much like me (6)
36. It is important to him to enjoy life's pleasures. (Q4_36)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. It is important to him that every person in the world have equal opportunities in life. (Q4_37)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. It is important to him to be humble. (Q4_38)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. It is important to him to figure things out himself. (Q4_39)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. It is important to him to honour the traditional practices of his culture. (Q4_40)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41. It is important to him to be the one who tells others what to do. (Q4_41)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42. It is important to him to obey all the laws. (Q4_42)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. It is important to him to have all sorts of new experiences. (Q4_43)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. It is important to him to own expensive things that show his wealth (Q4_44)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. It is important to him to protect the natural environment from destruction or pollution. (Q4_45)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46. It is important to him to take advantage of every opportunity to have fun. (Q4_46)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47. It is important to him to concern himself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not like me at all (1)	Not like me (2)	A little like me (3)	Moder ately like me (4)	Like me (5)	Very much like me (6)
with every need of his dear ones. (Q4_47)						
48. It is important to him that people recognize what he achieves. (Q4_48)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49. It is important to him never to be humiliated. (Q4_49)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50. It is important to him that his country protect itself against all threats. (Q4_50)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
51. It is important to him never to make other people angry. (Q4_51)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
52. It is important to him that everyone be treated justly, even people he doesn't know. (Q4_52)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
53. It is important to him to avoid anything dangerous. (Q4_53)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
54. It is important to him to be satisfied with what he has and not ask for more. (Q4_54)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55. It is important to him that all his friends and family can rely on him completely. (Q4_55)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
56. It is important to him to be free to choose what he does by himself. (Q4_56)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
57. It is important to him to accept people even when he disagrees with them. (Q4_57)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### PVQ-RR Female

Q36 Please read each description and think about how much that person is or is not like you. Put an X in the box to the right that shows how much the person described is like you. **HOW MUCH LIKE YOU IS THIS PERSON?**

	Not like me at all (1)	Not like me (2)	A little like me (3)	Moder- ately like me (4)	Like me (5)	Very much like me (6)
1. It is important to her to form her views independently. (Q36_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. It is important to her that her country is secure and stable. (Q36_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. It is important to her to have a good time. (Q36_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. It is important to her to avoid upsetting other people. (Q36_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. It is important to her that the weak and vulnerable in society be protected. (Q36_5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. It is important to her that people do what she says they should. (Q36_6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. It is important to her never to think she deserves more than other people. (Q36_7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. It is important to her to care for nature. (Q36_8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. It is important to her that no one should ever shame her. (Q36_9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. It is important to her always to look for different things to do. (Q36_10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. It is important to her to take care of people she is close to. (Q36_11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not like me at all (1)	Not like me (2)	A little like me (3)	Moder ately like me (4)	Like me (5)	Very much like me (6)
12. It is important to her to have the power that money can bring. (Q36_12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. It is very important to her to avoid disease and protect her health. (Q36_13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. It is important to her to be tolerant toward all kinds of people and groups. (Q36_14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. It is important to her never to violate rules or regulations. (Q36_15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. It is important to her to make her own decisions about her life. (Q36_16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. It is important to her to have ambitions in life. (Q36_17)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. It is important to her to maintain traditional values and ways of thinking. (Q36_18)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. It is important to her that people she knows have full confidence in her. (Q36_19)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. It is important to her to be wealthy. (Q36_20)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. It is important to her to take part in activities to defend nature. (Q36_21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. It is important to her never to annoy anyone. (Q36_22)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



	Not like me at all (1)	Not like me (2)	A little like me (3)	Moder ately like me (4)	Like me (5)	Very much like me (6)
23. It is important to her to develop her own opinions. (Q36_23)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. It is important to her to protect her public image. (Q36_24)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. It is very important to her to help the people dear to her. (Q36_25)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. It is important to her to be personally safe and secure. (Q36_26)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. It is important to her to be a dependable and trustworthy friend. (Q36_27)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. It is important to her to take risks that make life exciting. (Q36_28)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. It is important to her to have the power to make people do what she wants. (Q36_29)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. It is important to him to plan her activities independently. (Q36_30)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. It is important to her to follow rules even when no-one is watching. (Q36_31)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. It is important to her to be very successful. (Q36_32)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. It is important to her to follow her family's customs or the customs of a religion. (Q36_33)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not like me at all (1)	Not like me (2)	A little like me (3)	Moder ately like me (4)	Like me (5)	Very much like me (6)
34. It is important to her to listen to and understand people who are different from her. (Q36_34)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. It is important to her to have a strong state that can defend its citizens. (Q36_35)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. It is important to her to enjoy life's pleasures. (Q36_36)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. It is important to her that every person in the world have equal opportunities in life. (Q36_37)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. It is important to her to be humble. (Q36_38)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. It is important to her to figure things out herself. (Q36_39)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. It is important to her to honour the traditional practices of her culture. (Q36_40)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41. It is important to her to be the one who tells others what to do. (Q36_41)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42. It is important to her to obey all the laws. (Q36_42)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. It is important to her to have all sorts of new experiences. (Q36_43)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. It is important to her to own expensive things that show her wealth (Q36_44)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. It is important to her to protect the natural environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not like me at all (1)	Not like me (2)	A little like me (3)	Moder ately like me (4)	Like me (5)	Very much like me (6)
from destruction or pollution. (Q36_45)						
46. It is important to her to take advantage of every opportunity to have fun. (Q36_46)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47. It is important to her to concern herself with every need of her dear ones. (Q36_47)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
48. It is important to her that people recognize what she achieves. (Q36_48)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49. It is important to her never to be humiliated. (Q36_49)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50. It is important to her that her country protect itself against all threats. (Q36_50)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
51. It is important to her never to make other people angry. (Q36_51)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
52. It is important to her that everyone be treated justly, even people she doesn't know. (Q36_52)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
53. It is important to her to avoid anything dangerous. (Q36_53)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
54. It is important to her to be satisfied with what she has and not ask for more. (Q36_54)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55. It is important to her that all her friends and family can rely on her completely. (Q36_55)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
56. It is important to her to be free to	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not like me at all (1)	Not like me (2)	A little like me (3)	Moderately like me (4)	Like me (5)	Very much like me (6)
choose what she does by herself. (Q36_56)						
57. It is important to her to accept people even when she disagrees with them. (Q36_57)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### BMW Brand

Q5 In this part of the questionnaire you are to ask yourself: "What is characteristic/typical/most significant for the brand, and what is less characteristic/less typical/less significant for the brand? For instance, Apple brand is imaginative, exciting. There are two different passenger car brands on the following pages: THE BMW BRAND *In the space before each value, write the number (1,2,3,4,5,6) that indicates the importance of that value for you, personally. Try to distinguish as much as possible between the values by using most numbers. Before you begin, read the characteristics for each brand, choose the characteristic that is most important to you and rate it 6. Next, choose the characteristic that is most opposed and rate it 1. Then rate the rest of the characteristics for BMW, for example Apple is very exciting, hence the rating would be: 6 Excitement.*

	Not characteristic at all (1)	Not characteristic (2)	A little characteristic (3)	Moderately Characteristic (4)	Characteristic (5)	Very characteristic (6)
Sincerity (down-to-earth, honest, wholesome, cheerful) (Q5_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Excitement (Daring, spirited, Imaginative, up to date) (Q5_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Competence (reliable, intelligent)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

t, successf ul) (Q5_3)						
— Sophistic ation (upper class, charming ) (Q5_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ruggedn ess (outdoor sy, tough) (Q5_5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q6 Do you like BMW

	Strongly dislike (1)	Dislike (2)	Like a little (3)	Moderately like (4)	Like (5)	Like very much (6)
Do you like BMW (liking not buying), does BMW appeal to you? Please mark accordingly. (Q6_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q7 I intend to buy a BMW

	Not intend to buy at all (1)	Not intend to buy (2)	Intend to buy a little (3)	Moderately intend to buy (4)	Intend to buy (5)	Strongly intend to buy (6)
I intend to buy a BMW passenger car. (Q7_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q8 Listed below are some characteristics of passenger cars. For each of these characteristics, please indicate by circling the appropriate number **how likely or unlikely it is that BMW would possess each of these characteristics**, for instance BMW possesses very likely a good/nice exterior.

	Not likely at all (1)	Not likely (2)	A little likely (3)	Moder ately likely (4)	Likely (5)	Very likely (6)
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Exterior (style and design, etc.) (Q8_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Convenience (fittings, space, etc.) (Q8_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Performance (torque, speed, etc.) (Q8_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safety (Airbags, ABS, etc.) (Q8_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Economic aspect (price, fuel, etc.) (Q8_5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dealer (expertise, attitude, etc.) (Q8_6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Warranty (repair time, spare parts, etc.) (Q8_7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q9 If you were considering BMW, in general, how important, or unimportant are the following characteristics to you. For most people, some things are more important than others. Please circle the number, which is closest to the degree of importance you would attach to that characteristic when purchasing BMW.

	Not important at all (1)	Not important (2)	A little important (3)	Moderately important (4)	Important (5)	Very important (6)
Exterior (style and design, etc.) (Q9_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Convenience (fittings, space, etc.) (Q9_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Performance (torque, speed, etc.) (Q9_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safety (Airbags, ABS, etc.) (Q9_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Economic aspect (price, fuel, etc.) (Q9_5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dealer (expertise, attitude, etc.) (Q9_6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Warranty (repair time, spare parts, etc.) (Q9_7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q10 How much are you involved in passenger cars? What are your feelings towards BMW, for example "is ...important/interested/appealing" (please mark accordingly)?

	Not at all... (1)	Not... (2)	A little... (3)	Moderately... (4)	Is... (5)	Very much... (6)
Important (Q10_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interested (Q10_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appealing (Q10_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q11 How much differentiation is there concerning exterior, convenience, performance, safety, economic aspect, dealers, and warranty (please mark accordingly)?

	Yes (1)	No (2)
I can hardly notice the difference between BMW and Mercedes-Benz (Q11_1)	<input type="radio"/>	<input type="radio"/>
BMW differs a lot from Mercedes (Q11_2)	<input type="radio"/>	<input type="radio"/>
It is harder to distinguish BMW from its competition Yes No (Q11_3)	<input type="radio"/>	<input type="radio"/>

Q12 How conspicuous is it to drive a BMW (please mark accordingly)?

	Yes (1)	No (2)
The user of BMW is more of an attention-seeker (Q12_1)	<input type="radio"/>	<input type="radio"/>
The user of BMW is more noticeable when using it (Q12_2)	<input type="radio"/>	<input type="radio"/>
People who use BMW show off (Q12_3)	<input type="radio"/>	<input type="radio"/>

Q13 How unique is a BMW (please mark accordingly)

	Yes (1)	No (2)
BMW is directed to a highly selected market (Q13_1)	<input type="radio"/>	<input type="radio"/>
The majority of consumers buy BMW (Q13_2)	<input type="radio"/>	<input type="radio"/>
Only a very few use BMW (Q13_3)	<input type="radio"/>	<input type="radio"/>

### Mercedes-Benz Brand

Q14 The Mercedes-Benz Brand *In the space before each value, write the number (1,2,3,4,5,6) that indicates the importance of that value for you, personally. Try to distinguish as much as possible between the values by using most numbers. Before you begin, read the characteristics for each brand, choose the characteristic that is most important to you and rate it 6. Next, choose the characteristic that is most opposed and rate it 1. Then rate the rest of the characteristics for Mercedes, for example Apple is very exciting, hence the rating would be: 6 Excitement.*

	Not characte ristic at all (1)	Not characte ristic (2)	A little characte ristic (3)	Moderat ely Charact eristic (4)	Charact eristic (5)	Very characte ristic (6)
Sincerity (down- to-earth, honest, wholeso me, cheerful) (Q14_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exciteme nt (Daring, spirited, Imaginati ve, up to date) (Q14_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compete nce (reliable, intelligen t, successf ul) (Q14_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sophistic ation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



(upper class, charming) (Q14_4)						
Ruggedness (outdoorsy, tough) (Q14_5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q15 Do you like Mercedes-Benz

	Strongly dislike (1)	Dislike (2)	Like a little (3)	Moderately like (4)	Like (5)	Like very much (6)
Do you like Mercedes (liking not buying), does Mercedes appeal to you? Please mark accordingly. (Q15_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q16 I intend to buy a Mercedes-Benz

	Not intend to buy at all (1)	Not intend to buy (2)	Intend to buy a little (3)	Moderately intend to buy (4)	Intend to buy (5)	Strongly intend to buy (6)
I intend to buy a Mercedes passenger car. (Q16_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q17 Listed below are some characteristics of passenger cars. For each of these characteristics, please indicate by circling the appropriate number how likely or unlikely it is that Mercedes-Benz would possess each of these characteristics, for instance Mercedes possesses very likely a good/nice exterior.

	Not likely at all (1)	Not likely (2)	A little likely (3)	Moderately likely (4)	Likely (5)	Very likely (6)
Exterior (style and design, etc.) (Q17_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Convenience (fittings, space, etc.) (Q17_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Performance (torque, speed, etc.) (Q17_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safety (Airbags, ABS, etc.) (Q17_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Economic aspect (price, fuel, etc.) (Q17_5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dealer (expertise, attitude, etc.) (Q17_6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Warranty (repair time, spare parts, etc.) (Q17_7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q18 If you were considering Mercedes-Benz, in general, how important, or unimportant are the following characteristics to you. For most people, some things are more important than others. Please circle the number, which is closest to the degree of importance you would attach to that characteristic when purchasing Mercedes.

	Not importa nt at all (1)	Not importa nt (2)	A little importa nt (3)	Moderate ly important (4)	Importa nt (5)	Very importa nt (6)
Exterior (style and design, etc.) (Q18_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Convenience (fittings, space, etc.) (Q18_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Performance (torque, speed, etc.) (Q18_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safety (Airbags, ABS, etc.) (Q18_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Economic aspect	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(price, fuel, etc.) (Q18_5)						
Dealer (expertise, attitude, etc.) (Q18_6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Warranty (repair time, spare parts, etc.) (Q18_7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q19 How much are you involved in passenger cars? What are your feelings towards Mercedes-Benz, for example "is ...important/interested/appealing" (please mark accordingly)?

	Not at all... (1)	Not... (2)	A little... (3)	Moderately... (4)	Is... (5)	Very much... (6)
Important (Q19_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interested (Q19_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appealing (Q19_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q20 How much differentiation is there concerning exterior, convenience, performance, safety, economic aspect, dealers, and warranty (please mark accordingly)?

	Yes (1)	No (2)
I can hardly notice the difference between Mercedes-Benz and BMW(Q20_1)	<input type="radio"/>	<input type="radio"/>
Mercedes-Benz differs a lot from BMW (Q20_2)	<input type="radio"/>	<input type="radio"/>
It is harder to distinguish Mercedes-Benz from its competition (Q20_3)	<input type="radio"/>	<input type="radio"/>

Q21 How conspicuous is it to drive a Mercedes-Benz (please mark accordingly)?

	Yes (1)	No (2)
The user of Mercedes-Benz is more of an attention-seeker (Q21_1)	<input type="radio"/>	<input type="radio"/>
The user of Mercedes-Benz is more noticeable when using it (Q21_2)	<input type="radio"/>	<input type="radio"/>
People who use Mercedes-Benz show off (Q21_3)	<input type="radio"/>	<input type="radio"/>

Q22 How unique is a Mercedes-Benz (please mark accordingly)

	Yes (1)	No (2)
Mercedes-Benz is directed to a highly selected market (Q22_1)	<input type="radio"/>	<input type="radio"/>
The majority of consumers buy Mercedes-Benz (Q22_2)	<input type="radio"/>	<input type="radio"/>
Only a very few use Mercedes-Benz (Q22_3)	<input type="radio"/>	<input type="radio"/>

### Background Item

Q23 Your age

\_\_\_\_\_

Q25 How many years of education has each person completed (since 1st grade)? (estimate if not certain)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Yours elf (Q25_1)																				
Your Fathe r (Q25_2)																				
Your Moth er (Q25_3)																				

Q26 What is your highest educational level currently (circle)?

- ☐ 1. Junior high school (1)
- ☐ 2. Senior high/technical/professional school (2)
- ☐ 3. College/university (3)
- ☐ 4. Postgraduate and above (4)

Q27 Your Marital status (circle):

- ☐ 1. Single (1)
- ☐ 2. Married or cohabiting (2)
- ☐ 3. Widowed (3)
- ☐ 4. Divorced (4)

Q28 What is your current occupation or your occupation when last employed?

- ☐ 1. Teacher grades k-2 (1)
- ☐ 2. Teacher grades 3-8 (2)
- ☐ 3. Teacher grades 9-12 (3)
- ☐ 4. School principal (4)
- ☐ 5. Other professional (5)
- ☐ 6. Manager or business owner (6)
- ☐ 7. Clerical or sales worker (7)
- ☐ 8. Skilled worker (8)
- ☐ 9. Other blue collar (9)
- ☐ 10. Farm owner or farm worker (10)
- ☐ 11. Secondary school student (11)
- ☐ 12. University student: social sciences & education (12)
- ☐ 13. University student: humanities, arts, & law (13)
- ☐ 14. University student: natural sciences & medicine (14)
- ☐ 15. Homemaker (15)
- ☐ 16. Other (16)

Q29 How much is your monthly household income (all persons living in your household, excluding tax)

- ☐ 1. Below 20,000 RMB (1)
- ☐ 2. 20,000 – 39,999 RMB (2)
- ☐ 3. 40,000 – 59,999 RMB (3)
- ☐ 4. 60,000 – 79,999 RMB (4)
- ☐ 5. 80,000 – 99,999 RMB (5)
- ☐ 6. 100,000 RMB and above (6)

Q30 How much is your general budget for a new car (net price of the car, excluding any other fees, such as tax, insurance, plate fee, etc.)

- ☐ 1. Below 200,000 RMB (1)

- ☐ 2. 200,000 – 399,999 RMB (2)
- ☐ 3. 400,000 – 599,999 RMB (3)
- ☐ 4. 600,000 – 799,999 RMB (4)
- ☐ 5. 800,000 – 999,999 RMB (5)
- ☐ 6. 1,000,000 RMB and above (6)

Q35 In what kind of a place did you grow up? (circle):

- ☐ 1. large city (500,000+) (1)
- ☐ 2. small city (2)
- ☐ 3. rural area (3)
- ☐ 4. farm (4)

## Appendix A2 Chinese questionnaire

### Filter questions

Q1 豪华轿车

	是 (1)	不是 (2)
您拥有一辆豪华轿车吗 ( $\geq$ RMB 400,000) (Q1_1)	<input type="radio"/>	<input type="radio"/>
您曾拥有一辆豪华轿车吗 ( $\geq$ RMB 400,000) (Q1_2)	<input type="radio"/>	<input type="radio"/>
在未来的 6 个月内您会购买一辆豪华轿车吗 ( $\geq$ RMB 400,000) (Q1_3)	<input type="radio"/>	<input type="radio"/>

### Gender

Q2 您的性别是什么 (请选择)

- ☐ 男性 (1)
- ☐ 女性 (2)

### Age group

Q3 您在以下哪个年龄段?

- ☐ 出生於 1979 年以前 (1)
- ☐ 出生於 1980-1991 (2)
- ☐ 出生於 1992 及之后 (3)

### City

Q42 你住在哪里

- ☐ 北京 (1)
- ☐ 上海 (2)
- ☐ 深圳 (3)

### PVQ-RR Male

Q4 下面是我们对右边的一些不同的人的简要描述。请阅读每一个描述，并想想这个人在多大程度上像、或者不像您。在格子裡打 X，来表示所描述的人在多大程度上像您。 这个人有多像您?

	完全 不像 我 (1)	不像 我 (2)	仅有一 点点像 我 (3)	有点 像我 (4)	像我 (5)	非常 像我 (6)
他重视可独立地建立自己的看法。 (Q4_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视国家的安全稳定。 (Q4_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
有一段愉悦的时光对他来说是重要的。 (Q4_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视不使别人不悦。 (Q4_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
社会中的弱势群体得到保护，对他来说是重要的。 (Q4_5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视别人按他说的去做。 (Q4_6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他绝不认为他该比别人得到更多。 (Q4_7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视关怀爱护大自然。 (Q4_8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视不被任何人羞辱。 (Q4_9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
常常找些不同的事情来做，对他来说是重要的。 (Q4_10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视可照顾身边的人。 (Q4_11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视可拥有金钱所能带来的权力。 (Q4_12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
避免生病、保持健康，对他来说是非常重要的。 (Q4_13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视包容所有不同类的人和群体。 (Q4_14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
从不违反规章制度，对他来说是重要的。 (Q4_15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



	完全 不像 我 (1)	不像 我 (2)	仅有一 点点像 我 (3)	有点 像我 (4)	像我 (5)	非常 像我 (6)
独立做出 <b>有关</b> 自己人生的决定，对他来说是重要的。 (Q4_16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
在生活中拥有雄心壮志，对他来说是重要的。 (Q4_17)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视保持传统价值观和思维方式。 (Q4_18)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视得到认识的人之完全信任。 (Q4_19)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
财富对他来说是重要的。 (Q4_20)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视参与保护自然的活 动。 (Q4_21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视从不去惹恼任何人。 (Q4_22)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
自己的观点自己来建立，对他来说是重要的。 (Q4_23)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
保护自身的公众形象，对他来说是重要的。 (Q4_24)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
帮助亲爱的人对他来说是很 重要的。 (Q4_25)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视个人的安全和保障。 (Q4_26)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
成为一个别人可依靠、可信 任的朋友，对他来说是重要 的。 (Q4_27)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
为使生活精彩而冒险，对他来说是重要的。 (Q4_28)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视拥有可使别人按自己 的意愿做事的权力。 (Q4_29)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	完全 不像 我 (1)	不像 我 (2)	仅有一 点点像 我 (3)	有点 像我 (4)	像我 (5)	非常 像我 (6)
可独立地计划自己的活动， 对他来说是重要的。 (Q4_30)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
即使没人监管仍遵守规则， 对他来说是重要的。 (Q4_31)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
人生非常成功，对他来说是 重要的。 (Q4_32)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视遵从家庭的习俗或宗 教的传统。 (Q4_33)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视聆听和理解那些和他 不同的人。 (Q4_34)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
有一个强有力的并能保护它 的公民的政府，对他来说是 重要的。 (Q4_35)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视享受生活的乐事。 (Q4_36)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
世界上每一个人在生活中拥 有同等的机会，对他来说是 重要的。 (Q4_37)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视谦卑。 (Q4_38)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视靠自己去理解问题。 (Q4_39)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
尊崇文化中的传统做法，对 他来说是重要的。 (Q4_40)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
担当别人的领导或指挥，对 他来说是重要的。 (Q4_41)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视遵守所有法律。 (Q4_42)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
有各种不同的新鲜经历，对 他来说是重要的。 (Q4_43)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	完全 不像 我 (1)	不像 我 (2)	仅有一 点点像 我 (3)	有点 像我 (4)	像我 (5)	非常 像我 (6)
拥有能显示财富的昂贵物品，对他来说很重要。 (Q4_44)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
保护大自然免遭破坏或污染，对他来说是重要的。 (Q4_45)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视每一个开心的机会。 (Q4_46)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视用心关怀亲朋好友的每一个需要。 (Q4_47)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视别人对他的成就之赏识。 (Q4_48)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
永不被别人侮辱，对他来说是重要的。 (Q4_49)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他的祖国能够抵御外面一切威胁，对他来说是重要的。 (Q4_50)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视从不使其他人生气。 (Q4_51)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
所有的甚至包括他不认识的人都能受到公正地对待，对他来说是重要的。 (Q4_52)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
避开一切危险的事，对他来说是重要的。 (Q4_53)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
满足於已经得到的而不要求更多，对他来说是重要的。 (Q4_54)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
能获所有的朋友和家人完全依靠，对他来说是重要的。 (Q4_55)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他重视选择他自己做事的自由。 (Q4_56)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	完全 不像 我 (1)	不像 我 (2)	仅有一 点点像 我 (3)	有点 像我 (4)	像我 (5)	非常 像我 (6)
他重视接纳别人甚至包括持 异议者。 (Q4_57)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### PVQ-RR Female

**Q36** 下面是我们对一些不同的人的简要描述。请阅读每一个描述，并想想这个人在多大程度上像、或者不像您。在右边的格子裡打 X，来表示所描述的人在多大程度上像您。 **这个人有多像您？**

	完全 不像 我 (1)	不像 我 (2)	仅有一 点点像 我 (3)	有点 像我 (4)	像我 (5)	非常 像我 (6)
她重视可独立地建立自己的看法。 (Q36_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视国家的安全稳定。 (Q36_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
有一段愉悦的时光对她来说是重要的。 (Q36_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视不使别人不悦。 (Q36_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
社会中的弱势群体得到保护，对她来说是重要的。 (Q36_5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视别人按她说的去做。 (Q36_6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她绝不认为她该比别人得到更多。 (Q36_7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视关怀爱护大自然。 (Q36_8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视不被任何人羞辱。 (Q36_9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
常常找些不同的事情来做，对她来说是重要的。 (Q36_10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	完全 不像 我 (1)	不像 我 (2)	仅有一 点点像 我 (3)	有点 像我 (4)	像我 (5)	非常 像我 (6)
她重视可照顾身边的人。 (Q36_11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视可拥有金钱所能带来的权力。 (Q36_12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
避免生病、保持健康，对她来说是非常重要的。 (Q36_13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视包容所有不同类的人和群体。 (Q36_14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
从不违反规章制度，对她来说是重要的。 (Q36_15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
独立做出有关自己人生的决定，对她来说是重要的。 (Q36_16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
在生活中拥有雄心壮志，对她来说是重要的。 (Q36_17)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视保持传统价值观和思维方式。 (Q36_18)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视得到认识的人之完全信任。 (Q36_19)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
财富对她来说是重要的。 (Q36_20)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视参与保护自然的活活动。 (Q36_21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视从不去惹恼任何人。 (Q36_22)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
自己的观点自己来建立对她来说是重要的。 (Q36_23)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	完全 不像 我 (1)	不像 我 (2)	仅有一 点点像 我 (3)	有点 像我 (4)	像我 (5)	非常 像我 (6)
保护自身的公众形象， 对她来说是重要的。 (Q36_24)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
帮助她亲爱的人对她来 说是很重要的。 (Q36_25)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视个人的安全和保 障。 (Q36_26)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
成为一个别人可依靠、 可信任的朋友，对她来 说是重要的。 (Q36_27)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
为使生活精彩而冒的 险，对她来说是重要 的。 (Q36_28)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视拥有可使别人按 自己的意愿做事的权 力。 (Q36_29)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
可独立地计划自己的活 动，对她来说是重要 的。 (Q36_30)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
即使没人监管仍遵守规 则，对她来说是重要 的。 (Q36_31)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
人生非常成功，对她来 说是重要的。 (Q36_32)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视遵从家庭的习俗 或宗教的传统。 (Q36_33)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视聆听和理解那些 和她不同的人。 (Q36_34)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	完全 不像 我 (1)	不像 我 (2)	仅有一 点点像 我 (3)	有点 像我 (4)	像我 (5)	非常 像我 (6)
<b>有一个强有力的并能保护它的公民政府，对她来说是重要的。</b> (Q36_35)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视享受生活的乐事。 (Q36_36)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
世界上每一个人在生活中拥有同等的机会，对她来说是重要的。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(Q36_37)						
她重视谦卑。 (Q36_38)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视靠自己去理解问题。 (Q36_39)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
尊崇文化中的传统做法，对她来说是重要的。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(Q36_40)						
担当别人的领导或指挥，对她来说是重要的。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(Q36_41)						
她重视遵守所有法律。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(Q36_42)						
有各种不同的新鲜经历，对她来说是重要的。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(Q36_43)						
拥有能显示财富的昂贵物品，对她来说很重要。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(Q36_44)						
保护大自然免遭破坏或污染，对她来说是重要的。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(Q36_45)						
她重视每一个开心的机会。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(Q36_46)						

	完全 不像 我 (1)	不像 我 (2)	仅有一 点点像 我 (3)	有点 像我 (4)	像我 (5)	非常 像我 (6)
她重视用心关怀亲朋好友的每一个需要。 (Q36_47)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视别人对她的成就之赏识。 (Q36_48)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
永不被别人侮辱，对她来说是重要的。 (Q36_49)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
他的祖国能够抵御外面一切威胁，对她来说是重要的。 (Q36_50)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视从不使其他人生气。 (Q36_51)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
所有的甚至包括她不认识的人都能受到公正地对待，对她来说是重要的。 (Q36_52)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
避开一切危险的事，对她来说是重要的。 (Q36_53)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
满足於已经得到的而不要求更多，对她来说是重要的。 (Q36_54)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
能获所有的朋友和家人完全依靠，对她来说是重要的。 (Q36_55)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视选择的自由。 (Q36_56)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
她重视接纳别人（甚至包括持异议者）。 (Q36_57)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## BMW Brand



**Q5 宝马品牌:** 用这一部分的问卷来问问您自己:"对品牌来说, 有特点/典型/最重要的是什么? 对品牌来说, 不太具有特点/不典型/不太重要的是什么? 例如, 苹果品牌富有想象力, 刺激。在以下页面上有两个不同的**小轿车**车品牌: 宝马品牌. 在每项重要性前面的空格用**数字 (1,2,3,4,5,6)** 标记您个人认为的重要性. 尝试尽量多用不同数字以最大程度地区分出重要性的差别. 开始前, 看一下每个品牌的特点, 选择您认为最重要那个特点打**6**. 下一步, 选择最相反的特点打**1**。然后为宝马其它的特点打分, 例如苹果非常令人兴奋, 因此打分应该为:**6-令人兴奋**。

	1 完全没有特点(1)	2 没什么特点(2)	3 有一点点特点(3)	4 一般有特点(4)	5 有特点(5)	6 非常有特点(6)
诚意 (脚踏实地的、诚实的、有益健康的、令人愉快的) (Q5_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
令人兴奋 (大胆的, 奔放的, 富有想象力的、最新潮的) (Q5_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
能力 (可靠的、智慧的、成功的) (Q5_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
成熟 (上层阶级的, 迷人的) (Q5_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
坚固性 (户外的, 结实的) (Q5_5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q6 您喜欢宝马吗？**

	强烈 不喜 欢 (1)	不喜 欢 (2)	一点 点喜 欢 (3)	一般 喜欢 (4)	喜 欢 (5)	非常 喜欢 (6)
您喜欢宝马吗？（喜欢，不是买），宝马吸引您吗？请对应地标记。 (Q6_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q7 我打算买一辆宝马客车. 请对应地标记**

	根本不 打算买 (1)	不打 算买 (2)	一点点 打算买 (3)	一般打 算买 (4)	打算 买 (5)	强烈打 算买 (6)
我打算买一辆宝马客车。 (Q7_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q8 下面列出了一些小轿车的特点。对于每一个特点，请圈出恰当的数字以示宝马多大可能或多不可能拥有每个特征，例如宝马非常可能外观好/美观：**

	完全不 可能 (1)	不太 可能 (2)	有点 可能 (3)	一般 可能 (4)	有可 能 (5)	很有 可能 (6)
外观（风格和设计等） (Q8_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
便利（配件、空间等） (Q8_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
性能（扭矩、速度等） (Q8_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
安全（安全气囊、防抱死制动系统等） (Q8_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
经济方面（价格、燃料等） (Q8_5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
供货商（专业知识、态度等） (Q8_6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
保修（修理时间、备用备件等） (Q8_7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q9** 如果您考虑宝马，一般情况下，以下特点对您来讲有多重要或多不重要。  
 对于大多数人来说，有些特点比其它的更重要。当您购买宝马时，该特性对您来讲有多重要，请圈出对应的**数字**：

	根本不重要 (1)	不重要 (2)	有点重要 (3)	一般重要 (4)	重要 (5)	非常重要 (6)
外观（风格和设计等） (Q9_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
便利（配件、空间等） (Q9_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
性能（扭矩、速度等） (Q9_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
安全（安全气囊、防抱死制动系统等） (Q9_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
经济方面（价格、燃料等） (Q9_5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
供货商（专业知识、态度等） (Q9_6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
保修（修理时间、备用备件等） (Q9_7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q10** 您对小轿车的涉及多少？您对宝马的感觉如何，例如"是...重要的/感兴趣的/吸引人的"(请对应地标记)：

	一点也不... (1)	不... (2)	有点... (3)	一般... (4)	是... (5)	非常... (6)
重要的 (Q10_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
感兴趣的 (Q10_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
吸引人的 (Q10_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q11** 关于外观、便利、性能、安全、经济方面、经销商和保修，有多大差别异（请对应地标记）？

	是 (1)	否 (2)
我几乎注意不到宝马和梅赛德斯-奔驰之间的区别 (Q11_1)	<input type="radio"/>	<input type="radio"/>
宝马和奔驰有很大不同 (Q11_2)	<input type="radio"/>	<input type="radio"/>

很难区分宝马和其竞争对手 (Q11_3)	<input type="radio"/>	<input type="radio"/>
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**Q12** 开宝马有多显眼（请对应地标记）？

	是 (1)	否 (2)
宝马的用户更大程度是想吸引眼球 (Q12_1)	<input type="radio"/> o	<input type="radio"/>
宝马的用户用宝马时更引人注意 (Q12_2)	<input type="radio"/> o	<input type="radio"/>
使用宝马的人们是炫耀他们自己 (Q12_3)	<input type="radio"/> o	<input type="radio"/>

**Q13** 宝马有多独特（请对应地标记）？

	是 (1)	否 (2)
宝马的市场定位为高端精品 (Q13_1)	<input type="radio"/>	<input type="radio"/>
绝大多数消费者购买宝马 (Q13_2)	<input type="radio"/>	<input type="radio"/>
只有少数精品客户使用宝马 (Q13_3)	<input type="radio"/>	<input type="radio"/>

### Mercedes-Benz Brand

**Q14** 奔驰品牌: 在每项重要性前面的空格用数字 (1,2,3,4,5,6) 标记您个人认为的重要。 尝试尽量多用不同数字以最大程度地区分出重要性的差别。 开始前，看一下每个品牌的特点，选择您认为最重要那个特点打 6。下一步，选择最相反的特点打 1。然后为梅赛德斯-奔驰其它的特点打分，例如苹果非常令人兴奋，因此打分应该为：6 令人兴奋。

	完全没有特点 (1)	没什么特点 (2)	有一点特点 (3)	一般有点特点 (4)	有特点 (5)	非常有特点 (6)
诚意（脚踏实地的、诚实的、有益健康的、令人愉快的） (Q14_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
令人兴奋（大胆的，奔放的，富有想象力的、最新潮的） (Q14_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
能力（可靠的、智能的、成功的） (Q14_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
成熟（上层阶级的，迷人的） (Q14_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
坚固性（户外的，结实的） (Q14_5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q15 您喜欢梅赛德斯-奔驰吗？**

	强烈不 喜欢 (1)	不喜 欢 (2)	有点 喜欢 (3)	一般 喜欢 (4)	喜欢 (5)	非常 喜欢 (6)
您喜欢梅赛德斯-奔驰吗 ？（喜欢，不是买），梅 赛德斯-奔驰吸引您吗？ (Q15_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q16 我打算买一辆梅赛德斯-奔驰客车**

	根本不 打算买 (1)	不打 算买 (2)	有点打 算买 (3)	一般打 算买 (4)	打算 买 (5)	强烈打 算买 (6)
我打算买一辆梅赛德 斯-奔驰客车。 (Q16_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q17 下面列出了小轿车的一些特点。对于每一个特点，请圈出恰当的数字以  
示梅赛德斯-奔驰多大可能或多不可能拥有每个特征，例如梅赛德斯-奔驰非常  
可能外观好/美观.**

	完全不 可能 (1)	不太 可能 (2)	有点 可能 (3)	一般 可能 (4)	有可 能 (5)	很有 可能 (6)
外观（风格和设计等） (Q17_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
便利（配件、空间等 ）(Q17_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
性能（扭矩、速度等 ）(Q17_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
安全（安全气囊、防抱 死制动系统 等） (Q17_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
经济方面（价格、燃 料等）(Q17_5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
供货商（专业知识、 态度等）(Q17_6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
保修（修理时间、备 用备件等）(Q17_7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q18** 如果您正在考虑梅赛德斯-奔驰，一般情况下，以下特点对您来讲有多重要或多不重要。对于大多数人来说，有些的是比其它的更重要。当您购买奔驰时，请圈出与表示该特性对您来讲有多重要的对应的数字。

	根本不重要 (1)	不重要 (2)	有点重要 (3)	一般重要 (4)	重要 (5)	非常重要 (6)
外观（风格和设计等） (Q18_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
便利（配件、空间等） (Q18_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
性能（扭矩、速度等） (Q18_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
安全（安全气囊、防抱死制动系统等） (Q18_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
经济方面（价格、燃料等） (Q18_5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
供货商（专业知识、态度等） (Q18_6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
保修（修理时间、备用备件等） (Q18_7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q19** 您对小轿车的涉有有多少？您对梅赛德斯-奔驰的感觉如何，例如"是...重要的/是感兴趣的/吸引人的"(请对应地标记):

	一点也不... (1)	不... (2)	有点... (3)	一般... (4)	是... (5)	非常... (6)
重要的 (Q19_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
感兴趣的(Q19_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
吸引人的 (Q19_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q20** 关于外观、便利、性能、安全、经济方面、经销商和保修，有多大差别（请对应地标记）？

	是 (1)	否 (2)
我几乎注意不到梅赛德斯-奔驰和宝马之间的区别 (Q20_1)	<input type="radio"/>	<input type="radio"/>

梅赛德斯-奔驰和宝马有很大不同 (Q20_2)	<input type="radio"/>	<input type="radio"/>
很难区分奔驰和其竞争对手 (Q20_3)	<input type="radio"/>	<input type="radio"/>

Q21 开梅赛德斯-奔驰有多么显眼（请对应地标记）？

	是 (1)	否 (2)
梅赛德斯-奔驰的用户更大程度是想吸引眼球 (Q21_1)	<input type="radio"/>	<input type="radio"/>
梅赛德斯-奔驰的用户用它时更引人注意 (Q21_2)	<input type="radio"/>	<input type="radio"/>
人使用用梅赛德斯-奔驰来的人是炫耀自己 (Q21_3)	<input type="radio"/>	<input type="radio"/>

Q22 梅赛德斯-奔驰有多独特（请对应地标记）？

	是 (1)	否 (2)
梅赛德斯-奔驰的市场定位为高端精品 (Q22_1)	<input type="radio"/>	<input type="radio"/>
绝大多数消费者购买梅赛德斯-奔驰 (Q22_2)	<input type="radio"/>	<input type="radio"/>
只有少数精品客户使用梅赛德斯-奔驰 (Q22_3)	<input type="radio"/>	<input type="radio"/>

Q23 您的年龄

\_\_\_\_\_

Q25 每个人完成了多少年的教育（一年级以后）？（如果不确定，可以估计）

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
您本人 (Q25_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
您的父亲 (Q25_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
您的母亲 (Q25_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q26 您目前最高的教育水平是什么（画圈）？

☐ 初中 (1)

- ☐ 高中/技术/职业学校 (2)
- ☐ 大学学院/大学 (3)
- ☐ 研究生及以上 (4)

**Q27** 您的婚姻状况

- ☐ 单身 (1)
- ☐ 已婚或同居 (2)
- ☐ 丧偶 (3)
- ☐ 离婚 (4)

**Q28** 您目前从事的职业或最近从事的上一个职业是什么？

- ☐ k-2 年级的老师 (1)
- ☐ 3-8 年级的老师 (2)
- ☐ 9-12 年级的老师 (3)
- ☐ 校长 (4)
- ☐ 其他职业人士 (5)
- ☐ 经理或企业主 (6)
- ☐ 文员或销售员 (7)
- ☐ 技术工人 (8)
- ☐ 其他蓝领 (9)
- ☐ 农场主或农场工人 (10)
- ☐ 中学生 (11)
- ☐ 大学生：社会科学&教育 (12)
- ☐ 大学生：人文，艺术&法律 (13)
- ☐ 大学生：自然科学&医学 (14)
- ☐ 家庭主妇/主男 (15)
- ☐ 其他 (16)



Q29 您每月的家庭收入是多少（居住在您家里的所有人，-税后）

- ☐ 低於 20,000 元 (1)
- ☐ 20,000 - 39,999 元 (2)
- ☐ 40,000 - 59,999 元 (3)
- ☐ 60,000 - 79,999 元 (4)
- ☐ 80,000 - 99,999 元 (5)
- ☐ 100,000 元及以上 (6)

Q30 您买一臺新车的大概预算是多少（汽车的淨价，不包括任何其他费用，如税费，保险费，车牌费等）

- ☐ 低於 200,000 元 (1)
- ☐ 200,000 - 399,999 元 (2)
- ☐ 400,000 - 599,999 元 (3)
- ☐ 600,000 - 799,999 元 (4)
- ☐ 800,000 - 999,999 元 (5)
- ☐ 1,000,000 元及以上 (6)

Q35 您在什么样的地方长大？(请圈出)

- ☐ 大城市（500,000+）(1)
- ☐ 小城市 (2)
- ☐ 农村 (3)
- ☐ 农场 (4)

## Appendix B1 Demographic overview filter questions

<b>Own a luxury passenger car</b>	86 male and 89 female respondents own a luxury passenger car: in total 175 respondents.
	47 respondents are born 1979 and before. 65 respondents are born 1980 – 1991. 63 respondents who own one are born 1992 and after.
	6 respondents are from Beijing. 53 respondents are from Shanghai. 66 respondents are from Shenzhen.
<b>Did own a luxury passenger car</b>	58 male respondents and 62 female respondents did own a luxury car: in total 120 respondents.
	30 respondents are born 1979 and before. 39 respondents are born 1980 – 1991. 51 respondents are born 1992 and after.
	40 respondents are from Beijing. 34 respondents are from Shanghai. 46 respondents are from Shenzhen.
<b>Will buy a luxury passenger car within the next 6 months</b>	131 male respondents and 116 female respondents will buy a luxury passenger car: in total 247 respondents.
	77 respondents are born 1979 and before. 85 respondents are born 1980 – 1991. 85 are born 1992 and after.
	87 respondents are from Beijing. 78 respondents are from Shanghai. 82 respondents are from Shenzhen.

## Appendix B2a Demographic overview years of education

	Count	Perce nt	Count	Perce nt	Count	Perce nt
years of educatio n	years of education Yourself (responde nt)		years of educatio n your father		years of educatio n your mother	
1	0	0.0%	0	0.0%	0	0.0%
2	0	0.0%	0	0.0%	1	0.3%
3	1	0.3%	3	1.0%	1	0.3%
4	1	0.3%	5	1.7%	2	0.7%
5	0	0.0%	3	1.0%	10	3.3%
6	0	0.0%	8	2.7%	17	5.7%
7	2	0.7%	4	1.3%	7	2.3%
8	0	0.0%	7	2.3%	15	5.0%
9	0	0.0%	33	11.0%	28	9.3%
10	2	0.7%	10	3.3%	11	3.7%
11	2	0.7%	19	6.3%	10	3.3%
12	15	5.0%	54	18.0%	63	21.0%
13	14	4.7%	20	6.7%	18	6.0%
14	15	5.0%	13	4.3%	10	3.3%
15	55	18.3%	39	13.0%	28	9.3%
16	104	34.7%	44	14.7%	38	12.7%
17	14	4.7%	8	2.7%	9	3.0%
18	25	8.3%	10	3.3%	11	3.7%
19	11	3.7%	8	2.7%	6	2.0%
20	36	12.0%	8	2.7%	8	2.7%

## Appendix B2b Demographic overview years of education respondent

Count												
years of education Yourself		Which age group are you Born:			To tal	What gender are you		To tal	Where do you live			To tal
		1979 and before	1980-1991	1992 and after		m ale	fem ale		Beiji ng	Shan ghai	Shenz hen	
	1	2	0	1	3	2	1	3	2	0	1	3
	3	0	0	1	1	0	1	1	0	1	0	1
	4	0	0	1	1	1	0	1	0	0	1	1
	7	1	1	0	2	1	1	2	1	1	0	2
	10	0	0	2	2	1	1	2	1	0	1	2
	11	1	0	1	2	1	1	2	0	2	0	2
	12	6	2	7	15	5	10	15	3	8	4	15
	13	6	5	3	14	7	7	14	3	5	6	14
	14	4	5	6	15	9	6	15	3	5	7	15
	15	23	20	12	55	25	30	55	16	11	28	55
	16	36	34	34	104	65	39	104	34	39	31	104
	17	4	6	4	14	5	9	14	5	5	4	14
	18	7	10	8	25	15	10	25	5	11	9	25
	19	4	6	1	11	7	4	11	4	3	4	11
	20	8	8	20	36	9	27	36	23	9	4	36
Total		102	97	101	300	153	147	300	100	100	100	300

## Appendix B3 Demographic overview highest education level

Count												
What is your highest educational level currently?		Which age group are you Born:			To tal	What gender are you		To tal	Where do you live			To tal
		1979 and before	1980 - 1991	1992 and after		m al e	fe ma le		Bei jin g	Sha ngh ai	She nzhe n	
	Senior high/technical/professional school	4	1	3	8	4	4	8	1	5	2	8
	College/University	92	76	90	258	136	122	258	85	81	92	258
	Postgraduate or above	6	20	8	34	13	21	34	14	14	6	34
Total		102	97	101	300	153	147	300	100	100	100	300

## Appendix B4 Demographic overview marital status

Count												
Your Marital status?	Which age group are you Born			To tal		What gender are you		To tal	Where do you live			To tal
	1979 and before	1980-1991	1992 and after			m ale	fem ale		Beij ing	Shan ghai	Shen zhen	
Single	3	10	47	60		35	25	60	13	12	35	60
Married or cohabiting	96	86	54	236		116	120	236	86	87	63	236
Widowed	0	1	0	1		0	1	1	1	0	0	1
Divorced	3	0	0	3		2	1	3	0	1	2	3
Total	102	97	101	300		153	147	300	100	100	100	300

## Appendix B5 Demographic overview current occupation

Count												
What is your current occupation or your occupation when last employed ?		Which age group are you Born			Total	What gender are you		Total	Which age group are you			Total
		1979 and before	1980 - 1991	1992 and after		male	female		1979 and before	1980 - 1991	1992 and after	
	Teacher grades k-2	0	0	2	2	1	1	2	0	0	2	2
	Teacher grades 3-8	1	1	3	5	3	2	5	1	1	3	5
	Teacher grades 9-12	1	1	2	4	1	3	4	1	1	2	4
	Other professional	21	15	17	53	26	27	53	21	15	17	53
	Manager or business owner	51	56	44	151	79	72	151	51	56	44	151
	Clerical or sales worker	16	17	12	45	18	27	45	16	17	12	45
	Skilled worker	5	5	8	18	12	6	18	5	5	8	18
	Other blue collar	1	1	2	4	2	2	4	1	1	2	4
	Secondary school student	0	0	1	1	0	1	1	0	0	1	1
	University student social	0	0	3	3	2	1	3	0	0	3	3

science s & educati on												
Universi ty student humanit ies, arts & law	0	0	3	3	2	1	3	0	0	3	3	
Universi ty student natural science s & medicin e	0	0	3	3	2	1	3	0	0	3	3	
Homem aker	1	0	0	1	0	1	1	1	0	0	1	
Other	5	1	1	7	5	2	7	5	1	1	7	
Total	102	97	10 1	30 0	15 3	147	30 0	102	97	10 1	30 0	



## Appendix B6 Demographic overview monthly household income

Count												
How much is your monthly household income ?		Which age group are you Born:			To tal	What gender are you		To tal	Where do you live			To tal
		1979 and before	1980-1991	1992 and after		m ale	fem ale		Beij ing	Shan ghai	Shen zhen	
	Belo w RMB 20,000	8	2	10	20	12	8	20	6	5	9	20
	RMB 20,000 - 39,999	45	33	27	105	48	57	105	34	42	29	105
	RMB 40,000 - 59,999	34	34	26	94	54	40	94	29	35	30	94
	RMB 60,000 – 79,999	10	5	17	32	23	9	32	7	8	17	32
	RMB 80,000 – 99,999	1	10	13	24	6	18	24	15	1	8	24
	≥ RMB 100,000	4	13	8	25	10	15	25	9	9	7	25
Total		102	97	101	300	153	147	300	100	100	100	300

## Appendix B7 Demographic overview budget for a new car

Count												
How much is your general budget for a new car?		Which age group are you born			To tal	What gender are you		To tal	Where do you live			To tal
		1979 and before	1980-1991	1992 and after		m ale	fem ale		Beij ing	Shan ghai	Shen zhen	
	Below RMB 200,000	5	1	3	9	4	5	9	1	2	6	9
	RMB 200,000 – 399,999	19	8	18	45	20	25	45	10	16	19	45
	RMB 400,000 – 599,999	58	51	37	146	79	67	146	49	61	36	146
	RMB 600,000 – 799,999	15	18	22	55	34	21	55	19	12	24	55
	RMB 800,000 – 999,999	4	14	18	36	11	25	36	19	5	12	36
	RMB 1,000,000 and above	1	5	3	9	5	4	9	2	4	3	9
Total		102	97	101	300	153	147	300	100	100	100	300

## Appendix B8 Demographic overview kind of place for growing up

Count												
In what kind of a place did you grow up?		Which age group are you born			To tal	What gender are you		To tal	Where do you live			To tal
		1979 and before	1980-1991	1992 and after		m ale	fem ale		Beij ing	Shan ghai	Shen zhen	
	Large city ( 500,000+ )	87	95	91	273	142	131	273	94	94	85	273
	Small City	10	2	9	21	9	12	21	5	6	10	21
	Rural area	5	0	1	6	2	4	6	1	0	5	6
Total		102	97	101	300	153	147	300	100	100	100	300

## Appendix B9 Purchase intention male and female respondents

<b>gender</b>		<b>BMW liking</b>	<b>BMW PI</b>	<b>MB liking</b>	<b>MB PI</b>
<b>male</b>	M	5.29	4.94	5.14	4.59
	SD	.833	.912	.892	1.121
	Min.	2	1	2	1
	Max.	6	6	6	6
<b>female</b>	M	5.15	4.67	5.00	4.48
	SD	.961	1.130	1.014	1.155
	Min.	1	1	2	1
	Max.	6	6	6	6
<b>Total</b>	M	5.22	4.81	5.07	4.54
	SD	.899	1.032	.954	1.137
	Min.	1	1	2	1
	Max.	6	6	6	6

## Appendix B10 Purchase intention Beijing, Shanghai, and Shenzhen

cities		BMW liking	BMW PI	MB liking	MB PI
<b>Beijing</b>	M	5.30	4.85	4.98	4.57
	SD	.870	.857	1.035	1.047
	Min.	2	2	2	1
	Max.	6	6	6	6
<b>Shanghai</b>	M	5.21	4.79	5.17	4.50
	SD	.795	.998	.842	1.168
	Min.	3	2	3	1
	Max.	6	6	6	6
<b>Shenzhen</b>	M	5.15	4.79	5.07	4.54
	SD	1.019	1.217	.977	1.201
	Min.	1	1	2	1
	Max.	6	6	6	6
<b>Total</b>	M	5.22	4.81	5.07	4.54
	SD	.899	1.032	.954	1.137
	Min.	1	1	2	1
	Max.	6	6	6	6

## Appendix C1 CFA personal values

### Openness-to-change <- cfa

lavaan 0.6-5 ended normally after 44 iterations

Estimator	ML
Optimization method	NLMINB
Number of free parameters	30
Number of observations	300
Model Test User Model:	
Test statistic	88.555
Degrees of freedom	48
p-value (Chi-square)	0.000
Model Test Baseline Model:	
Test statistic	1707.931
Degrees of freedom	66
p-value	0.000
User Model versus Baseline Model:	
Comparative Fit Index (CFI)	0.975
Tucker-Lewis Index (TLI)	0.966
Loglikelihood and Information Criteria:	
Loglikelihood user model (H0)	-4513.870
Loglikelihood unrestricted model (H1)	-4469.592
Akaike (AIC)	9087.740
Bayesian (BIC)	9200.126
Sample-size adjusted Bayesian (BIC)	9104.975
Root Mean Square Error of Approximation:	
RMSEA	0.052
90 Percent confidence interval - lower	0.035
90 Percent confidence interval - upper	0.069
p-value RMSEA <= 0.05	0.404
Standardised Root Mean Square Residual:	
SRMR	0.032
Parameter Estimates:	
Information	Expected
Information saturated (h1) model	Structured
Standard errors	Standard
Latent Variables:	
	Estimate Std.Err z-value P(> z )

Self_Direction_Thought =~				
Q4_Q4_1	1.000			
Q4_Q4_23	1.085	0.094	11.505	0.000
Q4_Q4_39	1.043	0.088	11.849	0.000
Self_Direction_Action =~				
Q4_Q4_16	1.000			
Q4_Q4_30	1.034	0.093	11.139	0.000
Q4_Q4_56	1.069	0.097	10.995	0.000
Stimulation =~				
Q4_Q4_10	1.000			
Q4_Q4_28	1.064	0.103	10.351	0.000
Q4_Q4_43	1.163	0.096	12.164	0.000
Hedonism =~				
Q4_Q4_3	1.000			
Q4_Q4_36	1.375	0.140	9.807	0.000
Q4_Q4_46	1.356	0.138	9.801	0.000
Covariances:				
	Estimate	Std.Err	z-value	P(> z )
Self_Direction_Thought ~~				
Slf_Drctn_Actn	0.425	0.053	8.024	0.000
Stimulation	0.434	0.055	7.903	0.000
Hedonism	0.324	0.043	7.505	0.000
Self_Direction_Action ~~				
Stimulation	0.457	0.057	7.969	0.000
Hedonism	0.332	0.044	7.480	0.000
Stimulation ~~				
Hedonism	0.343	0.046	7.407	0.000
Variances:				
	Estimate	Std.Err	z-value	P(> z )
.Q4_Q4_1	0.496	0.045	10.948	0.000
.Q4_Q4_23	0.457	0.044	10.445	0.000
.Q4_Q4_39	0.364	0.036	10.048	0.000
.Q4_Q4_16	0.554	0.050	11.201	0.000
.Q4_Q4_30	0.460	0.043	10.695	0.000
.Q4_Q4_56	0.522	0.048	10.832	0.000
.Q4_Q4_10	0.562	0.054	10.484	0.000
.Q4_Q4_28	0.844	0.077	11.016	0.000
.Q4_Q4_43	0.479	0.053	9.080	0.000
.Q4_Q4_3	0.475	0.041	11.552	0.000
.Q4_Q4_36	0.500	0.048	10.503	0.000
.Q4_Q4_46	0.488	0.046	10.511	0.000
Slf_Drctn_Thgt	0.437	0.067	6.535	0.000
Slf_Drctn_Actn	0.437	0.069	6.305	0.000
Stimulation	0.540	0.081	6.650	0.000
Hedonism	0.258	0.047	5.447	0.000
Self_Enhancement <- cfa				
lavaan 0.6-5 ended normally after 44 iterations				

Estimator	ML			
Optimization method	NLMINB			
Number of free parameters	30			
Number of observations	300			
Model Test User Model:				
Test statistic	88.555			
Degrees of freedom	48			
p-value (Chi-square)	0.000			
Model Test Baseline Model:				
Test statistic	1707.931			
Degrees of freedom	66			
p-value	0.000			
User Model versus Baseline Model:				
Comparative Fit Index (CFI)	0.975			
Tucker-Lewis Index (TLI)	0.966			
Loglikelihood and Information Criteria:				
Loglikelihood user model (H0)	-4513.870			
Loglikelihood unrestricted model (H1)	-4469.592			
Akaike (AIC)	9087.740			
Bayesian (BIC)	9200.126			
Sample-size adjusted Bayesian (BIC)	9104.975			
Root Mean Square Error of Approximation:				
RMSEA	0.052			
90 Percent confidence interval - lower	0.035			
90 Percent confidence interval - upper	0.069			
p-value RMSEA <= 0.05	0.404			
Standardised Root Mean Square Residual:				
SRMR	0.032			
Parameter Estimates:				
Information	Expected			
Information saturated (h1) model	Structured			
Standard errors	Standard			
Latent Variables:				
	Estimate	Std.Err	z-value	P(> z )
Self_Direction_Thought =~				
Q4_Q4_1	1.000			
Q4_Q4_23	1.085	0.094	11.505	0.000
Q4_Q4_39	1.043	0.088	11.849	0.000
Self_Direction_Action =~				
Q4_Q4_16	1.000			



Q4_Q4_30	1.034	0.093	11.139	0.000
Q4_Q4_56	1.069	0.097	10.995	0.000
Stimulation =~				
Q4_Q4_10	1.000			
Q4_Q4_28	1.064	0.103	10.351	0.000
Q4_Q4_43	1.163	0.096	12.164	0.000
Hedonism =~				
Q4_Q4_3	1.000			
Q4_Q4_36	1.375	0.140	9.807	0.000
Q4_Q4_46	1.356	0.138	9.801	0.000

#### Covariances:

	Estimate	Std.Err	z-value	P(> z )
Self_Direction_Thought ~~				
Slf_Drctn_Actn	0.425	0.053	8.024	0.000
Stimulation	0.434	0.055	7.903	0.000
Hedonism	0.324	0.043	7.505	0.000
Self_Direction_Action ~~				
Stimulation	0.457	0.057	7.969	0.000
Hedonism	0.332	0.044	7.480	0.000
Stimulation ~~				
Hedonism	0.343	0.046	7.407	0.000

#### Variances:

	Estimate	Std.Err	z-value	P(> z )
.Q4_Q4_1	0.496	0.045	10.948	0.000
.Q4_Q4_23	0.457	0.044	10.445	0.000
.Q4_Q4_39	0.364	0.036	10.048	0.000
.Q4_Q4_16	0.554	0.050	11.201	0.000
.Q4_Q4_30	0.460	0.043	10.695	0.000
.Q4_Q4_56	0.522	0.048	10.832	0.000
.Q4_Q4_10	0.562	0.054	10.484	0.000
.Q4_Q4_28	0.844	0.077	11.016	0.000
.Q4_Q4_43	0.479	0.053	9.080	0.000
.Q4_Q4_3	0.475	0.041	11.552	0.000
.Q4_Q4_36	0.500	0.048	10.503	0.000
.Q4_Q4_46	0.488	0.046	10.511	0.000
Slf_Drctn_Thgt	0.437	0.067	6.535	0.000
Slf_Drctn_Actn	0.437	0.069	6.305	0.000
Stimulation	0.540	0.081	6.650	0.000
Hedonism	0.258	0.047	5.447	0.000

#### Conservation<- cfa

lavaan 0.6-5 ended normally after 44 iterations

Estimator	ML
Optimization method	NLMINB
Number of free parameters	30
Number of observations	300

Model Test User Model:

Test statistic	88.555
Degrees of freedom	48
p-value (Chi-square)	0.000

Model Test Baseline Model:

Test statistic	1707.931
Degrees of freedom	66
p-value	0.000

User Model versus Baseline Model:

Comparative Fit Index (CFI)	0.975
Tucker-Lewis Index (TLI)	0.966

Loglikelihood and Information Criteria:

Loglikelihood user model (H0)	-4513.870
Loglikelihood unrestricted model (H1)	-4469.592

Akaike (AIC)	9087.740
Bayesian (BIC)	9200.126
Sample-size adjusted Bayesian (BIC)	9104.975

Root Mean Square Error of Approximation:

RMSEA	0.052
90 Percent confidence interval - lower	0.035
90 Percent confidence interval - upper	0.069
p-value RMSEA <= 0.05	0.404

Standardised Root Mean Square Residual:

SRMR	0.032
------	-------

Parameter Estimates:

Information	Expected
Information saturated (h1) model	Structured
Standard errors	Standard

Latent Variables:

	Estimate	Std.Err	z-value	P(> z )
Self_Direction_Thought =~				
Q4_Q4_1	1.000			
Q4_Q4_23	1.085	0.094	11.505	0.000
Q4_Q4_39	1.043	0.088	11.849	0.000
Self_Direction_Action =~				
Q4_Q4_16	1.000			
Q4_Q4_30	1.034	0.093	11.139	0.000
Q4_Q4_56	1.069	0.097	10.995	0.000
Stimulation =~				
Q4_Q4_10	1.000			
Q4_Q4_28	1.064	0.103	10.351	0.000
Q4_Q4_43	1.163	0.096	12.164	0.000

Hedonism =~				
Q4_Q4_3	1.000			
Q4_Q4_36	1.375	0.140	9.807	0.000
Q4_Q4_46	1.356	0.138	9.801	0.000
Covariances:				
	Estimate	Std.Err	z-value	P(> z )
Self_Direction_Thought ~~				
Slf_Drctn_Actn	0.425	0.053	8.024	0.000
Stimulation	0.434	0.055	7.903	0.000
Hedonism	0.324	0.043	7.505	0.000
Self_Direction_Action ~~				
Stimulation	0.457	0.057	7.969	0.000
Hedonism	0.332	0.044	7.480	0.000
Stimulation ~~				
Hedonism	0.343	0.046	7.407	0.000
Variances:				
	Estimate	Std.Err	z-value	P(> z )
.Q4_Q4_1	0.496	0.045	10.948	0.000
.Q4_Q4_23	0.457	0.044	10.445	0.000
.Q4_Q4_39	0.364	0.036	10.048	0.000
.Q4_Q4_16	0.554	0.050	11.201	0.000
.Q4_Q4_30	0.460	0.043	10.695	0.000
.Q4_Q4_56	0.522	0.048	10.832	0.000
.Q4_Q4_10	0.562	0.054	10.484	0.000
.Q4_Q4_28	0.844	0.077	11.016	0.000
.Q4_Q4_43	0.479	0.053	9.080	0.000
.Q4_Q4_3	0.475	0.041	11.552	0.000
.Q4_Q4_36	0.500	0.048	10.503	0.000
.Q4_Q4_46	0.488	0.046	10.511	0.000
Slf_Drctn_Thgt	0.437	0.067	6.535	0.000
Slf_Drctn_Actn	0.437	0.069	6.305	0.000
Stimulation	0.540	0.081	6.650	0.000
Hedonism	0.258	0.047	5.447	0.000
<b>Self_Transcendence &lt;- cfa</b>				
lavaan 0.6-5 ended normally after 44 iterations				
Estimator	ML			
Optimization method	NLMINB			
Number of free parameters	30			
Number of observations	300			
Model Test User Model:				
Test statistic	88.555			
Degrees of freedom	48			
p-value (Chi-square)	0.000			
Model Test Baseline Model:				

Test statistic	1707.931			
Degrees of freedom	66			
p-value	0.000			
User Model versus Baseline Model:				
Comparative Fit Index (CFI)	0.975			
Tucker-Lewis Index (TLI)	0.966			
Loglikelihood and Information Criteria:				
Loglikelihood user model (H0)	-4513.870			
Loglikelihood unrestricted model (H1)	-4469.592			
Akaike (AIC)	9087.740			
Bayesian (BIC)	9200.126			
Sample-size adjusted Bayesian (BIC)	9104.975			
Root Mean Square Error of Approximation:				
RMSEA	0.052			
90 Percent confidence interval - lower	0.035			
90 Percent confidence interval - upper	0.069			
p-value RMSEA <= 0.05	0.404			
Standardised Root Mean Square Residual:				
SRMR	0.032			
Parameter Estimates:				
Information	Expected			
Information saturated (h1) model	Structured			
Standard errors	Standard			
Latent Variables:				
	Estimate	Std.Err	z-value	P(> z )
Self_Direction_Thought =~				
Q4_Q4_1	1.000			
Q4_Q4_23	1.085	0.094	11.505	0.000
Q4_Q4_39	1.043	0.088	11.849	0.000
Self_Direction_Action =~				
Q4_Q4_16	1.000			
Q4_Q4_30	1.034	0.093	11.139	0.000
Q4_Q4_56	1.069	0.097	10.995	0.000
Stimulation =~				
Q4_Q4_10	1.000			
Q4_Q4_28	1.064	0.103	10.351	0.000
Q4_Q4_43	1.163	0.096	12.164	0.000
Hedonism =~				
Q4_Q4_3	1.000			
Q4_Q4_36	1.375	0.140	9.807	0.000
Q4_Q4_46	1.356	0.138	9.801	0.000
Covariances:				

	Estimate	Std.Err	z-value	P(> z )
Self_Direction_Thought ~~				
Slf_Drctn_Actn	0.425	0.053	8.024	0.000
Stimulation	0.434	0.055	7.903	0.000
Hedonism	0.324	0.043	7.505	0.000
Self_Direction_Action ~~				
Stimulation	0.457	0.057	7.969	0.000
Hedonism	0.332	0.044	7.480	0.000
Stimulation ~~				
Hedonism	0.343	0.046	7.407	0.000
Variances:				
	Estimate	Std.Err	z-value	P(> z )
.Q4_Q4_1	0.496	0.045	10.948	0.000
.Q4_Q4_23	0.457	0.044	10.445	0.000
.Q4_Q4_39	0.364	0.036	10.048	0.000
.Q4_Q4_16	0.554	0.050	11.201	0.000
.Q4_Q4_30	0.460	0.043	10.695	0.000
.Q4_Q4_56	0.522	0.048	10.832	0.000
.Q4_Q4_10	0.562	0.054	10.484	0.000
.Q4_Q4_28	0.844	0.077	11.016	0.000
.Q4_Q4_43	0.479	0.053	9.080	0.000
.Q4_Q4_3	0.475	0.041	11.552	0.000
.Q4_Q4_36	0.500	0.048	10.503	0.000
.Q4_Q4_46	0.488	0.046	10.511	0.000
Slf_Drctn_Thgt	0.437	0.067	6.535	0.000
Slf_Drctn_Actn	0.437	0.069	6.305	0.000
Stimulation	0.540	0.081	6.650	0.000
Hedonism	0.258	0.047	5.447	0.000

## Appendix C2 Ranking the importance of personal values

				S DT	SD A	St	He	A	P D	PR	F	SP	SS	T	C R	CI	Hu	U N	U C	UT	BC	B D
male	born 1992 and after	Shenzhen	M	4. 88	4.9 4	4. 88	4. 82	5. 02	4. 59	4.5 1	4. 79	4.8 5	4. 91	4. 66	4. 79	4. 44	4. 48	4. 92	4. 89	4. 90	4.8 9	4. 76
			S D	0. 68	0.6 7	0. 78	0. 69	0. 78	0. 81	0.8 0	0. 74	0.9 7	0. 81	0. 80	0. 86	0. 96	0. 79	0. 75	0. 86	0. 75	0.7 7	0. 75
		Shanghai	M	4. 57	4.4 3	4. 40	4. 80	4. 17	4. 00	4.1 7	4. 53	4.0 6	4. 63	4. 10	4. 57	4. 27	3. 87	4. 33	4. 07	4. 50	4.5 0	4. 63
			S D	0. 82	0.7 9	0. 89	0. 80	1. 41	0. 79	0.7 4	1. 02	0.8 0	0. 79	0. 80	0. 97	0. 81	0. 74	0. 82	0. 80	0. 85	1.2 0	0. 85
		Beijing	M	4. 80	5.0 0	4. 97	5. 20	5. 07	4. 67	4.8 3	4. 97	5.0 3	5. 37	4. 70	4. 80	4. 77	4. 80	4. 87	4. 53	4. 83	5.0 0	4. 73
			S D	0. 57	0.5 9	0. 69	0. 55	0. 60	0. 67	0.6 1	0. 66	0.7 4	0. 43	0. 69	0. 76	0. 79	0. 74	0. 65	0. 76	0. 95	0.5 4	0. 52
		Total	M	4. 81	4.8 6	4. 81	4. 88	4. 87	4. 50	4.5 1	4. 78	4.8 4	4. 95	4. 56	4. 75	4. 47	4. 42	4. 81	4. 67	4. 81	4.8 4	4. 73
			S D	0. 69	0.7 0	0. 80	0. 69	0. 94	0. 80	0.7 7	0. 78	0.9 0	0. 78	0. 80	0. 85	0. 91	0. 81	0. 77	0. 88	0. 81	0.8 3	0. 72
	born 1979 and before	Shanghai	M	4. 86	5.0 5	4. 79	5. 09	5. 00	4. 56	4.3 7	4. 61	5.0 7	5. 11	4. 93	4. 84	4. 49	4. 49	5. 07	4. 88	5. 04	4.9 8	4. 89
			S D	0. 81	0.8 8	0. 92	0. 85	0. 80	0. 83	1.1 0	0. 71	0.8 6	0. 77	0. 92	0. 98	0. 96	1. 01	1. 05	0. 90	0. 64	0.8 3	0. 90
		Beijing	M	4. 84	4.8 1	4. 40	4. 98	4. 51	3. 79	4.2 6	4. 47	4.9 5	5. 12	4. 81	4. 98	4. 42	4. 23	4. 63	4. 72	4. 79	5.0 0	4. 82

				S DT	SD A	St	He	A	P D	PR	F	SP	SS	T	C R	Cl	Hu	U N	U C	UT	BC	B D
			S D	0. 73	0.8 7	0. 89	0. 74	0. 86	1. 14	0.9 6	0. 71	0.6 7	0. 49	0. 82	0. 53	0. 51	0. 70	0. 76	0. 79	0. 77	0.6 8	0. 66
		Shenz hen	M	5. 15	5.3 1	5. 00	5. 31	5. 08	4. 92	5.1 5	5. 21	5.3 1	5. 36	5. 10	5. 21	4. 82	4. 87	5. 26	5. 08	5. 44	5.2 6	5. 15
			S D	0. 68	0.7 0	0. 86	0. 75	0. 64	0. 92	0.8 8	0. 69	0.6 2	0. 54	0. 60	0. 66	0. 80	0. 89	0. 67	0. 78	0. 52	0.8 3	0. 70
		Total	M	4. 93	5.0 3	4. 70	5. 10	4. 84	4. 37	4.5 3	4. 71	5.0 9	5. 18	4. 93	4. 99	4. 55	4. 49	4. 95	4. 87	5. 05	5.0 6	4. 93
			S D	0. 75	0.8 4	0. 91	0. 78	0. 81	1. 07	1.0 5	0. 75	0.7 3	0. 62	0. 80	0. 76	0. 78	0. 89	0. 88	0. 82	0. 70	0.7 7	0. 77
	Born 1980 – 1991	Shenz hen	M	5. 03	5.0 9	5. 12	5. 03	5. 21	4. 82	4.9 7	5. 21	5.2 1	5. 15	5. 30	5. 00	5. 06	4. 91	5. 18	5. 06	5. 18	5.3 3	5. 21
			S D	1. 05	1.0 0	0. 70	0. 75	0. 65	1. 04	0.7 7	0. 75	0.5 6	0. 69	0. 85	0. 76	0. 90	1. 01	0. 75	0. 79	0. 75	0.4 2	0. 78
		Beijing	M	4. 75	4.6 4	4. 56	4. 90	4. 48	4. 38	4.4 6	4. 38	4.5 6	4. 56	4. 19	4. 21	4. 15	4. 33	4. 42	4. 21	4. 63	4.6 3	4. 46
			S D	0. 73	0.9 4	0. 65	0. 64	0. 82	0. 76	0.9 1	0. 98	0.7 4	0. 81	1. 15	0. 90	0. 80	0. 97	0. 86	1. 00	0. 72	0.8 2	0. 81
		Shang hai	M	5. 02	5.2 2	4. 92	5. 13	5. 10	4. 37	4.8 7	4. 72	5.0 2	4. 97	4. 58	4. 85	4. 75	4. 37	5. 03	4. 85	4. 87	5.0 5	4. 90
			S D	0. 63	0.6 2	0. 81	0. 51	0. 61	0. 98	0.6 7	0. 59	0.5 4	0. 62	0. 92	0. 67	0. 68	0. 74	0. 62	0. 80	0. 69	0.5 8	0. 59
		Total	M	4. 93	4.9 9	4. 84	5. 03	4. 91	4. 48	4.7 52	4. 72	4.9 08	4. 87	4. 62	4. 67	4. 62	4. 48	4. 86	4. 68	4. 86	4.9 7	4. 82
			S D	0. 77	0.8 6	0. 75	0. 61	0. 75	0. 92	0.7 9	0. 82	0.6 6	0. 73	1. 05	0. 83	0. 84	0. 90	0. 79	0. 92	0. 73	0.6 8	0. 76

				S DT	SD A	St	He	A	P D	PR	F	SP	SS	T	C R	CI	Hu	U N	U C	UT	BC	B D
	Total	M		4. 88	4.9 6	4. 78	5. 00	4. 87	4. 45	4.5 9	4. 74	4.9 4	5. 00	4. 70	4. 80	45 .4	4. 46	4. 87	4. 74	4. 90	4.9 5	4. 83
		SD		0. 73	0.8 0	0. 82	0. 70	0. 84	0. 93	0.8 8	0. 78	0.7 8	0. 72	0. 90	0. 82	0. 84	0. 86	0. 81	0. 87	0. 75	0.7 7	0. 75
				S DT	SD A	St	He	A	P D	PR	F	SP	SS	T	C R	CI	Hu	U N	U C	UT	BC	B D
fem ale	born 1979 and before	Beijing	M	5. 03	5.1 5	4. 69	5. 26	4. 90	4. 67	4.3 8	4. 69	5.2 1	5. 08	4. 90	5. 21	4. 62	4. 90	5. 13	5. 18	5. 18	5.2 1	5. 21
			S D	0. 71	0.7 9	1. 04	0. 75	0. 79	0. 96	1.2 8	0. 84	0.8 3	0. 80	0. 76	0. 76	0. 88	0. 92	0. 67	0. 89	0. 72	0.7 6	0. 74
		Shang hai	M	4. 94	4.9 2	4. 75	5. 26	4. 71	4. 53	4.6 5	4. 72	5.2 7	5. 00	4. 71	5. 10	4. 75	4. 59	5. 16	4. 82	4. 82	5.0 4	4. 92
			S D	0. 52	0.7 3	0. 81	0. 51	0. 62	0. 76	0.8 0	0. 56	0.4 4	0. 59	0. 71	0. 59	0. 61	0. 63	0. 53	0. 67	0. 58	0.6 7	0. 67
		Shenz hen	M	4. 35	4.2 5	3. 63	4. 38	3. 79	3. 46	3.4 9	3. 95	4.2 9	4. 08	4. 11	4. 29	3. 79	3. 94	4. 40	4. 22	4. 08	4.3 5	4. 21
			S D	0. 88	0.9 5	1. 20	1. 14	1. 05	1. 10	0.9 9	0. 87	0.9 1	1. 04	0. 85	1. 04	0. 79	0. 95	1. 04	0. 88	0. 89	0.9 6	0. 76
		Total	M	4. 72	4.7 1	4. 27	4. 90	4. 38	4. 12	4.1 0	4. 40	4.8 5	4. 64	4. 51	4. 79	4. 32	4. 40	4. 84	4. 67	4. 61	4.8 0	4. 70
			S D	0. 79	0.9 2	1. 16	0. 96	0. 98	1. 10	1.1 3	0. 85	0.8 9	0. 96	0. 84	0. 93	0. 87	0. 92	0. 88	0. 90	0. 87	0.8 9	0. 83
	Born 1980 – 1991	Beijing	M	4. 79	4.8 3	4. 71	4. 97	4. 63	4. 37	4.2 2	4. 37	4.8 3	4. 73	4. 65	4. 56	4. 52	4. 41	4. 78	4. 90	4. 59	5.0 2	4. 73
			S D	0. 94	0.9 5	0. 91	0. 84	0. 95	0. 80	1.1 8	1. 04	1.2 0	0. 83	0. 94	1. 07	1. 01	0. 80	0. 99	0. 80	0. 89	0.8 7	0. 84



				S DT	SD A	St	He	A	P D	PR	F	SP	SS	T	C R	Cl	Hu	U N	U C	UT	BC	B D
		Shang hai	M	5. 04	5.0 7	4. 76	5. 17	4. 92	4. 42	4.4 6	4. 67	5.1 1	5. 10	4. 75	4. 88	4. 57	4. 39	5. 08	4. 89	4. 93	5.0 1	5. 03
			S D	0. 79	0.6 8	0. 92	0. 67	0. 84	0. 72	0.9 7	0. 79	0.7 1	0. 80	0. 81	0. 81	0. 99	0. 87	0. 72	0. 69	0. 73	0.7 1	0. 71
		Shenz hen	M	5. 60	5.5 3	5. 67	5. 73	5. 67	5. 67	5.5 3	5. 67	5.6 7	5. 60	5. 60	5. 60	5. 53	5. 60	5. 53	5. 53	5. 60	5.6 0	5. 73
			S D	0. 60	0.5 6	0. 75	0. 60	0. 58	0. 75	0.5 1	0. 58	0.5 8	0. 55	0. 89	0. 72	0. 56	0. 72	0. 87	0. 69	0. 72	0.7 2	0. 60
		Total	M	4. 72	4.7 1	4. 27	4. 90	4. 38	4. 12	4.1 0	4. 40	4.8 5	4. 64	4. 51	4. 79	4. 32	4. 40	4. 84	4. 67	4. 61	4.8 0	4. 70
			S D	0. 79	0.9 2	1. 16	0. 96	0. 98	1. 10	1.1 3	0. 85	0.8 9	0. 96	0. 84	0. 93	0. 87	0. 92	0. 88	0. 90	0. 87	0.8 9	0. 83
	born 1992 and after	Shang hai	M	4. 13	3.8 7	4. 00	3. 93	4. 10	3. 70	4.3 0	4. 13	4.2 3	4. 00	3. 83	3. 73	3. 73	3. 67	4. 27	3. 83	3. 97	4.0 7	3. 87
			S D	1. 03	0.9 2	0. 89	0. 94	0. 61	0. 58	0.6 7	0. 67	0.4 5	0. 79	0. 76	1. 00	0. 90	0. 61	0. 78	0. 48	1. 06	0.5 2	0. 76
		Shenz hen	M	4. 84	4.8 2	4. 91	5. 20	4. 82	4. 49	4.3 1	4. 56	4.7 8	4. 91	4. 73	4. 89	4. 69	4. 38	5. 04	4. 80	4. 96	5.1 8	4. 91
			S D	0. 75	0.6 9	0. 53	0. 28	0. 82	1. 02	1.0 7	0. 88	0.7 1	0. 72	0. 99	0. 57	0. 73	0. 72	0. 65	0. 70	0. 79	0.5 6	0. 95
		Beijing	M	5. 68	5.1 9	5. 37	5. 33	5. 10	5. 16	5.2 9	5. 17	5.4 2	5. 40	5. 16	5. 30	5. 22	5. 43	5. 48	5. 38	5. 57	5.4 29	5. 59
			S D	0. 32	0.4 7	0. 49	0. 42	0. 87	1. 00	1.0 9	0. 72	0.3 5	0. 43	0. 83	0. 52	0. 49	0. 67	0. 44	0. 46	0. 62	0.4 5	0. 28
		Total	M	4. 90	4.9 0	4. 73	5. 00	4. 78	4. 43	4.5 1	4. 66	4.9 5	4. 93	4. 69	4. 81	4. 55	4. 50	4. 92	4. 78	4. 86	4.9 6	4. 86

				S DT	SD A	St	He	A	P D	PR	F	SP	SS	T	C R	CI	Hu	U N	U C	UT	BC	B D
			S D	0. 79	0.8 3	0. 92	0. 77	0. 90	0. 98	1.0 1	0. 84	0.8 2	0. 80	0. 90	0. 87	0. 88	0. 90	0. 82	0. 85	0. 83	0.7 9	0. 80
	Total	M		5. 68	5.1 9	5. 37	5. 33	5. 10	5. 16	5.2 9	5. 17	5.4 3	5. 40	5. 16	5. 30	5. 22	5. 43	5. 48	5. 38	5. 57	5.4 3	5. 59
		SD		0. 32	0.4 7	0. 49	0. 42	0. 87	1. 00	1.0 9	0. 72	0.3 5	0. 43	0. 83	0. 52	0. 49	0. 67	0. 44	0. 46	0. 62	0.4 5	0. 28
Tota l	Mean			4. 90	4.9 0	4. 73	5. 00	4. 78	4. 43	4.5 1	4. 66	4.9 5	4. 93	4. 69	4. 80	4. 55	4. 50	4. 92	4. 78	4. 86	4.9 6	4. 86
	SD			0. 79	0.8 3	0. 92	0. 77	0. 90	0. 98	1.0 1	0. 84	0.8 2	0. 80	0. 90	0. 87	0. 88	0. 90	0. 82	0. 85	0. 83	0.7 9	0. 80
	<b>Age group</b>			S DT	SD A	St	He	A	P D	PR	F	SP	SS	T	C R	CI	Hu	U N	U C	UT	BC	B D
	born 1979 and before	M		4. 82	4.8 7	4. 49	5. 00	4. 61	4. 25	4.3 2	4. 56	4.9 7	4. 91	4. 72	4. 89	4. 43	4. 44	4. 90	4. 77	4. 83	4.9 3	4. 82
		SD		0. 77	0.8 9	1. 06	0. 88	0. 92	1. 09	1.1 0	0. 81	0.8 2	0. 85	0. 84	0. 85	0. 83	0. 91	0. 88	0. 86	0. 82	0.8 4	0. 81
	Born 1980 – 1991	M		4. 96	5.0 0	4. 84	5. 09	4. 89	4. 50	4.6 0	4. 68	4.9 8	4. 93	4. 71	4. 74	4. 63	4. 50	4. 93	4. 82	4. 86	5.0 2	4. 90
		SD		0. 81	0.8 3	0. 84	0. 69	0. 83	0. 88	0.9 6	0. 89	0.8 2	0. 78	0. 98	0. 90	0. 92	0. 89	0. 83	0. 84	0. 78	0.7 3	0. 78
	born 1992 and after	M		4. 93	4.8 3	4. 86	4. 93	4. 84	4. 55	4.6 2	4. 76	4.8 9	4. 94	4. 64	4. 79	4. 58	4. 55	4. 93	4. 76	4. 91	4.9 3	4. 85
		SD		0. 80	0.7 5	0. 79	0. 73	0. 91	0. 94	0.9 4	0. 81	0.8 1	0. 79	0. 90	0. 86	0. 90	0. 90	0. 77	0. 85	0. 89	0.7 9	0. 83

				S DT	SD A	St	He	A	P D	PR	F	SP	SS	T	C R	CI	Hu	U N	U C	UT	BC	B D
	Total	M		4. 90	4.9 0	4. 73	5. 00	4. 78	4. 43	4.5 1	4. 66	4.9 5	4. 93	4. 69	4. 81	4. 55	4. 50	4. 92	4. 78	4. 86	4.9 6	4. 86
		SD		0. 79	0.8 3	0. 92	0. 77	0. 90	0. 98	1.0 1	0. 84	0.8 2	0. 80	0. 90	0. 87	0. 88	0. 90	0. 82	0. 85	0. 83	0.7 9	0. 80
	Cities			S DT	SD A	St	He	A	P D	PR	F	SP	SS	T	C R	CI	Hu	U N	U C	UT	BC	B D
	Beijing	M		5. 01	4.9 3	4. 79	5. 10	4. 76	4. 49	4.5 7	4. 66	5.0 0	5. 03	4. 75	4. 85	4. 63	4. 68	4. 89	4. 86	4. 94	5.0 6	4. 95
		SD		0. 77	0.8 0	0. 84	0. 68	0. 86	1. 00	1.0 9	0. 89	0.8 3	0. 71	0. 92	0. 85	0. 82	0. 90	0. 82	0. 86	0. 84	0.7 3	0. 76
	Shanghai	M		4. 85	4.8 9	4. 68	5. 00	4. 78	4. 34	4.5 1	4. 61	4.9 7	4. 90	4. 59	4. 76	4. 51	4. 31	4. 93	4. 68	4. 78	4.8 7	4. 80
		SD		0. 79	0.8 4	0. 89	0. 78	0. 87	0. 82	0.8 8	0. 72	0.7 1	0. 78	0. 88	0. 88	0. 88	0. 83	0. 81	0. 82	0. 78	0.7 9	0. 80
	Shenzhe n	M		4. 85	4.8 7	4. 70	4. 92	4. 79	4. 46	4.4 5	4. 72	4.8 6	4. 86	4. 73	4. 82	4. 51	4. 50	4. 93	4. 81	4. 87	4.9 5	4. 82
		SD		0. 82	0.8 5	1. 02	0. 84	0. 96	1. 09	1.0 5	0. 90	0.9 0	0. 90	0. 91	0. 87	0. 95	0. 93	0. 85	0. 87	0. 87	0.8 3	0. 85
	Total	M		4. 90	4.9 0	4. 73	5. 00	4. 77	4. 43	4.5 1	4. 66	4.9 5	4. 93	4. 69	4. 81	4. 55	4. 50	4. 92	4. 78	4. 86	4.9 6	4. 86
		SD		0. 79	0.8 3	0. 92	0. 77	0. 90	0. 98	1.0 1	0. 84	0.8 2	0. 80	0. 90	0. 87	0. 88	0. 90	0. 82	0. 85	0. 83	0.7 9	0. 80

### Appendix C3 Descriptive statistics Stimulation

	N	Mean	SD	SE	95%- Confidence Interval		Min.	Max.
					LB	UB		
1	10	4.486	1.055	.104	4.279	4.694	1.666	6.000
	2	9	8	5			6	0
2	97	4.838	.8417	.085	4.668	5.008	2.333	6.000
		4		4			3	0
3	10	4.858	.7949	.079	4.701	5.015	2.333	6.000
	1	0		0	1	0	3	0
Total	30	4.725	.9191	.053	4.621	4.829	1.666	6.000
	0	5		0		9	6	0

### Appendix C4 Descriptive statistics Self-enhancement

	N	Mean	SD	SE	95% Confidence Interval		Minimum	Maximum
					LB	UB		
1	10	4.389	.936	.0927	4.206	4.573	1.3333	6.0000
	2	9	5		0	9		
2	97	4.665	.759	.0770	4.512	4.818	2.6666	6.0000
		5	1		5	5		
3	10	4.669	.801	.0797	4.511	4.828	2.3333	6.0000
	1	9	3		7	1		
Total	30	4.573	.844	.0487	4.477	4.669	1.3333	6.0000
	0	3	6	6	3	3		

## Appendix C5 Testing the impact of personal values on purchase intentions

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	
BMW liking	SDT	-0.0313	0.1015	280	-0.3085	0.7579	-0.0277	
BMW liking	SDA	0.0326	0.1000	280	0.326	0.7447	0.03	
BMW liking	St	-0.1425	0.0832	280	-1.712	0.0880	-0.1457	
BMW liking	He	-0.0072	0.1060	280	-0.068	0.9459	-0.0062	
BMW liking	A	<b>0.2012</b>	<b>0.0828</b>	<b>280</b>	<b>2.4302</b>	<b>0.0157</b>	<b>0.2004</b>	*
BMW liking	PoD	0.0028	0.0778	280	0.0356	0.9716	0.003	
BMW liking	PR	<b>0.1295</b>	<b>0.0648</b>	<b>280</b>	<b>2.0005</b>	<b>0.0464</b>	<b>0.1457</b>	*
BMW liking	F	0.0451	0.0887	280	0.5079	0.6120	0.042	
BMW liking	SP	-0.0914	0.0969	280	-0.9433	0.3463	-0.0831	
BMW liking	SS	0.1419	0.0950	280	1.4938	0.1364	0.1268	
BMW liking	T	-0.0564	0.0759	280	-0.7426	0.4583	-0.0567	
BMW liking	CR	0.096	0.0931	280	1.0313	0.3033	0.0928	
BMW liking	Col	-0.0491	0.0752	280	-0.653	0.5143	-0.0483	
BMW liking	Hu	-0.0045	0.0798	280	-0.0569	0.9547	-0.0045	
BMW liking	UN	0.1041	0.0867	280	1.2002	0.2311	0.0955	
BMW liking	UC	-0.0855	0.0882	280	-0.97	0.3329	-0.0808	
BMW liking	UT	<b>0.2855</b>	<b>0.0915</b>	<b>280</b>	<b>3.1209</b>	<b>0.0020</b>	<b>0.2643</b>	**

BMW liking	BC	0.0177	0.1024	280	0.1727	0.8630	0.0155	
BMW liking	BD	0.1627	0.1024	280	1.5885	0.1133	0.1456	
BMW purchase intention	BMW liking	<b>0.5863</b>	<b>0.057</b>	<b>279</b>	<b>10.2782</b>	<b>0.0000</b>	<b>0.5108</b>	***
BMW purchase intention	SDT	0.101	0.0969	279	1.0419	0.2984	0.0778	
BMW purchase intention	SDA	0.1017	0.0955	279	1.0651	0.2878	0.0815	
BMW purchase intention	St	0.1458	0.0798	279	1.8257	0.069	0.1299	
BMW purchase intention	He	-0.0575	0.1012	279	-0.5686	0.5701	-0.043	
BMW purchase intention	A	0.0815	0.0798	279	1.0207	0.3083	0.0707	
BMW purchase intention	PD	0.1068	0.0743	279	1.4389	0.1513	0.1013	
BMW purchase intention	PR	0.0487	0.0622	279	0.7819	0.4349	0.0477	
BMW purchase intention	F	0.1128	0.0847	279	1.3309	0.1843	0.0916	
BMW purchase intention	SP	<b>-0.2843</b>	<b>0.0926</b>	<b>279</b>	<b>-3.0686</b>	<b>0.0024</b>	<b>-0.2251</b>	**
BMW purchase intention	SS	0.0875	0.091	279	0.9609	0.3375	0.0681	
BMW purchase intention	T	0.0014	0.0726	279	0.019	0.9849	0.0012	
BMW purchase intention	CR	-0.1144	0.089	279	-1.2854	0.1997	-0.0964	

BMW purchase intention	CI	-0.0106	0.0719	279	-0.148	0.8825	-0.0091	
BMW purchase intention	Hu	-0.0557	0.0762	279	-0.7312	0.4653	-0.0483	
BMW purchase intention	UN	-0.1131	0.083	279	-1.3623	0.1742	-0.0904	
BMW purchase intention	UC	0.0988	0.0843	279	1.1723	0.2421	0.0814	
BMW purchase intention	UT	-0.002	0.0888	279	-0.0221	0.9824	-0.0016	
BMW purchase intention	BC	0.0311	0.0978	279	0.3184	0.7504	0.0238	
BMW purchase intention	BD	0.0932	0.0982	279	0.9496	0.3431	0.0727	
MB liking	SDT	-0.0347	0.1125	280	-0.3089	0.7577	-0.0289	
MB liking	SDA	0.0733	0.1108	280	0.6617	0.5087	0.0635	
MB liking	St	0.0823	0.0922	280	0.8925	0.3729	0.0792	
MB liking	He	-0.0657	0.1174	280	-0.5596	0.5762	-0.0531	
MB liking	A	0.1356	0.0917	280	1.4795	0.1401	0.1272	
MB liking	PD	0.0536	0.0861	280	0.622	0.5344	0.0549	
MB liking	PR	-0.0723	0.0717	280	-1.0077	0.3145	-0.0765	
MB liking	F	<b>0.2062</b>	<b>0.0983</b>	<b>280</b>	<b>2.0981</b>	<b>0.0368</b>	<b>0.181</b>	*
MB liking	SP	-0.0608	0.1073	280	-0.5665	0.5715	-0.052	
MB liking	SS	0.0717	0.1052	280	0.682	0.4958	0.0603	
MB liking	T	0.0455	0.0841	280	0.5412	0.5888	0.0431	

MB liking	CR	0.162	0.1031	280	1.5722	0.1170	0.1476	
MB liking	CI	-0.0186	0.0833	280	-0.2239	0.8230	-0.0173	
MB liking	Hu	-0.1337	0.0883	280	-1.5129	0.1314	-0.1254	
MB liking	UN	0.1419	0.0961	280	1.4773	0.1407	0.1225	
MB liking	UC	-0.1433	0.0976	280	-1.468	0.1432	-0.1276	
MB liking	UT	0.1578	0.1013	280	1.5581	0.1204	0.1376	
MB liking	BC	-0.091	0.1134	280	-0.8025	0.4229	-0.0752	
MB liking	BD	0.1914	0.1134	280	1.6873	0.0927	0.1612	
MB purchase intention	MB liking	<b>0.6453</b>	<b>0.0605</b>	<b>279</b>	<b>10.6589</b>	<b>0.0000</b>	<b>0.5416</b>	***
MB purchase intention	SDT	0.1185	0.1139	279	1.0403	0.2991	0.0828	
MB purchase intention	SDA	-0.0635	0.1123	279	-0.5652	0.5724	-0.0461	
MB purchase intention	St	<b>0.2049</b>	<b>0.0935</b>	<b>279</b>	<b>2.1919</b>	<b>0.0292</b>	<b>0.1656</b>	*
MB purchase intention	He	0.1859	0.119	279	1.5626	0.1193	0.1261	
MB purchase intention	A	0.1222	0.0932	279	1.3108	0.1910	0.0962	
MB purchase intention	PD	0.1185	0.0873	279	1.3566	0.1760	0.1019	
MB purchase intention	PR	0.0318	0.0728	279	0.4368	0.6626	0.0283	
MB purchase intention	F	0.0509	0.1003	279	0.5069	0.6126	0.0375	



MB purchase intention	SP	-0.144	0.1088	279	-1.3241	0.1866	-0.1034	
MB purchase intention	SS	<b>-0.2453</b>	<b>0.1066</b>	<b>279</b>	<b>-2.3008</b>	<b>0.0221</b>	<b>-0.1732</b>	*
MB purchase intention	T	0.1099	0.0852	279	1.2897	0.1982	0.0873	
MB purchase intention	CR	-0.0161	0.1049	279	-0.1538	0.8778	-0.0123	
MB purchase intention	CI	0.08	0.0844	279	0.9482	0.3439	0.0621	
MB purchase intention	Hu	-0.0687	0.0899	279	-0.7646	0.4451	-0.0541	
MB purchase intention	UN	0.1302	0.0977	279	1.3325	0.1838	0.0943	
MB purchase intention	UC	0.1055	0.0993	279	1.0623	0.2890	0.0788	
MB purchase intention	UT	<b>-0.2505</b>	<b>0.1031</b>	<b>279</b>	<b>-2.4305</b>	<b>0.0157</b>	<b>-0.1833</b>	*
MB purchase intention	BC	-0.1083	0.115	279	-0.9419	0.3471	-0.0752	
MB purchase intention	BD	-0.0799	0.1155	279	-0.6923	0.4893	-0.0565	
BMW liking	MB liking	<b>0.3726</b>	-	<b>300</b>	<b>6.9186</b>	<b>0.0000</b>	<b>0.3726</b>	***
BMW purchase intention	MB purchase intention	<b>0.358</b>	-	<b>300</b>	<b>6.6086</b>	<b>0.0000</b>	<b>0.358</b>	***
BMW liking	MB purchase intention	-0.0635	-	300	-1.096	0.137	-0.0635	

BMW purchase intention	MB liking	0.0419	-	300	0.7222	0.2354	0.0419	
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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

## Appendix C6 Testing the impact of higher-order personal values on purchase intentions

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	
BMW liking	STr	<b>0.4579</b>	<b>0.1543</b>	<b>295</b>	<b>2.9679</b>	<b>0.0032</b>	<b>0.3592</b>	**
BMW liking	SE	<b>0.2799</b>	<b>0.0736</b>	<b>295</b>	<b>3.8019</b>	<b>0.0002</b>	<b>0.2631</b>	***
BMW liking	OC	-0.0477	0.1335	295	-0.3574	0.7211	-0.0388	
BMW liking	Con	0.047	0.1337	295	0.3513	0.7256	0.0376	
BMW purchase intention	BMW liking	<b>0.5772</b>	<b>0.0559</b>	<b>294</b>	<b>10.3223</b>	0.0000	<b>0.5028</b>	***
BMW purchase intention	STr	0.0417	0.1504	294	0.2771	0.7819	0.0285	
BMW purchase intention	SE	<b>0.334</b>	<b>0.0724</b>	<b>294</b>	<b>4.6123</b>	0.0000	<b>0.2735</b>	***
BMW purchase intention	OC	<b>0.3082</b>	<b>0.1282</b>	<b>294</b>	<b>2.4035</b>	<b>0.0169</b>	<b>0.2185</b>	*
BMW purchase intention	Con	<b>-0.2859</b>	<b>0.1285</b>	<b>294</b>	<b>-2.2257</b>	<b>0.0268</b>	<b>-0.1993</b>	*
MB liking	STr	0.1801	0.1711	295	1.0528	0.2933	0.1331	
MB liking	SE	<b>0.1715</b>	<b>0.0816</b>	<b>295</b>	<b>2.1</b>	<b>0.0366</b>	<b>0.1517</b>	*
MB liking	OC	0.1516	0.1481	295	1.0236	0.3068	0.1161	
MB liking	Con	0.2189	0.1483	295	1.4762	0.1409	0.165	
MB purchase intention	MB liking	<b>0.6376</b>	<b>0.0595</b>	<b>294</b>	<b>10.7138</b>	0.0000	<b>0.5352</b>	***

MB purchase intention	STr	-0.1522	0.1752	294	-0.8686	0.3858	-0.0944	
MB purchase intention	SE	<b>0.3338</b>	<b>0.0841</b>	<b>294</b>	<b>3.9695</b>	<b>0.0001</b>	<b>0.2479</b>	***
MB purchase intention	OC	0.2804	0.1516	294	1.8496	0.0654	0.1803	
MB purchase intention	Con	-0.1587	0.1522	294	-1.0432	0.2977	-0.1004	
BMW liking	MB liking	<b>0.3841</b>	-	<b>300</b>	<b>7.169</b>	0.0000	<b>0.3841</b>	***
BMW purchase intention	MB purchase intention	<b>0.3456</b>	-	<b>300</b>	<b>6.3476</b>	0.0000	<b>0.3456</b>	***
BMW liking	MB purchase intention	<b>-0.1009</b>	-	<b>300</b>	<b>-1.747</b>	<b>0.0408</b>	<b>-0.1009</b>	*
BMW purchase intention	MB liking	0.0629	-	300	1.0865	0.1391	0.0629	

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

## Appendix C7 Testing the impact of higher-order personal values and generational cohorts on liking and purchase intentions

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	p	c
<b>Age group 1</b>									
BMW liking	STr	0.4579	0.1543	295	2.9679	0.0032	0.3553	**	c
BMW liking	SE	0.2799	0.0736	295	3.8019	0.0002	0.2785	***	c
BMW liking	OC	<b>-0.4441</b>	<b>0.2013</b>	<b>97</b>	<b>-2.2064</b>	<b>0.0297</b>	<b>-0.3798</b>	*	
BMW liking	Con	0.0470	0.1337	295	0.3513	0.7256	0.0357		c
BMW purchase intention	BMW liking	0.5772	0.0559	294	10.3223	0.0000	0.4682	***	c
BMW purchase intention	STr	0.0417	0.1504	294	0.2771	0.7819	0.0262		c
BMW purchase intention	SE	0.3340	0.0724	294	4.6123	0.0000	0.2696	***	c
BMW purchase intention	OC	0.3082	0.1282	294	2.4035	0.0169	0.2138	*	c
BMW purchase intention	Con	-0.2859	0.1285	294	-2.2257	0.0268	-0.176	*	c
MB liking	STr	0.1801	0.1711	295	1.0528	0.2933	0.1444		c
MB liking	SE	0.2460	0.1370	97	1.7951	0.0757	0.2529		
MB liking	OC	-0.0774	0.2256	97	-0.3430	0.7323	-0.0684		
MB liking	Con	0.2189	0.1483	295	1.4762	0.1409	0.1717		c

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	p	c
MB purchase intention	MB liking	<b>0.8622</b>	<b>0.1124</b>	<b>96</b>	<b>7.6696</b>	<b>0.0000</b>	<b>0.6102</b>	<b>***</b>	
MB purchase intention	STr	-0.1522	0.1752	294	-0.8686	0.3858	-0.0863		c
MB purchase intention	SE	0.3338	0.0841	294	3.9695	0.0001	0.2429	<b>***</b>	c
MB purchase intention	OC	0.2804	0.1516	294	1.8496	0.0654	0.1753		c
MB purchase intention	Con	-0.1587	0.1522	294	-1.0432	0.2977	-0.0881		c
<b>Age group 2</b>									
BMW liking	STr	0.4579	0.1543	295	2.9679	0.0032	0.3613	<b>**</b>	c
BMW liking	SE	0.2799	0.0736	295	3.8019	0.0002	0.2436	<b>***</b>	c
BMW liking	OC	0.3585	0.2293	92	1.5632	0.1214	0.2901		
BMW liking	Con	0.0470	0.1337	295	0.3513	0.7256	0.0399		c
BMW purchase intention	BMW liking	0.5772	0.0559	294	10.3223	0.0000	0.5608	<b>***</b>	c
BMW purchase intention	STr	0.0417	0.1504	294	0.2771	0.7819	0.032		c
BMW purchase intention	SE	0.3340	0.0724	294	4.6123	0.0000	0.2825	<b>***</b>	c
BMW purchase intention	OC	0.3082	0.1282	294	2.4035	0.0169	0.2423	<b>*</b>	c
BMW purchase intention	Con	-0.2859	0.1285	294	-2.2257	0.0268	-0.2356	<b>*</b>	c
MB liking	STr	0.1801	0.1711	295	1.0528	0.2933	0.1302		c
MB liking	SE	-0.1761	0.1734	92	-1.0155	0.3125	-0.1405		

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	p	c
MB liking	OC	<b>0.8088</b>	<b>0.2454</b>	<b>92</b>	<b>3.2955</b>	<b>0.0014</b>	<b>0.5997</b>	<b>**</b>	
MB liking	Con	0.2189	0.1483	295	1.4762	0.1409	0.1701		c
MB purchase intention	MB liking	<b>0.3939</b>	<b>0.1014</b>	<b>91</b>	<b>3.8856</b>	<b>0.0002</b>	<b>0.3818</b>	<b>***</b>	
MB purchase intention	STr	-0.1522	0.1752	294	-0.8686	0.3858	-0.1067		c
MB purchase intention	SE	0.3338	0.0841	294	3.9695	0.0001	0.2581	<b>***</b>	c
MB purchase intention	OC	0.2804	0.1516	294	1.8496	0.0654	0.2015		c
MB purchase intention	Con	-0.1587	0.1522	294	-1.0432	0.2977	-0.1196		c
<b>Age group 3</b>									
BMW liking	STr	0.4579	0.1543	295	2.9679	0.0032	0.3615	<b>**</b>	c
BMW liking	SE	0.2799	0.0736	295	3.8019	0.0002	0.2526	<b>***</b>	c
BMW liking	OC	0.0093	0.3105	96	0.0300	0.9761	0.0070		
BMW liking	Con	0.0470	0.1337	295	0.3513	0.7256	0.0376		c
BMW purchase intention	BMW liking	0.5772	0.0559	294	10.3223	0.0000	0.507	<b>***</b>	c
BMW purchase intention	STr	0.0417	0.1504	294	0.2771	0.7819	0.0289		c
BMW purchase intention	SE	0.3340	0.0724	294	4.6123	0.0000	0.2648	<b>***</b>	c
BMW purchase intention	OC	0.3082	0.1282	294	2.4035	0.0169	0.2046	<b>*</b>	c
BMW purchase intention	Con	-0.2859	0.1285	294	-2.2257	0.0268	-0.2011	<b>*</b>	c

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	p	c
MB liking	STr	0.1801	0.1711	295	1.0528	0.2933	0.1256		c
MB liking	SE	<b>0.4025</b>	<b>0.1332</b>	<b>96</b>	<b>3.0227</b>	<b>0.0032</b>	<b>0.3209</b>	<b>**</b>	
MB liking	OC	-0.2073	0.3364	96	-0.6162	0.5392	-0.1384		
MB liking	Con	0.2189	0.1483	295	1.4762	0.1409	0.1548		c
MB purchase intention	MB liking	<b>0.6443</b>	<b>0.1012</b>	<b>95</b>	<b>6.3663</b>	<b>0.0000</b>	<b>0.5898</b>	<b>***</b>	
MB purchase intention	STr	-0.1522	0.1752	294	-0.8686	0.3858	-0.0972		c
MB purchase intention	SE	0.3338	0.0841	294	3.9695	0.0001	0.2436	<b>***</b>	c
MB purchase intention	OC	0.2804	0.1516	294	1.8496	0.0654	0.1714		c
MB purchase intention	Con	-0.1587	0.1522	294	-1.0432	0.2977	-0.1028		c

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05



## Appendix D1 Perception of BMW and MB brand personality

				BMW BP Sincerity	BMW BP Excitement	BMW BP Competence	BMW BP Sophisticated	BMW BP Ruggedness	MB BP Sincerity	MB BP Excitement	MB BP Competence	MB BP Sophisticated	MB BP Ruggedness
male	born 1992 and after	Shenzhen	M	5.00	5.09	5.06	5.03	5.23	5.03	5.31	5.23	5.11	5.37
			S D	0.84	0.919	0.873	0.822	0.731	0.822	0.963	0.69	0.867	0.77
		Shanghai	M	4.50	4.30	5.10	4.50	4.40	4.40	4.50	5.10	4.30	4.50
			S D	1,179	1,494	0.876	0.85	0.966	0.966	1,581	0.876	0.823	0.85
		Beijing	M	5.00	4.70	5.20	4.30	5.00	5.10	4.50	4.90	4.90	4.90
			S D	0.816	1,059	1,033	1,160	0.943	0.994	0.85	1,287	0.994	1,287
		Total	M	4.91	4.87	5.09	4.8	5.04	4.93	5.02	5.15	4.93	5.13
			S D	0.908	1,090	0.888	0.931	0.86	0.9	1,130	0.848	0.92	0.944
	born 1979 and before	Shanghai	M	5.21	5.11	5	5.16	4.95	5.21	4.95	5.21	4.95	5.26
			S D	0.787	0.809	0.943	0.958	0.848	0.855	0.911	0.918	1,177	0.733
		Beijing	M	4.32	4.84	5.11	4.74	5.11	5.16	4.68	5.37	5.26	5.11
			S D	1,108	0.898	0.994	1,447	0.737	0.898	1,250	0.684	0.991	0.658
		Shenzhen	M	5.31	5.62	5.77	5.46	5.54	5.38	5.54	5.62	5.69	5.54
			S D	0.63	0.65	0.599	0.66	0.877	0.65	0.66	0.65	0.63	0.66

		Tot al	M	4.90	5.14	5.24	5.08	5.16	5.24	5.0000	5.37	5.25	5.27
			S D	0.985	0.849	0.929	1,129	0.834	0.815	1,039	0.774	1,017	0.695
	born198 0-1991	She nzh en	M	5.27	4.91	5.55	5.09	5.09	5.09	5.36	5.36	5.36	4.91
			S D	1,009	0.944	0.934	0.944	0.831	1,044	1,027	0.674	0.809	0.944
		Beij ing	M	4.94	4.94	5.00	4.94	5.13	5.06	4.88	5.19	5.38	5.13
			S D	1,063	1,063	1,095	0.998	0.719	0.929	0.957	0.75	0.719	0.719
		Sha ngh ai	M	4.85	5.1	5.25	5.30	4.90	4.95	5.05	5.15	5.25	5.2
			S D	0.933	0.912	0.639	0.801	1,071	0.826	0.999	0.671	0.786	1,005
		Tot al	M	4.98	5.00	5.23	5.13	5.02	5.02	5.06	5.21	5.32	5.11
			S D	0.989	0.956	0.89	0.9	0.897	0.897	0.987	0.69	0.755	0.89
	Total	M		4.93	5.00	5.18	4.99	5.07	5.06	5.03	5.24	5.16	5.17
		SD		0.954	0.973	0.899	0.997	0.859	0.875	1,051	0.778	0.919	0.849
fe m a l e	born 1979 and before	Beij ing	M	5.23	4.92	5.00	5.38	5.38	5.38	5.08	5.31	5.46	5.46
			S D	0.725	1,038	1,354	0.65	0.65	0.768	0.862	0.63	0.776	0.776
		Sha ngh ai	M	4.82	5.06	5.06	5.06	5.12	4.76	5.12	5.06	5.24	5.24
			S D	1,015	0.827	0.748	0.659	0.781	1,033	0.857	0.827	0.664	0.664
		She nzh en	M	3.95	4.38	4.48	4.76	4.67	4.57	4.33	4.81	4.95	4.86
			S D	1,284	1,244	1,289	1,179	1,017	0.811	1,155	0.981	0.921	1,062
			M	4.57	4.75	4.80	5.02	5.00	4.84	4.78	5.02	5.18	5.14

	born1980-1991	Tot al	S D	1,188	1,093	1,167	0.927	0.894	0.925	1,045	0.86	0.817	0.895
		Beij ing	M	4.90	4.86	4.90	4.90	5.24	4.90	4.95	5.10	5.00	5.29
			S D	1,091	0.964	0.995	0.995	1,091	0.768	0.865	0.831	0.837	0.784
		Sha ngh ai	M	4.87	4.96	4.87	5.00	4.92	5.04	5.17	5	4.96	5.04
			S D	0.947	1,160	1,076	0.933	0.974	0.955	1,090	0.933	1,367	1,160
		She nzh en	M	5.80	6.00	5.8	5.4	5.8	6.00	6.00	5.60	5.80	5.60
			S D	0.447	0.000	0.447	0.548	0.447	0.000	0.000	0.548	0.447	0.548
		Tot al	M	4.98	5.02	4.98	5.00	5.14	5.08	5.16	5.10	5.06	5.20
			S D	1,000	1,059	1,020	0.926	1,010	0.877	0.976	0.863	1,114	0.969
	born 1992 and after	Sha ngh ai	M	4.70	4.30	4.40	4.20	4.30	4.10	4.20	4.30	4.30	4.20
			S D	0.675	1,252	1,265	0.789	1,567	1,792	0.919	1,567	0.823	1,229
		She nzh en	M	4.73	4.80	5.07	4.67	4.93	5.13	4.67	5.40	5.00	5.13
			S D	0.961	0.775	1,033	1,047	1,033	0.743	0.976	0.632	1,000	0.834
		Beij ing	M	5.62	5.00	4.76	5.52	5.71	5.57	4.95	5.14	5.62	5.81
			S D	1,117	0.775	0.831	0.512	1,102	0.87	0.59	0.655	0.59	0.512
		Tot al	M	5.13	4.78	4.78	4.96	5.15	5.11	4.70	5.04	5.13	5.24
			S D	1,067	0.917	1,009	0.942	1,299	1,215	0.84	0.988	0.934	1,015
	Total	M		4.88	4.85	4.86	4.99	5.10	5.01	4.88	5.05	5.12	5.19
		SD		1,107	1,029	1,066	0.925	1,068	1,010	0.976	0.897	0.957	0.953

Total	M		4.91	4.93	5.02	4.99	5.08	5.03	4.96	5.15	5.14	5.18
	SD		1,030	1,002	0.996	0.961	0.966	0.943	1,016	0.843	0.936	0.900
	<b>Age group</b>											
	born 1979 and before	M	4.74	4.94	5.02	5.05	5.08	5.04	4.89	5.2	5.22	5.21
		SD	1.098	0.993	1.072	1.028	0.864	0.889	1.043	0.833	0.919	0.8
	born 1980 - 1991	M	4.98	5.01	5.1	5.06	5.08	5.05	5.11	5.15	5.19	5.15
		SD	0.989	1.005	0.963	0.911	0.954	0.882	0.978	0.782	0.961	0.928
	born 1992 and after	M	5.01	4.83	4.95	4.87	5.09	5.01	4.87	5.1	5.02	5.18
		SD	0.985	1,011	0.953	0.934	1,078	1,054	1,016	0.911	0.927	0.974
	Total	M	4.91	4.93	5.02	4.99	5.08	5.03	4.96	5.15	5.14	5.18
		SD	1.030	1.002	0.996	0.961	0.966	0.943	1.016	0.843	0.936	0.900
	<b>Cities</b>											
	Beijing	M	5.00	4.89	4.97	5.01	5.29	5.2	4.86	5.18	5.29	5.32
		SD	1.092	0.931	1.020	1.049	0.924	0.876	0.91	0.783	0.832	0.803
	Shanghai	M	4.87	4.9	4.98	4.97	4.84	4.85	4.93	5.02	4.93	5.01
		SD	0.928	1.068	0.932	0.893	1.022	1.067	1.066	0.953	1.057	1.000
	Shenzhen	M	4.85	4.99	5.12	5.00	5.12	5.05	5.08	5.25	5.20	5.21
		SD	1.067	1.010	1.037	0.943	0.902	0.845	1.061	0.77	0.876	0.868
	Total	M	4.91	4.93	5.02	4.99	5.08	5.03	4.96	5.15	5.14	5.18
		SD	1,030	1.002	0.996	0.961	0.966	0.943	1.016	0.843	0.936	0.900

## Appendix D2 Testing the impact of perception of brand personality on purchase intention

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	
BMW liking	BMW Sincerity	<b>0.2211</b>	<b>0.0479</b>	<b>294</b>	<b>4.6149</b>	<b>0.0000</b>	<b>0.2535</b>	***
BMW liking	BMW Excitement	0.0930	0.0477	294	1.9473	0.0524	0.1037	
BMW liking	BMW Competence	<b>0.1991</b>	<b>0.0484</b>	<b>294</b>	<b>4.1095</b>	<b>0.0001</b>	<b>0.2207</b>	***
BMW liking	BMW Sophistication	<b>0.1538</b>	<b>0.0486</b>	<b>294</b>	<b>3.1623</b>	<b>0.0017</b>	<b>0.1644</b>	**
BMW liking	BMW Ruggedness	<b>0.1355</b>	<b>0.0519</b>	<b>294</b>	<b>2.6120</b>	<b>0.0095</b>	<b>0.1457</b>	**
BMW purchase intention	BMW liking	<b>0.5686</b>	<b>0.0652</b>	<b>293</b>	<b>8.7217</b>	<b>0.0000</b>	<b>0.4953</b>	***
BMW purchase intention	BMW Sincerity	<b>0.1526</b>	<b>0.0555</b>	<b>293</b>	<b>2.752</b>	<b>0.0063</b>	<b>0.1524</b>	**
BMW purchase intention	BMW Excitement	0.0517	0.0537	293	0.9629	0.3364	0.0502	
BMW purchase intention	BMW Competence	<b>0.1575</b>	<b>0.0557</b>	<b>293</b>	<b>2.8279</b>	<b>0.0050</b>	<b>0.1521</b>	**
BMW purchase intention	BMW Sophistication	-0.0032	0.0553	293	-0.058	0.9538	-0.003	
BMW purchase intention	BMW Ruggedness	-0.0338	0.0587	293	-0.5754	0.5655	-0.0316	
MB liking	MB Sincerity	<b>0.2727</b>	<b>0.0598</b>	<b>294</b>	<b>4.5646</b>	<b>0.0000</b>	<b>0.2694</b>	***
MB liking	MB Excitement	<b>0.1800</b>	<b>0.0529</b>	<b>294</b>	<b>3.4036</b>	<b>0.0008</b>	<b>0.1916</b>	***
MB liking	MB Competence	0.0951	0.0674	294	1.4108	0.1594	0.0839	

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	
MB liking	MB Sophistication	<b>0.1275</b>	<b>0.0607</b>	<b>294</b>	<b>2.1003</b>	<b>0.0366</b>	<b>0.1251</b>	*
MB liking	MB Ruggedness	<b>0.1347</b>	<b>0.0612</b>	<b>294</b>	<b>2.2020</b>	<b>0.0284</b>	<b>0.1270</b>	*
MB purchase intention	MB liking	<b>0.6355</b>	<b>0.0668</b>	<b>293</b>	<b>9.5103</b>	<b>0.0000</b>	<b>0.5334</b>	***
MB purchase intention	MB Sincerity	0.0354	0.0708	293	0.5002	0.6173	0.0294	
MB purchase intention	MB Excitement	0.084	0.0618	293	1.3592	0.1751	0.075	
MB purchase intention	MB Competence	0.1316	0.0775	293	1.6985	0.0905	0.0975	
MB purchase intention	MB Sophistication	-0.0621	0.0701	293	-0.8865	0.3761	-0.0511	
MB purchase intention	MB Ruggedness	0.0924	0.0707	293	1.3081	0.1919	0.0732	
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05								

### Appendix D3 Testing the effect of perception of brand personality and generational cohorts on liking and purchase intention

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	p	c
<b>Age group 1</b>									
BMW liking	BMW Sincerity	0.2211	0.0479	294	4.6149	0.0000	0.2580	***	c
BMW liking	BMW Excitement	0.093	0.0477	294	1.9473	0.0524	0.0982		c
BMW liking	BMW Competence	<b>0.3469</b>	<b>0.0867</b>	<b>96</b>	<b>4.0009</b>	<b>0.0001</b>	<b>0.3949</b>	***	
BMW liking	BMW Sophistication	0.1538	0.0486	294	3.1623	0.0017	0.1680	**	c
BMW liking	BMW Ruggedness	0.1355	0.0519	294	2.612	0.0095	0.1244	**	c
BMW purchase intention	BMW liking	0.5686	0.0652	293	8.7217	0.0000	0.4612	***	c
BMW purchase intention	BMW Sincerity	0.1526	0.0555	293	2.752	0.0063	0.1445	**	c
BMW purchase intention	BMW Excitement	0.0517	0.0537	293	0.9629	0.3364	0.0443		c
BMW purchase intention	BMW Competence	0.1575	0.0557	293	2.8279	0.0050	0.1455	**	c
BMW purchase intention	BMW Sophistication	-0.0032	0.0553	293	-0.058	0.9538	-0.0028		c
BMW purchase intention	BMW Ruggedness	-0.0338	0.0587	293	-0.5754	0.5655	-0.0252		c
MB liking	MB Sincerity	0.2727	0.0598	294	4.5646	0.0000	0.2662	***	c
MB liking	MB Excitement	<b>0.393</b>	<b>0.086</b>	<b>96</b>	<b>4.571</b>	<b>0.0000</b>	<b>0.4498</b>	***	
MB liking	MB Competence	0.0951	0.0674	294	1.4108	0.1594	0.0870		c
MB liking	MB Sophistication	0.0135	0.1013	96	0.1332	0.8943	0.0136		
MB liking	MB Ruggedness	0.1347	0.0612	294	2.202	0.0284	0.1183	*	c
MB purchase intention	MB liking	<b>0.8398</b>	<b>0.1364</b>	<b>95</b>	<b>6.1551</b>	<b>0.0000</b>	<b>0.5944</b>	***	
MB purchase intention	MB Sincerity	0.0354	0.0708	293	0.5002	0.6173	0.0245		c

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	p	c
MB purchase intention	MB Excitement	0.084	0.0618	293	1.3592	0.1751	0.0680		c
MB purchase intention	MB Competence	0.1748	0.1506	95	1.1604	0.2488	0.1131		
MB purchase intention	MB Sophistication	-0.0621	0.0701	293	-0.8865	0.3761	-0.0443		c
MB purchase intention	MB Ruggedness	0.0924	0.0707	293	1.3081	0.1919	0.0574		c
<b>Age group 2</b>									
BMW liking	BMW Sincerity	0.2211	0.0479	294	4.6149	0.0000	0.2508	***	c
BMW liking	BMW Excitement	0.093	0.0477	294	1.9473	0.0524	0.1072		c
BMW liking	BMW Competence	<b>0.2193</b>	<b>0.0881</b>	<b>91</b>	<b>2.4895</b>	<b>0.0146</b>	<b>0.2421</b>	*	
BMW liking	BMW Sophistication	0.1538	0.0486	294	3.1623	0.0017	0.1606	**	c
BMW liking	BMW Ruggedness	0.1355	0.0519	294	2.612	0.0095	0.1482	**	c
BMW purchase intention	BMW liking	0.5686	0.0652	293	8.7217	0.0000	0.5525	***	c
BMW purchase intention	BMW Sincerity	0.1526	0.0555	293	2.752	0.0063	0.1682	**	c
BMW purchase intention	BMW Excitement	0.0517	0.0537	293	0.9629	0.3364	0.0579		c
BMW purchase intention	BMW Competence	0.1575	0.0557	293	2.8279	0.0050	0.1689	**	c
BMW purchase intention	BMW Sophistication	-0.0032	0.0553	293	-0.058	0.9538	-0.0032		c
BMW purchase intention	BMW Ruggedness	-0.0338	0.0587	293	-0.5754	0.5655	-0.0359		c
MB liking	MB Sincerity	0.2727	0.0598	294	4.5646	0.0000	0.2528	***	c
MB liking	MB Excitement	<b>0.2431</b>	<b>0.1023</b>	<b>91</b>	<b>2.3768</b>	<b>0.0196</b>	<b>0.2497</b>	*	
MB liking	MB Competence	0.0951	0.0674	294	1.4108	0.1594	0.0781		c
MB liking	MB Sophistication	0.0233	0.106	91	0.2201	0.8263	0.0236		
MB liking	MB Ruggedness	0.1347	0.0612	294	2.2020	0.0284	0.1313	*	c
MB purchase intention	MB liking	<b>0.3754</b>	<b>0.1013</b>	<b>90</b>	<b>3.7076</b>	<b>0.0004</b>	<b>0.3639</b>	***	



Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	p	c
MB purchase intention	MB Sincerity	0.0354	0.0708	293	0.5002	0.6173	0.0318		c
MB purchase intention	MB Excitement	0.084	0.0618	293	1.3592	0.1751	0.0836		c
MB purchase intention	MB Competence	<b>0.4547</b>	<b>0.1309</b>	<b>90</b>	<b>3.4734</b>	<b>0.0008</b>	<b>0.3621</b>	***	
MB purchase intention	MB Sophistication	-0.0621	0.0701	293	-0.8865	0.3761	-0.0608		c
MB purchase intention	MB Ruggedness	0.0924	0.0707	293	1.3081	0.1919	0.0873		c
<b>Age group 3</b>									
BMW liking	BMW Sincerity	0.2211	0.0479	294	4.6149	0.0000	0.2453	***	c
BMW liking	BMW Excitement	0.093	0.0477	294	1.9473	0.0524	0.1059		c
BMW liking	BMW Competence	0.0141	0.0841	95	0.1675	0.8674	0.0151		
BMW liking	BMW Sophistication	0.1538	0.0486	294	3.1623	0.0017	0.1619	**	c
BMW liking	BMW Ruggedness	0.1355	0.0519	294	2.6120	0.0095	0.1645	**	c
BMW purchase intention	BMW liking	0.5686	0.0652	293	8.7217	0.0000	0.4995	***	c
BMW purchase intention	BMW Sincerity	0.1526	0.0555	293	2.752	0.0063	0.1487	**	c
BMW purchase intention	BMW Excitement	0.0517	0.0537	293	0.9629	0.3364	0.0517		c
BMW purchase intention	BMW Competence	0.1575	0.0557	293	2.8279	0.0050	0.1485	**	c
BMW purchase intention	BMW Sophistication	-0.0032	0.0553	293	-0.0580	0.9538	-0.0030		c
BMW purchase intention	BMW Ruggedness	-0.0338	0.0587	293	-0.5754	0.5655	-0.0361		c
MB liking	MB Sincerity	0.2727	0.0598	294	4.5646	0.0000	0.2859	***	c
MB liking	MB Excitement	-0.0606	0.0878	95	-0.6902	0.4918	-0.0613		
MB liking	MB Competence	0.0951	0.0674	294	1.4108	0.1594	0.0862		c
MB liking	MB Sophistication	<b>0.3692</b>	<b>0.1054</b>	<b>95</b>	<b>3.5034</b>	<b>0.0007</b>	<b>0.3406</b>	***	
MB liking	MB Ruggedness	0.1347	0.0612	294	2.202	0.0284	0.1305	*	c

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	p	c
MB purchase intention	MB liking	<b>0.6579</b>	<b>0.1142</b>	<b>94</b>	<b>5.7612</b>	<b>0.0000</b>	<b>0.6022</b>	***	
MB purchase intention	MB Sincerity	0.0354	0.0708	293	0.5002	0.6173	0.0340		c
MB purchase intention	MB Excitement	0.084	0.0618	293	1.3592	0.1751	0.0778		c
MB purchase intention	MB Competence	-0.1118	0.1153	94	-0.9701	0.3345	-0.0928		
MB purchase intention	MB Sophistication	-0.0621	0.0701	293	-0.8865	0.3761	-0.0524		c
MB purchase intention	MB Ruggedness	0.0924	0.0707	293	1.3081	0.1919	0.0819		c

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

## Appendix E1 Testing the impact of Self-brand congruence and generational cohorts

<b>BMW</b>		
congruence_ST_BMW Sincerity by age group		
a) Kruskal-Wallis is with chi-square = 1.8137, df = 2, p = 0.4038, is not significant ( $p \geq 0.05$ ).		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	P = 0.55	-
3	P = 0.53	P = 0.55
There are no age group differences since p-values are all $p \geq 0.05$ .		
congruence_ST_BMW Excitement by age groups		
a) Kruskal-Wallis is with chi-square = 0.050272, df = 2, p = 0.9752, which is not significant ( $p \geq 0.05$ ).		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	Age group1	Age group 2
2	0.94	-
3	0.94	0.94
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_ST_BMW Competence by age groups		
a) Kruskal-Wallis is with chi-square = 3.0588, df = 2, p = 0.2167, which is not significant ( $p \geq 0.05$ ).		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.50	-
3	0.50	0.27
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_ST_BMW Sophistication by age groups		
a) Kruskal-Wallis is with chi-square = 0.53817, df = 2, p = 0.7641, which is not significant ( $p \geq 0.05$ ).		

b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.82	-
3	0.82	0.82
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_ST_BMW Ruggedness by age groups		
a) Kruskal-Wallis is with chi-square = 0.77329, df = 2, $p = 0.6793$ , which is not significant ( $p \geq 0.05$ ).		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.65	-
3	0.65	0.65
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_SE_BMW Sincerity by age groups		
a) Kruskal-Wallis is with chi-square = 1.1709, df = 2, $p = 0.5568$ , which is not significant ( $p \geq 0.05$ ).		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.69	-
3	0.74	0.83
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_SE_BMW Excitement by age groups		
a) Kruskal-Wallis is with chi-square = 1.948, df = 2, $p = 0.3776$ , which is not significant ( $p \geq 0.05$ ).		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.53	-
3	0.49	0.53
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_SE_BMW Competence by age groups		
a) Kruskal-Wallis is with chi-square = 0.75634, df = 2, $p = 0.6851$ , which is not significant ( $p \geq 0.05$ ).		

b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.83	-
3	0.83	0.83
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_SE_BMW Sophistication by age groups		
a) Kruskal-Wallis is with chi-square = 1.6706, df = 2, $p = 0.4337$ , which is not significant ( $p \geq 0.05$ ).		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.71	-
3	0.54	0.72
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_SE_BMW Ruggedness by age groups		
a) Kruskal-Wallis is with chi-square = 3.4235, df = 2, $p = 0.1805$ , which is not significant ( $p \geq 0.05$ ).		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.23	-
3	0.42	0.51
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_OC_BMW Sincerity by age groups		
a) Kruskal-Wallis is with chi-square = 2.8205, df = 2, $p = 0.2441$ , which is not significant ( $p \geq 0.05$ ).		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.32	-
3	0.27	0.84
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_OC_BMW Excitement by age groups		
a) Kruskal-Wallis is with chi-square = 0.1442, df = 2, $p = 0.9304$ , which is not significant ( $p \geq 0.05$ ).		

b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.85	-
3	0.85	0.85
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_OC_BMW Competence by age groups		
a) Kruskal-Wallis is with chi-square = 0.86106, df = 2, $p = 0.6502$ , which is not significant ( $p \geq 0.05$ ).		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.97	-
3	0.86	0.83
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_OC_BMW Sophistication by age groups		
a) Kruskal-Wallis is with chi-square = 0.63987, df = 2, $p = 0.7262$ , which is not significant ( $p \geq 0.05$ ).		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.76	-
3	0.76	0.76
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_OC_BMW Ruggedness by age groups		
a) Kruskal-Wallis is with chi-square = 0.88796, df = 2, $p = 0.6415$ , which is not significant ( $p \geq 0.05$ ).		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.76	-
3	0.76	0.76
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_Con_BMW Sincerity by age groups		
a) Kruskal-Wallis is with chi-square = 1.2354, df = 2, $p = 0.5392$ , which is not significant ( $p \geq 0.05$ ).		

b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.71	-
3	0.65	0.87
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_ Con_BMW Excitement by age groups		
a) Kruskal-Wallis is with chi-square = 1.4566, df = 2, $p = 0.4827$ , which is not significant ( $p \geq 0.05$ ).		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.79	-
3	0.85	0.59
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_ Con_BMW Competence by age groups		
a) Kruskal-Wallis is with chi-square = 0.34451, df = 2, $p = 0.8418$ , which is not significant ( $p \geq 0.05$ ).		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.85	-
3	0.85	0.85
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_ Con_BMW Sophistication by age groups		
a) Kruskal-Wallis is with chi-square = 1.6669, df = 2, $p = 0.4345$ , which is not significant ( $p \geq 0.05$ ).		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.95	-
3	0.60	0.46
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_ Con_BMW Ruggedness by age groups		
a) Kruskal-Wallis is with chi-square = 0.037911, df = 2, $p = 0.9812$ , which is not significant ( $p \geq 0.05$ ).		

- b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:

Age group	1	2
2	1	-
3	1	1

There are no age group differences, since p-values are all  $p \geq 0.05$ .

### MB

congruence\_ST\_MB Sincerity by age groups

- a) Kruskal-Wallis is with chi-square = 2.5752, df = 2, has a p = 0.2759, which is not significant ( $< 0.05$ ).

- b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:

Age group	1	2
2	0.98	-
3	0.36	0.31

There are no age group differences, since p-values are all  $p \geq 0.05$ .

congruence\_ST\_MB Excitement by age groups

- a) Kruskal-Wallis is with chi-square = 0.088408, df = 2, with a p = 0.9568, thus  $>0.05$  and not significant.

- b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:

Age group	1	2
2	0.95	-
3	0.95	0.95

There are no age group differences, since p-values are all  $p \geq 0.05$ .

congruence\_ST\_MB Sophistication by age groups

- a) Kruskal-Wallis is with chi-square = 0.068198, df = 2, p = 0.9665, thus  $>0.05$  and not significant.

- b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:

Age group	1	2
2	0.97 -	
3	0.97	0.97

There are no age group differences, since p-values are all  $p \geq 0.05$ .

congruence\_ST\_MB Ruggedness by age groups

- a) Kruskal-Wallis is with chi-square = 3.031, df = 2, p = 0.2197, thus  $>0.05$  and not significant.



b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.95	-
3	0.28	0.25
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_SE_MB Sincerity by age groups		
a) Kruskal-Wallis is with chi-square = 0.7578, df = 2, $p = 0.6846$ , thus $>0.05$ and not significant.		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.79	-
3	0.79	0.79
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_SE_MB Excitement by age groups		
a) Kruskal-Wallis is with chi-square = 0.33216, df = 2, $p = 0.847$ , thus $>0.05$ and not significant.		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.92	-
3	0.92	0.92
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_SE_MB Competence by age groups		
a) Kruskal-Wallis is with chi-square = 1.6787, df = 2, $p = 0.432$ , thus $>0.05$ and not significant.		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.47	-
3	0.79	0.61
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_SE_MB Sophistication by age groups		
a) Kruskal-Wallis is with chi-square = 3.9688, df = 2, $p = 0.1375$ , thus $>0.05$ and not significant.		

b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.46	-
3	0.14	0.46
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_SE_MB Ruggedness by age groups		
a) Kruskal-Wallis is with chi-square = 0.91507, df = 2, p = 0.6328, thus $>0.05$ and not significant.		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.78	-
3	0.78	0.78
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_OC_MB Sincerity by age groups		
a) Kruskal-Wallis is with chi-square = 1.6463, df = 2, p = 0.439, thus $>0.05$ and not significant.		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.66	-
3	0.66	0.53
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_OC_MB Excitement by age groups		
a) Kruskal-Wallis is with chi-square = 0.20378, df = 2, p = 0.9031, thus $>0.05$ and not significant.		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.85	-
3	0.85	0.85
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_OC_MB Sophistication by age groups		
a) Kruskal-Wallis is with chi-square = 1.554, df = 2, p = 0.4598, thus $>0.05$ and not significant.		

b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.58	-
3	0.61	0.61
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_OC_MB Ruggedness by age groups		
a) Kruskal-Wallis is with chi-square = 1.5105, df = 2, $p = 0.4699$ , thus $>0.05$ and not significant.		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.70	-
3	0.70	0.62
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_Con_MB Sincerity by age groups		
a) Kruskal-Wallis is with chi-square = 0.26407, df = 2, $p = 0.8763$ , thus $>0.05$ and not significant.		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	1	-
3	1	1
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_Con_MB Excitement by age groups		
a) Kruskal-Wallis is with chi-square = 0.57253, df = 2, $p = 0.7511$ , thus $>0.05$ and not significant.		
b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:		
Age group	1	2
2	0.75	-
3	0.75	0.75
There are no age group differences, since p-values are all $p \geq 0.05$ .		
congruence_Con_MB Sophistication by age groups		
a) Kruskal-Wallis is with chi-square = 0.27948, df = 2, $p = 0.8696$ , thus $>0.05$ and not significant.		

b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:

Age group	1	2
2	0.9	-
3	0.9	0.9

There are no age group differences, since p-values are all  $p \geq 0.05$ .

congruence\_Con\_MB Ruggedness by age groups

a) Kruskal-Wallis is with chi-square = 1.2446, df = 2,  $p = 0.5367$ , which is not significant ( $p \geq 0.05$ ).

b) Pairwise comparisons of age group differences using Wilcoxon rank sum test:

Age group	1	2
2	0.98	-
3	0.68	0.67

There are no age group differences, since p-values are all  $p \geq 0.05$ .

## Appendix E2 Testing the impact of Self-brand congruence on liking and purchase intention

Response	Predictor	Estimate	Std. Error	DF	Crit. Value	P. Value	Std. Estimate	
BMW liking	cong STr_BMW Sincerity	<b>-0.2942</b>	<b>0.0882</b>	<b>279</b>	<b>-33.370</b>	<b>0.0010</b>	<b>-0.5850</b>	** *
BMW liking	cong STr_BMW Competence	0.1523	0.0781	279	19.504	0.0521	0.3068	
BMW liking	cong STr_BMW Ruggedness	0.1666	0.1089	279	15.307	0.1270	0.2915	
BMW liking	cong SE_BMW Sincerity	<b>0.0646</b>	<b>0.0316</b>	<b>279</b>	<b>20.446</b>	<b>0.0418</b>	<b>0.1142</b>	*
BMW liking	cong SE_BMW Ruggedness	<b>-0.1392</b>	<b>0.028</b>	<b>279</b>	<b>-49.618</b>	<b>0.0000</b>	<b>-0.3621</b>	** *
BMW liking	cong OC_BMW Sophistication	<b>-0.0641</b>	<b>0.0243</b>	<b>279</b>	<b>-26.419</b>	<b>0.0087</b>	<b>-0.1261</b>	**
BMW liking	cong OC_BMW Ruggedness	0.1379	0.0705	279	19.553	0.0515	0.2701	
BMW liking	cong Con_BMW Sincerity	<b>0.2580</b>	<b>0.079</b>	<b>279</b>	<b>32.665</b>	<b>0.0012</b>	<b>0.5405</b>	**
BMW liking	cong Con_BMW Excitement	0.0475	0.0292	279	16.271	0.1049	0.0886	
BMW liking	cong Con_BMW Competence	-0.1108	0.0732	279	-15.139	0.1312	-0.2282	
BMW liking	cong Con_BMW Ruggedness	<b>-0.2281</b>	<b>0.0813</b>	<b>279</b>	<b>-28.065</b>	<b>0.0054</b>	<b>-0.3930</b>	**

BMW purchase intention	cong STr_BMW Excitement	<b>-0.1742</b>	<b>0.0593</b>	<b>280</b>	<b>-29.385</b>	<b>0.0036</b>	<b>-0.2518</b>	<b>**</b>
BMW purchase intention	cong STr_BMW Ruggedness	<b>0.1593</b>	<b>0.0797</b>	<b>280</b>	<b>20,000</b>	<b>0.0465</b>	<b>0.2428</b>	<b>*</b>
BMW purchase intention	cong SE_BMW Competence	<b>-0.1013</b>	<b>0.0335</b>	<b>280</b>	<b>-30.279</b>	<b>0.0027</b>	<b>-0.1815</b>	<b>**</b>
BMW purchase intention	cong OC_BMW Sincerity	<b>-0.2017</b>	<b>0.0543</b>	<b>280</b>	<b>-37.119</b>	<b>0.0002</b>	<b>-0.3977</b>	<b>**</b> <b>*</b>
BMW purchase intention	cong OC_BMW Excitement	<b>0.1603</b>	<b>0.0603</b>	<b>280</b>	<b>26.575</b>	<b>0.0083</b>	<b>0.2364</b>	<b>**</b>
BMW purchase intention	cong OC_BMW Competence	<b>0.0859</b>	<b>0.0419</b>	<b>280</b>	<b>20.511</b>	<b>0.0412</b>	<b>0.1311</b>	<b>*</b>
BMW purchase intention	cong Con_BMW Sincerity	<b>0.1722</b>	<b>0.0559</b>	<b>280</b>	<b>30.816</b>	<b>0.0023</b>	<b>0.3143</b>	<b>**</b>
BMW purchase intention	cong Con_BMW Sophistication	<b>-0.0736</b>	<b>0.0299</b>	<b>280</b>	<b>-24.599</b>	<b>0.0145</b>	<b>-0.1141</b>	<b>*</b>
BMW purchase intention	cong Con_BMW Ruggedness	-0.1524	0.0816	280	-18.667	0.0630	-0.2287	
MB liking	cong STr_MB Sincerity	<b>-0.3509</b>	<b>0.0977</b>	<b>278</b>	<b>-35.918</b>	<b>0.0004</b>	<b>-0.4507</b>	<b>**</b> <b>*</b>
MB liking	cong STr_MB Ruggedness	<b>0.1636</b>	<b>0.0807</b>	<b>278</b>	<b>20.265</b>	<b>0.0437</b>	<b>0.2594</b>	<b>*</b>
MB liking	cong SE_MB Sincerity	<b>-0.0915</b>	<b>0.0427</b>	<b>278</b>	<b>-21.402</b>	<b>0.0332</b>	<b>-0.1625</b>	<b>*</b>
MB liking	cong SE_MB Excitement	<b>0.0666</b>	<b>0.0264</b>	<b>278</b>	<b>25.200</b>	<b>0.0123</b>	<b>0.1295</b>	<b>*</b>
MB liking	cong SE_MB Competence	0.0894	0.0514	278	17.399	0.0830	0.1991	

MB liking	cong SE_MB Sophistication	<b>-0.1729</b>	<b>0.0523</b>	27 8	<b>-33.040</b>	<b>0.0011</b>	<b>-0.3884</b>	**
MB liking	cong SE_MB Ruggedness	<b>0.1288</b>	<b>0.047</b>	27 8	<b>27.427</b>	<b>0.0065</b>	<b>0.3003</b>	**
MB liking	cong OC_MB Sincerity	0.1105	0.0757	27 8	14.600	0.1454	0.1494	
MB liking	cong OC_MB Competence	-0.1186	0.0671	27 8	-17.669	0.0783	-0.1444	
MB liking	cong OC_MB Sophistication	<b>0.1613</b>	<b>0.0498</b>	27 8	<b>32.367</b>	<b>0.0014</b>	<b>0.2678</b>	**
MB liking	cong Con_MB Sincerity	<b>0.3578</b>	<b>0.0816</b>	27 8	<b>43.837</b>	<b>0.0000</b>	<b>0.4829</b>	** *
MB liking	cong Con_MB Ruggedness	<b>-0.2499</b>	<b>0.0751</b>	27 8	<b>-33.265</b>	<b>0.0010</b>	<b>-0.4365</b>	** *
MB purchase intention	cong STr_MB Sincerity	<b>-0.2791</b>	<b>0.131</b>	27 6	<b>-21.307</b>	<b>0.0340</b>	<b>-0.3010</b>	*
MB purchase intention	cong STr_MB Sophistication	0.1271	0.0939	27 6	13.531	0.1771	0.1689	
MB purchase intention	cong STr_MB Ruggedness	<b>0.2003</b>	<b>0.0917</b>	27 6	<b>21.830</b>	<b>0.0299</b>	<b>0.2665</b>	*
MB purchase intention	cong SE_MB Competence	<b>-0.1412</b>	<b>0.0519</b>	27 6	<b>-27.212</b>	<b>0.0069</b>	<b>-0.2639</b>	**
MB purchase intention	cong SE_MB Sophistication	0.1033	0.0626	27 6	16.512	0.0998	0.1949	
MB purchase intention	cong SE_MB Ruggedness	<b>0.1390</b>	<b>0.0534</b>	27 6	<b>26.000</b>	<b>0.0098</b>	<b>0.2719</b>	**
MB purchase intention	cong OC_MB Sincerity	-0.1288	0.0951	27 6	-13.541	0.1768	-0.1462	

MB purchase intention	cong OC_MB Excitement	<b>-0.2419</b>	<b>0.0691</b>	<b>27</b> <b>6</b>	<b>-34.980</b>	<b>0.0005</b>	<b>-0.3594</b>	<b>**</b> <b>*</b>
MB purchase intention	cong OC_MB Competence	<b>0.2407</b>	<b>0.0721</b>	<b>27</b> <b>6</b>	<b>33.379</b>	<b>0.0010</b>	<b>0.2460</b>	<b>**</b> <b>*</b>
MB purchase intention	cong OC_MB Sophistication	<b>-0.2095</b>	<b>0.0872</b>	<b>27</b> <b>6</b>	<b>-24.024</b>	<b>0.0169</b>	<b>-0.2920</b>	<b>*</b>
MB purchase intention	cong Con_MB Sincerity	<b>0.4212</b>	<b>0.0956</b>	<b>27</b> <b>6</b>	<b>44.052</b>	<b>0.0000</b>	<b>0.4772</b>	<b>**</b> <b>*</b>
MB purchase intention	cong Con_MB Excitement	<b>0.1915</b>	<b>0.073</b>	<b>27</b> <b>6</b>	<b>26.218</b>	<b>0.0092</b>	<b>0.2683</b>	<b>**</b>
MB purchase intention	cong Con_MB Ruggedness	<b>-0.3856</b>	<b>0.0878</b>	<b>27</b> <b>6</b>	<b>-43.901</b>	<b>&lt;</b> <b>0.0000</b> <b>5</b>	<b>-0.5654</b>	<b>**</b> <b>*</b>

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05



### Appendix E3 Testing the impact of Self-brand congruence and generational cohorts on liking and purchase intention

Response	Predictor	Estimate	Std. Error	DF	Crit. Value	P. Value	Std. Estimate	p	c
<b>Age group 1</b>									
BMW liking	cong STr_BMW Sincerity	-0.2942	0.0882	279	-3.3370	0.0010	-0.4282	** *	c
BMW liking	cong STr_BMW Competence	0.1523	0.0781	279	1.9504	0.0521	0.3657		c
BMW liking	cong STr_BMW Ruggedness	0.1666	0.1089	279	1.5307	0.1270	0.2012		c
BMW liking	cong SE_BMW Sincerity	0.0646	0.0316	279	2.0446	0.0418	0.1257	*	c
BMW liking	cong SE_BMW Ruggedness	-0.1392	0.0280	279	-4.9618	0.0000	-0.4678	** *	c
BMW liking	cong OC_BMW Sophistication	-0.0641	0.0243	279	-2.6419	0.0087	-0.1745	**	c
BMW liking	cong OC_BMW Ruggedness	0.1379	0.0705	279	1.9553	0.0515	0.215		c
BMW liking	cong Con_BMW Sincerity	0.2580	0.0790	279	3.2665	0.0012	0.4108	**	c
BMW liking	cong Con_BMW Excitement	0.0475	0.0292	279	1.6271	0.1049	0.0597		c
BMW liking	cong Con_BMW Competence	-0.1108	0.0732	279	-1.5139	0.1312	-0.2695		c

BMW liking	cong Con_BMW Ruggedness	-0.2281	0.0813	27 9	-2.8065	0.0054	-0.2576	**	c
BMW purchase intention	BMW liking	0.4703	0.0633	28 0	7.4303	0.0000	0.3815	** *	c
BMW purchase intention	cong STr_BMW Excitement	-0.1742	0.0593	28 0	-2.9385	0.0036	-0.1662	**	c
BMW purchase intention	cong STr_BMW Ruggedness	0.1593	0.0797	28 0	2.0000	0.0465	0.1561	*	c
BMW purchase intention	<b>cong SE_BMW Competence</b>	<b>-0.2045</b>	<b>0.0585</b>	<b>82</b>	<b>-3.4943</b>	<b>0.0008</b>	<b>-0.4037</b>	** *	
BMW purchase intention	cong OC_BMW Sincerity	-0.2017	0.0543	28 0	-3.7119	0.0002	-0.3327	** *	c
BMW purchase intention	cong OC_BMW Excitement	0.1603	0.0603	28 0	2.6575	0.0083	0.1172	**	c
BMW purchase intention	cong OC_BMW Competence	0.0859	0.0419	28 0	2.0511	0.0412	0.1386	*	c
BMW purchase intention	cong Con_BMW Sincerity	0.1722	0.0559	28 0	3.0816	0.0023	0.2224	**	c
BMW purchase intention	cong Con_BMW Sophistication	0.0214	0.0589	82	0.3638	0.7169	0.0376		
BMW purchase intention	cong Con_BMW Ruggedness	-0.1524	0.0816	28 0	-1.8667	0.0630	-0.1396		c
MB liking	cong STr_MB Sincerity	-0.3509	0.0977	27 8	-3.5918	0.0004	-0.434	** *	c
MB liking	cong STr_MB Ruggedness	0.1636	0.0807	27 8	2.0265	0.0437	0.2849	*	c
MB liking	cong SE_MB Sincerity	-0.0915	0.0427	27 8	-2.1402	0.0332	-0.2129	*	c

MB liking	cong SE_MB Excitement	0.0666	0.0264	27 8	2.5200	0.0123	0.1399	*	c
MB liking	cong SE_MB Competence	0.0894	0.0514	27 8	1.7399	0.0830	0.2814		c
MB liking	cong SE_MB Sophistication	-0.1729	0.0523	27 8	-3.3040	0.0011	-0.5009	**	c
MB liking	cong SE_MB Ruggedness	0.1288	0.0470	27 8	2.7427	0.0065	0.3829	**	c
MB liking	cong OC_MB Sincerity	0.1105	0.0757	27 8	1.4600	0.1454	0.1554		c
MB liking	cong OC_MB Competence	-0.1186	0.0671	27 8	-1.7669	0.0783	-0.1937		c
MB liking	cong OC_MB Sophistication	0.1613	0.0498	27 8	3.2367	0.0014	0.2848	**	c
MB liking	cong Con_MB Sincerity	0.3578	0.0816	27 8	4.3837	0.0000	0.4738	** *	c
MB liking	cong Con_MB Ruggedness	-0.2499	0.0751	27 8	-3.3265	0.0010	-0.4606	** *	c
MB purchase intention	MB liking	0.5624	0.0662	27 6	8.4947	0.0000	0.398	** *	c
MB purchase intention	cong STr_MB Sincerity	-0.2791	0.1310	27 6	-2.1307	0.0340	-0.2443	*	c
MB purchase intention	cong STr_MB Sophistication	0.1271	0.0939	27 6	1.3531	0.1771	0.1557		c
MB purchase intention	cong STr_MB Ruggedness	0.2003	0.0917	27 6	2.1830	0.0299	0.2468	*	c
MB purchase intention	cong SE_MB Competence	-0.1412	0.0519	27 6	-2.7212	0.0069	-0.3145	**	c

MB purchase intention	cong SE_MB Sophistication	0.1033	0.0626	27 6	1.6512	0.0998	0.2118		c
MB purchase intention	cong SE_MB Ruggedness	0.1390	0.0534	27 6	2.6000	0.0098	0.2925	**	c
MB purchase intention	cong OC_MB Sincerity	-0.1288	0.0951	27 6	-1.3541	0.1768	-0.1282		c
MB purchase intention	cong OC_MB Excitement	-0.2419	0.0691	27 6	-3.4980	0.0005	-0.3512	** *	c
MB purchase intention	cong OC_MB Competence	0.2407	0.0721	27 6	3.3379	0.0010	0.2782	** *	c
MB purchase intention	cong OC_MB Sophistication	-0.2095	0.0872	27 6	-2.4024	0.0169	-0.2618	*	c
MB purchase intention	cong Con_MB Sincerity	0.4212	0.0956	27 6	4.4052	0.0000	0.3947	** *	c
MB purchase intention	cong Con_MB Excitement	0.1915	0.0730	27 6	2.6218	0.0092	0.2193	**	c
MB purchase intention	cong Con_MB Ruggedness	-0.3856	0.0878	27 6	-4.3901	0.0000	-0.503	** *	c
<b>Age group 2</b>									
BMW liking	cong STr_BMW Sincerity	-0.2942	0.0882	27 9	-3.3370	0.0010	-0.5262	** *	c
BMW liking	cong STr_BMW Competence	0.1523	0.0781	27 9	1.9504	0.0521	0.2542		c
BMW liking	cong STr_BMW Ruggedness	0.1666	0.1089	27 9	1.5307	0.1270	0.2601		c
BMW liking	cong SE_BMW Sincerity	0.0646	0.0316	27 9	2.0446	0.0418	0.0977	*	c

BMW liking	cong SE_BMW Ruggedness	-0.1392	0.0280	27 9	-4.9618	0.0000	-0.1971	** *	c
BMW liking	cong OC_BMW Sophistication	-0.0641	0.0243	27 9	-2.6419	0.0087	-0.0865	**	c
BMW liking	cong OC_BMW Ruggedness	0.1379	0.0705	27 9	1.9553	0.0515	0.2586		c
BMW liking	cong Con_BMW Sincerity	0.2580	0.0790	27 9	3.2665	0.0012	0.4788	**	c
BMW liking	cong Con_BMW Excitement	0.0475	0.0292	27 9	1.6271	0.1049	0.0799		c
BMW liking	cong Con_BMW Competence	-0.1108	0.0732	27 9	-1.5139	0.1312	-0.197		c
BMW liking	cong Con_BMW Ruggedness	-0.2281	0.0813	27 9	-2.8065	0.0054	-0.3578	**	c
BMW purchase intention	BMW liking	0.4703	0.0633	28 0	7.4303	0.0000	0.4569	** *	c
BMW purchase intention	cong STr_BMW Excitement	-0.1742	0.0593	28 0	-2.9385	0.0036	-0.2354	**	c
BMW purchase intention	cong STr_BMW Ruggedness	0.1593	0.0797	28 0	2.0000	0.0465	0.2416	*	c
BMW purchase intention	cong SE_BMW Competence	0.1229	0.1117	77	1.1006	0.2745	0.1663		
BMW purchase intention	cong OC_BMW Sincerity	-0.2017	0.0543	28 0	-3.7119	0.0002	-0.3444	** *	c
BMW purchase intention	cong OC_BMW Excitement	0.1603	0.0603	28 0	2.6575	0.0083	0.2102	**	c
BMW purchase intention	cong OC_BMW Competence	0.0859	0.0419	28 0	2.0511	0.0412	0.1184	*	c

BMW purchase intention	cong Con_BMW Sincerity	0.1722	0.0559	28 0	3.0816	0.0023	0.3105	**	c
BMW purchase intention	cong Con_BMW Sophistication	0.0021	0.0854	77	0.0251	0.9800	0.0031		
BMW purchase intention	cong Con_BMW Ruggedness	-0.1524	0.0816	28 0	-1.8667	0.0630	-0.2323		c
MB liking	cong STr_MB Sincerity	-0.3509	0.0977	27 8	-3.5918	0.0004	-0.4301	** *	c
MB liking	cong STr_MB Ruggedness	0.1636	0.0807	27 8	2.0265	0.0437	0.3025	*	c
MB liking	cong SE_MB Sincerity	-0.0915	0.0427	27 8	-2.1402	0.0332	-0.0979	*	c
MB liking	cong SE_MB Excitement	0.0666	0.0264	27 8	2.5200	0.0123	0.097	*	c
MB liking	cong SE_MB Competence	0.0894	0.0514	27 8	1.7399	0.0830	0.1093		c
MB liking	cong SE_MB Sophistication	-0.1729	0.0523	27 8	-3.3040	0.0011	-0.3249	**	c
MB liking	cong SE_MB Ruggedness	0.1288	0.0470	27 8	2.7427	0.0065	0.2496	**	c
MB liking	cong OC_MB Sincerity	0.1105	0.0757	27 8	1.4600	0.1454	0.1304		c
MB liking	cong OC_MB Competence	-0.1186	0.0671	27 8	-1.7669	0.0783	-0.0958		c
MB liking	cong OC_MB Sophistication	0.1613	0.0498	27 8	3.2367	0.0014	0.3594	**	c
MB liking	cong Con_MB Sincerity	0.3578	0.0816	27 8	4.3837	0.0000	0.4495	** *	c

MB liking	cong Con_MB Ruggedness	-0.2499	0.0751	27 8	-3.3265	0.0010	-0.5128	** *	c
MB purchase intention	MB liking	0.5624	0.0662	27 6	8.4947	0.0000	0.5452	** *	c
MB purchase intention	cong STr_MB Sincerity	-0.2791	0.1310	27 6	-2.1307	0.0340	-0.3316	*	c
MB purchase intention	cong STr_MB Sophistication	0.1271	0.0939	27 6	1.3531	0.1771	0.2448		c
MB purchase intention	cong STr_MB Ruggedness	0.2003	0.0917	27 6	2.1830	0.0299	0.359	*	c
MB purchase intention	cong SE_MB Competence	-0.1412	0.0519	27 6	-2.7212	0.0069	-0.1674	**	c
MB purchase intention	cong SE_MB Sophistication	0.1033	0.0626	27 6	1.6512	0.0998	0.1881		c
MB purchase intention	cong SE_MB Ruggedness	0.1390	0.0534	27 6	2.6000	0.0098	0.2611	**	c
MB purchase intention	cong OC_MB Sincerity	-0.1288	0.0951	27 6	-1.3541	0.1768	-0.1474		c
MB purchase intention	cong OC_MB Excitement	-0.2419	0.0691	27 6	-3.4980	0.0005	-0.2322	** *	c
MB purchase intention	cong OC_MB Competence	0.2407	0.0721	27 6	3.3379	0.0010	0.1885	** *	c
MB purchase intention	cong OC_MB Sophistication	-0.2095	0.0872	27 6	-2.4024	0.0169	-0.4525	*	c
MB purchase intention	cong Con_MB Sincerity	0.4212	0.0956	27 6	4.4052	0.0000	0.5129	** *	c
MB purchase intention	cong Con_MB Excitement	0.1915	0.0730	27 6	2.6218	0.0092	0.2213	**	c

MB purchase intention	cong Con_MB Ruggedness	-0.3856	0.0878	27 6	-4.3901	0.0000	-0.7669	** *	c
<b>Age group 3</b>									
BMW liking	cong STr_BMW Sincerity	-0.2942	0.0882	27 9	-3.3370	0.0010	-0.7639	** *	c
BMW liking	cong STr_BMW Competence	0.1523	0.0781	27 9	1.9504	0.0521	0.2767		c
BMW liking	cong STr_BMW Ruggedness	0.1666	0.1089	27 9	1.5307	0.1270	0.3891		c
BMW liking	cong SE_BMW Sincerity	0.0646	0.0316	27 9	2.0446	0.0418	0.1138	*	c
BMW liking	cong SE_BMW Ruggedness	-0.1392	0.0280	27 9	-4.9618	0.0000	-0.326	** *	c
BMW liking	cong OC_BMW Sophistication	-0.0641	0.0243	27 9	-2.6419	0.0087	-0.0772	**	c
BMW liking	cong OC_BMW Ruggedness	0.1379	0.0705	27 9	1.9553	0.0515	0.3295		c
BMW liking	cong Con_BMW Sincerity	0.2580	0.0790	27 9	3.2665	0.0012	0.7006	**	c
BMW liking	cong Con_BMW Excitement	0.0475	0.0292	27 9	1.6271	0.1049	0.1182		c
BMW liking	cong Con_BMW Competence	-0.1108	0.0732	27 9	-1.5139	0.1312	-0.2027		c
BMW liking	cong Con_BMW Ruggedness	-0.2281	0.0813	27 9	-2.8065	0.0054	-0.5269	**	c
BMW purchase intention	BMW liking	0.4703	0.0633	28 0	7.4303	0.0000	0.4131	** *	c



BMW purchase intention	BMW Sincerity	0.0234	0.0595	28 0	0.3937	0.6941	0.0228		c
BMW purchase intention	cong STr_BMW Excitement	-0.1742	0.0593	28 0	-2.9385	0.0036	-0.3442	**	c
BMW purchase intention	cong STr_BMW Ruggedness	0.1593	0.0797	28 0	2.0000	0.0465	0.3268	*	c
BMW purchase intention	cong SE_BMW Competence	-0.0325	0.0807	81	-0.4023	0.6885	-0.0590		
BMW purchase intention	cong OC_BMW Sincerity	-0.2017	0.0543	28 0	-3.7119	0.0002	-0.5028	** *	c
BMW purchase intention	cong OC_BMW Excitement	0.1603	0.0603	28 0	2.6575	0.0083	0.3492	**	c
BMW purchase intention	cong OC_BMW Competence	0.0859	0.0419	28 0	2.0511	0.0412	0.1309	*	c
BMW purchase intention	cong Con_BMW Sincerity	0.1722	0.0559	28 0	3.0816	0.0023	0.4107	**	c
BMW purchase intention	cong Con_BMW Sophistication	<b>-0.2161</b>	<b>0.0689</b>	<b>81</b>	<b>-3.1364</b>	<b>0.0024</b>	<b>-0.2808</b>	**	
BMW purchase intention	cong Con_BMW Ruggedness	-0.1524	0.0816	28 0	-1.8667	0.0630	-0.3092		c
MB liking	cong STr_MB Sincerity	-0.3509	0.0977	27 8	-3.5918	0.0004	-0.4813	** *	c
MB liking	cong STr_MB Ruggedness	0.1636	0.0807	27 8	2.0265	0.0437	0.1877	*	c
MB liking	cong SE_MB Sincerity	-0.0915	0.0427	27 8	-2.1402	0.0332	-0.1571	*	c
MB liking	cong SE_MB Excitement	0.0666	0.0264	27 8	2.5200	0.0123	0.1445	*	c

MB liking	cong SE_MB Competence	0.0894	0.0514	27 8	1.7399	0.0830	0.1696		c
MB liking	cong SE_MB Sophistication	-0.1729	0.0523	27 8	-3.3040	0.0011	-0.3121	**	c
MB liking	cong SE_MB Ruggedness	0.1288	0.0470	27 8	2.7427	0.0065	0.2543	**	c
MB liking	cong OC_MB Sincerity	0.1105	0.0757	27 8	1.4600	0.1454	0.1593		c
MB liking	cong OC_MB Competence	-0.1186	0.0671	27 8	-1.7669	0.0783	-0.1283		c
MB liking	cong OC_MB Sophistication	0.1613	0.0498	27 8	3.2367	0.0014	0.1156	**	c
MB liking	cong Con_MB Sincerity	0.3578	0.0816	27 8	4.3837	0.0000	0.5177	** *	c
MB liking	cong Con_MB Ruggedness	-0.2499	0.0751	27 8	-3.3265	0.0010	-0.3335	** *	c
MB purchase intention	MB liking	0.5624	0.0662	27 6	8.4947	0.0000	0.5148	** *	c
MB purchase intention	cong STr_MB Sincerity	-0.2791	0.1310	27 6	-2.1307	0.0340	-0.3504	*	c
MB purchase intention	cong STr_MB Sophistication	0.1271	0.0939	27 6	1.3531	0.1771	0.1055		c
MB purchase intention	cong STr_MB Ruggedness	0.2003	0.0917	27 6	2.1830	0.0299	0.2104	*	c
MB purchase intention	cong SE_MB Competence	-0.1412	0.0519	27 6	-2.7212	0.0069	-0.2451	**	c
MB purchase intention	cong SE_MB Sophistication	0.1033	0.0626	27 6	1.6512	0.0998	0.1707		c

MB purchase intention	cong SE_MB Ruggedness	0.1390	0.0534	27 6	2.6000	0.0098	0.2512	**	c
MB purchase intention	cong OC_MB Sincerity	-0.1288	0.0951	27 6	-1.3541	0.1768	-0.17		c
MB purchase intention	cong OC_MB Excitement	-0.2419	0.0691	27 6	-3.4980	0.0005	-0.4461	** *	c
MB purchase intention	cong OC_MB Competence	0.2407	0.0721	27 6	3.3379	0.0010	0.2384	** *	c
MB purchase intention	cong OC_MB Sophistication	-0.2095	0.0872	27 6	-2.4024	0.0169	-0.1375	*	c
MB purchase intention	cong Con_MB Sincerity	0.4212	0.0956	27 6	4.4052	0.0000	0.5579	** *	c
MB purchase intention	cong Con_MB Excitement	0.1915	0.0730	27 6	2.6218	0.0092	0.3546	**	c
MB purchase intention	cong Con_MB Ruggedness	-0.3856	0.0878	27 6	-4.3901	0.0000	-0.471	** *	c

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

## Appendix F1 BMW brand conspicuousness - age groups

			Which age group are you			Total
			1	2	3	
The user of BMW is more of an attention-seeker.	1	Count	73	74	81	228
		% of Total	24.3%	24.7%	27.0%	76.0%
	2	Count	29	23	20	72
		% of Total	9.7%	7.7%	6.7%	24.0%

The user of BMW is more noticeable when using it.	1	Count	83	83	85	251
		% of Total	27.7%	27.7%	28.3%	83.7%
	2	Count	19	14	16	49
		% of Total	6.3%	4.7%	5.3%	16.3%

People who use BMW show off.	1	Count	58	54	56	168
		% of Total	19.3%	18.0%	18.7%	56.0%
	2	Count	44	43	45	132
		% of Total	14.7%	14.3%	15.0%	44.0%
Total		Count	102	97	101	300
		% of Total	34.0%	32.3%	33.7%	100.0%

## Appendix F2 MB brand conspicuousness - age groups

			Which age group are you			Total
			1	2	3	
The user of MB is more of an attention-seeker.	1	Count	66	75	74	215
		% of Total	22.0%	25.0%	24.7%	71.7%
	2	Count	36	22	27	85
		% of Total	12.0%	7.3%	9.0%	28.3%

The user of MB is more noticeable when using it.	1	Count	82	74	74	230
		% of Total	27.3%	24.7%	24.7%	76.7%
	2	Count	20	23	27	70
		% of Total	6.7%	7.7%	9.0%	23.3%

People who use MB show off.	1	Count	59	55	53	167
		% of Total	19.7%	18.3%	17.7%	55.7%
	2	Count	43	42	48	133
		% of Total	14.3%	14.0%	16.0%	44.3%
Total		Count	102	97	101	300
		% of Total	34.0%	32.3%	33.7%	100.0%

## Appendix F3 BMW brand uniqueness - age groups

			Which age group are you			Total
			1	2	3	
BMW is directed to a highly selected market.	1	Count	98	91	91	280
		% of Total	32.7%	30.3%	30.3%	93.3%
	2	Count	4	6	10	20
		% of Total	1.3%	2.0%	3.3%	6.7%

The majority of consumers buy BMW.	1	Count	38	50	60	148
		% of Total	12.7%	16.7%	20.0%	49.3%
	2	Count	64	47	41	152
		% of Total	21.3%	15.7%	13.7%	50.7%

Only very few use BMW.	1	Count	68	62	55	185
		% of Total	22.7%	20.7%	18.3%	61.7%
	2	Count	34	35	46	115
		% of Total	11.3%	11.7%	15.3%	38.3%
Total		Count	102	97	101	300
		% of Total	34.0%	32.3%	33.7%	100.0%

## Appendix F4 MB brand uniqueness - age groups

			Which age group are you			Total
			1	2	3	
MB is directed to a highly selected market.	1	Count	96	88	85	269
		% of Total	32.0%	29.3%	28.3%	89.7%
	2	Count	6	9	16	31
		% of Total	2.0%	3.0%	5.3%	10.3%

The majority of consumers buy MB.	1	Count	40	43	60	143
		% of Total	13.3%	14.3%	20.0%	47.7%
	2	Count	62	54	41	157
		% of Total	20.7%	18.0%	13.7%	52.3%

Only very few use MB.	1	Count	68	60	53	181
		% of Total	22.7%	20.0%	17.7%	60.3%
	2	Count	34	37	48	119
		% of Total	11.3%	12.3%	16.0%	39.7%
Total		Count	102	97	101	300
		% of Total	34.0%	32.3%	33.7%	100.0%

## Appendix F5 Testing the impact of brand uniqueness and brand conspicuousness on Self-brand congruence

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	p
cong SE_BMW Sincerity	bc_BMW_1	0.4758	0.3678	293	1.2938	0.1968	0.0780	
cong SE_BMW Sincerity	bc_BMW_2	<b>1.5208</b>	<b>0.4785</b>	<b>293</b>	<b>3.1781</b>	<b>0.0016</b>	<b>0.1900</b>	<b>**</b>
cong SE_BMW Sincerity	bc_BMW_3	<b>1.5705</b>	<b>0.5781</b>	<b>293</b>	<b>2.7167</b>	<b>0.007</b>	<b>0.1618</b>	<b>**</b>
cong SE_BMW Sincerity	bu_BMW_1	0.2037	0.3808	293	0.5348	0.5932	0.0312	
cong SE_BMW Sincerity	bu_BMW_2	0.0571	0.5105	293	0.1118	0.911	0.0065	
cong SE_BMW Sincerity	bu_BMW_3	<b>1.5878</b>	<b>0.7619</b>	<b>293</b>	<b>2.084</b>	<b>0.038</b>	<b>0.1206</b>	<b>*</b>
cong SE_BMW Excitement	bc_BMW_1	0.2424	0.4000	293	0.6062	0.5449	0.0365	
cong SE_BMW Excitement	bc_BMW_2	<b>1.8983</b>	<b>0.5204</b>	<b>293</b>	<b>3.6478</b>	<b>0.0003</b>	<b>0.2176</b>	<b>***</b>
cong SE_BMW Excitement	bc_BMW_3	<b>1.8564</b>	<b>0.6286</b>	<b>293</b>	<b>2.953</b>	<b>0.0034</b>	<b>0.1755</b>	<b>**</b>
cong SE_BMW Excitement	bu_BMW_1	0.6527	0.4141	293	1.5760	0.1161	0.0917	
cong SE_BMW Excitement	bu_BMW_2	0.395	0.5552	293	0.7116	0.4773	0.0414	
cong SE_BMW Excitement	bu_BMW_3	0.3866	0.8285	293	0.4666	0.6412	0.0269	
cong SE_BMW Competence	bc_BMW_1	0.3760	0.4674	293	0.8043	0.4219	0.0481	
cong SE_BMW Competence	bc_BMW_2	<b>1.7202</b>	<b>0.6082</b>	<b>293</b>	<b>2.8285</b>	<b>0.005</b>	<b>0.1677</b>	<b>**</b>



Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	p
cong SE_BMW Competence	bc_BMW_3	<b>2.288</b>	<b>0.7347</b>	<b>293</b>	<b>3.1142</b>	<b>0.002</b>	<b>0.1840</b>	<b>**</b>
cong SE_BMW Competence	bu_BMW_1	0.5979	0.484	293	1.2352	0.2177	0.0714	
cong SE_BMW Competence	bu_BMW_2	<b>1.6280</b>	<b>0.6488</b>	<b>293</b>	<b>2.5092</b>	<b>0.0126</b>	<b>0.1450</b>	<b>*</b>
cong SE_BMW Competence	bu_BMW_3	<b>2.1691</b>	<b>0.9683</b>	<b>293</b>	<b>2.2402</b>	<b>0.0258</b>	<b>0.1286</b>	<b>*</b>
cong SE_BMW Sophistication	bc_BMW_1	-0.086	0.5378	293	-0.1599	0.8731	-0.0098	
cong SE_BMW Sophistication	bc_BMW_2	1.0562	0.6998	293	1.5094	0.1323	0.0917	
cong SE_BMW Sophistication	bc_BMW_3	<b>1.9682</b>	<b>0.8453</b>	<b>293</b>	<b>2.3283</b>	<b>0.0206</b>	<b>0.141</b>	<b>*</b>
cong SE_BMW Sophistication	bu_BMW_1	0.4374	0.5569	293	0.7853	0.4329	0.0465	
cong SE_BMW Sophistication	bu_BMW_2	0.4854	0.7465	293	0.6503	0.516	0.0385	
cong SE_BMW Sophistication	bu_BMW_3	1.4623	1.1141	293	1.3125	0.1904	0.0772	
cong SE_BMW Ruggedness	bc_BMW_1	0.0196	0.5569	293	0.0353	0.9719	0.0022	
cong SE_BMW Ruggedness	bc_BMW_2	1.2559	0.7246	293	1.7331	0.0841	0.1053	
cong SE_BMW Ruggedness	bc_BMW_3	<b>2.0689</b>	<b>0.8754</b>	<b>293</b>	<b>2.3634</b>	<b>0.0188</b>	<b>0.1431</b>	<b>*</b>
cong SE_BMW Ruggedness	bu_BMW_1	0.7837	0.5767	293	1.3589	0.1752	0.0805	
cong SE_BMW Ruggedness	bu_BMW_2	0.1684	0.7731	293	0.2179	0.8277	0.0129	
cong SE_BMW Ruggedness	bu_BMW_3	0.6645	1.1537	293	0.576	0.5651	0.0339	
cong SE_MB Sincerity	bc_MB_1	-0.1027	0.5088	293	-0.2017	0.8403	-0.0129	
cong SE_MB Sincerity	bc_MB_2	0.3631	0.5412	293	0.6709	0.5028	0.0424	

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	p
cong SE_MB Sincerity	bc_MB_3	1.6192	0.881	293	1.838	0.0671	0.1115	
cong SE_MB Sincerity	bu_MB_1	0.334	0.5077	293	0.6579	0.5111	0.0396	
cong SE_MB Sincerity	bu_MB_2	<b>1.2963</b>	<b>0.6516</b>	<b>293</b>	<b>1.9893</b>	<b>0.0476</b>	0.1191	*
cong SE_MB Sincerity	bu_MB_3	0.9765	0.975	293	1.0015	0.3174	0.0588	
cong SE_MB Excitement	bc_MB_1	0.134	0.4296	293	0.3119	0.7553	0.0198	
cong SE_MB Excitement	bc_MB_2	0.7733	0.4569	293	1.6926	0.0916	0.1061	
cong SE_MB Excitement	bc_MB_3	<b>2.4198</b>	<b>0.7437</b>	<b>293</b>	<b>3.2538</b>	<b>0.0013</b>	<b>0.1957</b>	**
cong SE_MB Excitement	bu_MB_1	0.2811	0.4286	293	0.6559	0.5124	0.0391	
cong SE_MB Excitement	bu_MB_2	0.2661	0.5501	293	0.4837	0.629	0.0287	
cong SE_MB Excitement	bu_MB_3	0.7261	0.8231	293	0.8821	0.3784	0.0513	
cong SE_MB Competence	bc_MB_1	-0.3223	0.604	293	-0.5336	0.594	-0.0334	
cong SE_MB Competence	bc_MB_2	1.0643	0.6423	293	1.6569	0.0986	0.1025	
cong SE_MB Competence	bc_MB_3	<b>3.3875</b>	<b>1.0456</b>	<b>293</b>	<b>3.2396</b>	<b>0.0013</b>	<b>0.1924</b>	**
cong SE_MB Competence	bu_MB_1	-0.1243	0.6026	293	-0.2063	0.8367	-0.0121	
cong SE_MB Competence	bu_MB_2	<b>1.8177</b>	<b>0.7735</b>	<b>293</b>	<b>2.3501</b>	<b>0.0194</b>	<b>0.1376</b>	*
cong SE_MB Competence	bu_MB_3	1.5114	1.1573	293	1.306	0.1926	0.075	
cong SE_MB Ruggedness	bc_MB_1	-0.2507	0.5965	293	-0.4203	0.6745	-0.0268	
cong SE_MB Ruggedness	bc_MB_2	0.4308	0.6344	293	0.679	0.4977	0.0428	

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	p
cong SE_MB Ruggedness	bc_MB_3	<b>2.2375</b>	<b>1.0328</b>	<b>293</b>	<b>2.1665</b>	<b>0.0311</b>	<b>0.1312</b>	*
cong SE_MB Ruggedness	bu_MB_1	0.1379	0.5952	293	0.2316	0.817	0.0139	
cong SE_MB Ruggedness	bu_MB_2	1.157	0.7639	293	1.5146	0.131	0.0905	
cong SE_MB Ruggedness	bu_MB_3	1.6068	1.143	293	1.4057	0.1609	0.0823	

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

## Appendix G1 Overview Functional congruence

				BM W Exte rior	BM W Con veni ence	BM W Perf orma nce	BM W Safe ty	BM W Econ omic	BM W Deal er	BM W Warr anty	MB Exte rior	MB Con veni ence	MB Perf orma nce	MB Safe ty	MB Econ omic	MB Deal er	MB Warr anty
ma le	bor n 19 79 an d bef ore	Beijing	M	0.16	0.42	0.21	0.37	0.79	-0.21	0.00	0.11	0.00	0.11	0.16	0.32	-0.11	0.05
			SD	0.83	0.69	0.54	0.76	1.18	0.98	0.75	0.81	1.05	0.81	0.60	1.06	0.94	0.78
		Shanghai	M	-0.21	0.16	-0.16	0.05	0.26	0.00	0.16	0.16	-0.16	-0.42	0.21	0.26	-0.21	0.21
			SD	0.63	0.96	1.12	0.85	1.24	0.47	0.96	0.50	0.60	0.84	0.63	1.37	0.85	0.79
		Shenzhen	M	0.00	-0.08	-0.23	0.08	0.15	0.31	0.23	0.00	0.00	-0.15	0.15	0.08	-0.15	0.15
			SD	0.41	0.76	0.93	0.49	0.38	0.48	0.60	0.00	0.82	0.38	0.69	0.49	0.80	0.55
		Total	M	-0.02	0.20	-0.04	0.18	0.43	0.00	0.12	0.10	-0.06	-0.16	0.18	0.24	-0.16	0.14
			SD	0.68	0.83	0.89	0.74	1.08	0.72	0.79	0.57	0.83	0.76	0.62	1.07	0.86	0.72
	bor n 19 80- 19 91	Beijing	M	0.25	0.38	-0.44	0.13	0.56	-0.13	-0.19	0.19	-0.13	-0.13	-0.31	0.06	-0.06	0.31
			SD	0.93	0.81	0.73	0.62	1.26	0.72	0.83	0.83	0.72	1.02	0.79	0.57	0.77	0.70
		Shanghai	M	-0.20	0.00	0.05	0.10	-0.05	-0.30	-0.05	-0.05	0.15	-0.10	0.10	-0.15	-0.30	0.25
			SD	0.70	0.86	0.76	0.85	1.05	0.86	0.69	0.51	0.88	0.64	0.97	1.14	0.80	0.97
		Shenzhen	M	0.18	0.18	-0.18	-0.09	0.27	0.18	0.18	0.18	0.18	-0.09	-0.27	-0.09	0.36	0.09
			SD	0.40	1.08	0.98	0.94	1.10	1.25	0.60	0.60	0.75	0.83	0.65	0.94	0.81	0.70
		Total	M	0.04	0.17	-0.17	0.06	0.23	-0.13	-0.04	0.09	0.06	-0.11	-0.13	-0.06	-0.06	0.23
			SD	0.75	0.89	0.82	0.79	1.15	0.92	0.72	0.65	0.79	0.81	0.85	0.92	0.82	0.81
		Beijing	M	0.60	-0.40	0.10	-0.60	0.60	-0.10	-0.30	-0.20	0.30	-0.50	-0.20	0.10	-0.40	0.00

	bor n 19 92 an d aft er		SD	0.84	0.52	0.57	0.52	1.35	0.74	0.67	0.63	0.82	1.08	0.63	1.20	0.84	0.82
		Shanghai	M	0.20	-0.10	0.60	-0.40	0.00	0.30	0.20	0.20	0.70	-0.20	-0.10	0.20	-0.10	-0.40
			SD	0.42	0.32	0.84	0.70	1.63	1.16	0.63	0.92	0.82	0.79	0.88	1.23	0.88	1.07
		Shenzhen	M	0.20	-0.06	-0.03	0.14	0.09	-0.17	0.03	-0.03	0.03	0.00	-0.34	-0.09	0.03	0.00
			SD	0.80	0.94	0.75	0.69	1.22	0.79	0.92	0.89	0.66	0.84	0.68	0.89	0.86	0.87
		Total	M	0.27	-0.13	0.11	-0.09	0.16	-0.07	0.00	-0.02	0.20	-0.13	-0.27	0.00	-0.07	-0.07
			SD	0.76	0.79	0.76	0.73	1.32	0.86	0.84	0.85	0.76	0.88	0.71	1.00	0.86	0.90
	Tot al	Beijing	M	0.29	0.22	-0.04	0.07	0.67	-0.16	-0.13	0.07	0.02	-0.11	-0.09	0.18	-0.16	0.13
			SD	0.87	0.77	0.67	0.75	1.22	0.82	0.76	0.78	0.89	0.96	0.70	0.94	0.85	0.76
		Shanghai	M	-0.12	0.04	0.08	-0.02	0.08	-0.06	0.08	0.08	0.14	-0.24	0.10	0.08	-0.22	0.10
			SD	0.63	0.82	0.95	0.83	1.24	0.83	0.79	0.61	0.82	0.75	0.82	1.24	0.82	0.94
		Shenzhen	M	0.15	-0.02	-0.10	0.08	0.14	0.00	0.10	0.02	0.05	-0.05	-0.22	-0.05	0.05	0.05
			SD	0.66	0.92	0.82	0.70	1.06	0.85	0.80	0.73	0.71	0.75	0.70	0.82	0.84	0.78
		Total	M	0.10	0.07	-0.03	0.05	0.27	-0.07	0.03	0.05	0.07	-0.13	-0.08	0.06	-0.10	0.09
			SD	0.74	0.84	0.83	0.76	1.19	0.83	0.79	0.71	0.80	0.82	0.75	1.00	0.84	0.82
fe ma le Tot al	bor n 19 79 an d bef ore	Beijing	M	0.15	0.23	0.08	0.00	0.15	0.00	0.00	0.00	0.23	0.08	-0.15	0.23	-0.08	-0.08
			SD	0.55	0.73	0.76	0.41	0.55	0.71	0.71	0.82	0.60	0.76	0.38	0.60	0.49	0.49
		Shanghai	M	0.12	0.12	0.18	0.12	0.35	-0.18	0.06	0.12	-0.29	-0.29	0.18	0.18	-0.29	0.35
			SD	0.78	0.93	0.88	0.86	0.86	0.81	0.90	0.60	0.85	0.77	0.64	1.01	0.69	0.79
		Shenzhen	M	0.29	0.19	0.52	-0.05	0.24	0.19	0.48	0.00	-0.29	0.05	0.62	0.29	0.14	0.43
			SD	0.85	0.93	0.81	0.92	0.89	0.81	0.81	0.71	0.85	0.97	0.97	1.19	0.91	0.81
		Total	M	0.20	0.18	0.29	0.02	0.25	0.02	0.22	0.04	-0.16	-0.06	0.27	0.24	-0.06	0.27
			SD	0.75	0.87	0.83	0.79	0.80	0.79	0.83	0.69	0.81	0.86	0.80	0.99	0.76	0.75
		Beijing	M	-0.05	-0.05	-0.10	0.24	0.29	0.43	0.10	0.14	0.14	0.10	0.10	-0.10	0.00	0.29

	bor n 19 80 - 19 91		SD	0.92	0.80	0.83	0.62	0.96	1.08	0.83	0.73	0.85	0.77	0.70	0.83	0.71	0.64
		Shanghai	M	0.08	-0.08	0.13	0.29	-0.17	-0.04	0.46	0.25	-0.08	0.21	0.29	0.17	-0.13	0.17
			SD	0.72	0.78	0.68	0.69	1.09	0.81	1.02	1.07	0.78	0.83	0.46	1.05	0.54	0.76
		Shenzhen	M	0.20	0.00	0.20	-0.20	0.00	-0.40	0.00	0.00	0.20	-0.20	-0.20	0.40	0.20	0.00
			SD	0.45	0.71	0.45	0.84	0.71	0.55	0.00	0.00	0.45	0.45	0.84	0.89	0.45	0.00
		Total	M	0.04	-0.06	0.04	0.22	0.04	0.12	0.26	0.18	0.04	0.12	0.16	0.08	-0.04	0.20
			SD	0.78	0.77	0.73	0.68	1.01	0.94	0.90	0.87	0.78	0.77	0.62	0.94	0.60	0.67
	bor n 19 92 an d aft er	Beijing	M	-0.10	0.10	0.14	-0.10	0.24	-0.29	0.00	0.00	-0.05	0.00	0.19	0.19	0.29	0.00
			SD	0.77	0.70	0.57	0.70	1.22	1.23	0.71	0.45	0.74	0.71	0.87	1.08	0.64	0.77
		Shanghai	M	0.00	0.70	0.00	-0.10	0.20	0.30	-0.20	0.20	-0.10	0.40	0.10	0.10	0.50	0.10
			SD	0.47	0.67	0.94	0.99	0.42	0.82	1.03	0.79	0.88	0.70	0.57	0.74	0.85	0.74
		Shenzhen	M	-0.07	0.07	0.07	0.13	-0.20	-0.33	0.47	0.00	0.00	0.13	-0.07	0.33	0.00	0.00
			SD	0.88	0.80	0.70	0.64	1.26	0.62	0.64	0.65	0.65	0.83	0.59	0.90	1.07	0.53
		Total	M	-0.07	0.22	0.09	-0.02	0.09	-0.17	0.11	0.04	-0.04	0.13	0.09	0.22	0.24	0.02
			SD	0.74	0.76	0.69	0.75	1.11	1.00	0.80	0.59	0.73	0.75	0.72	0.94	0.85	0.68
	Tot al	Beijing	M	-0.02	0.07	0.04	0.05	0.24	0.05	0.04	0.05	0.09	0.05	0.07	0.09	0.09	0.09
			SD	0.78	0.74	0.72	0.62	0.98	1.10	0.74	0.65	0.75	0.73	0.72	0.89	0.65	0.67
		Shanghai	M	0.08	0.14	0.12	0.16	0.08	-0.02	0.20	0.20	-0.16	0.08	0.22	0.16	-0.06	0.22
			SD	0.69	0.85	0.79	0.81	0.93	0.81	1.00	0.87	0.81	0.82	0.54	0.97	0.70	0.76
		Shenzhen	M	0.15	0.12	0.32	0.00	0.05	-0.07	0.41	0.00	-0.12	0.05	0.27	0.32	0.10	0.22
			SD	0.82	0.84	0.76	0.81	1.02	0.75	0.71	0.63	0.75	0.86	0.90	1.04	0.92	0.69
		Total	M	0.06	0.11	0.14	0.07	0.13	-0.01	0.20	0.09	-0.05	0.06	0.18	0.18	0.04	0.17
			SD	0.76	0.80	0.76	0.74	0.97	0.91	0.84	0.73	0.77	0.80	0.72	0.96	0.75	0.71
		Beijing	M	0.16	0.34	0.16	0.22	0.53	-0.13	0.00	0.06	0.09	0.09	0.03	0.28	-0.09	0.00

	bor n 19 79 an d bef ore		SD	0.72	0.70	0.63	0.66	1.02	0.87	0.72	0.80	0.89	0.78	0.54	0.89	0.78	0.67
		Shanghai	M	-0.06	0.14	0.00	0.08	0.31	-0.08	0.11	0.14	-0.22	-0.36	0.19	0.22	-0.25	0.28
			SD	0.71	0.93	1.01	0.84	1.06	0.65	0.92	0.54	0.72	0.80	0.62	1.20	0.77	0.78
		Shenzhen	M	0.18	0.09	0.24	0.00	0.21	0.24	0.38	0.00	-0.18	-0.03	0.44	0.21	0.03	0.32
			SD	0.72	0.87	0.92	0.78	0.73	0.70	0.74	0.55	0.83	0.80	0.89	0.98	0.87	0.73
		Total	M	0.09	0.19	0.13	0.10	0.34	0.01	0.17	0.07	-0.11	-0.11	0.23	0.24	-0.11	0.21
			SD	0.72	0.84	0.88	0.76	0.95	0.75	0.81	0.63	0.82	0.81	0.72	1.03	0.81	0.74
	bor n 19 80 - 19 91	Beijing	M	0.08	0.14	-0.24	0.19	0.41	0.19	-0.03	0.16	0.03	0.00	-0.08	-0.03	-0.03	0.30
			SD	0.92	0.82	0.80	0.62	1.09	0.97	0.83	0.76	0.80	0.88	0.76	0.73	0.73	0.66
		Shanghai	M	-0.05	-0.05	0.09	0.20	-0.11	-0.16	0.23	0.11	0.02	0.07	0.20	0.02	-0.20	0.20
			SD	0.71	0.81	0.71	0.76	1.06	0.83	0.91	0.87	0.82	0.76	0.73	1.09	0.67	0.85
		Shenzhen	M	0.19	0.13	-0.06	-0.13	0.19	0.00	0.13	0.13	0.19	-0.13	-0.25	0.06	0.31	0.06
			SD	0.40	0.96	0.85	0.89	0.98	1.10	0.50	0.50	0.66	0.72	0.68	0.93	0.70	0.57
		Total	M	0.04	0.05	-0.06	0.14	0.13	0.00	0.11	0.13	0.05	0.01	0.02	0.01	-0.05	0.22
			SD	0.76	0.83	0.77	0.74	1.08	0.94	0.83	0.77	0.78	0.80	0.75	0.93	0.71	0.74
	bor n 19 92 an d aft er	Beijing	M	0.13	-0.06	0.13	-0.26	0.35	-0.23	-0.10	-0.06	0.06	-0.16	0.06	0.16	0.06	0.00
			SD	0.85	0.68	0.56	0.68	1.25	1.09	0.70	0.51	0.77	0.86	0.81	1.10	0.77	0.77
		Shanghai	M	0.10	0.30	0.30	-0.25	0.10	0.30	0.00	0.20	0.30	0.10	0.00	0.15	0.20	-0.15
			SD	0.45	0.66	0.92	0.85	1.17	0.98	0.86	0.83	0.92	0.79	0.73	0.99	0.89	0.93
		Shenzhen	M	0.12	-0.02	0.00	0.14	0.00	-0.22	0.16	-0.02	0.02	0.04	-0.26	0.04	0.02	0.00
			SD	0.82	0.89	0.73	0.67	1.23	0.74	0.87	0.82	0.65	0.83	0.66	0.90	0.91	0.78
		Total	M	0.12	0.03	0.10	-0.06	0.13	-0.12	0.05	0.01	0.09	-0.01	-0.11	0.10	0.07	-0.03
			SD	0.77	0.79	0.73	0.73	1.22	0.92	0.82	0.74	0.75	0.83	0.73	0.97	0.86	0.81
		Beijing	M	0.12	0.14	0.00	0.06	0.43	-0.04	-0.04	0.06	0.06	-0.02	0.00	0.13	-0.02	0.11

	Total		SD	0.83	0.75	0.70	0.68	1.11	0.98	0.75	0.71	0.81	0.84	0.71	0.91	0.75	0.71
		Shanghai	M	-0.02	0.09	0.10	0.07	0.08	-0.04	0.14	0.14	-0.01	-0.08	0.16	0.12	-0.14	0.16
			SD	0.67	0.83	0.87	0.82	1.09	0.82	0.90	0.75	0.82	0.80	0.69	1.10	0.77	0.85
		Shenzhen	M	0.15	0.04	0.07	0.05	0.10	-0.03	0.23	0.01	-0.02	-0.01	-0.02	0.10	0.07	0.12
			SD	0.73	0.89	0.82	0.74	1.04	0.81	0.78	0.69	0.72	0.80	0.82	0.93	0.87	0.74
		Total	M	0.08	0.09	0.06	0.06	0.20	-0.04	0.11	0.07	0.01	-0.04	0.05	0.12	-0.03	0.13
			SD	0.75	0.82	0.80	0.75	1.09	0.87	0.82	0.72	0.79	0.81	0.74	0.98	0.80	0.77
	Age group																
	born 1979 and before	M	0.09	0.19	0.13	0.10	0.34	0.01	0.17	0.07	-0.11	-0.11	0.23	0.24	-0.11	0.21	
		SD	0.72	0.84	0.88	0.76	0.95	0.75	0.81	0.63	0.82	0.81	0.72	1.03	0.81	0.74	
	born 1980-1991	M	0.04	0.05	-0.06	0.14	0.13	0.00	0.11	0.13	0.05	0.01	0.02	0.01	-0.05	0.22	
		SD	0.76	0.83	0.77	0.74	1.08	0.94	0.83	0.77	0.78	0.80	0.75	0.93	0.71	0.74	
	born 1992 and after	M	0.12	0.03	0.10	-0.06	0.13	-0.12	0.05	0.01	0.09	-0.01	-0.11	0.10	0.07	-0.03	
		SD	0.77	0.79	0.73	0.73	1.22	0.92	0.82	0.74	0.75	0.83	0.73	0.97	0.86	0.81	
	Total	M	0.08	0.09	0.06	0.06	0.20	-0.04	0.11	0.07	0.01	-0.04	0.05	0.12	-0.03	0.13	
SD		0.75	0.82	0.80	0.75	1.09	0.87	0.82	0.72	0.79	0.81	0.74	0.98	0.80	0.77		
	Cities																
	Beijing	M	0.12	0.14	0.00	0.06	0.43	-0.04	-0.04	0.06	0.06	-0.02	0.00	0.13	-0.02	0.11	
		SD	0.83	0.75	0.70	0.68	1.11	0.98	0.75	0.71	0.81	0.84	0.71	0.91	0.75	0.71	
	Shanghai	M	-0.02	0.09	0.10	0.07	0.08	-0.04	0.14	0.14	-0.01	-0.08	0.16	0.12	-0.14	0.16	
		SD	0.67	0.83	0.87	0.82	1.09	0.82	0.90	0.75	0.82	0.80	0.69	1.10	0.77	0.85	
	Shenzhen	M	0.15	0.04	0.07	0.05	0.10	-0.03	0.23	0.01	-0.02	-0.01	-0.02	0.10	0.07	0.12	



		SD	0.73	0.89	0.82	0.74	1.04	0.81	0.78	0.69	0.72	0.80	0.82	0.93	0.87	0.74
	Total	M	0.08	0.09	0.06	0.06	0.20	-0.04	0.11	0.07	0.01	-0.04	0.05	0.12	-0.03	0.13
		SD	0.75	0.82	0.80	0.75	1.09	0.87	0.82	0.72	0.79	0.81	0.74	0.98	0.80	0.77

## Appendix G2 Testing the impact of Functional congruence on purchase intention

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	
BMW liking	cong BMW Exterior	<b>-0.1850</b>	<b>0.0687</b>	<b>292</b>	<b>-2.6921</b>	<b>0.0075</b>	<b>-0.1538</b>	**
BMW liking	cong BMW Convenience	-0.0079	0.0625	292	-0.1270	0.8991	-0.0073	
BMW liking	cong BMW Performance	0.0253	0.0662	292	0.3818	0.7029	0.0224	
BMW liking	cong BMW Safety	-0.1150	0.0685	292	-1.6785	0.0943	-0.0956	
BMW liking	cong BMW Economic	<b>-0.1369</b>	<b>0.0477</b>	<b>292</b>	<b>-2.8706</b>	<b>0.0044</b>	<b>-0.1659</b>	**
BMW liking	cong BMW Dealer	-0.0355	0.0588	292	-0.6031	0.5469	-0.0344	
BMW liking	cong BMW Warranty	<b>-0.1519</b>	<b>0.0639</b>	<b>292</b>	<b>-2.3777</b>	<b>0.0181</b>	<b>-0.1380</b>	*
BMW purchase intention	cong BMW Exterior	0.0341	0.0599	291	0.5685	0.5702	0.0247	
BMW purchase intention	cong BMW Convenience	-0.0694	0.0538	291	-1.2907	0.1978	-0.0554	
BMW purchase intention	cong BMW Performance	-0.0380	0.057	291	-0.6660	0.5060	-0.0293	
BMW purchase intention	cong BMW Safety	-0.0168	0.0593	291	-0.2828	0.7776	-0.0121	
BMW purchase intention	cong BMW Economic	<b>-0.1545</b>	<b>0.0417</b>	<b>291</b>	<b>-3.7092</b>	<b>0.0002</b>	<b>-0.1631</b>	***
BMW purchase intention	cong BMW Dealer	0.0038	0.0507	291	0.0754	0.9399	0.0032	
BMW purchase intention	cong BMW Warranty	<b>-0.1481</b>	<b>0.0556</b>	<b>291</b>	<b>-2.6661</b>	<b>0.0081</b>	<b>-0.1173</b>	**
MB liking	cong MB Exterior	-0.1296	0.0766	292	-1.6920	0.0917	-0.0973	
MB liking	cong MB Convenience	-0.0787	0.0706	292	-1.1150	0.2658	-0.0648	
MB liking	cong MB Performance	-0.1319	0.0687	292	-1.9200	0.0558	-0.1121	

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	
MB liking	cong MB Safety	-0.1100	0.0755	292	-1.4556	0.1466	-0.0857	
MB liking	cong MB Economic	-0.0813	0.0562	292	-1.4465	0.1491	-0.0835	
MB liking	cong MB Dealer	-0.0995	0.0698	292	-1.4247	0.1553	-0.0832	
MB liking	cong MB Warranty	-0.0537	0.0719	292	-0.7472	0.4556	-0.0432	
MB purchase intention	cong MB Exterior	0.0356	0.0703	291	0.5057	0.6134	0.0224	
MB purchase intention	cong MB Convenience	0.0556	0.0646	291	0.8611	0.3899	0.0385	
MB purchase intention	cong MB Performance	0.0668	0.0632	291	1.0569	0.2914	0.0476	
MB purchase intention	cong MB Safety	-0.0586	0.0693	291	-0.8458	0.3984	-0.0383	
MB purchase intention	cong MB Economic	<b>-0.1158</b>	<b>0.0516</b>	<b>291</b>	<b>-2.2465</b>	<b>0.0254</b>	<b>-0.0998</b>	*
MB purchase intention	cong MB Dealer	0.0638	0.064	291	0.9973	0.3194	0.0448	
MB purchase intention	cong MB Warranty	<b>-0.1778</b>	<b>0.0657</b>	<b>291</b>	<b>-2.7046</b>	<b>0.0072</b>	<b>-0.1199</b>	**

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

## Appendix H1 BMW and MB brand involvement – age groups

Age groups		BMW BI 1 (Important)	BMW BI 2 (Interested)	BMW BI 3 (Appealing)	MB BI 1 (Important)	MB BI 2 (Interested)	MB BI 3 (Appealing)
born 1979 and before	M	4.98	5.08	5.02	4.98	4.9	4.87
	S D	0.985	1,021	1,005	0.856	1,039	0.93
born 1980-1991	M	5.24	5.1	5.27	5.14	5.16	5.14
	S D	0.747	0.848	0.784	0.79	0.921	0.89
born 1992 and after	M	5.08	4.95	5.2	4.93	4.91	5.08
	S D	0.956	0.876	0.895	1,003	1,001	0.891
Total	M	5.1	5.04	5.16	5.02	4.99	5.03
	S D	0.907	0.919	0.904	0.89	0.993	0.908

## Appendix H2 BMW brand differentiation - age groups

			I can hardly notice the difference between BMW and MB.		Total
			1 (yes)	2 (no)	
Which age group are you	1	Count	24	78	102
		% of Total	8.0%	26.0%	34.0%
	2	Count	25	72	97
		% of Total	8.3%	24.0%	32.3%
	3	Count	28	73	101
		% of Total	9.3%	24.3%	33.7%
Total		Count	77	223	300
		% of Total	25.7%	74.3%	100.0%

			BMW differs a lot from MB.		Total
			1	2	
Which age group are you	1	Count	80	22	102
		% of Total	26.7%	7.3%	34.0%
	2	Count	89	8	97
		% of Total	29.7%	2.7%	32.3%
	3	Count	88	13	101
		% of Total	29.3%	4.3%	33.7%
Total		Count	257	43	300
		% of Total	85.7%	14.3%	100.0%

			It is harder to distinguish BMW from its competition.		Total
			1	2	
Which age group are you	1	Count	20	82	102
		% of Total	6.7%	27.3%	34.0%
	2	Count	23	74	97
		% of Total	7.7%	24.7%	32.3%
	3	Count	18	83	101
		% of Total	6.0%	27.7%	33.7%
Total		Count	61	239	300
		% of Total	20.3%	79.7%	100.0%

### Appendix H3 MB brand differentiation - age groups

			MB differs a lot from BMW.		Total
			1	2	
Which age group are you	1	Count	78	24	102
		% of Total	26.0%	8.0%	34.0%
	2	Count	87	10	97
		% of Total	29.0%	3.3%	32.3%
	3	Count	81	20	101
		% of Total	27.0%	6.7%	33.7%
Total		Count	246	54	300
		% of Total	82.0%	18.0%	100.0%

			I can hardly notice the difference between MB and BMW		Total
			1	2	
Which age group are you	1	Count	22	80	102
		% of Total	7.3%	26.7%	34.0%
	2	Count	22	75	97
		% of Total	7.3%	25.0%	32.3%
	3	Count	30	71	101
		% of Total	10.0%	23.7%	33.7%
Total		Count	74	226	300
		% of Total	24.7%	75.3%	100.0%

			It is harder to distinguish MB from its competition.		Total
			1	2	
Which age group are you	1	Count	24	78	102
		% of Total	8.0%	26.0%	34.0%
	2	Count	25	72	97
		% of Total	8.3%	24.0%	32.3%
	3	Count	17	84	101
		% of Total	5.7%	28.0%	33.7%
Total		Count	66	234	300
		% of Total	22.0%	78.0%	100.0%

## Appendix H4 Testing the impact of brand differentiation and brand involvement on Functional congruence

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	
cong BMW Safety	bi_BMW	-0.0209	0.0549	295	-0.3809	0.7035	-0.0223	
cong BMW Safety	bd_BMW_1	-0.1986	0.1078	295	-1.8414	0.0666	-0.1142	
cong BMW Safety	bd_BMW_2	-0.0390	0.0994	295	-0.3923	0.6951	-0.0244	
cong BMW Safety	bd_BMW_3	<b>-1.1731</b>	<b>0.3153</b>	<b>295</b>	<b>-3.7205</b>	<b>0.0002</b>	<b>-0.2202</b>	***
cong BMW Economic	bi_BMW	<b>-0.2593</b>	<b>0.0808</b>	<b>295</b>	<b>-3.2088</b>	<b>0.0015</b>	<b>-0.1895</b>	**
cong BMW Economic	bd_BMW_1	-0.0327	0.1587	295	-0.2060	0.8369	-0.0129	
cong BMW Economic	bd_BMW_2	0.0397	0.1462	295	0.2718	0.7860	0.0171	
cong BMW Economic	bd_BMW_3	-0.2270	0.4640	295	-0.4893	0.6250	-0.0292	
cong BMW Warranty	bi_BMW	<b>-0.1441</b>	<b>0.0603</b>	<b>295</b>	<b>-2.3896</b>	<b>0.0175</b>	<b>-0.1405</b>	*
cong BMW Warranty	bd_BMW_1	-0.0557	0.1184	295	-0.4702	0.6386	-0.0293	
cong BMW Warranty	bd_BMW_2	-0.2125	0.1091	295	-1.9473	0.0525	-0.1216	
cong BMW Warranty	bd_BMW_3	<b>-0.9083</b>	<b>0.3463</b>	<b>295</b>	<b>-2.6225</b>	<b>0.0092</b>	<b>-0.1560</b>	**

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

## Appendix I1 Testing the effect of gender (overview)

<b>Response</b>	<b>Predictor</b>	<b>Test.Stat</b>	<b>DF</b>	<b>P.Value</b>	
BMW liking	Q2: BMW Sincerity	1.0	1	<b>0.0228</b>	*
BMW liking	Q2:BMW Ruggedness	1.0	1	<b>0.0008</b>	***
BMW liking	Q2:Self-Transendence	1.0	1	<b>0.0060</b>	**
BMW liking	Q2:Openness-to-change	1.0	1	<b>0.0109</b>	*
BMW liking	Q2:cong OC_BMW Ruggedness	1.0	1	<b>0.0481</b>	*
MB liking	Q2:MB Sophistication	11.6	1	<b>0.0012</b>	**
MB liking	Q2:MB Ruggedness	11.6	1	<b>0.0127</b>	*
MB liking	Q2:cong STr_MB Ruggedness	11.6	1	<b>0.0014</b>	**
MB liking	Q2:cong SE_MB Sophistication	11.6	1	<b>0.0241</b>	*
MB liking	Q2:cong SE_MB Ruggedness	11.6	1	<b>0.0329</b>	*
MB liking	Q2:cong OC_MB Sophistication	11.6	1	<b>0.0365</b>	*
MB purchase intention	Q2:MB Sophistication	40.4	1	<b>0.0412</b>	*



## Appendix I2 Testing the effect of gender

### Male

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	
BMW liking	BMW Sincerity	<b>0.2271</b>	<b>0.0726</b>	<b>132</b>	<b>3.1291</b>	<b>0.0022</b>	<b>0.2601</b>	<b>**</b>
BMW liking	Self-transcendence	<b>0.7268</b>	<b>0.2055</b>	<b>132</b>	<b>3.5374</b>	<b>0.0006</b>	<b>0.588</b>	<b>***</b>
MB liking	MB Ruggedness	<b>0.2104</b>	<b>0.0796</b>	<b>131</b>	<b>2.641</b>	<b>0.0093</b>	<b>0.2003</b>	<b>**</b>
MB liking	cong STr_ MB Ruggedness	<b>0.3232</b>	<b>0.0997</b>	<b>131</b>	<b>3.2428</b>	<b>0.0015</b>	<b>0.4216</b>	<b>**</b>

### Female

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	
BMW liking	BMW Ruggedness	<b>0.4603</b>	<b>0.0971</b>	<b>126</b>	<b>4.7407</b>	<b>&lt;0.00005</b>	<b>0.512</b>	<b>***</b>
BMW liking	cong OC_BMW Ruggedness	<b>0.2874</b>	<b>0.1252</b>	<b>126</b>	<b>2.2963</b>	<b>0.0233</b>	<b>0.6371</b>	<b>*</b>
MB liking	MB Sophistication	<b>0.4167</b>	<b>0.1015</b>	<b>125</b>	<b>4.1046</b>	<b>0.0001</b>	<b>0.3935</b>	<b>***</b>
MB liking	Cong SE_MB Sophistication	<b>-0.3098</b>	<b>0.076</b>	<b>125</b>	<b>-4.0766</b>	<b>0.0001</b>	<b>-0.7666</b>	<b>***</b>
MB liking	cong SE_MB Ruggedness	<b>0.2538</b>	<b>0.0703</b>	<b>125</b>	<b>3.6096</b>	<b>0.0004</b>	<b>0.6845</b>	<b>***</b>
MB liking	cong OC_MB Sophistication	<b>0.2997</b>	<b>0.0686</b>	<b>125</b>	<b>4.3704</b>	<b>&lt;0.00005</b>	<b>0.5889</b>	<b>***</b>
MB purchase intention	MB Sophistication	<b>-0.3112</b>	<b>0.1248</b>	<b>123</b>	<b>-2.4927</b>	<b>0.0140</b>	<b>-0.258</b>	<b>*</b>

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

### Appendix I3 Testing the effect of cities (overview)

Response	Predictor	Test.Stat	DF	P.Value	
BMW purchase intention	Q41:cong Con_BMW Ruggedness	20.5	1	<b>0.0339</b>	*
MB liking	Q41:cong OC_MB Sincerity	8.1	1	<b>0.0164</b>	*

### Appendix I4 Testing the effect of cities

Response	Predictor	Estimate	Std.Error	DF	Crit.Value	P.Value	Std.Estimate	
<b>Shanghai</b>								
BMW purchase intention	cong Con_BMW Ruggedness	<b>-0.5518</b>	<b>0.1643</b>	<b>80</b>	<b>-3.3572</b>	<b>0.0012</b>	<b>-0.7357</b>	**
<b>Shenzhen</b>								
MB liking	cong OC_MB Sincerity	<b>0.6603</b>	<b>0.1855</b>	<b>78</b>	<b>3.5597</b>	<b>0.0006</b>	<b>0.685</b>	***

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

## Appendix J1 Correlation personal values (centered) with demographic characteristics

cPV		What gender are you	Which age group are you	Where do you live	years of education Yourself	year of education: Your Father	Years of education: Your Mother	What is your highest educational level?	Your Marital status?	What is your current/last occupation?	How much is your income?	How much is your car budget?	Place for growing up?
cSDT	Pearson Correlation (r)	-0.083	<b>.119*</b>	-0.022	0.103	<b>.155**</b>	<b>.148*</b>	<b>.119*</b>	0.02	-0.015	0.042	<b>.122*</b>	0.007
	Sig. (2-tailed)	0.151	0.039	0.709	0.075	0.007	0.01	0.039	0.733	0.791	0.471	0.035	0.906
cSDA	r	-0.11	0.098	0.113	0.015	<b>.132*</b>	0.074	0.052	0.024	0.039	-0.055	-0.034	0.011
	Sig. (2-tailed)	0.058	0.09	0.051	0.8	0.023	0.202	0.374	0.682	0.502	0.344	0.552	0.852
cSt	r	0.043	<b>-.134*</b>	-0.053	<b>.209**</b>	<b>.209**</b>	<b>.266**</b>	<b>.158**</b>	-0.063	-0.032	<b>.145*</b>	<b>.174**</b>	<b>-.293**</b>
	Sig. (2-tailed)	0.459	0.020	0.360	0.000	0.000	0.000	0.006	0.279	0.579	0.012	0.003	0.000
cHe	r	<b>-.119*</b>	-0.044	-0.077	-0.11	-0.033	-0.021	0.009	0.009	0.082	<b>-.143*</b>	-0.096	0.046
	Sig. (2-tailed)	0.039	0.446	0.183	0.058	0.571	0.712	0.87	0.877	0.155	0.013	0.097	0.429
cA	r	0.006	<b>-.116*</b>	0.042	-0.016	-0.105	-0.066	0.087	-0.028	0.014	<b>.142*</b>	0.066	-0.097
	Sig. (2-tailed)	0.912	0.044	0.464	0.778	0.068	0.256	0.133	0.634	0.811	0.014	0.255	0.093
cPD	r	0.039	<b>-.155**</b>	0.041	0.061	-0.019	0.018	-0.023	-0.046	-0.025	<b>.114*</b>	<b>.141*</b>	<b>-.169**</b>
	Sig. (2-tailed)	0.501	0.007	0.481	0.295	0.739	0.751	0.698	0.432	0.669	0.049	0.015	0.003
cPR	r	0.044	0.048	-0.024	0.092	0.021	0.061	0.059	0.046	<b>-.125*</b>	<b>.142*</b>	<b>.159**</b>	-0.095
	Sig. (2-tailed)	0.446	0.411	0.679	0.111	0.723	0.289	0.305	0.429	0.030	0.014	0.006	0.099
cF	r	0.091	0.017	-0.069	0.03	-0.031	-0.042	-0.018	0.04	-0.046	-0.091	0.037	0.05
	Sig. (2-tailed)	0.115	0.773	0.232	0.603	0.596	0.471	0.755	0.487	0.426	0.117	0.522	0.388

cPV		What gender are you	Which age group are you	Where do you live	years of education Yourself	year of education: Your Father	Years of education: Your Mother	What is your highest educational level?	Your Marital status?	What is your current/last occupation?	How much is your income?	How much is your car budget?	Place for growing up?
cSP	r	<b>.124*</b>	-0.041	0.095	-0.033	-0.066	<b>-.126*</b>	0.006	-0.018	-0.015	<b>-.188**</b>	<b>-.169**</b>	<b>.139*</b>
	Sig. (2-tailed)	0.032	0.478	0.101	0.572	0.253	0.029	0.914	0.756	0.793	0.001	0.003	0.016
cSS	r	<b>.119*</b>	-0.079	0.027	<b>-.155**</b>	-0.081	-0.081	-0.061	-0.048	-0.056	-0.108	<b>-.143*</b>	<b>.123*</b>
	Sig. (2-tailed)	0.04	0.171	0.639	0.007	0.159	0.161	0.29	0.409	0.336	0.061	0.013	0.034
cT	r	-0.054	-0.002	0.008	-0.017	-0.055	-0.067	<b>-.122*</b>	<b>.149**</b>	0.033	-0.022	-0.089	0.006
	Sig. (2-tailed)	0.351	0.966	0.883	0.773	0.345	0.25	0.034	0.01	0.574	0.702	0.124	0.911
cCR	r	0.056	-0.069	-0.027	-0.113	-0.048	-0.08	<b>-.136*</b>	0.021	-0.025	-0.077	-0.112	<b>.160**</b>
	Sig. (2-tailed)	0.337	0.236	0.645	0.051	0.403	0.167	0.018	0.721	0.66	0.185	0.053	0.005
cCI	r	0.103	-0.046	-0.047	-0.032	0.094	0.107	-0.07	-0.079	-0.046	-0.018	-0.01	0.042
	Sig. (2-tailed)	0.074	0.425	0.414	0.584	0.104	0.065	0.23	0.173	0.43	0.762	0.869	0.466
cHu	r	0.091	0.017	-0.069	-0.009	-0.007	-0.022	-0.06	0.044	0.003	-0.036	0.034	0.037
	Sig. (2-tailed)	0.115	0.773	0.232	0.872	0.899	0.708	0.304	0.453	0.953	0.537	0.558	0.524
cUN	r	<b>.124*</b>	-0.041	0.095	-0.075	-0.017	-0.066	0.031	0.009	0.05	0.03	0.012	-0.031
	Sig. (2-tailed)	0.032	0.478	0.101	0.197	0.764	0.257	0.597	0.876	0.388	0.601	0.83	0.587
cUC	r	<b>.119*</b>	-0.079	0.027	-0.047	0.041	0.017	-0.069	-0.062	-0.024	0.06	0	-0.012
	Sig. (2-tailed)	0.04	0.171	0.639	0.421	0.483	0.767	0.231	0.288	0.68	0.299	0.997	0.835
cUT	r	-0.054	-0.002	0.008	0.013	-0.033	-0.06	0.023	0.001	0.093	0.099	-0.048	0.039
	Sig. (2-tailed)	0.351	0.966	0.883	0.817	0.567	0.304	0.698	0.981	0.107	0.086	0.409	0.506
cBC	r	0.056	-0.069	-0.027	0.016	-0.069	-0.054	0.051	-0.053	0.108	<b>-.114*</b>	<b>-.165**</b>	0.021
	Sig. (2-tailed)	0.337	0.236	0.645	0.78	0.231	0.353	0.376	0.36	0.061	0.049	0.004	0.714
cBD	r	0.103	-0.046	-0.047	-0.003	-0.087	-0.051	-0.028	0.011	0.093	-0.077	-0.046	<b>.177**</b>

cPV		What gender are you	Which age group are you	Where do you live	years of education Yourself	year of education: Your Father	Years of education: Your Mother	What is your highest educational level?	Your Marital status?	What is your current/last occupation?	How much is your income?	How much is your car budget?	Place for growing up?
	Sig. (2-tailed)	0.074	0.425	0.414	0.963	0.132	0.38	0.63	0.846	0.108	0.183	0.428	0.002
**. Correlation is significant at the 0.01 level (2-tailed).													
*. Correlation is significant at the 0.05 level (2-tailed).													

## Appendix J2 Correlation brand personality and purchase intention with demographic characteristics

		What gender are you	Which age group are you	Where do you live	years of educa- tion Yourself	year of educa- tion: Your Father	Years of educa- tion: Your Mother	What is your highest educa- tional level?	Your Marita- l status ?	What is your current/last occupa- tion?	How much is your income?	How much is your car budget?	Place for growi- ng up?
<b>BMW</b>													
BMW Sincerity	Pearson Correlatio- n (r)	-.021	.110	-.060	.062	<b>.135*</b>	<b>.171**</b>	.004	.099	-.087	<b>.276**</b>	<b>.232**</b>	- <b>.209**</b>
	Sig. (2- tailed)	.714	.057	.304	.283	.019	.003	.948	.087	.131	.000	.000	.000
BMW Excitement	r	-.075	-.045	.041	.063	<b>.119*</b>	.112	<b>.136*</b>	.109	<b>-.128*</b>	<b>.261**</b>	<b>.189**</b>	- <b>.185**</b>
	Sig. (2- tailed)	.197	.439	.481	.277	.039	.053	.018	.059	.027	.000	.001	.001
BMW Competence	r	- <b>.164**</b>	-.028	.062	.049	.108	.076	<b>.133*</b>	.067	-.030	<b>.197**</b>	<b>.146*</b>	-.043
	Sig. (2- tailed)	.004	.624	.288	.400	.063	.191	.022	.246	.605	.001	.011	.458
	r	.000	-.076	-.004	.056	<b>.149**</b>	.106	.059	<b>.163**</b>	-.084	<b>.197**</b>	<b>.147*</b>	-.073

		What gender are you	Which age group are you	Where do you live	years of education Yourself	year of education: Your Father	Years of education: Your Mother	What is your highest educational level?	Your Marital status?	What is your current/last occupation?	How much is your income?	How much is your car budget?	Place for growing up?
BMW Sophistication	Sig. (2-tailed)	.998	.189	.941	.336	.010	.066	.309	.005	.147	.001	.011	.209
BMW Ruggedness	r	.012	.005	-.072	.097	<b>.146*</b>	.072	-.002	<b>.123*</b>	-.008	<b>.246**</b>	<b>.165**</b>	-.072
	Sig. (2-tailed)	.835	.937	.214	.093	.011	.211	.978	.033	.894	.000	.004	.213
Do you like BMW	r	-.077	.028	-.068	<b>.140*</b>	<b>.149**</b>	<b>.120*</b>	.044	.070	- <b>.152**</b>	<b>.244**</b>	<b>.173**</b>	-.103
	Sig. (2-tailed)	.184	.628	.239	.015	.010	.038	.451	.228	.009	.000	.003	.076
I intend to buy a BMW	r	<b>-.130*</b>	.058	-.024	<b>.158**</b>	<b>.164**</b>	<b>.185**</b>	.097	<b>.126*</b>	-.070	<b>.246**</b>	<b>.268**</b>	- <b>.250**</b>
	Sig. (2-tailed)	.024	.314	.682	.006	.004	.001	.093	.029	.225	.000	.000	.000
<b>MB</b>													
MB Sincerity	r	-.028	-.013	-.065	.113	<b>.182**</b>	<b>.191**</b>	.030	<b>.137*</b>	-.065	<b>.237**</b>	<b>.255**</b>	<b>-.125*</b>
	Sig. (2-tailed)	.634	.826	.261	.050	.002	.001	.599	.018	.261	.000	.000	.030
MB Excitement	r	-.070	-.008	.089	.055	.077	.049	.037	<b>.141*</b>	-.011	<b>.200**</b>	<b>.240**</b>	<b>-.120*</b>
	Sig. (2-tailed)	.227	.888	.126	.343	.181	.397	.520	.015	.848	.000	.000	.038
	r	-.111	-.047	.034	.036	<b>.162**</b>	<b>.164**</b>	.066	.025	.007	<b>.117*</b>	<b>.137*</b>	-.031

		What gender are you	Which age group are you	Where do you live	years of education Yourself	year of education: Your Father	Years of education: Your Mother	What is your highest educational level?	Your Marital status?	What is your current/last occupation?	How much is your income?	How much is your car budget?	Place for growing up?
MB Competence	Sig. (2-tailed)	.054	.413	.558	.534	.005	.004	.251	.661	.898	.043	.018	.587
MB Sophistication	r	-.018	-.086	-.039	<b>.150**</b>	<b>.205**</b>	<b>.151**</b>	.082	.096	-.052	<b>.167**</b>	<b>.211**</b>	-.073
	Sig. (2-tailed)	.751	.137	.498	.009	.000	.009	.157	.096	.368	.004	.000	.206
MB Ruggedness	r	.011	-.013	-.050	<b>.119*</b>	<b>.157**</b>	<b>.129*</b>	-.007	.077	.029	<b>.158**</b>	<b>.150**</b>	<b>-.119*</b>
	Sig. (2-tailed)	.844	.826	.388	.040	.006	.025	.905	.184	.615	.006	.009	.039
Do you like Mercedes	r	-.075	-.042	.039	<b>.216**</b>	<b>.220**</b>	<b>.185**</b>	.039	<b>.166**</b>	<b>-.118*</b>	<b>.262**</b>	<b>.260**</b>	-.098
	Sig. (2-tailed)	.193	.466	.506	.000	.000	.001	.497	.004	.042	.000	.000	.090
I intend to buy a MB	r	-.052	-.016	-.011	<b>.138*</b>	<b>.201**</b>	<b>.195**</b>	.041	<b>.181**</b>	-.096	<b>.223**</b>	<b>.335**</b>	<b>- .259**</b>
	Sig. (2-tailed)	.367	.783	.852	.017	.000	.001	.482	.002	.095	.000	.000	.000
**. Correlation is significant at the 0.01 level (2-tailed).													
*. Correlation is significant at the 0.05 level (2-tailed).													



### Appendix J3 Correlation personal values (centered) with brand personality

		BMW Sincerity	BMW Excitement	BMW Competence	BMW Sophistication	BMW Ruggedness	MB Sincerity	MB Excitement	MB Competence	MB Sophistication	MB Ruggedness
cS DT	Pearson Correlation (r)	-0.077	-0.003	0.006	-0.056	-0.076	-0.066	-0.106	0.011	0.049	-0.072
	Sig. (2-tailed)	0.184	0.958	0.913	0.332	0.187	0.251	0.068	0.85	0.401	0.211
cS DA	r	-0.026	<b>0.188**</b>	<b>.209**</b>	0.026	0.068	0.098	0.102	<b>0.196**</b>	0.108	0.065
	Sig. (2-tailed)	0.657	0.001	0	0.65	0.243	0.091	0.078	0.001	0.063	0.265
cSt	r	0.044	<b>0.114*</b>	0.077	-0.01	-0.037	0.084	0.059	0.034	0.012	0.049
	Sig. (2-tailed)	0.443	0.048	0.183	0.864	0.52	0.146	0.305	0.553	0.83	0.396

		<b>BMW Sincerit y</b>	<b>BMW Excitem ent</b>	<b>BMW Compet ence</b>	<b>BMW Sophisti cation</b>	<b>BMW Rugged ness</b>	<b>MB Sincerit y</b>	<b>MB Excitem ent</b>	<b>MB Compet ence</b>	<b>MB Sophisti cation</b>	<b>MB Rugged ness</b>
cH	r	<b>-0.156**</b>	0.042	0.023	-0.068	-0.093	-0.005	-0.047	0.113	-0.007	0.067
E	Sig. (2- tailed)	0.007	0.464	0.692	0.24	0.108	0.932	0.416	0.051	0.906	0.248
cA	r	<b>0.131*</b>	0.05	<b>0.144*</b>	-0.035	0.049	<b>0.133*</b>	0.103	0.078	0.002	0.008
	Sig. (2- tailed)	0.023	0.392	0.013	0.546	0.398	0.021	0.075	0.175	0.969	0.892
cP	r	<b>0.155**</b>	0.011	0.021	0.017	0.067	0.072	0.083	-0.101	-0.039	0.024
D	Sig. (2- tailed)	0.007	0.848	0.717	0.768	0.25	0.213	0.151	0.08	0.506	0.684
cP	r	0.113	0.074	0.076	0.022	-0.017	0.056	-0.016	-0.089	-0.042	-0.094
R	Sig. (2- tailed)	0.05	0.199	0.19	0.709	0.774	0.337	0.787	0.122	0.473	0.106
cF	r	0.041	-0.079	0.001	<b>-0.152**</b>	0.004	0.012	-0.021	-0.031	-0.02	-0.022
	Sig. (2- tailed)	0.484	0.171	0.985	0.008	0.951	0.835	0.718	0.596	0.728	0.705
cSP	r	-0.055	-0.071	0.006	-0.005	-0.013	-0.094	-0.033	0.054	-0.01	-0.047

		<b>BMW Sincerity</b>	<b>BMW Excitement</b>	<b>BMW Competence</b>	<b>BMW Sophistication</b>	<b>BMW Ruggedness</b>	<b>MB Sincerity</b>	<b>MB Excitement</b>	<b>MB Competence</b>	<b>MB Sophistication</b>	<b>MB Ruggedness</b>
	Sig. (2-tailed)	0.343	0.218	0.918	0.929	0.824	0.103	0.564	0.352	0.860	0.414
cSS	r	-0.035	-0.001	0.047	-0.008	-0.07	-0.066	0.008	0.067	-0.002	0.003
	Sig. (2-tailed)	0.548	0.981	0.42	0.891	0.225	0.257	0.894	0.245	0.967	0.96
cT	r	0.010	<b>-0.165**</b>	-0.091	0.021	0.044	-0.059	-0.03	-0.081	0.031	-0.013
	Sig. (2-tailed)	0.858	0.004	0.114	0.72	0.451	0.312	0.599	0.16	0.589	0.819
cC R	r	-0.097	-0.057	0.015	0.061	<b>0.160**</b>	0.062	0.008	0.079	0.075	0.074
	Sig. (2-tailed)	0.093	0.323	0.8	0.295	0.005	0.285	0.89	0.171	0.195	0.2
cCI	r	-0.068	-0.053	<b>-0.160**</b>	-0.072	-0.11	-0.095	-0.072	-0.047	-0.052	<b>-0.143*</b>
	Sig. (2-tailed)	0.238	0.356	0.006	0.215	0.057	0.100	0.217	0.416	0.366	0.013
cHu	r	0.012	<b>-0.142*</b>	<b>-0.182**</b>	-0.022	0.069	-0.026	-0.102	<b>-0.179**</b>	-0.058	-0.051

		<b>BMW Sincerity</b>	<b>BMW Excitement</b>	<b>BMW Competence</b>	<b>BMW Sophistication</b>	<b>BMW Ruggedness</b>	<b>MB Sincerity</b>	<b>MB Excitement</b>	<b>MB Competence</b>	<b>MB Sophistication</b>	<b>MB Ruggedness</b>
	Sig. (2-tailed)	0.831	0.014	0.002	0.704	0.237	0.650	0.077	0.002	0.316	0.383
cU N	r	-0.063	-0.014	-0.054	0.055	-0.106	-0.111	-0.043	-0.037	0.015	-0.068
	Sig. (2-tailed)	0.273	0.816	0.353	0.338	0.067	0.055	0.462	0.528	0.802	0.241
cU C	r	0.062	0.098	-0.063	0.067	0.06	-0.055	0.052	-0.005	-0.028	0.087
	Sig. (2-tailed)	0.286	0.09	0.276	0.244	0.301	0.339	0.366	0.928	0.63	0.134
cUT	r	0.026	<b>0.134*</b>	0.068	<b>0.176**</b>	<b>0.161**</b>	0.087	0.014	0.049	0.072	0.103
	Sig. (2-tailed)	0.654	0.02	0.238	0.002	0.005	0.131	0.812	0.401	0.213	0.075
cB C	r	<b>-0.153**</b>	-0.042	<b>-0.117*</b>	-0.09	<b>-0.171**</b>	-0.058	0.009	-0.06	-0.031	0.045
	Sig. (2-tailed)	0.008	0.472	0.042	0.119	0.003	0.32	0.882	0.299	0.59	0.441
	r	-0.026	-0.07	-0.017	0.083	-0.018	-0.02	0.024	0.107	-0.016	0.082

		<b>BMW Sincerity</b>	<b>BMW Excitement</b>	<b>BMW Competence</b>	<b>BMW Sophistication</b>	<b>BMW Ruggedness</b>	<b>MB Sincerity</b>	<b>MB Excitement</b>	<b>MB Competence</b>	<b>MB Sophistication</b>	<b>MB Ruggedness</b>
cB D	Sig. (2-tailed)	0.653	0.227	0.773	0.149	0.758	0.727	0.678	0.065	0.782	0.156
**. Correlation is significant at the 0.01 level (2-tailed).											
*. Correlation is significant at the 0.05 level (2-tailed).											

#### Appendix J4 Correlation higher-order personal values (centered) with brand personality

		<b>BMW Since rity</b>	<b>BMW Excite ment</b>	<b>BMW Compet ence</b>	<b>BMW Sophistic ation</b>	<b>BMW Rugged ness</b>	<b>MB Since rity</b>	<b>MB Excite ment</b>	<b>MB Compet ence</b>	<b>MB Sophistic ation</b>	<b>MB Rugged ness</b>
cS Tr	r	-.064	.048	-.079	<b>.122*</b>	-.033	-.070	.022	.017	.005	.099
	Sig. (2- tail ed)	.269	.407	.174	.035	.569	.224	.704	.764	.931	.086
cS E	r	<b>.181**</b>	.064	.106	.005	.041	<b>.114*</b>	.070	-.062	-.038	-.035
	Sig. (2- tail ed)	.002	.272	.067	.926	.481	.048	.227	.282	.507	.543
cO C	r	-.089	<b>.156**</b>	<b>.142*</b>	-.046	-.061	.055	.010	<b>.156**</b>	.071	.051
	Sig. (2- tail ed)	.125	.007	.014	.425	.293	.345	.867	.007	.222	.376
cC on	r	-.102	<b>-.155**</b>	-.091	-.005	.001	-.110	-.055	.020	.016	-.061
	Sig. (2- tail ed)	.078	.007	.115	.938	.982	.056	.343	.734	.789	.291

\*\* . Correlation is significant at the 0.01 level (2-tailed).

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