MASTER THESIS

The relationship between luxury consumption and happiness
How personality traits influence this relationship

A case study in The Netherlands

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ABSTRACT

This study aims to re-examine the relationship between luxury consumption, specifically luxury vehicle ownership, and happiness. It also discusses the influence of personality traits on this relationship. In exploring the relationship between luxury vehicle ownership and happiness, this study looks deeply into the aspects of luxury vehicle consumption that are correlated with happiness. These aspects are vehicle ownership, vehicle price and luxury vehicle ownership. Indeed, according to the literature, luxury vehicle ownership is ownership of the most expensive vehicle. To differentiate with the previous study, this study offers a new perspective in exploring the relationship between the consumption of a luxury vehicle and happiness using the big five personality traits, without ignoring the impact of income and personal characteristics. This study uses the LISS (Longitudinal Internet Studies for The Social Sciences) panel data, which contains happiness-related information from individuals who reside in the Netherlands. The OLS model is used to explore variations in happiness determinants and their effects on happiness. This study argues that luxury vehicles ownership can bring happiness. Furthermore, this study also argues that big five personality traits can moderate this relationship, whereby they have the capacity to influence the evaluation of luxury consumption, both ex ante and ex post. Nevertheless, this study tests only the relationship between luxury vehicle ownership and happiness, personality traits and happiness, and the moderating effect of big five personality traits on the relationship between luxury vehicle ownership and happiness. The mechanisms that work behind those relationships are not tested in this study. Results show that, luxury vehicles ownership increases happiness. However, there is not enough evidence to conclude that the big five personality traits can explain the variation of happiness levels reported by luxury vehicles owners.

Keywords: happiness, luxury consumption, luxury vehicle, personality, big five personality traits

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1. INTRODUCTION

"Happiness is the meaning and the purpose of life, the whole aim and end of human existence." - Aristotle

Happiness is the motivation for human desire (Oswald, 1997). It is one of the goals in life that is shared by many people (Easterlin, 2004). The question of how people can achieve happiness in their lives has become an important concern, as studies reveal that people may not always succeed in predicting what will make them happy (Kahneman & Thaler, 2006; Stutzer & Frey, 2012). A significant number of happiness studies in economics explore the determinants of happiness (Stutzer & Frey, 2012). These studies are motivated by the ambition to understand the key drivers of happiness that will eventually allow better facilitation of happiness (Myers & Diener, 1995; Stutzer & Frey, 2012). A better understanding of the determinants of happiness can help people to choose better priorities in their lives in the search for happiness. Moreover, seeking firmer conclusions on happiness determinants is important as we cannot ignore the association between happiness and certain behaviors of people (Stutzer & Frey, 2012).

Recent studies find that people who are happy with their lives behave differently from people who are less happy (Frey, 2008). Happy people are more likely to enjoy sharing and helping others (Lyubomirsky, King, & Diener, 2005). They are more willing to participate in society and make a positive contribution to their community (Isen, 1970; Diener & Seligman, 2002). Lyubormirsky et al. (2005) argue that positive emotions in happy people induce a tendency towards pro-social behavior which explains their high engagement in society. In their workplaces, they work more effectively and creatively, thereby gaining greater productivity compared to their less happy peers (Tay, Kuykendall, & Diener, 2015). As a consequence, they have a better chance of success in their career (Tay et al., 2015). Due to their lifestyle, happy people can expect to live a healthier life, as the behavior of happy people promotes health (Diener & Chan, 2011). Guven (2012) suggests that happiness makes people take better life decisions. The consumption of healthy foods such as fruits and vegetables is found to increase with the reported happiness level (Blanchflower, Oswald, & Steward-Brown, 2013).

Past studies on the determinants of happiness showed that happiness is multi-dimensional (Frey & Stutzer, 2002b), indicating that happiness has many possible determinants. Personal characteristics and personality, and their relationships with happiness have mostly been investigated by psychologists (Easterlin, 2003). Age (Myers & Diener, 1995; Frey & Stutzer, 2002a) and marital status (Myers, 2000; Gerdtham & Johannesson, 2001; Easterlin 2003) are two examples of personal characteristics that are found to correlate with happiness. In addition, Frey and Stutzer (2002a) confirm the existence of a correlation between people's education level and their reported happiness level. The quantity and quality of social relations that people have also matters in relation to happiness (Stutzer & Frey, 2012). Alternatively, Lykken and Tellegen (1996) suggest that heritability components, such as genetic factors and personality, affect happiness.

Economists pay a lot of attention to – and put a lot of effort into – studying the effect of income on happiness (Stanca & Veenhoven, 2015). The Easterlin paradox is one of the earliest and most important findings in happiness economics, which unveils the correlation between income and happiness (Easterlin, 1974). The Easterlin paradox outlines a consistent relationship between increased income and happiness within an individual, but not within a country, nor in a time series comparison. An increase in income makes people happier, but when everyone else becomes richer as well, income no longer affects happiness (Easterlin, 1974). Similarly, the level of happiness remains unchanged over the years despite a sharp increase in the US's real GDP (Easterlin, 1974). This gives evidence of a mixed relationship between income and happiness.

Unemployment is another economic factor that can influence happiness, as it can reduce an individuals' happiness level (Frey & Stutzer, 2002a). Loss of income is presumed to be one of the reasons for the lower happiness level of someone who is unemployed (Gertham & Johannesson, 2001). In a similar fashion, income through consumption activity can also affect happiness (DeLeire & Kalil, 2010).

Happiness studies have shown that particular patterns of consumption may influence happiness differently (Dumludag, 2015). Some people find happiness in purchasing luxury goods while others may find it in another type of consumption. Consumption might satisfy desires that could facilitate happiness (Csikszentmihalyi, 2000). Stanca and Veenhoven

(2015) argue that the consumption of basic goods and services is actually a prerequisite condition to evoking happiness. Another study by DeLeire and Kalil (2010) investigates the possible association between types of consumption and happiness. They find that only leisure consumption has a positive association with higher levels of happiness through its effect on social status and relationships. However, relatively little evidence has resulted from studies about the effects of consumption on happiness (Dumludag, 2015; Stanca & Veenhoven, 2015).

Driven by the insight that certain patterns of consumption might alter happiness through material possessions (Okulicz-Kozaryn, Nash, & Tursi, 2015), this study explores more about this potential correlation by looking into luxury goods consumption patterns, specifically on luxury vehicles as a prominent example of luxury goods. Purchasing a luxury vehicle is a major financial decision for most people, since buying such a vehicle is the single largest purchase after buying a house (Okulicz-Kozaryn et al., 2015) and significantly more expensive than when purchasing a non-luxury vehicle.

From the perspective of happiness, the impact luxury vehicle ownership has on happiness is still unclear. In general, the positive relationship between the consumption of luxury goods and happiness is confirmed by Hudders and Pandelaere (2012). In contrast, a study by Okulicz-Kozaryn et al. (2015), that directly investigates the relationship between luxury cars ownership and happiness, finds no evidence of a relationship between them. Regardless that ownership of luxury vehicles can increase happiness by making commuting easier (Stanca & Veenhoven, 2015), it can also decrease happiness, as it creates pollution (Welsch, 2006) and leads to increased traffic congestion (Stutzer & Frey, 2008).

To some extent, this study serves as an extension of Okulicz-Kozaryn et al. (2015), offering a more comprehensive analysis and incorporating previously unexamined variables, such as personality traits, into the model. The main objective of this study is to observe the impact of consumption of luxury vehicles on happiness, and also to determine whether personality traits can influence the relationship between luxury vehicles ownership and happiness.

The purchase of a luxury vehicle is expected to influence happiness by providing the owner with a favorable social image (Vigneron & Johnson, 1999; Phau & Prendergast, 2000,

Johansson-Stenman & Martinsson, 2015). Okulicz-Kozaryn et al. (2015) argue that people want a luxury vehicle because it serves as a status symbol. The acquisitions of luxury vehicles allow the owners to fit into a certain community that can indicate their social status as well as facilitating social interaction between them (Corneo & Jeanne, 1997); the idea is that, in the end, this will make them happier (Ahuvia, 2002).

Consumption of luxury goods is not only about social image (Vigneron & Johnson, 1999). People often purchase luxury goods in order to reinforce their positive self-image, as luxury goods are also known to have a high association with best quality, achievement and success (Vigneron & Johnson, 1999; Windmann, Hennigs, & Siebels, 2007). Indeed, having luxury vehicles can increase people's self-esteem (Okulicz-Kozaryn et al., 2015) and actually make them happy (Truong & McColl, 2011). Many people seek happiness through the possession of luxury vehicles; the study of the relationship between these purchases and happiness is in its infancy, whereby many substantial gaps still have to be filled (Morris & Guerra, 2015). On a higher level, the impact that luxury goods have on happiness is still far from conclusive. The correlation between luxury goods and happiness seems to vary under different conditions (DeLeire & Kalil, 2010; Dumludag, 2015; Okulicz-Kozaryn et al., 2015). People who own luxury goods are not always happier than those who do not (Diener, Horwitz, & Emmons, 1985), and the same applies to the owners of luxury vehicles (Okulicz-Kozaryn et al., 2015).

Furthermore, Diener and Biswas-Diener (2002) argue that personality may affect the happiness derived from a consumption experience. Personality plays an important part in determining whether people feel happy or unhappy about their consumption (Diener, 1994; Csikszentmihalyi, 1999) by influencing people's thoughts, feelings and behavior towards it (McCrae & Costa, 1999). In addition, among others happiness determinants, personality is also regarded as one of the strongest and most consistent happiness determinants (Costa & McCrae, 1980; Diener, Suh, Lucas, & Smith, 1999). Certain personality traits are found to have a capacity to lead people to live happier lives than others (Diener, Emmons, Larsen, & Griffin, 1985; DeNeve & Cooper, 2008) due to their capacity to shape people's perceptions of their life experience (DeNeve & Cooper, 2008; Veenhoven, 2009b).

This study disentangles the influence of the consumption of a luxury vehicle using personality traits as moderators to happiness by answering the central question of this research:

"What is the relationship between the consumption of luxury vehicles and level of happiness, and how do personality traits influence this relationship?"

This study aims to provide empirical evidence on the correlation between the consumption of luxury vehicle and happiness, and also to make a contribution to the existing literature. This study aims to contribute to furthering out understanding of the consumption of a luxury vehicle, as an economic activity aimed at realizing happiness. The finding of this study will demonstrate whether the consumption of a luxury vehicle, as revealed preference, does enhance happiness as professed by advertising, or it is just one of a multitude of misinformed preferences that will subsequently require special care. This will bring new knowledge to increase public awareness of whether seeking happiness in luxury vehicle ownership is the right priority in fund allocation, especially for those with limited resources.

This study also has policy implications. The findings from this study can bring new valuable information for economic policy, specifically in relation to transport and environmental preservation, by reducing the problems caused by vehicles, specifically luxury vehicles. These findings can also provide additional insight for policy makers so they can develop a well-suited program to regulating luxury vehicle consumption while taking into consideration not only the economic results, but also human happiness.

The relationship between the consumption of luxury vehicle and happiness is traced carefully through the three aspects of consumption of a luxury vehicle. Firstly, this study investigates the effects owning such a vehicle has on happiness. Secondly, it examines whether a vehicle owner's happiness is influenced by the price of the vehicle. Examining whether happiness is affected by vehicle ownership and price will benefit our understanding of the composition of the relationship between luxury vehicle ownership and happiness. This study relates to a category of vehicle based on price, whereby the luxury vehicle category is defined as the most expensive vehicle. The moderations effect of personality traits are investigated in relation to these three aspects. To differentiate with the previous study, this study offers a new perspective in exploring the relationship between the consumption of a

luxury vehicle and happiness using the big five personality traits, without ignoring the impact of income and personal characteristics. This study makes use of the Longitudinal Internet Studies for The Social Sciences (LISS) panel data that provide data on vehicles owned by people who reside in the Netherlands.

The next chapter, chapter two, provides all relevant concepts used in this study. Chapter three covers the methodology of this study, including the research design used. The results are explained in chapter four. And finally, in chapter five, further discussion of the findings is presented, limitations are identified, and recommendations for future research are made.

2. LITERATURE REVIEW

Happiness, luxury consumption and personality are three important concepts relevant to this study. The relevance of terms happiness, life satisfaction and well-being are discussed at the start of this chapter. Afterwards, happiness measurement and correlation are covered as well as the concept of happiness in order to provide a thorough understanding of happiness as the central attention of this study. Furthermore, the expected relationship between happiness, luxury consumption and personality is elaborated upon at the end of the chapter.

2.1 Happiness Concept

Happiness and Subjective Well Being

Happiness, life satisfaction and subjective well-being are often used interchangeably in the literature on happiness. However, Diener (1994) and the Organization for Economic Co-Operation and Development (OECD) (2013) suggest that happiness, life satisfaction and subjective well-being actually refer to different definitions. Subjective well-being is a broader subject, in which happiness and life satisfaction are an integral part (OECD, 2013). The OECD (2013) defines the notion of subjective well-being as *"good mental states, including all evaluation that people make of their life, positive and negative and the affective reactions of people to their experiences"* (p. 10). From this definition, subjective well-being incorporates life evaluation and affective reaction as its two major components (Ryff, 1989; Diener, 1994). People with high subjective well-being are those who appreciate their life more on the whole and who experience pleasant affect more frequently than unpleasant affect (Diener, Sandvik, & Pavot, 1991; Diener, 1994; Myers & Diener, 1995; Diener, Lucas, & Oishi, 2002). Diener, Lucas, and Oishi (2002) suggest that subjective well-being can be split up into cognitive and affective appreciation of life.

The cognitive part of subjective well-being is life satisfaction or life evaluation (Okulicz-Kozaryn et al., 2015), that is, the global appreciation of one's life, how much a person is satisfied about the life they have (Diener, 1994; Stanca & Veenhoven, 2015). On the other hand, happiness or affective reaction refers to the affective aspect of subjective well-being (Okulicz-Kozaryn et al., 2015) which is the net balance of positive over negative affective reaction in one's emotional life (Diener, 1994). Life satisfaction, happiness and subjective

well-being are probably correlated as all of them are subjective and involve a global assessment of life (Diener, 1994). They are affected by how a person experiences the life he or she has. With this understanding, it is clear that happiness, life satisfaction and subjective well-being are highly correlated. In a sense, this justifies the fact that happiness and life satisfaction are frequently used as valid proxies for subjective well-being.

Happiness serves this study's purpose better, considering its relevance to the concept of consumption and personality. Unlike life satisfaction which is more about a global and long-term subjective evaluation of life (Veenhoven, 2009a), study by Luhmann, Hawkley, Eid, and Cacioppo (2012) suggest that people report their affective well-being by considering specific sources of information. Happiness captures ongoing affective reactions to life events and activities (Diener, 1994; Chekola, 2007), while consumption is one of the activities that people do to attain pleasantness and/or prevent unpleasantness (Ramsoy, 2014). Another reason why happiness suits this study more is because of its relation to personality. Jovanovic (2011) finds that personality has a higher correlation with the affective component of well-being compared to the cognitive component of well-being. Therefore, happiness is the proxy that will be used to capture this correlation.

Happiness in Economics

Within the context of consumption, consumers make many choices with every decisionwe deal with many consumer choices in every decision: whether to purchase now or later, at a discounted or at a premium price and also about the matter of luxury good or non-luxury goods. How consumers choose from the many options is an interesting subject for economists to explore.

Economists use the utility concept to explain consumer choices (Simon, 1959). The more utility a person gets from his or her consumption choices, the more satisfied the person will be (Simon, 1959). Kahneman and Thaler (2006) differentiate the term utility into predicted and experienced utility in order to understand choices better. They describe predicted utility as the expected benefit from consumption experience. People make their consumption choices based on expected value of the particular options (Ramsoy, 2014), and happiness is one of the possible values offered by consumption goods that motivates people to consume (Oswald, 1997). It is known that people predict their utilities based on their current states

(e.g. hungry versus full), the context of the decision (e.g. simultaneous versus one time choice), and past experiences (Kahneman & Thaler, 2006). Advertising and word-of-mouth can also influence predicted utility, serving as a source of information to support the decision-making process (Dutt, 2008; Ramsoy, 2014). Once choices are made based on the predicted utility, they lead to consequences.

Kahneman and Thaler (2006) define experienced utility as people's actual experience of their consumptions. The evaluation of the consumption experience determines whether people feel enjoyment or misery as a consequence of their consumption choices. Experienced utility can be revealed in real time as instant utility, or in a form of past experience as remembered utility (Kahneman, Wakker, & Sarin, 1997). Ramsoy (2014) explains in detail the impact of experienced utility as part of humans' learning mechanism that will influence future decisions.

These two concepts of utility – predicted and experienced utility – increase our understanding of choices. Kahneman and Thaler (2006) suggest that an accurate utility prediction is a prerequisite of utility-maximizing choices when the actual experience meets the expected value; such as when we feel joy after purchasing a long desired luxury bag. On the other hand, inaccurate utility prediction happens when the actual experience does not match up to our expectations. This distortion in predicting utility (mis-predicting) is argued to be one of the reasons for our unhappiness about consumption (Frey & Stutzer, 2014). Stutzer and Frey (2008) provide an example of mis-predicting utility in the commuting paradox that shows how a longer commuting time to workplace results in a lower level of well-being even though the job resulted in higher income, and higher income is associated with a higher level of well-being.

Measuring Happiness

After we have a clear concept on how to define happiness, it is essential to have an understanding of measuring happiness. Peer-reports and self-reports are two of the methods available for measuring happiness (Diener et al., 1999). Sandvik, Diener, and Seidlitz (1993) advise peer-reported happiness measures, in which happiness can be assessed by relatives and friends. This non-self-reporting of happiness is possible as happy people are known to share the same noticeable cues, e.g., the Duchenne smile – smiling with eyes (Kahneman &

Krueger, 2006; Leppanen & Hietanen, 2007). Happy people are also noticeable in social interaction as they smile more often during interaction compared to their less happy peers (Fernandez-Dols & Ruiz-Belda, 1995).

However, non-self-reported measures of happiness have limitations. Irwin, Kammann, and Dixon (1979) find that a peer's judgment of happiness may fail due to the misperception of another person's happiness. This misperception of happiness happens when people judge others using their own definition of happiness (Irwin et al., 1979), since happiness is subjective and 'in one's mind' (Veenhoven, 2012). For example, some people consider themselves happy when spending time in social interaction, whereas others may be happy when having quality time alone. The other way around, an unhappy person can also be found among party-goers who are associated with happy people. Alternative methods from the field of neuroscience, such as the salivary cortisol test (Dinan, 1994) and brain imaging of happiness (George et al., 1995) aim to facilitate this subjectivity of happiness. However, due to high costs and the complexity of these neuroscience methods, using them in a study with large numbers of subjects would be difficult (Ramsoy, 2014).

Self-reported measures of happiness is another method which can be considered for measuring happiness (Stanca & Veenhoven, 2015) as no-one knows precisely how happy a person is in life better than that person him or herself (Irwin et al., 1979). Questions in self-reported measures of happiness can be put directly in the form of single or multiple questions (Veenhoven, 2012) as most people are capable of judging whether they are happy or unhappy (Lyubomirsky & Lepper, 1999).

Kahneman and Krueger (2006) criticize this self-reporting in reply to direct question(s) as a means for measuring happiness. They doubt that people would be able to recall the correct remembered utility to be used in assessing happiness as a global view. Confounding factors are also believed to create noise in people's responses to direct question(s) about happiness (Kahneman, Kahneman, & Tversky, 2003; Kahneman & Krueger, 2006; Veenhoven, 2012). This means that when people are asked the same question more than once, their answers are rarely the same. Although current mood and emotion are known as possible disturbances in recalling feelings on past life events (Diener, Larsen, & Emmons, 1984), the reliability of answers to happiness-related question still stands, despite these disruptions. This reliability is

strongly influenced by the use of information that is accessed chronically instead of temporarily (Shimmack & Oishi, 2005). Chronically accessed information is the information that readily comes to mind when being questioned about life; for example, our evaluation of marriage, work and health. On the other hand, temporarily accessed information – mood or emotion – is a situational factor.

Another possible bias of direct question(s) about happiness relates to the durability of people responses, whether their answers only represent current happiness instead of happiness about life as a whole (Veenhoven, 2009a). Studies by Diener (2000), Diener et al. (2013) and Kahneman and Krueger (2006) reveal happiness adaptability in response to significant changes in people's lives. A prior study by Brickman, Coates, and Janoff-Bullman (1978) demonstrates that lottery winners are not happier than the victims of accidents. This study shows that happiness levels adapt quickly after either winning the lottery or being involved in an accident. This reliability of response to direct happiness-related question(s) has been proven in the long term, although it is stronger in a short period of time (Diener, Inglehart, & Tay, 2013).

Nonetheless, the biggest concern regarding direct question(s) on happiness is whether direct question(s) about happiness can measure what they are supposed to measure (Veenhoven, 2012). People tend to give normative or even desired answers, instead of describing their actual level of happiness (Irwin et al., 1979; Diener, 2000), so their responses to happiness question(s) may not reveal their true happiness. Several studies provide clarification in a response to this criticism. Sandvik et al. (1993) find consistency between the self-reported happiness in response to direct questions and peer-rated happiness. While Veenhoven (2012) also finds consistency between the results of happiness based on direct question(s) and happiness measured in clinical in-depth interviews. In view of the above-mentioned reasons, the answers to direct question(s) in happiness self-reported measurements are valid, reliable and consistent. This form of happiness measurement has been proven to be easily understood and properly answered (Veenhoven, 2012; Stanca & Veenhoven, 2015). Some common survey questions used in happiness measurement are presented in **Appendix A**.

2.2 Happiness Correlates

In the previous section, we developed our understanding of happiness by exploring its definition, as well as how it is measured, so now we know what happiness is and how happy people are. Our understanding of happiness would not be complete without looking at who those happy people are and what has been discovered so far to predict happiness.

Prior studies discovered many factors that correlated with happiness (Diener, 1994; Frey, & Stutzer, 2002b). Frey and Stutzer (2002a) propose three big groups of happiness determinants: (1) demographic and personality-related, (2) economic and (3) political factors. Many studies of demographic and personality-related standpoints have been undertaken to explore the correlation between these factors and happiness. Salient examples are studies which explore correlations between happiness and origin (Frey & Stutzer, 2002a), marriage (Myers & Diener, 1995; Mastekaasa, 1995; Myers, 2000; Frey & Stutzer, 2002a) or religion (Myers & Diener, 1995; Myers, 2000).

One possible explanation suggested by researchers is would be that the social support which accompanies marriage and religious activities make people feel happier about their lives (Helliwell & Putnam, 2004). A study by Mastekaasa (1995) finds that marriage increases happiness because of companionship, as companionship reduces loneliness. In a similar fashion, Ellison, Gay, and Glass (1989) suggest that communality in religious activities increases happiness by facilitating the forming of social bonding among members. On the contrary, the lack of social capital a foreigner has, compared to natives, reduces their happiness (Domingues-Fuentes & Hombrados-Mendieta, 2012).

From an economic point of view, income, unemployment and inflation are regarded as major influences on happiness (Frey & Stutzer, 2002a). In the search for happiness, the possible correlation between income and happiness has been extensively studied by economists (Dumludag, 2015). Easterlin (1974) reveals the paradox in the relationship between income and happiness. More money leads to a happier life for one individual (Easterlin, 1974; Myers & Diener, 1995), although this effect seems to be diminished at a certain level of income (Myers, 2000). This adaptation of happiness in respect of income happens due to adjustments in aspirations, as people's needs grow together with their income increase (Easterlin, 1974; Diener & Biswas-Diener, 2002). A group of the wealthiest people

in America reported themselves as only slightly happier than the average American (Diener, Horwitz, & Emmons, 1985).

Happiness is also found to be unaffected by an increase in income when everyone in society has a similar level of income (Easterlin, 1974). People have a tendency to compare themselves with others in judging their happiness (Easterlin, 1974), so having more money does not always make one feel good in certain situations. Furthermore, Frey and Stutzer (2002a) explain that the effect of income on happiness does not actually come from the absolute monetary value, but rather from people's relative position in respect of others.

This relativity concept of happiness and its relationship with income give insight into the role of income within the structure of society (Frey & Stutzer, 2002a). Myers (2000) suggests that money can affect happiness depending on the way in which we spend it. Certain consumption attitudes can boost our social status (Frey & Stutzer, 2002a) and people with a higher income have more opportunities to fulfill whatever desires they have (Dumludag, 2015). Diener and Biswas-Diener (2002) reveal that the fulfillment of basic needs, such as food, clothes and shelter, gives additional happiness. Moreover, certain goods, for example luxury goods, can give a signal about the owner's status in society (Perez-Truglia, 2013), thus affecting happiness. The higher a person's position in society, the better he or she feels (Easterlin, 1974; Frey & Stutzer, 2002a).

Unlike income, which is found to have mixed association with happiness, unemployment and inflation are both found to contribute negatively towards happiness (Frey & Stutzer, 2002a; Di Tella, MacCulloch, & Oswald, 2003). Loss of income due to unemployment has been suggested as the cause of the lower happiness level reported by someone who is jobless (Clark & Oswald, 1994; Gerlach & Stephan, 1996; Winkelmann & Winkelmann, 1998; Gerdtham & Johannesson, 2001). However, Frey and Stutzer (2002a) argue that unemployed people, who still have the same amount of income as when they were employed, remain unhappy. Unemployed people only feel less unhappy about their unemployment if they are not alone in that situation (Frey & Stutzer, 2002a; Winkelmann, 2009). People worry about their position in society, which in the end makes them upset and unhappy. Frey and Stutzer (2002a) also suggest the possibility that it is the same reason that makes people unhappy

about inflation. As inflation increases, so do prices. These price increases may reduce people's consumption and indirectly affect their position in society.

Besides demographic and economic factors, political or institutional conditions also contribute to happiness (Frey & Stutzer, 2000b; Diener & Biswas-Diener, 2002). Higher self-reported levels of happiness are found within democracies and federal systems as both systems encourage the involvement of citizens (Frey & Stutzer, 2000a; Frey & Stutzer, 2000b; Diener & Biswas-Diener, 2002; Frey & Stutzer; 2002a). The involvement of citizens in a political system influences the political outcome, making it more favorable toward the citizens' preferences, thereby explaining the impact of institutional factors on self-reported happiness.

In addition to providing us with knowledge of the three happiness' predictors – demographic, economic and political – happiness studies also highlight the importance of these three factors in respect of people's rank in society (Kahneman & Krueger, 2006) and their social capital (Frey & Stutzer, 2002a) in determining their level of happiness. With regard to one's position in society, Easterlin (1974) finds that, in order to judge their happiness, people need to compare themselves to a standard; such as how others are doing. Thus, people might be happy or unhappy with their particular condition of their life, depending on the level of others compared to them (Diener & Biswas-Diener, 2002).

Social capital is the value of our social network (Helliwell & Putnam, 2004). The OECD (2001) defines social capital as anything residing in social relationships in which we need to invest to provide benefits in the future. For example, friends and family in whom we have to invest time but who will later provide us with support in almost every aspect of life (OECD, 2001). Social capital is found to make a positive contribution to happiness through multiple channels and forms (Helliwell & Putnam, 2004). Helliwell and Putnam (2004) confirm this positive contribution of social capital to happiness flow in the form of social support from partner, families, friends, neighbors, work and political colleagues. The support of families' and friends' reduces levels of suicide, whereby suicide can serve as a representation of people's level of happiness (Helliwell, 2007). This finding may help further our understanding of the correlation between marriage, faith, personality, income, unemployment, civic engagement and happiness as mentioned earlier.

2.3 Luxury Consumption

The Meaning of Consumption

A description of living could be: to live is to consume. In its very basic sense, consumption is the intake of an object by a subject to support that subject's functionality (Borgmann, 2000). Furthermore, Csikszentmihalyi (2000) defines consumption as an exchange of resources for rewards. In consumption terms, resources such as money, time, energy and effort need to be traded off to earn rewards which are the expected benefits offered by the consumption goods (Droge, Calantone, Agrawal, & Mackoy, 1993). Csikszentmihalyi (2000) identifies two types of expected benefits that motivate people to consume: which are existential and experiential benefits.

Existential benefits are expected benefits that come from fulfilling life-sustaining needs as described in Maslow's hierarchy of needs – survival, safety, love, belonging and self-esteem (Csikszentmihalyi, 2000). These are concretely essential for humans to function well in life and also serve a specific purpose, such as eating when hungry or making an investment to secure future life. Nevertheless, in everyday life, in between humans' effort to fulfil their existential needs, there are always moments when they have nothing to do. Lacking a clear purpose makes humans disengage from life and eventually makes their lives less meaningful (Omodei & Wearing, 1990; Csikszentmihalyi, 2000). This is when humans start to expect their experiential benefits to be fulfilled.

Experiential benefits are expected benefits we get from keeping our brains engaged in a specific activity, as human beings crave purpose to every moment of their lives (Holbrook & Hirschman, 1982; Csikszentmihalyi, 2000). Jogging is an example of a simple activity that people do in their spare time in order to engage their brain. By jogging in their spare time, people are engaged in directing their minds and bodies on how to complete the target distance. Another example of experiential benefit is shopping. Csikszentmihalyi (2000) believes that the shopping activity is what matters, rather than the things we buy. The mind and body are actively engaged in multiple touch points during shopping, such as during the search for and evaluation of products (Holbrook & Hirschman, 1982). Nevertheless, the consequences of this particular activity, shopping, are not necessarily positive.

The consequence of the consumption is derived from calculating the benefit gained over cost incurred (Csikszentmihalty, 2000). As described in the section on the concept of happiness, actual choices are driven by the calculating the expected benefit over cost (Ramsoy, 2014), while the consumption experience depends on the accuracy of this calculation (Kahneman & Thaler, 2006). Congruency between expected benefit and cost is not always achieved (Diener & Biswas-Diener, 2002). For example, the purchase of a massive luxurious house will not always bring happiness as a benefit, but instead may imprison the owner who has to work long-hours to pay for the house.

This notion of calculating the benefit over cost in a consumption activity is somehow incapable of explaining how consumers behave in relation to luxury goods. People are often willing to spend large sums of money on expensive luxury goods rather than buying cheaper alternatives that serve a similar functionality (Hudders, 2012). Classical economic theory assumes that people always make rational choices to maximize their utility (Kahneman & Thaler, 2006). Utility in a rational choice has monotonicity as one of its axioms, whereby the more needs a person can satisfy, the better (Rubinstein, 2006), while spending money on luxury goods that are significantly more expensive than the alternatives will reduce the remaining budget available for goods representing other needs. Do luxury goods actually serve a bigger portion of utility compared to non-luxury goods?

Luxury Goods and Luxury Consumption

The definition of luxury is declared to be subjective based on the consumers' perceptions of a brand or product (Phau & Prendergast, 2000; Hudders, Pandelaere & Vyncke, 2013). It is in a state of continuous evolution, along with time and place (Yeoman & McMahon Beattie, 2006). For example, brands or products that were regarded as luxury goods in the year 1930 and in the year 2000 may be quite different. Another example is that a specific brand for Indonesians may be considered a luxury good, but this may not be the case for Dutch people. These multiple angles of subjectivity in relation to luxury items make it more difficult to conceptualize its definition (Phau & Prendergast, 2000).

Understanding the definition of luxury goods requires the consideration of what constitutes a luxury good. Cantry (2003) emphasizes scarcity or rarity as the most important criterion in defining a luxury product; meaning, in other words, limited access to the product.

Scarcity is thought to evoke prestige for the owner (Corneo & Jeanne, 1997; Phau & Prendergast, 2000; Vigneron & Johnson, 2004). Scarcity can be created using one of several methods. Luxury goods companies may limit their distribution channel, so consumers are not able to find the goods all over the place (Kemp, 1998; Phau & Prendergast, 2000; Cantry, 2003) or their may limit the quantity of products in order to make the products scarce (Cantry, 2003; Hudders, Pandelaere, & Vyncke, 2013).

Setting a high price for a product is another way in which luxury goods companies can can create scarcity, as a high price creates a boundary for consumer to access the product (Dubois & Duquesne, 1993; Cantry, 2003). In line with this notion, economists and marketers have agreed on the definition of luxury goods as the most expensive goods with the greatest quality on the market compared to similar products (Vigneron & Johnson, 2004).

Furthermore, Vigneron and Johnson (1999) consider five perceived values that constitute the prestige of luxury: 1) perceived value of conspicuousness, 2) perceived value of uniqueness, 3) perceived value of social conformity, 4) perceived value of self-achievement and 5) perceived value of quality. Price is suggested as the most important indicator of prestige for people with a perceived value of conspicuousness, uniqueness and quality of a luxury good (Vigneron & Johnson, 1999). The higher the price, the more prestigious the good is. In another study by Corneo and Jeanne (1997), perceived value of uniqueness and social conformity are suggested as the two strongest components of a luxury product as they can send signals about wealth in achieving certain status in the society.

Vehicles as Luxury Goods and Their Relationship with Happiness

This study focuses on luxury vehicles as a prominent example of the consumption of luxury goods. It has been argued that a positive correlation between consumption and happiness comes from the fulfillment of biological and psychological needs, whereby the consumption makes life easier (Diener et al., 2002; DeLeire & Kalil, 2010). A luxury vehicle provides the same basic functionality as a frugal vehicle, in which it improves the way people commute, travel and deliver (Okulicz-Kozaryn et al., 2015). A private vehicle is perceived as being more convenient, reliable and pleasurable than public transport (Steg, 2003). A study by Morris and Guerra (2015) confirms that people who travel by private car are happier than

people who travel by bus or train. Thus, this study predicts that owning a vehicle increases happiness, as it reduces the hardship of commuting.

H1: Vehicle ownership enhances happiness.

However, if owning a vehicle that is not necessarily a luxury vehicle already improves happiness, does owning a luxury vehicle then make the owner happier? Galbraith (1999) in Dutt (2008) and Dumludag (2015) claim that luxury goods have no effect to happiness, since the need of luxury is artificially created by advertising. Plus, as a luxury vehicle is like other luxury goods that never become a part of our biological and psychological needs, it is believed that fulfillment of this artificial need will never make people better off.

Another point of view, Veenhoven (1991) suggests that happiness may result from luxury goods after basic human needs have been fulfilled. This potential relationship between luxury goods and happiness is supported by Hudders and Pandelaere (2012) who confirm the positive impact of the consumption of luxury goods on the life satisfaction of people with higher materialistic values, at least in the short term. In their study, luxury consumption was measured by means of a self-perceived luxury consumption scale. It measures the frequency of luxury goods consumption in eight sectors of luxury, including vehicles.

Several reasons may serve as possible explanations on why the consumption of a luxury vehicle, as an economic activity, may have a positive impact on happiness. As demonstrated in the section on happiness correlation, people often need information about relative income and relative consumption (Kahneman & Kruger, 2006) as well as social capital (Frey & Stutzer, 2002a) are in order to judge happiness. Prestige inherent to luxury goods (Corneo & Jeanne, 1997; Phau & Prendergast, 2000; Vigneron & Johnson, 2004) can facilitate the formation of relative income, relative consumption (Easterlin, 1974; Ahuvia, 2002; Perez-Truglia, 2013) and social capital (Ahuvia, 2002).

Perez-Truglia (2013) finds that happiness goes hand-in-hand with conspicuous consumption, the act of spending on expensive things that are not necessary in order to impress others, due to their ability to send signal about the wealth of an individual. Visibility of the good is an important element of luxury goods in allowing people send such signals (Perez-Truglia, 2013). Heffetz (2011) shows that a vehicle has a high visibility ranking which

means the possession of a vehicle is highly noticeable to others. The full list of visibility index is provided in **Appendix B**. The more visible the goods are, the more positional they tend to be, thus allowing them to serve as a strong status symbol for the owner (Johansson-Stenman & Martinsson, 2006; Okulicz-Kozaryn et al., 2015).

Accordingly, luxury vehicles satisfy the criteria of perceived value conspicuousness due to their prominent association with a high price (Dubois & Duquesne, 1993; Cantry, 2003; Vigneron & Johnson, 2004; Okulicz-Kozaryn et al., 2015), in which the high price of luxury goods represents the consumption power of an individual that is commonly used by people to value themselves or others (Bogaerts & Pandelaere, 2013). The bigger the consumption power, the wealthier they are, which then gives them a higher status in society (Kahneman & Thaler, 2006). Therefore, this study predicts that the price of the vehicle positively influences happiness.

H2: The price of a vehicle positively influences happiness.

The signaling value of conspicuous consumption, in regard to an individual's wealth level, depends on the character of the individual (Corneo & Jeanne, 1997) and also on society (Ahuvia, 2002). People can gain their status in society by being different or by being the same as their reference group (Corneo & Jeanne, 1997). Happiness is thus found to be influenced by the social mechanism applied in society, irrespective of whether it has an individualist or a collectivist norm (Wong, 1997; Ahuvia, 2002). In an individualist society, people feel better off when they feel exclusive. On the other hand, in a collectivist society, people feel better off when they assimilate within society. Vehicles as luxury goods are capable of sending signals in both types of society, whether they are signals of exclusiveness or social conformity (Vigneron & Johnson, 1999; Hudders, 2012, Okulicz-Kozaryn et al., 2015).

Social conformity can also be facilitated by a community in respect of a luxury brand (Muniz & O'Guinn, 2001). Referring to the concept of social capital, brand community can be considered as an example of a social capital in people's life, whereby people need to purchase luxury vehicles in order to gain attachment with the community (OECD, 2001). Muniz & O'Guinn (2001) suggest that connection among members in brand communities drives the relationship to become more personal, as they feel responsible towards one

another. Consumer well-being is found to be affected by social interaction within a brand community (Grzeskowiak & Sirgy, 2007). Nonetheless, the need to belong is inevitable for human beings to be happy (Baumeister & Leary, 1995). DeLeire and Kalil (2010) and Dumludag (2015) also support this finding by discovering that consumption enjoyed in the company of others has a positive association with happiness.

The correlation between the consumption of a luxury vehicle and happiness does not always relate to the forming of social identify, as luxury goods also promote strong self-identity signaling (Vigneron & Johnson, 1999). Having luxury vehicles contributes positively to self-esteem (Okulicz-Kozaryn et al., 2015), as luxury vehicles are perceived to have the finest quality among products in their category (Vigneron & Johnson, 2004) and are often purchased as a means of self-reward (Truong & McColl, 2011), and eventually they make people feel good (Truong & McColl, 2011; Hudders & Pandelaere, 2013). Moreover, a luxury vehicle reminds them of their success in life and forms a source of positive feelings (Richins & Dawson, 1992; Truong & McColl, 2011). Therefore, considering all these argumentations about the way in which the consumption of luxury vehicle could make a positive contribution to happiness through its reflection on social and personal identity, the following hypothesis is postulated.

H3: Owners of luxury vehicles are happier than owners of frugal vehicles.

2.4 Personality

Ryckman (2012) defines personality as *"the dynamic and organized set of characteristics possessed by a person that uniquely influences his or her cognitions, motivations and behaviors in various situations"* (p. 5). Personality is the individual difference that consistently works behind the specific way of how humans think, feel and behave (McCrae & Costa, 1999). In this view, human decisions (act) and their perception of the decision result (react) are governed by personality.

The Five-Factor Model of Personality, which is also known as the big five personality, is used in this study. This came out as the backbone structure to various personality concepts (Digman, 1990). Neuroticism, extraversion, agreeableness, conscientiousness and openness to experience are the five factors known as the basic personality traits capable of describing

almost all human behavior (McCrae & John, 1992; Ozer & Benet-Martinez, 2006). Goldberg (1981) finds 475 of trait adjectives that can be used as the big five personality descriptors. Their consistency and comprehensiveness has also been supported in several studies (Fiske, 1949; Tupes & Christal, 1961; Norman, 1963; Brand & Egan, 1989; John & Srivastava, 1999). A summary of the big five personality model through time is provided in **Appendix C**.

The correlation between personality and happiness has been widely observed in previous studies (Costa & McCrae, 1980; Furnham & Brewin, 1990; Brebner, Donaldson, Kirby, & Ward, 1995; DeNeve & Cooper, 1998; Jovanovic, 2011). The study by Diener, Suh, Lucas, and Smith (1999) suggests personality as a robust determinant for happiness. Ozer and Benet-Menitez (2006) also find that personality affects happiness through the creation of favorable condition for happiness. A summary of possible contributions of personality traits on positive outcome on happiness is provided in **Appendix D**.

Certain personality traits make people characteristically happier compared to others (Brebner, Donaldson, Kirby, & Ward, 1995), as happy people have been found to share the same traits (Myers & Diener, 1995). Among the big five, extraversion and neuroticism are discovered to have strongest correlation with happiness (Costa & McCrae, 1980; Furnham & Brewin, 1990; Diener, Oishi, & Lucas, 2003). Extraversion leads to positive affect, while neuroticism leads to negative affect (McCrae & Costa, 1991). Extraversion predisposes people to experience more positive emotions in their relationships with others, whereas neuroticism predisposes people to experience negative emotions due to their anxiety and a tendency to have complaint about things (Costa & McCrae, 1980; Emmons & Diener, 1985; DeNeve & Cooper, 1998). The links that extraversion and neuroticism have to positive and negative affection are explained in the study by Furnham and Brewin (1990), as extraverts are more sensitive to reward signals, whereas neurotics are more likely to sense punishment signals.

Positive affect does not merely correlate with extraversion that emphasizes the quantity and intensity of personal interaction. Agreeableness is also discovered to be a source of positive joy, while conscientiousness leads to improve life satisfaction (DeNeve & Cooper,

1998). Agreeableness and conscientiousness contribute to creating happiness by fostering a happiness-compatible condition (McCrae & Costa, 1991).

The love, warmth and generosity of agreeable people facilitate the establishment of quality in personal interaction (McCrae & Costa, 1991; DeNeve & Cooper, 1998), while the efficiency, competency and diligent attitude of conscientious people drive achievement and success (McCrae & Costa, 1991; Myers & Diener, 1995). Understanding this provides a possible explanation for why unemployment decreases our level of happiness significantly (Clark & Oswald, 1994; Winkelmann & Winkelmann, 1995; Winkelmann & Winkelmann, 1998; Gerlach & Stephan, 1996; Gerdtham & Johannesson, 2001; Frey & Stutzer, 2002b), because unemployment results in conscientious people having lost the source for fulfilling their achievement needs (McCrae & Costa, 1991).

The last personality trait in the big five – openness to experience – is found to be irrelevant to predicting happiness (DeNeve & Cooper, 1998). McCrae and Costa (1991) explain that openness to experience correlates to both positive and negative affect, as it amplifies the intensity. For this reason, openness to experience has no effect on happiness.

H4: Except for the personality trait openness to experience, which has no effect on happiness, the big five personality traits (extraversion, emotional stability (reversed personality trait for neuroticism), agreeableness and conscientiousness) positively influence happiness.

2.5 Relationship between Happiness, a Luxury Vehicle and Personality

Possible relationships between personality, luxury goods and happiness have also been explored (Belk, 1985; Richins & Dawson, 1992; Hudders, 2012). Hudders and Pandelaere (2012) reveal a positive impact of luxury goods on happiness for a person with a higher materialism score. Materialism refers to a personal value for love of material needs and desires (Richins & Dawson, 1992). A materialist is someone who puts possession at the center of their life, judges success by the number and quality of possessions and believes that possessions are essential for life satisfaction and happiness (Richins & Dawson, 1992). Belk (1985) defines materialism as an assortment of personality traits, particularly envy, non-generosity and possessiveness.

People often seek happiness through the possession of goods, but the impact of materialism on happiness mostly reveals the opposite effect (Richins & Dawson, 1992; Polak & McCullough, 2006; Okulicz-Kozaryn et al., 2015). Accordingly, instead of using materialism as one of the observed variables, this study looks at the moderator effect of personality traits – as the component that constructs materialism itself – on happiness resulting from the consumption of a luxury vehicle. This approach is chosen to open up a new perspective in exploring the possible relationship between a luxury vehicle and happiness.

In consumption, predicted utility is the underlying reason for a purchasing decision (Kahneman & Thaler, 2006; Ramsoy, 2014). Status, exclusivity, conformity, achievement and quality, which construct prestige, are benefits expected from luxury goods, and drive people's choice in the direction of luxury vehicles (Vigneron & Johnson, 1999; Phau & Prendergast, 2000; Johansson-Stenman & Martinsson, 2006; Husic & Cicic, 2009; Okulicz-Kozaryn et al., 2015). Once a choice has been made and executed, the purchaser is immediately confronted with the consequences of that choice; an evaluation process takes place which results in experienced utility (Kahneman & Thaler, 2006; Ramsoy, 2014). We may feel the satisfaction and joy of purchasing a luxury vehicle that we had desired for some time, or we may feel disappointment in the purchased vehicle that failed to live up our expectations. Congruency between the predicted and the experienced utility is mandatory in maximizing utility (Diener & Biswas-Diener, 2002; Kahneman & Thaler, 2006). Mis-predicting utility makes happiness slide away.

The 'set point theory' suggests that happiness is mainly determined by fixed and stable set point characteristics, such as genetic factors and personality traits (Lykken & Tellegen, 1996). McCrae and Costa (1999) offer one possible explanation of the role of personality traits in helping facilitate congruency between predicted and experienced utility in order to foster happiness. They find that the basic tendency of personality traits is to influence the way people think, feel and behave (McCrae & Costa, 1999).

Set points act as the center of the expected value of a life experience, as we intuitively choose something that suits our personality (Aaker, 1997; McIntyre & Miller, 1992; Mulyanegara, Tsarenko, & Anderson, 2009). Moreover, as a stable characteristic of humans, the same personality traits are also present during our evaluation of the actual experience

(McCrae & Costa, 1999). In this context, if people are fully capable of understanding themselves and what they want, then the possibility of mis-predicting utility will decrease (McCrae & Costa, 1999).

Furthermore, certain personality traits enable some people to be happier than others (Diener, Emmons, Larsen, & Griffin, 1985) as personality traits influence how people experience life (DeNeve & Cooper, 2008; Veenhoven, 2009b). Personality affects happiness through its power of defining how people perceive life (Headey & Wearing, 1989, DeNeve & Cooper, 1998; Veenhoven, 2009b). Individuals with certain personality traits might be predisposed to experience higher levels of happiness, especially when they engage in activities that are compatible with their personality (McCrae & Costa, 1991). Consumption of luxury vehicle may serve as a compatible activity for certain personalities, and is thus predicted to moderate the relationship between the consumption of a luxury vehicle and happiness.

To assess the potential effect of personality traits in moderating the relationship between the consumption of a luxury vehicle and happiness, this study considers the congruency between the motivation for purchasing a luxury vehicle and personality traits. A coherent association between the motivation towards purchasing a luxury vehicle and personality traits can indicate a potential moderating effect of personality in respect of the relationship between consumption of a luxury vehicle and happiness, thereby reaffirming the role of personality traits during utility prediction and evaluation.

Compatibility between personal values and product attributes can have a profound impact on consumer behavior, as it can stimulate motivation towards purchasing a certain product (Vinson, Scott, & Lamont, 1977). Furthermore, a mutual relationship between big five personality traits and personal values are confirmed in a study by Roccas, Sagiv, Schwartz, and Knafo (2002), which finds that people try to behave according to their values while at the same time valuing the goal that their traits serve. They develop a mapping between big five personality traits and personal values, as presented in table 1. Figure 1 shows the framework used by this study to assess the potential moderation effect of personality traits on the relationship between the consumption of a luxury vehicle and happiness.

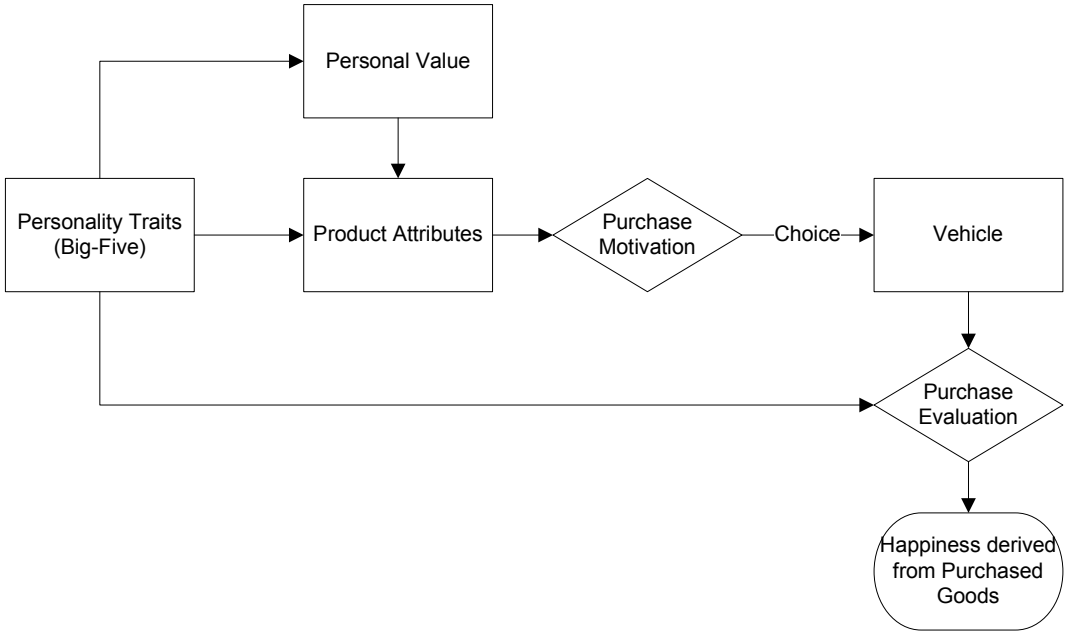

Figure 1 – Framework in Assessing The Potential Moderator Effect of Personality Traits

Table 1 – Mapping Between Big Five Personality Traits and Personal Values

Big Five Personality Traits	Personal Values
Extraversion	(+) **achievement**, stimulation, **hedonism**; (-) tradition
Neuroticism	(+) **hedonism**, stimulation; (-) benevolence, tradition, **conformity**
Agreeableness	(+) benevolence, tradition, **conformity**; (-) power, **achievement**, **hedonism**
Conscientiousness	(+) **achievement**, **conformity**; (-) stimulation
Openness to experience	(+) universalim, self-direction, stimulation; (-) **conformity**, security, tradition

*Notes: **bold:** personal values that can be associated with the prestige of luxury*

Morris and Guerra (2015) identify two product attributes that can affect the happiness level of people who travel by car, in which these two product attributes can be associated into two big five personality traits. First, the level of interaction with another person during the trip differentiates the happiness level between car passengers and drivers (Morris & Guerra, 2015). Car passengers experience greater happiness due to the pleasure of interacting with other passengers, while the displeasure of being with someone without interacting due to

driving reduces the happiness level of car drivers compared to car passengers. Furthermore, people who are more likely gain happiness from their interaction with other people tend to be people with a high score for agreeableness (McCrae & Costa, 1991). Accordingly, car drivers with a high score on agreeableness, who are more likely to be concerned about their social interaction (McCrae & Costa, 1991; Myers & Diener, 1995), are expected to have a lower happiness level.

Morris and Guerra (2015) also suggest that people experience more pleasantness from a private vehicle as it gives a feeling of control. Private vehicles are perceived as reliable (Steg, 2003). People with a high score for conscientiousness, who like things in order (McCrae & Costa, 1991), are expected to benefit more, in term of happiness, from having a private vehicle. Having their own vehicle gives them the ability to control their own schedule rather than relying on the less certain schedules of public transport (Morris & Guerra, 2015).

Moreover, a study by Mulyanegara et al. (2009) reveals the relationship between big five personality traits and brand preferences through brand and product attributes. Personality traits that are compatible with prestige as the strongest product attribute of luxury goods are predicted to influence the preference towards a luxury vehicle. Furthermore, Casidy (2012) investigates the relationship between big five personality traits and prestige-sensitivity within the context of fashion brand for young people in Australia. Lichtenstein, Ridgway, and Netemeyer (1993) define prestige sensitivity as *"favorable perceptions of price, based on the feelings of prominence and status that higher prices signal to other people about the purchaser"* (p. 236).

Casidy (2012) finds no significant relationship between extraversion and prestige. However, a congruency between the personal values achievement that is associated with personality trait extraversion (refer to Table 1) and the product attribute prestige of a luxury vehicle can be used to predict the moderation effect of personality trait extraversion on the relationship between a luxury vehicle and happiness.

In buying a vehicle, people are more concerned about their self-image that will be reflected by the chosen vehicle (Steg, 2003; Johansson-Stenman & Martinsson, 2006). A study by Mulyanegara et al. (2009) finds that people with a high score for conscientiousness preferred a trusted brand that reflects their characteristic of reliability, whereas neurotics

preferred a trusted brand to reduce their anxiety. A luxury brand is closely associated with a trusted brand as it inherently provides prestige, i.e., it is perceived as the most expensive product with the finest quality among others (Vigneron & Johnson, 1999). Casidy (2012) finds the same result for conscientiousness, as it is positively associated with prestige sensitivity. People with a high score for conscientiousness prefer a prestige brand that can express an image of success and achievement to their peers.

Negative associations between openness to experience and agreeableness to prestige sensitivity are also confirmed in the same study by Casidy (2012). People with a high score for openness to experience are more likely to experiment with a new brand which usually has less prestige. On the other hand, the assurance of quality offered by a prestige brand that has a higher price may be less appealing to agreeable people who have a tendency to easily build a high degree of trust in the quality of a less prestigious brand (Casidy, 2012). Taking these findings into account, the following hypotheses are asserted. A summary of the relationship between big five personality traits and the product attributes of luxury goods is presented in **Appendix E**.

H5: Extraversion positively moderates the effect of luxury vehicle ownership on happiness, whereby the effect is stronger when the extraversion score is high.

H6: Neuroticism positively moderates the effect of luxury vehicle ownership on happiness, whereby the effect is stronger when the neuroticism score is high (as reversed personality trait, emotional stability negatively moderates the effect of luxury vehicle ownership on happiness, whereby the effect is weaker when the emotional stability score is high).

H7: Agreeableness negatively moderates the effect of luxury vehicle ownership on happiness, whereby the effect is weaker when the agreeableness score is high.

H8: Conscientiousness positively moderates the effect of luxury vehicle ownership on happiness, whereby the effect is stronger when the conscientiousness score is high.

H9: Openness to experience negatively moderates the effect of luxury vehicle ownership on happiness, whereby the effect is weaker when the openness to experience score is high.

2.6 Conceptual Model

This study follows a systematic approach in defining the hypotheses. It argues that luxury vehicles ownership can bring happiness due to the effect of prestige, as the most prominent product attributes of a luxury vehicle in promoting the formation of relative consumption and social capital for the owners. Furthermore, this study also argues that big five personality traits can moderate this relationship. There are two reasons behind this argument. Firstly, previous literature shows that big five personality traits can influence happiness. Secondly, the correlation between big five personality traits and prestige is also confirmed by previous literature that ratifies the capacity of personality traits to influence the evaluation of luxury consumption, both ex ante and ex post, which in the end can increase the chance of happiness by decreasing the possibility of mis-predicting utility.

Nevertheless, this study tests only the relationship between luxury vehicle ownership and happiness, personality traits and happiness, and the moderating effect of big five personality traits on the relationship between luxury vehicle ownership and happiness. The mechanisms that work behind those relationships serve only as a foundation to develop the hypotheses and are not tested in this study.

Figure 2 presents the conceptual model as constructed by the aforementioned propositions.

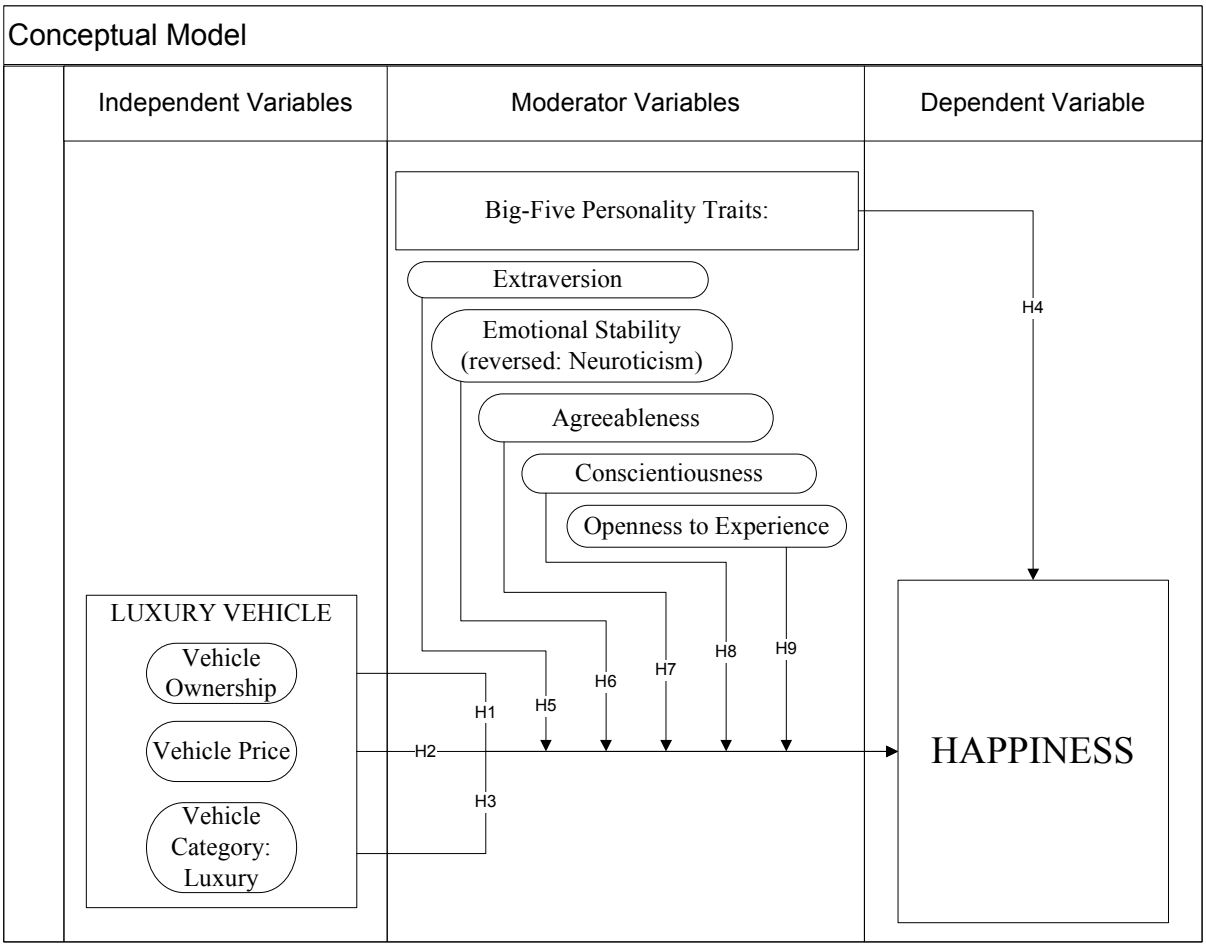

Figure 2 – Conceptual Model

3. METHODOLOGY

This chapter discusses the research methodology used in addressing the research question of this study. It starts with the research design that describes the main data source used by this study. Discussion on the research design continues with detail information of all variables involved, including their related particular measurements that are used in analyzing the dataset. The last part of this chapter elaborates the model that is employed by this study.

3.1 Research Design

3.1.1 Data and Method

This study uses the LISS (Longitudinal Internet Studies for The Social Sciences) panel data. It contains happiness information from 7,000 individuals in 4,500 households in the Netherlands. All subjects in LISS survey are drawn randomly from the Netherlands' statistics data[1], whereby the data become nationally representative for the Netherlands population. Due to the availability of luxury consumption data, this study focuses in four time frames which are year 2008, year 2010, year 2012 and year 2014. This study explores three datasets in LISS core studies which are 'Personality' (core study 7), 'Economic Situation: Assets' (core study 9) and 'Economic Situation: Income' (core study 10) in testing the hypotheses. Background information of LISS' survey participants is available in another dataset namely 'Background Variables'.

List of LISS variables used in this study are presented in table 2 below.

Tabel 2 – List of LISS Variables Used

Type	Name	LISS Studies	LISS Coding
Dependent	Happiness	Personality	nomem_encr (identifier for each individual), cp14g010 (happiness).
Independent	Luxury consumption	Economic Condition: Asset	nomem_encr (identifier for each individual), ca14d008 (vehicle

[1]https://www.lissdata.nl/lissdata/about-panel

			ownership), ca14d023 (vehicle value).
Moderator	Personality	Personality	nomem_encr (identifier for each individual), cp14g020 to cp14g069 (big5 personality test).
Controlled	Demographic (except for income)	Background Variables	nomem_encr (identifier for each individual), geslacht (gender), leeftijd (age), burgstat (marital status), belbezig (occupation), oplmet (education), woning (dwelling), herkomstgroep (origin).
Controlled	Demographic (income)	Economic Condition: Income	nomem_encr (identifier for each individual), and other variables listed in footnote for variable 'income'

This study treats the data as a cross-sectional dataset and applies between-subject design for the data analysis. A cross-sectional dataset is preferred considering the characteristics of the LISS data, which has unbalanced panel data structure and contains attrition of individuals from one or more survey years. This study pools all the time-series data and makes cluster by individual identifier to generate robust standard error.

3.1.2 Dependent Variable: Happiness

Happiness, the central interest of this study, acts as dependent variable. Happiness level is measured by self-reported measurement using a single direct question. LISS survey uses the direct question about happiness from European Social Survey (ESS). Respondents are asked: *"On the whole, how happy would you say you are?"*. Their answers are recorded on 10-point Likert scale, ranging from 1 (totally unhappy) to 10 (totally happy). Category *'I don't know'* from respondents is left out from the analysis.

3.1.3 Independent Variable: Luxury Consumption

Luxury Consumption

The independent variable in this study is luxury consumption which focuses on luxury vehicle. This study investigates the relationships between consumption of luxury vehicle (independent variable) and happiness (dependent variable) comprehensively. It explores the relationship from three aspects of luxury vehicle consumption sequentially which are vehicle ownership, vehicle price and luxury vehicle ownership.

Figure 3 – Three aspects of consumption on luxury vehicle

Vehicle ownership and price information are available in LISS survey. In LISS survey, vehicle refers to cars, motorcycles, boats and static caravans. LISS survey asks their respondents whether they possess one or more of car(s), motorcycle(s), boat(s) and static caravan(s) on 31 December 20XX. ***Vehicle ownership*** is a categorical variable that contains value *'0'* for *'no, I don't own vehicle'* and value *'1'* for *'yes, I own vehicle'*.

After asking about the vehicle ownership, LISS survey gathers the data about the price of vehicles by asking respondents to estimate the total sales value of their car(s), motorcycle(s), boat(s) and (static) caravan(s) that owned on 31 December 20XX. Respondents need to answer the question by providing the estimated sales value in euro currency. Categories *'I don't know'* and *'I prefer not to say'* are dropped. ***Vehicle value*** represents the price of the vehicle. It is a continuous variable. This variable contains extreme values that distant substantially from the other observations. Standard logarithmic transformation does not work well for the data in this study due to a substantial portion of the data population which has no vehicle at all (vehicle value is zero), in which log 0 is undefined and dropped. Inverse hyperbolic sine, a powerful data transformation tools to handle extreme value in zero (Johnson, 1949; Burbigee, Magee & Robb, 1988), is used in this study. It retains the zero value. Another advantage of inverse hyperbolic sine is its behavior similarity with standard

logarithmic, thus it can be interpreted in exactly the same way of a logarithmic variable interpretation (Burbigee, Magee & Robb, 1988), where 1% increase in inverse hyperbolic sine transformed vehicle price corresponds to a change in happiness level. Inverse hyperbolic sine allows for sensitive changes in vehicle price and examines disproportionate increase or decrease along its distribution. This means that an increase of the vehicle price from 200 euro to 300 can not be compared proportionally to an increase of the vehicle price from 200,000 euro to 300,000 euro (Friedline, Masa, & Chowa, 2015).

This study develops a categorical variable for the vehicle category based on the price of the vehicle which is derived from the LISS survey result. In line with the literature, luxury vehicle category is defined as the most expensive vehicle. These categories refer to Okulicz-Kozaryn, Nash & Tursi (2015) with a modification in its currency; where the original study uses United States Dollar ($)[2] instead of Euro. ***Vehicle category*** is put in a categorical variable that has six classifications of vehicle as presented in table 3. The original table of Okulicz-Kozaryn, Nash & Tursi (2015) is available in **Appendix F.**

Tabel 3 – List of Vehicle Category

Dummy	Price Range	Description
1	€0	No vehicle
2	€1 to €4,420	Junk vehicle
3	€4,421 to €13,259	A vehicle that works
4	€13,260 to €20,330	Reliable vehicle
5	€20,331 to €30,937	Very good vehicle
6	>€30,937	Luxury vehicle

3.1.4 Moderator Variable: Personality

[2] Translation from Dollar to EURO uses the official exchange rate provided by the European Central Bank with translation date 22 June 2016. 1 dollar equals to 0.8839 Euro. (source: https://www.ecb.europa.eu/stats/exchange/eurofxref/html/eurofxref-graph-usd.en.html)

Moderator variable is a variable that modifies the strength of relationship between independent and dependent variable (Baron & Kenny, 1986). In this study, personality trait as moderator variable is expected to affect the relationship between consumption of luxury vehicle and happiness.

This study adopts established big-five personality test, namely Goldberg's 50-items IPIP (International Personality Item Pool) Big-Five Factor Markers (Goldberg, 1992; Goldberg et al., 2006), that is used by the LISS survey. It consists of ten statements for each big five personality dimensions with their reversed personality traits which are extraversion (introversion), agreeableness (autonomy), conscientiousness (impulsiveness), emotional stability (neuroticism) and openness to experience (tough-mindedness). The statement can refer to both the normal big five personality traits and their reversed personality traits. Complete list of those fifty statements about the big five personality dimensions are available in **Appendix G**.

Respondents are asked to rate the accuracy of each Goldberg's IPIP statement toward their personality in 5-point Likert scale ranging from 1 (very inaccurate) to 5 (very accurate). The more accurate the statement is to their personality, the higher score needs to be chosen by respondents. For normal big five personality, scores are calculated based on the chosen Likert scale (i.e. if respondents choose 4 for a statement, then their score will be 4 for that statement). Whereas for reversed personality, scores are calculated based on the reversed Likert scale (i.e. if respondents choose 4 for a statement, then their score will be 2 for that statement). The final score of each big five personality dimension is the total score of the normal big five and its reversed personality. The range of total scores within one dimension is 0 to 50. This personality test score has a continuous result for each big five personality dimension, in which the relationship between personality score is relative (i.e. in extraversion dimension, individual A who scores 36 has higher extraversion score compared to individual B who scores 26).

This study transforms personality test data from a continuous variable into a categorical variable that has two levels (dichotomizing) which are low and high personality test scores. Farrington and Loeber (2000) argue that dichotomizing allows the interaction effect studied more easily and systematically, because dichotomizing variable differentiates the condition

observed in the interaction more clearly than continuous. Dichotomizing of personality test score is relevant for this study since it can directly show whether two different condition of personality score influence the effect of luxury vehicle on happiness.

This study uses the 75th percentile of the distribution of each big five personality to indicate whether a respondent scores high or low in the big five personality, in which this categorization is representative to the original scoring system that is continuous. One categorical variable is created for each personality trait, that contains '0' for low score (personality test scores below 75th percentile of the distribution) and '1' for high score (personality test scores on 75th percentile of the distribution). Table 4 provides information about the ranges of the personality score within a categorical variable for each big five personality traits.

Tabel 4 –Personality Test Score Range within Categorical Variable for Each Big Five Personality Traits

Personality Traits	Low-Score (lower than 75th percentile)	High-Score (75th percentile or higher)
Extraversion	10 – 37	38 – 50
Agreeableness	16 – 42	43 – 50
Conscientiousness	17 – 41	42 – 50
Emotional Stability	10 – 39	40 – 50
Openness to Experience	13 – 38	39 – 50

3.1.5 Control Variables: Demographics

Demographics as control variables include individual personal characteristics information: gender, age, marital status, dwelling, occupation, education, origin and income. These individual characteristics are useful in this study due to their possible correlation with happiness.

Gender is a dummy variable which has value 1 if the respondent is male and 2 if the respondent is female. ***Age*** is a categorical variable which has four classifications based on the age range: *'1: 0 – 24 years'*, *'2: 25 – 39 years'*, *'3: 40 – 54 years'* and *'4: 55+ years'*.

Marital status is put into a categorical variable which consists of *'1: Married', '2: Separated', '3: Divorced', '4: Widow or Widower'* and *'5: Never Been Married'*. ***Dwelling*** is also put into a categorical variable which consists of *'Self-Owned', 'Rental', 'Sub-rented'* and *'Cost-free'*. *'Unknown'* responses are dropped. ***Occupation*** is recoded into six classifications which are *'1: Employed'*[3], *'2: Self-Employed', '3: Voluntary Work'*[4], *'4: Unemployed'*[5], *'5: Retired or Unable to Work'*[6] and *'6: Student and Home'*[7]. Classifications *'Does something else'* and 'Is too young to have an occupation' are left out from the analysis. ***Education*** is also recoded into four dummy variables which are *'1: Primary School', '2: Secondary School'*[8], *'3: College and University'*[9] and *'4: Not (yet) completed any education'*. Categories *'Other'* and *'Not yet started any education'* are dropped. ***Origin*** provides information about the ethnicity background of respondents whom all lived in Netherlands. This variable is a categorical variable that consists of five classifications: *'1: Dutch background', '2: First generation foreign, Western background', '3: First generation foreign, non-western background', '4: Second generation foreign, Western background' and '5: Second generation foreign, non-western background'*. Category *'Unknown'* is left out from the analysis. ***Income*** is a continuous variable. It is constructed by totaling all sources of income in gross amount[10]. Categories *'I prefer not to say'* and *'I don't know'* are replaced by zero

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[3] Classification 'Employed' includes the following categories: 'Paid employment' and 'Works or assists family business'.

[4] Classification 'Voluntary Work' includes the following categories: 'Performs unpaid work while retaining unemployment benefit' and 'Performs voluntary work'.

[5] Classification 'Unemployed' includes the following categories: 'Job seeker following job loss', 'First-time job seeker', 'Exempted from job seeking following job loss'.

[6] Classification 'Retired or Unable to Work' includes the following categories: 'Is pensioner ([voluntary] early retirement, old age pension scheme)' and 'Has partial work disability'.

[7] Classification 'Student and Home' includes the following categories: 'Attend school or is studying' and 'Takes care of the housekeeping'.

[8] Classification 'Secondary School' includes the following categories: 'vmbo (intermediate secondary education)' and 'havo/vwo (higher secondary education)'

[9] Classification 'College and University' includes the following categories: 'mbo (intermediate vocational education)', 'hbo (higher vocational education)' and 'wo (university)'

[10] LISS data provides detailed income in year 2013 per category. Total gross income in year 2013 consists of income from employers (ci14g010 + ci14g019 + ci14g028), self-employment (ci14g049), pensions (ci14g364 + ci14g076 + ci14g080 + ci14g084), allowances (ci14g102 + ci14g105 + ci14g108 + ci14g111 + ci14g114 +

value for calculation purpose. Similar with vehicle value, income as a variable contains extreme values of zero. Inverse hyperbolic sine is also used to do the data transformation in income.

3.2 Model: OLS

This study uses OLS as the estimation tool. Happiness as the dependent variable in this study is an ordinal variable. In theoretical perspective, ordinal models, such as ordered logit and probit, perform better compared to linear model in analyzing ordinal variable. They treat ordinal variable directly as ordinal (Winsip & Mare, 1984). Furthermore, ordinal models recognize the minimum and maximum values in an ordinal variable while linear regression does not (Winsip & Mare, 1984).

However, it is possible to treat an ordinal variable as a continuous variable and apply the linear model, considering responses in ordinal variable are commonly coded in numerical ascending order (Rhemtulla, Brosseau-Liard, & Savalei, 2012). This approach works well under the assumption that given a sufficient large number of categories, a categorical variable becomes similar to a continuous variable in producing a good regression result. The possible bias in parameter estimates which is resulted from treating an ordinal variable as continuous variable, decreases as the number of categories becomes larger, because then the variable approaches continuity (Johnson & Creech, 1983). Rhemtulla, Brosseau-Liard, and Savalei (2012) find that once the number of categories in a categorical variable reaches five, a continuous model performs as good as a ordinal model.

Taking into account that happiness has ten categories in this study, OLS model is preferred to analyze the data. Robust is applied into the model to correct the standard error and the goodness-of-fit of the model. Specifically in happiness research, Ferrer-i-Carbonell and Frijters (2004) confirm that the result of happiness regression is not affected substantially when linear model, such as OLS, is used, instead of ordinal probit or logit.

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ci14g117 + ci14g342 + ci14g123 + ci14g126 + ci14g129 + ci14g135 + ci14g140 (net) + ci14g143 (net) + ci14g330 (net) + ci14g331 + ci14g334), other sources of income (ci14g155 + ci14g157 + ci14g159 + ci14g163 + ci14g165 + ci14g167 + ci14g169 + ci14g171 + ci14g173), legacies and gifts (ci14g176), other forms of income (ci14g191 + ci14g192 + ci14g193 + ci14g194 + ci14g195 + ci14g196 + ci14g197 + ci14g198 + ci14g199 + ci14g200 + ci14g201 + ci14g360 + ci14g361 + ci14g362 + ci14g202)

In developing the model for the testing of hypotheses, this study follows Sustainable Happiness Model (SHM) by Sheldon & Lyubomirsky (2006). SHM proposes that happiness is increased when three happiness factors are matched: set point, circumstances and activities. Based on SHM, this study has sufficient power to explore the relationship possibility between happiness and its determinant factors by controlling three factors of SHM. Personality as the set point, which serves as a consistent factor across time and situations in people's life (Lykken & Tellegen, 1996; Easterlin, 2003); consumption of luxury vehicle as the activity that can enhance happiness (Richins & Dawson, 1992; Hudders & Pandelaere, 2012) and demographic data as the controlled circumstances (Myers & Diener, 1995; Frey & Stutzer, 2002a). Controlling these three happiness factors is aimed to minimize the risk of omitted variable bias that happens when a relevant variable that influences dependent variable is excluded from the model. Omitting a relevant variable from the model can cause correlation between the error and dependent variable due to the fact that the omitted variable is included in the error term as unobservable factor, which then it can lead to bias and inconsistency in OLS estimators (Woolridge, 2014).

To test hypothesis 1 to hypothesis 3, the following model is specified:

$$Happiness_i = \sum_j Luxury\ Consumption_{ij} + X_i\beta + \varepsilon$$

This model serves as a basic model where $Happiness_{\mathrm{i}}$ is measured happiness for individual i, $Luxury\ Consumption_{\mathrm{ij}}$ is consumption of luxury vehicle in aspect j for individual i; j consists of vehicle ownership, vehicle value and vehicle category. X_{i} contains all controlling variable for individual i used in the model. Regression is run one by one for each aspect of the consumption of luxury vehicle.

To test hypothesis 4, big five personality traits are added into the basic model to see whether they influence happiness. The impact of this new addition to the existing independent variable 'Luxury Consumption' is also feasible to be observed. $Personality_{\mathrm{i}}$ refers to all big five personality test score for individual i.

$$Happiness_i = \sum_j Luxury\ Consumption_{ij} + Personality_i + X_i\beta + \varepsilon$$

In testing hypotheses 5 to hypotheses 9, an interaction between independent variable 'Luxury Consumption' and 'Personality' is created to form a moderator variable. Then the new moderator variable is added into the full model.

$$Happiness_i = \sum_j Luxury\ Consumption_{ij} + Personality_i + [\sum_j Luxury\ Consumption_{ij}\ x\ Personality_i\ ] + X_i\beta + \varepsilon$$

4. RESULTS

In this chapter, the results from the hypotheses testing are briefly discussed. Summary statistics of the dataset are elaborated in the beginning of the chapter and then followed by the overview of correlation matrix for all variables involved in this study. The last part of this chapter presents the result and discussion of the hypotheses testing.

4.1 Summary Statistics

This section discusses the descriptive statistics of the dataset and summary statistics for happiness. The dataset contains 7,976 observations from the LISS survey in year 2008, year 2010, year 2012 and year 2014. Table 5 provides the descriptive statistics of the dataset. On average, the happiness level reported by the observation population is 7.5 within a range of 0 to 10. Table 5 shows that 56% of the population has vehicle with the maximum vehicle value of €1,200,000. The proportion of female in the population is 52%, which is 4%-points higher than male. The average age of the population is 49 years old with the youngest age is 16 while the oldest age is 96 years old. The majority of the population is married people (53.26%). They are employed (45.32%) and have university or college degree (57.06%). People with Dutch origin dominate the population by 85.22%.

Tabel 5 – Descriptive Statistics

Variable	Observations	Mean	Standard Deviation	Min	Max
Happiness	7976	7.498	1.310	0	10
Vehicle ownership	7976	0.560	0.496	0	1
Vehicle value	7976	6212.443	26210.960	0	1200000
Vehicle value (inverse hyperbolic sine)	7976	5.171	4.694	0	14.691
Vehicle value (quartile)	7976	2.294	1.254	1	4
Vehicle category	7976	2.096	1.246	1	6
Income	7976	29956.240	149142.000	0	9554786
Income (inverse hyperbolic sine)	7976	8.140	4.441	0	16.766
Income (quartile)	7976	2.500	1.118	1	4

Age	7976	49.299	17.828	16	96
Age group	7976	3.001	1.050	1	4
Gender	7976	1.518	0.500	1	2
Marital status	7976	2.611	1.815	1	5
Dwelling	7976	1.310	0.527	1	4
Occupation	7976	3.149	2.135	1	6
Education	7976	2.536	0.619	1	4
Origin	7976	22.155	56.546	0	202
Extraversion	7976	0.235	0.424	0	1
Agreeableness	7976	0.226	0.418	0	1
Conscientiousness	7976	0.225	0.418	0	1
Emotional stability	7976	0.247	0.431	0	1
Openness to experience/Intellect	7976	0.246	0.430	0	1
Year	7976	2012.025	2.483	2008	2014

After describing the population of the observation, summary statistics for happiness level are provided. In this discussion, low level of happiness refers to the three lowest scores from happiness scale which are '0' to '2', while high level of happiness refers to the three highest score from happiness scale which are '8' to '10'. In overall, high level of happiness are reported by 57.55% of the population. The average of reported happiness score decreases over time. The average of reported happiness in year 2014 is the lowest among other years. Table and figure related are provided in **Appendix H**.

The statistics of average happiness level according to personal characteristics show that male and female report equal average happiness level (mean: 7.5 happiness scale). Among those people who report high happiness level, 33.71% are highly educated (have university or college degree). People who have age more than 55 years old are the happiest compared to people in other age categories (61.47%). By percentage, only 44.44% of people who are from the 1st generation of non-western foreigner population report high happiness level; and it is the lowest percentage compared to other origin categories. A big difference between the percentages of individuals who are married and separated that report high happiness is noticeable. There is 65.11% of married people report high level of happiness, while only 26.08% of people in separation report high level of happiness. People who are employed tend

to be happier than those who are unemployed in general. This condition is in line with individuals who belong to the highest income quartile are having association with high level of happiness (63.34%). Table is presented in **Appendix I**.

It is interesting to observe the average of happiness according to consumption pattern. In this dataset from the LISS survey, consumption data related with dwelling and vehicle are available to be observed. Population in the dataset shows a higher percentage of people who report a high happiness level in the group of people who own their house (61.63%) and vehicle (60.67%) compare to those who don't. People who own their house report a higher average happiness score compared to who don't. Similar result applies for people who own their vehicle. People who own vehicle report higher average happiness score compared than who don't. Furthermore, among those who own vehicle, luxury vehicle owners report the highest average happiness score. Table and figures related are provided in **Appendix J**.

Summary statistics of happiness level according to big-five personality traits are also interesting to explore. The average happiness level by big five personality traits shows that people who have a high score in big five personality traits – extraversion, agreeableness, conscientiousness, emotional stability and openness to experience – are associated with a higher happiness level. Related table can be seen in **Appendix K**.

4.2 Correlation Matrix

In order to have general overview of the data, a correlational analysis is performed for all variables involved in the model. Table 6 on the next page describes the correlation among the dependent variable, independent variables and moderator variables. In line with the discussion in the happiness statistics summary, it can be seen that consumption has positive correlation with happiness, while year is negatively correlated. Vehicle ownership, price and category are positively related to extraversion, conscientiousness, emotional stability and openness to experience, indicating that people who own vehicle and prefer the more expensive vehicle are more extravert, conscientious, emotionally stable and open minded in general. These aspects of consumption of luxury vehicle are negatively related to agreeableness which means that people who have a higher score on agreeableness tend to care less about consumption on vehicle. Income has a positive correlation with vehicle

ownership, value and category. The increase in income (in percentage) urges people more to own vehicle with more expensive price.

In overall, there is no high correlation among these variables, except the correlation within each of three aspects of consumption of luxury vehicle. This is not a problem in this study since those three variables are put in three separate regressions. Complete correlational matrix, that includes control variables, is provided in **Appendix L**.

Table 6 – Correlational Matrix

MATRIX	Happiness	Vehicle ownership	Vehicle value (IHS)	Vehicle category	Extraversion	Agreeableness	Conscientiousness	Emotional stability	Openness to experience
Happiness	1.000								
Vehicle ownership	0.070*** (0.000)	1.000							
Vehicle value (IHS)	0.088*** (0.000)	0.977*** (0.000)	1.000						
Vehicle category	0.111*** (0.000)	0.780*** (0.000)	0.870*** (0.000)	1.000					
Extraversion	0.146*** (0.000)	0.004 (0.726)	0.011 (0.347)	0.025** (0.026)	1.000				
Agreeableness	0.089*** (0.000)	-0.032*** (0.005)	-0.038*** (0.001)	-0.043*** (0.000)	0.206*** (0.000)	1.000			
Conscientiousness	0.122*** (0.000)	0.053*** (0.000)	0.062*** (0.000)	0.064*** (0.000)	0.109*** (0.000)	0.223*** (0.000)	1.000		
Emotional stability	0.257*** (0.000)	0.087*** (0.000)	0.096*** (0.000)	0.103*** (0.000)	0.166*** (0.000)	0.078*** (0.000)	0.173*** (0.000)	1.000	
Openness to experience	0.048*** (0.000)	0.006 (0.606)	0.011 (0.347)	0.018 (0.116)	0.235*** (0.000)	0.183*** (0.000)	0.157*** (0.000)	0.147*** (0.000)	1.000

4.3 Presentation of Result

In this part, results from regression are presented for each hypothesis. In total, there are thirty OLS regressions run to investigate the relationship between luxury vehicle ownership and happiness, personality and happiness, and also the moderating effect of personality to the relationship between luxury vehicle ownership and happiness.

4.3.1 Consumption of Luxury Vehicle and Happiness

Columns A1 – A3 in table 7 show the regression result for hypothesis 1 that states vehicle ownership enhances happiness. In column A1, pure relationship between vehicle ownership and happiness is tested with controlling the effect of year dummy. As it is expected, owning a vehicle increases happiness and it is significant. However, this result may include bias because owning a vehicle correlates with income, as presented in correlation analysis. In the next regression, that is showed in column A2, income is added and the effect of vehicle ownership to happiness is still significant. The effect of one percent of income increase to happiness is positive (0.009).

In column A3, personal characteristics are added to the regression model as control and these additions eliminate the significant effect of vehicle ownership to happiness. Apparently, the effect of vehicle ownership to happiness is spurious, in which it disappears when taking into account for more determinants of happiness. Therefore hypothesis 1 is not confirmed.

Column A3 shows income still affects happiness positively with significant effect. Dwelling, as a variable that also correlates with income, arguably matters to happiness due to its functionality to serve one of the human basic survival needs. Not owning a house negatively affects happiness. Female is happier than male (0.059). Being over than 55 years old increases happiness compared to being under than 25 years old, but the correlation is not significant. Whereas being in age 25 to 54 lower the happiness level with significant effect. In general, having no marriage partner negatively influences happiness; more specific, happiness level is significantly reduced if someone is in a separation (-1.283). The effect of marital status to happiness is strongly significant. Having no job or having an unpaid job decreases the happiness level, the effect is significant. Moreover, being in the 1st and 2nd generations of foreigners, with non-western origin decrease the happiness level compared to the native Dutch people. As can be seen in correlation analysis and summary statistics,

happiness level declines in year 2014 compared to year 2008 (0.146) with significant effect. The complete regression table is provided in **Appendix M**.

Tabel 7 – Regression Table Set A

N	**7,976**	**7,976**	**7,976**	**7,976**
F-Test	**16.08**	**13.81**	**14.92**	**35.72**
R-Squared	**0.008**	**0.008**	**0.070**	**0.143**
Happiness	**A1**	**A2**	**A3**	**A4**
Vehicle ownership				
Yes	0.181*** (0.033)	0.155*** (0.034)	0.045 (0.035)	0.030 (0.034)
Income		0.009** (0.004)	0.009** (0.004)	0.005 (0.004)
Personal Characteristics	NO	NO	YES	YES
Extraversion				
High score extravert				0.290*** (0.035)
Agreeableness				
High score agreeable				0.120*** (0.037)
Conscientiousness				
High score conscientiousness				0.174*** (0.034)
Emotional stability				
High score emotional stability				0.660*** (0.031)
Openness to experience				
High score openness				-0.036 (0.037)
Year	YES	YES	YES	YES
Constant	7.484*** (0.037)	7.422*** (0.046)	7.933*** (0.114)	7.687*** (0.109)

Notes: Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1 Reference categories: Vehicle ownership: No, Vehicle category: No vehicle, Age: 0 – 24, Gender: Male, Marital status: Married, Dwelling: Self-owned, Occupation: Employed, Education: Primary school, Origin: Dutch native, Extraversion: Low score extravert, Agreeableness: Low score agreeable, Conscientiousness: Low score conscientiousness, Emotional stability: Low score emotional stability, Openness to experience: Low score openness to experience, Year: 2008.

Columns B1 – B3 in table 8 show the regression result for hypothesis 2, in which it argues that the price of a vehicle positively influences happiness. Regressions B1 – B3 explore the

effect of vehicle price as one of the aspect of consumption of luxury vehicle to happiness. Similar with regression A1, regression B1 does not include income and individual characteristics. It observes only the pure effect of vehicle price in inverse hyperbolic sine to happiness, by controlling year. Vehicle price has significant and positive effect to happiness. An increase in one-percent of vehicle price leads happiness to a higher level. In column B2, income is added to the regression and in this case the effect of vehicle price on happiness still holds. Income in this regression also has significant and positive impact to happiness.

The same set of individual characteristics is added into the regression B3 as control. The positive effect of vehicle price to happiness persists in this regression and it is significant. The result shows that hypothesis 2 is proved. The same pattern of result applies for the remaining controlling variables. The less happy people are associated with male than female, people with age 25 to 54 years old, people that are not married, people who don't own their own house, people who don't have source of income (unemployed, retired/unable to work, volunteering), foreigners with non-western background and being in year 2014. Income is significant and still affects happiness positively. The complete regression table is provided in **Appendix N**.

Table 8 – Regression Table Set B

N	**7,976**	**7,976**	**7,976**	**7,976**
F-Test	**20.86**	**17.17**	**15.05**	**35.85**
R-Squared	**0.010**	**0.011**	**0.070**	**0.143**
Happiness	**B1**	**B2**	**B3**	**B4**
Vehicle value	0.024***	0.022***	0.009**	0.007*
	(0.003)	(0.003)	(0.003)	(0.004)
Income		0.008*	0.008**	0.004
		(0.004)	(0.004)	(0.004)
Personal Characteristics	NO	NO	YES	YES
Extraversion				
High score extravert				0.289***
				(0.035)
Agreeableness				
High score agreeable				0.121***
				(0.037)
Conscientiousness				
High score				0.173***

conscientiousness				(0.034)
Emotional stability				
High score emotional stability				0.659*** (0.031)
Openness to experience				
High score openness				-0.036 (0.037)
Year	YES	YES	YES	YES
Constant	7.458*** (0.037)	7.409*** (0.045)	7.921*** (0.114)	7.678*** (0.109)

Notes: Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1 Reference categories: Vehicle ownership: No, Vehicle category: No vehicle, Age: 0 – 24, Gender: Male, Marital status: Married, Dwelling: Self-owned, Occupation: Employed, Education: Primary school, Origin: Dutch native, Extraversion: Low score extravert, Agreeableness: Low score agreeable, Conscientiousness: Low score conscientiousness, Emotional stability: Low score emotional stability, Openness to experience: Low score openness to experience, Year: 2008.

In testing hypothesis 3, the analysis goes a step further by observing also the impact of having a specific category of vehicle, as the benefit derived from a vehicle varies. It depends on which category is the vehicle belongs to. For example, a junk vehicle that barely works tends to cause more problem and need more maintenance than a vehicle that reliable. In this context, 'junk vehicle' can influence happiness differently than 'a vehicle that reliable'.

Columns C1 – C3 in table 9 show the regression result for hypothesis 3 that suggests owners of luxury vehicles are happier than owners of frugal vehicles. Regressions C1 – C3 follow the same sequential adding of controls as presented in regressions A1 – A3 and regressions B1 – B3, but using different aspect of consumption of luxury vehicle which is vehicle category. Regressions C1 tests pure relationship between vehicle categories and happiness, controlling the effect of year dummy. Except for 'junk vehicle', having any category of vehicle increases happiness and the effect is significant. 'Junk vehicle' negatively correlates with happiness but it is not significant. The coefficient of 'luxury vehicle' category is the strongest among other vehicle categories. 'Luxury vehicle' ownership increases happiness by 0.576 point compared to having no vehicle at all. Adding income in regression C2 does not change the significance of vehicle categories to happiness, although it makes their coefficients decrease slightly. The effect of income to happiness in this regression is positive and significant.

After controlling the same set of personal characteristics in regression C3, the significance of effect 'luxury vehicle' ownership to happiness remains the same although its magnitude becomes smaller. Still, among others, owners of luxury vehicle are the happiest, as the coefficient of vehicle category 'luxury vehicle' is the biggest. Therefore hypothesis 3 is confirmed.

Effects of other control variables on happiness are mostly the same. One-percent increase in income has positive effect on happiness. Female tends to be happier than male. Being unemployed, or not owning a house, or being not married, or being a foreigner with non-western origin, or being in age 25 to 54, or being in year 2014 negatively affects happiness. The complete regression table is provided in **Appendix O**.

Table 9 – Regression Table Set C

N	**7,976**	**7,976**	**7,976**	**7,976**
F-Test	**18.91**	**17.01**	**14.32**	**32.82**
R-Squared	**0.016**	**0.017**	**0.074**	**0.145**
Happiness	**C1**	**C2**	**C3**	**C4**
Vehicle category				
Junk vehicle	-0.004	-0.025	-0.066	-0.053
	(0.042)	(0.044)	(0.044)	(0.042)
A vehicle that works	0.244***	0.220***	0.105***	0.073*
	(0.039)	(0.040)	(0.041)	(0.039)
Reliable vehicle	0.342***	0.316***	0.149**	0.099*
	(0.059)	(0.059)	(0.059)	(0.056)
Very good vehicle	0.388***	0.361***	0.174**	0.116
	(0.084)	(0.084)	(0.085)	(0.080)
Luxury vehicle	0.576***	0.554***	0.359***	0.311***
	(0.073)	(0.073)	(0.077)	(0.072)
Income		0.008**	0.009**	0.005
		(0.004)	(0.004)	(0.004)
Personal Characteristics	NO	NO	YES	YES
Extraversion				
High score extraversion				0.285***

				(0.035)
Agreeableness				
High score agreeableness				0.125***
				(0.037)
Conscientiousness				
High score conscientiousness				0.169***
				(0.034)
Emotional stability				
High score emotional stability				0.656***
				(0.031)
Openness to experience				
High score openness				-0.038
				(0.037)
Year	YES	YES	YES	YES
Constant	7.472***	7.417***	7.917***	7.677***
	(0.037)	(0.045)	(0.114)	(0.109)

Notes: Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1 Reference categories: Vehicle ownership: No, Vehicle category: No vehicle, Age: 0 – 24, Gender: Male, Marital status: Married, Dwelling: Self-owned, Occupation: Employed, Education: Primary school, Origin: Dutch native, Extraversion: Low score extravert, Agreeableness: Low score agreeable, Conscientiousness: Low score conscientiousness, Emotional stability: Low score emotional stability, Openness to experience: Low score openness to experience, Year: 2008.

4.3.2 Big Five Personality Traits and Happiness

Regression A4 (table 7), regression B4 (table 8) and regression C4 (table 9) show the effect of big five personality traits to happiness in all three aspects of consumption of luxury vehicle. Except for personality trait openness to experience, the other big five personality traits give a positive effect on happiness and they are significant. Emotional stability, as the reversed personality traits for neuroticism, positively correlates with happiness, which shows neuroticism has the opposite effect on happiness. The coefficient of openness to experience indicates negative affect of the personality trait toward happiness, but it is not significant. These results are aligned with the literatures and show that hypothesis 4 is proved. Among others big five personality traits, emotional stability has the strongest impact on happiness in all specifications (regression A4: 0.660, regression B4: 0.659, regression C4: 0.656).

In regression A4 (table 7), the significance of vehicle ownership's effect on happiness is already eliminated by the addition of set personal characteristics in regression A3. Personality traits reduce the magnitude of vehicle ownership effect to happiness even more. This addition of big-five personality into the regression also diminishes the significance of income to happiness. It is clear that the significance impact of income in previous regressions (A2 and A3) are spurious, they reflect the effect of personality traits on happiness.

The impact of personality traits addition to the relationship between vehicle price and happiness is provided in regression B4 (table 8). In this case, the positive effect that vehicle price has on happiness still hold, but with slightly smaller magnitude and significance. The effect of income to happiness is disappeared. In regression C4 (table 9), personality traits diminish the effect of 'very good vehicle' to happiness, whereas the magnitude of 'luxury vehicle' category stays unaffected, positive (0.311) and highly significant ($p \leq 0.01$). It shows that happiness grows in hand with luxury vehicle. Whereas, the effect of income on happiness is also diminished in regression C4.

Other control variables in personal characteristics stay unaffected. Males are slightly less happy than females. Being unemployed or having unpaid work, or not owning a house, or being not married, or being a foreigner with non-western origin, or being in age 25 to 54, or being in year 2014 have a negative impact on happiness. Complete regression tables are available in **Appendix M** (regression A4)**, N** (regression B4) and **O** (regression C4).

4.3.3 Moderation Effect of Big Five Personality to The Relationship Between Consumption of Luxury Vehicle and Happiness

Table 10 presents the moderating effect of big five personality traits in respect of the relationship between vehicle ownership and happiness. Columns D1 – D5 show the moderating effect of each big five personality trait separately, while column D6 shows the the moderating effect of all big five personality traits simultaneously on the relationship between vehicle ownership and happiness. The coefficient of vehicle ownership increases and gains its significance back in regression D2 and D6. This is possible to happen, because when the interaction is added into the model, the effect of vehicle ownership to happiness can changed. The meaning of vehicle ownership now becomes the effect of vehicle ownership when personality test score is low. The coefficients and significances of personality traits into

happiness are unaffected by the interactions. Except for openness for experience, the other big five personality traits affect happiness positively without the ownership of a vehicle. Emotional stability holds the strongest positive effect to happiness when someone has no vehicle (regression D6: 0.710, with $p \leq 0.01$)

With the exception of the interactions between vehicle ownership and agreeableness, Columns D1 – D6 exhibit the interactions between vehicle ownership and big five personality traits are mostly insignificant. The interactions between vehicle ownership and agreeableness are consistently negative and significant (regressions D2 and D6). These results show that a high agreeableness score reduces the positive effect of vehicle ownership on happiness, thereby people with a high agreeableness score attain less happiness from their vehicle ownerships.

In regression D3, the interaction between conscientiousness and vehicle ownership is negative and significant, while vehicle ownership itself is positive but insignificant. It means that the positive coefficient of vehicle ownership does not affect happiness for people who have a low conscientiousness score, though it may impact the happiness for people who have a high conscientiousness score due to the significance of the interaction term between them. But then this interaction lost its significance in regression D6, where interactions between all big five personality traits and vehicle ownership are simultaneously added into the model.

The interaction between vehicle ownership and extraversion gives positive effect to happiness, but it is not significant. On the other hand, the interactions between vehicle ownership and emotional stability, as well as between vehicle ownership and openness to experience give the opposite effect to happiness, which are negatives but they are also insignificant. From these results, we can infer indications that a high extraversion score adds more happiness to vehicle ownership, whereas a high emotional stability score and a high openness to experience score reduce happiness gained from a vehicle ownership.

The relationship between income, personal characteristics and happiness are not affected by the addition of interaction terms in regression D1 – D6. Income has positive impact to happiness, though it is not significant. Male is less happy than female. Being unemployed, or owning no house, or being not married, or being a foreigner with non-western origin, or being

in age 25 to 54, or being in year 2014 negatively impacts happiness. The complete regression table is provided in **Appendix P**.

Table 10 – Regression Table Set D

N **F-Test** **R-Squared** **Happiness**	**7,976** **34.68** **0.143** **D1**	**7,976** **34.73** **0.143** **D2**	**7,976** **34.67** **0.143** **D3**	**7,976** **34.71** **0.143** **D4**	**7,976** **34.64** **0.143** **D5**	**7,976** **31.09** **0.144** **D6**
Vehicle ownership						
Yes	0.024	0.062*	0.057	0.051	0.026	0.077*
	(0.038)	(0.038)	(0.038)	(0.039)	(0.038)	(0.046)
Income	0.005	0.005	0.005	0.005	0.005	0.005
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Personal Characteristics	YES	YES	YES	YES	YES	YES
Extraversion						
High score extravert	0.278***	0.291***	0.290***	0.289***	0.290***	0.255***
	(0.055)	(0.035)	(0.035)	(0.035)	(0.035)	(0.057)
Agreeableness						
High score agreeable	0.120***	0.195***	0.119***	0.120***	0.120***	0.193***
	(0.037)	(0.056)	(0.037)	(0.037)	(0.037)	(0.057)
Conscientiousness						
High score conscientiousness	0.174***	0.174***	0.246***	0.173***	0.174***	0.227***
	(0.034)	(0.034)	(0.058)	(0.034)	(0.034)	(0.058)
Emotional stability						
High score emotional stability	0.660***	0.660***	0.659***	0.715***	0.660***	0.710***
	(0.031)	(0.031)	(0.031)	(0.049)	(0.031)	(0.051)
Openness to experience						
High score openness	-0.036	-0.037	-0.037	-0.036	-0.042	-0.065
	(0.037)	(0.037)	(0.037)	(0.037)	(0.057)	(0.059)
Interaction						
Own vehicle & high score extraversion	0.022					0.062

	(0.065)					(0.069)
Own vehicle & high score agreeableness		-0.140**				-0.136*
		(0.069)				(0.072)
Own vehicle & high score conscientiousness			-0.119*			-0.088
			(0.069)			(0.071)
Own vehicle & high score emotional stability				-0.09		-0.081
				(0.059)		(0.062)
Own vehicle & high score openness to experience					0.011	0.047
					(0.068)	(0.073)
Year	YES	YES	YES	YES	YES	YES
Constant	7.689***	7.669***	7.678***	7.679***	7.688***	7.669***
	(0.110)	(0.109)	(0.109)	(0.109)	(0.110)	(0.110)

Notes: Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1 Reference categories: Vehicle ownership: No, Vehicle category: No vehicle, Age: 0 – 24, Gender: Male, Marital status: Married, Dwelling: Self-owned, Occupation: Employed, Education: Primary school, Origin: Dutch native, Extraversion: Low score extravert, Agreeableness: Low score agreeable, Conscientiousness: Low score conscientiousness, Emotional stability: Low score emotional stability, Openness to experience: Low score openness to experience, Year: 2008.

Table 11 shows the moderating effect of big five personality traits on the relationship between the price of a vehicle and happiness. Columns E1 – E5 show the moderating effect of each big five personality traits separately, while column E6 shows the moderating effect of all big five personality traits on the relationship between vehicle price and happiness concurrently. Vehicle price affects happiness positively in general, regardless to the low personality trait score (columns E2 – E6). Only column E1 that shows the interaction between vehicle price and extraversion diminishes the significance of vehicle price to happiness. The effects of personality traits on happiness remain unchanged by the addition of these interactions. Emotional stability gives the strongest positive effect to happiness of someone who has vehicle with zero value, or in other words when he or she has no vehicle (regression E6: 0.728, with $p \leq 0.01$).

The interactions in regressions E1 and E6 show that a high extraversion score amplifies the magnitude of vehicle price positive effect on happiness but they are insignificant. The interactions between vehicle price and agreeableness (regressions E2 and E6) and emotional stability (regressions E4 and E6) are consistently being negative and significant, thereby the positive effect of the price of a vehicle turns into negative when it is accompanied with a high agreeableness score or a high emotional stability score.

Similarly to the result of regression set D, negative and significant interactions between vehicle price and conscientiousness are found in column E3, however, its significance is disappeared in regression E6 when interactions between other big five personality traits and vehicle price are added concurrently into the regression. This finding indicates that the increase in vehicle price (in percentage) makes people happier, but the effect is weakening by the presence of a high conscientiousness personality trait score. On the contrary, the positive effect of vehicle price to happiness becomes stronger when a high openness to experience score exists, though it is also insignificant.

The relationship between income, personal characteristics and happiness are not affected by the addition of interaction terms in regression E1 – E6. The impact of income to happiness remains positive but not significant. Female is happier than male. Happy people are those who are being employed, or having their own house, or married, or being native Dutch, or being in age 55 years old or being in year other than 2014. The complete regression table is provided in **Appendix Q**.

Table 11 – Regression Table Set E

N	**7,976**	**7,976**	**7,976**	**7,976**	**7,976**	**7,976**
F-Test	**34.86**	**34.85**	**34.81**	**34.87**	**34.76**	**31.27**
R-Squared	**0.143**	**0.144**	**0.143**	**0.144**	**0.143**	**0.144**
Happiness	**E1**	**E2**	**E3**	**E4**	**E5**	**E6**
Vehicle value	0.006	0.010***	0.010**	0.010**	0.007*	0.013***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)
Income	0.004	0.004	0.004	0.004	0.004	0.004
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)

Personal Characteristics	YES	YES	YES	YES	YES	YES
Extraversion						
High score extravert	0.279***	0.290***	0.289***	0.288***	0.289***	0.251***
	(0.054)	(0.035)	(0.035)	(0.035)	(0.035)	(0.056)
Agreeableness						
High score agreeable	0.121***	0.194***	0.119***	0.121***	0.120***	0.189***
	(0.037)	(0.055)	(0.037)	(0.037)	(0.037)	(0.057)
Conscientiousness						
High score conscientiousness	0.173***	0.173***	0.239***	0.172***	0.173***	0.215***
	(0.034)	(0.034)	(0.057)	(0.034)	(0.034)	(0.058)
Emotional stability						
High score emotional stability	0.659***	0.660***	0.659***	0.734***	0.659***	0.728***
	(0.031)	(0.031)	(0.031)	(0.048)	(0.031)	(0.050)
Openness to experience						
High score openness	-0.035	-0.037	-0.036	-0.035	-0.021	-0.043
	(0.037)	(0.037)	(0.037)	(0.037)	(0.056)	(0.058)
Interaction						
Vehicle value & high score extraversion	0.002					0.007
	(0.007)					(0.007)
Vehicle value & high score agreeableness		-0.015**				-0.014*
		(0.007)				(0.007)
Vehicle value & high score conscientiousness			-0.012*			-0.008
			(0.007)			(0.007)
Vehicle value & high score emotional stability				-0.013**		-0.012*
				(0.006)		(0.006)
Vehicle value & high score openness to experience					-0.003	0.001
					(0.007)	(0.008)

Year	YES	YES	YES	YES	YES	YES
Constant	7.680***	7.662***	7.670***	7.666***	7.675***	7.657***
	(0.110)	(0.109)	(0.109)	(0.110)	(0.110)	(0.110)

Notes: Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1 Reference categories: Vehicle ownership: No, Vehicle category: No vehicle, Age: 0 – 24, Gender: Male, Marital status: Married, Dwelling: Self-owned, Occupation: Employed, Education: Primary school, Origin: Dutch native, Extraversion: Low score extravert, Agreeableness: Low score agreeable, Conscientiousness: Low score conscientiousness, Emotional stability: Low score emotional stability, Openness to experience: Low score openness to experience, Year: 2008.

Regressions F1 to F6 in table 12 explore the moderating effect of big five personality traits on the relationship between luxury vehicle ownership and happiness. In a similar fashion with regression set D and E, columns F1 – F5 show the moderating effect of each big five personality trait solely, while column F6 shows the full moderating effect of all big five personality traits on the relationship between luxury vehicle ownership and happiness. Except for 'junk vehicle', having vehicle in all categories gives positive impact on happiness. The effects of a 'reliable vehicle' on happiness are not significant in regression F1 and F6. In regression F1, it is diminished by the single interaction between extraversion and 'reliable vehicle', while in regression F6, it is diminished by the addition of multiple interactions between big five personality traits and 'reliable vehicle'. In regression F2 to F4, the significance of positive effect from having a very good vehicle on happiness are also eliminated by the addition of interaction terms agreeableness, conscientiousness and emotional stability. A consistent pattern of significant relationships between 'luxury vehicle' ownership and happiness are exhibited through columns F1 – F6, showing that the 'luxury vehicle' ownership affects happiness positively, despite the low big five personality traits scores.

After the interactions are added, the relationship between big-five personality traits and happiness remain unchanged. Extraversion, agreeableness, conscientiousness and emotional stability have positive effects on happiness. Emotional stability contributes the greatest positive effect on happiness. These coefficients of personality traits tell the effect of big five personality traits for people who have no vehicle. The negative effect of openness to experience on happiness is not significant.

A high extraversion score makes the negative effect of ‘junk vehicle’ on happiness weaker. It negatively moderates the effect of ‘a vehicle that work’ and a ‘very good vehicle’ on happiness. On the other hand, a high extraversion score makes the effect of ‘luxury vehicle’ on happiness stronger. These interactions are not significant. The interactions between ‘reliable vehicle’ and extraversion are consistently significant and positive in regressions F1 and F6. In regard to the insignificant effect of ‘reliable vehicle’ on happiness, it implies that having ‘reliable vehicle’ has positive impact to happiness especially when the score for extraversion is high. An indication of positive moderation effect by extraversion in the relationship between luxury vehicle and happiness is found, though it is not significant. Thus, hypothesis 5 is not proven.

The interactions between agreeableness and vehicle categories are mostly not significant, except for the interaction between agreeableness and ‘a vehicle that works’. The interaction between agreeableness and ‘a vehicle that works’ in regression F2 is significant, which then it is diminished in regression F6 that contain all interactions terms between big five personality traits and all vehicle categories. The interaction term between agreeableness and ‘junk vehicle’ shows an indication that a high agreeableness score amplifies the negative impact of junk vehicle has on happiness. People with a high score of agreeableness gain less happiness from having ‘a vehicle that works’, ‘reliable vehicle’ and ‘very good vehicle’. The negative coefficient in the interaction between luxury vehicle and agreeableness indicates the effect of ‘luxury vehicle’ ownership on happiness is weaker for people who have a high agreeableness score, but it is not significant. Therefore, hypothesis 7 is not hold.

Regressions F3 and F6 show negative and significant interactions between ‘junk vehicle’ and conscientiousness, which indicating that ownership of junk vehicle does not affect happiness for people who score low in conscientiousness but can decrease the happiness of people who have a high score in conscientiousness due to the significance of their interaction. Interactions between conscientiousness with ‘vehicle that work’, ‘reliable vehicle’ and ‘luxury vehicle’ are also negatives, but not significant. They indicate the effect of ‘a vehicle that works’, ‘reliable vehicle’ and ‘luxury vehicle’ on happiness is weaker for people with a high conscientiousness score. For luxury vehicle, the result contradicts hypothesis 8.

The interaction between conscientiousness and ‘very good vehicle’ is negative (-0.002) and insignificant in regression F3, then turned into positive (0.032) in regression F6, though still insignificant. Multicollinearity is often associated with the reversed sign of coefficients. This study produces correlational matrix that shows no sign of multicollinearity among variables involved in the model, it thus provides evidence that the model is not suffered from multicollinearity. Furthermore, the shifting of the coefficient is not peculiar as it moves only by 0.034 or 3.4%-points which can be caused by the effect of controlling more variables, in this case interaction terms, in regression F6.

The interactions coefficients between emotional stability and ‘junk vehicle’ also show similar pattern. It has insignificant negative coefficient in regression F4 (-0.008) which then turned into positive (0.002) in regression F6. The same explanation is applied for this condition, in which the 1%-point changes in its coefficient is possibly happened due to the effect of controlling more variables in regression F6. Significant interactions between ‘a vehicle that works’ and emotional stability, are found in regressions F4 and F6. These interactions have negative coefficients, accordingly ‘a vehicle that works’ gives less happiness to people who a high emotional stability score. The interactions of ‘reliable vehicle’ and ‘very good vehicle’ to emotional stability show negative coefficients but insignificant, indicating that people with a high emotional stability score gain less happiness from an ownership of ‘reliable vehicle’ and ‘very good vehicle’. The interaction between ‘luxury vehicle’ category and emotional stability shows negative coefficient and significance in column F4, but the significance disappears in column F6. Thus, this study can infer only an indication about the negative moderating effect of emotional stability in respect of the relationship between luxury vehicle ownership and happiness. Hypothesis 6 is not hold.

Regressions F5 and F6 exhibit the moderating effect of openness to experience on the relationship between vehicle categories and happiness. Apparently, all interactions terms between openness to experience and vehicle categories are not significant. The interaction between openness to experience and ‘luxury vehicle’ category is negative, indicating that people with a high openness to experience score gain less happiness from a luxury vehicle ownership. Therefore, hypothesis 9 is also not proved.

The relationship between income and personal characteristics are unaffected by the inclusion of the interaction terms into the regressions F1 to F6. Income remains insignificant to happiness. Female is happier than male. Less happy people are associated with people who are not employed, or not having their own house, or not married, or foreigner, or being in the age of 24 to 54 years old, or being in year 2014. The complete regression table is provided in **Appendix R**.

Table 12 – Regression Table Set F

N **F-Test** **R-Squared** **Happiness**	**7,976** **29.39** **0.146** **F1**	**7,976** **29.09** **0.146** **F2**	**7,976** **29.10** **0.146** **F3**	**7,976** **29.19** **0.146** **F4**	**7,976** **28.79** **0.146** **F5**	**7,976** **20.00** **0.148** **F6**
Vehicle category						
Junk vehicle	-0.063	-0.02	-0.01	-0.052	-0.079	-0.032
	(0.048)	(0.047)	(0.047)	(0.049)	(0.048)	(0.058)
A vehicle that works	0.092**	0.106**	0.104**	0.122***	0.079*	0.159***
	(0.044)	(0.044)	(0.045)	(0.047)	(0.044)	(0.055)
Reliable vehicle	0.042	0.106*	0.124*	0.145**	0.112*	0.122
	(0.067)	(0.063)	(0.067)	(0.070)	(0.063)	(0.083)
Very good vehicle	0.155*	0.142	0.114	0.122	0.190**	0.208*
	(0.094)	(0.091)	(0.099)	(0.104)	(0.090)	(0.121)
Luxury vehicle	0.296***	0.343***	0.326***	0.387***	0.337***	0.388***
	(0.080)	(0.082)	(0.086)	(0.092)	(0.085)	(0.105)
Income	0.005	0.005	0.005	0.005	0.005	0.005
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Personal Characteristics	YES	YES	YES	YES	YES	YES
Extraversion						
High score extravert	0.278***	0.286***	0.285***	0.285***	0.287***	0.254***
	(0.055)	(0.035)	(0.035)	(0.035)	(0.035)	(0.057)
Agreeableness						
High score agreeable	0.124***	0.191***	0.126***	0.125***	0.126***	0.183***
	(0.037)	(0.056)	(0.037)	(0.037)	(0.037)	(0.057)
Conscientiousness						

High score conscientiousness	0.168***	0.169***	0.252***	0.168***	0.168***	0.234***
	(0.034)	(0.034)	(0.057)	(0.034)	(0.034)	(0.058)
Emotional stability						
High score emotional stability	0.658***	0.656***	0.654***	0.725***	0.656***	0.718***
	(0.031)	(0.031)	(0.031)	(0.049)	(0.031)	(0.050)
Openness to experience						
High score openness	-0.037	-0.039	-0.039	-0.036	-0.041	-0.065
	(0.037)	(0.037)	(0.037)	(0.037)	(0.057)	(0.059)
Interaction						
Junk vehicle & high score extraversion	0.051					0.072
	(0.086)					(0.091)
A vehicle that works & high score extraversion	-0.076					-0.021
	(0.079)					(0.085)
Reliable vehicle & high score extraversion	0.211**					0.264**
	(0.107)					(0.114)
Very good vehicle & high score extraversion	-0.126					-0.044
	(0.164)					(0.175)
Luxury vehicle & high score extraversion	0.069					0.139
	(0.142)					(0.150)
Junk vehicle & high score agreeableness		-0.133				-0.125
		(0.092)				(0.098)
A vehicle that works & high score agreeableness		-0.146*				-0.121
		(0.084)				(0.087)
Reliable vehicle & high score agreeableness		-0.017				-0.041
		(0.125)				(0.129)
Very good vehicle &		-0.110				-0.041

high score agreeableness						
		(0.180)				(0.188)
Luxury vehicle & high score agreeableness		-0.144				-0.105
		(0.149)				(0.148)
Junk vehicle & high score conscientiousness			-0.197**			-0.190**
			(0.092)			(0.095)
A vehicle that works & high score conscientiousness			-0.126			-0.08
			(0.080)			(0.082)
Reliable vehicle & high score conscientiousness			-0.104			-0.078
			(0.111)			(0.116)
Very good vehicle & high score conscientiousness			-0.002			0.032
			(0.153)			(0.151)
Luxury vehicle & high score conscientiousness			-0.065			-0.009
			(0.148)			(0.149)
Junk vehicle & high score emotional stability				-0.008		0.002
				(0.079)		(0.082)
A vehicle that works & high score emotional stability				-0.179**		-0.158**
				(0.069)		(0.072)
Reliable vehicle & high score emotional stability				-0.163		-0.167
				(0.102)		(0.106)
Very good vehicle & high score emotional stability				-0.038		-0.046
				(0.145)		(0.142)
Luxury vehicle & high score emotional				-0.245*		-0.234

stability						
				(0.135)		(0.145)
Junk vehicle & high score openness to experience					0.107	0.144
					(0.087)	(0.092)
A vehicle that works & high score openness to experience					-0.026	0.04
					(0.082)	(0.088)
Reliable vehicle & high score openness to experience					-0.052	-0.06
					(0.121)	(0.135)
Very good vehicle & high score openness to experience					-0.272	-0.239
					(0.181)	(0.203)
Luxury vehicle & high score openness to experience					-0.086	-0.033
					(0.140)	(0.159)
Year	YES	YES	YES	YES	YES	YES
Constant	7.678***	7.661***	7.665***	7.664***	7.677***	7.654***
	(0.110)	(0.110)	(0.109)	(0.110)	(0.110)	(0.110)

Notes: Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1 Reference categories: Vehicle ownership: No, Vehicle category: No vehicle, Age: 0 – 24, Gender: Male, Marital status: Married, Dwelling: Self-owned, Occupation: Employed, Education: Primary school, Origin: Dutch native, Extraversion: Low score extravert, Agreeableness: Low score agreeable, Conscientiousness: Low score conscientiousness, Emotional stability: Low score emotional stability, Openness to experience: Low score openness to experience, Year: 2008.

4.4 Discussion

4.4.1 Consumption of Luxury Vehicle and Happiness

Hypothesis 1, 2 and 3 scrutinize the relationship between consumption of luxury vehicle and happiness. This study addresses their relationship by exploring three aspects of consumption of luxury vehicle and happiness. First, the study examines the effect of being an owner of a vehicle can influence happiness (H1). Then, it investigates the effect of vehicle

price to happiness (H2). After gaining the understanding of the effects from vehicle ownership and price, this study explores the relationship between luxury vehicle ownership and happiness (H3). This study finds only an indication that vehicle ownership positively influences happiness. Instead, happiness increases hand in hand with vehicle price (magnitude: 0.007 happiness scales point, $p \leq 0.1$). And furthermore, among other vehicle categories, luxury vehicle ownership contributes the greatest positive impact on happiness. Having a luxury vehicle increases happiness by 0.311 points ($p \leq 0.01$) compared to not having vehicle at all, controlling income, personal characteristics and personality traits, ceteris paribus.

4.4.2 Big Five Personality and Happiness

Results from the OLS model regression in this study support the finding by prior researches as have been proposed in hypotheses 4. This study finds that people who have a high score in personality trait extraversion are happier than people who don't. Similar results are also found for personality traits emotional stability, agreeableness and conscientiousness. Having a high score in personality trait emotional stability, gives the strongest positive impact to happiness level (coefficient 0.660 with $p \leq 0.01$). While, having a high score in personality trait openness to experience has no effect to happiness.

4.4.3 Moderation Effect of Big Five Personality to the Relationship Between Consumption of Luxury Vehicle and Happiness

Hypotheses 5 to 9 aim to see whether the relationship between consumption of luxury vehicle and happiness depends on the score of big five personality traits. The testing of these hypotheses uses similar approach with hypothesis 1 to 3, which explores the relationship between luxury vehicle ownership and happiness through three aspects of consumption of luxury vehicle. First, the moderation effect of personality traits on the relationship between vehicle ownership and happiness is examined. Afterward, this study investigates the moderation effect of personality traits on the effect of vehicle price on happiness. Finally, the study looks into the moderation effect of personality traits on the relationship between luxury vehicle category and happiness (H5 – H9). In each of regression set for these aspects, the same set of income and personal characteristics are controlled. Before adding all the interactions terms, the interactions between each of big-five personality to each aspect is

added separately in order to look at whether the effect is similar or different for various personality traits, the sequence is as follow: R1) extraversion, R2) agreeableness, R3) conscientiousness, R4) agreeableness and R5) openness to experience, R6) all big five personality traits.

This study confirms the negative moderating effect of agreeableness on the relationship between vehicle ownership and happiness. The positive effect of vehicle ownership on happiness is weaker when the agreeableness score is high (magnitude negative 0.136 happiness scale point, $p \leq 0.1$). The level of happiness derived from a vehicle ownership is reduced by a high agreeableness score. Negative but insignificant moderation effects are also found in interactions between conscientiousness, emotional stability and openness to experience with vehicle ownership, indicating that a lower level of happiness is gained from a vehicle ownership for people with a high conscientiousness score or a high emotional stability score or a high openness to experience score. While, people with a high extraversion score is indicated to get a higher happiness level from a vehicle ownership compared to people with a low extraversion score.

The interaction between vehicle price and emotional stability is found to be negative and significant (coefficient: negative 0.012; $p \leq 0.1$). Similarly, agreeableness is found to be negatively moderates the relationship between vehicle price and happiness (coefficient: negative 0.012; $p \leq 0.1$). These means that the positive effect that the price of a vehicle has on happiness is weaker for people who have a high emotional stability score or a high agreeableness score. A negative but not significant interaction term is found for the interaction between vehicle price and conscientiousness score. It shows an indication that the presence of a high conscientiousness score can reduce the positive effect that the price of a vehicle has on happiness. On the other hand, people who have a high extraversion score or a high openness to experience score are indicated to gain more happiness from the increase in their vehicles price. It can be seen from the interaction results that show positive coefficient but insignificant.

The analysis goes a step further by observing the moderating effect of big five personality traits on the relationship between each of vehicle category and happiness. The results provide more comprehensive happiness-related findings, not only about the relationship between

vehicle category and happiness in general, but also the relationship between luxury vehicle ownership and happiness in specific. In this part of discussion, the moderating effect of each big five personality traits on the relationship between luxury vehicle ownership and happiness are presented. However, if the moderating effect on luxury vehicle ownership and happiness is not the strongest, the relationship between another vehicle category and happiness that receives the highest moderating effect will be presented alongside.

A high extraversion score gives positive but not significant moderating effect on the relationship between luxury vehicle ownership and happiness (magnitude 0.139 happiness scales point), thereby an indication that people with a high extraversion score derive more happiness from a luxury vehicle ownership. The greatest moderating effect of extraversion influences the relationship between 'reliable vehicle' and happiness (magnitude 0.264 happiness scales point). This moderating effect is significant ($p \leq 0.05$).

The interaction between agreeableness and luxury vehicle shows an indication that a high agreeableness score negatively moderates the relationship between luxury vehicle ownership and happiness (magnitude negative 0.105 happiness scales point). The positive effect of luxury vehicle ownership on happiness is reduced by a high agreeableness score. A high agreeableness score gives the highest moderating impact on the relationship between junk vehicle and happiness (magnitude negative 0.125 happiness scales point), but it is insignificant. It amplifies the negative impact of junk vehicle has to happiness.

A negative but insignificant moderating effect of conscientiousness is found on the relationship between luxury vehicle ownership and happiness (magnitude negative 0.009), indicating that luxury vehicle ownership gives less happiness for people who have a high conscientiousness score. However, a high conscientiousness score gives the greatest moderating impact on the relationship between 'junk vehicle' and happiness (magnitude negative 0.190 happiness scales point) and it is significant ($p \leq 0.05$). It shows that people who have a high onscientiousness score suffer more from their 'junk vehicle' purchases, they thus become less happy compared to people who have a low conscientiousness score.

The regression result exhibits a high emotional stability score has the highest moderating impact on the relationship between luxury vehicle ownership and happiness (magnitude

negative 0.234 happiness scales point), but it is not significant; meaning, the positive effect of luxury vehicle on happiness is decreased by the presence of a high emotional stability score.

Lastly, people who have a high openness to experience score are indicated to gain more happiness from a vehicle ownership, up until 'a vehicle that works' category. A high openness to experience score brings the strongest moderating effect in the relationship between the ownership of 'very good vehicle' and happiness. It negatively affects the relationship (magnitude negative 0.239 happiness scales point), but it is insignificant. Similarly, the regression result demonstrates an indication that people with high openness to experience score gain less happiness from the luxury vehicle purchase (magnitude negative 0.033 happiness scales point). These regression results of hypotheses 5, 6, 7, 8 and 9 testing find no sufficient evidence to say that certain big five personality traits can explain a variation of reported happiness by luxury vehicles owners.

4.4.4 Additional Findings

The regression results demonstrate that the impact of income on happiness diminishes together with the addition of consumption patterns, personality traits and other personal characteristics to the model. This finding is in line with the previous literatures that income can influence happiness through the composition of spending. In this study, the effect of certain consumption pattern such as vehicle and dwelling hold consistently in all model specifications.

Another additional salient finding is consistent patterns of significance in the relationships between being not married and happiness. This result is align with the previous literature, whereby social capital plays an important role in determining happiness. Being not married, especially in separation, can lower the happiness significantly with magnitude more than 1.1 happiness scales point. Similarly, being a foreigner with non-western origin decreases the happiness with magnitude more than 0.2 happiness scales point compared to natives and it is consistently significant in all model specifications. This happiness gap carries over even to the second generation of the foreigner.

4.4.5 Summary of Hypotheses Testing

Table 13 – Summary of Hypotheses Testing

HYPOTHESES	STATUS
H1: Vehicle ownership enhances happiness.	**REJECTED,** but find indication
H2: The price of a vehicle positively influences happiness.	**NOT REJECTED**
H3: Owners of luxury vehicles are happier than owners of frugal vehicles.	**NOT REJECTED**
H4: Except for the personality trait openness to experience, which has no effect on happiness, the big five personality traits (extraversion, emotional stability (reversed personality trait for neuroticism), agreeableness and conscientiousness) positively influence happiness.	**NOT REJECTED**
H5: Extraversion positively moderates the effect of luxury vehicle ownership on happiness, whereby the effect is stronger when the extraversion score is high.	**REJECTED,** but find indication
H6: Neuroticism positively moderates the effect of luxury vehicle ownership on happiness, whereby the effect is stronger when the neuroticism score is high (as reversed personality trait, emotional stability negatively moderates the effect of luxury vehicle ownership on happiness, whereby the effect is weaker when the emotional stability score is high).	**REJECTED,** but find indication
H7: Agreeableness negatively moderates the effect of luxury vehicle ownership on happiness, whereby the effect is weaker when the agreeableness score is high.	**REJECTED,** but find indication
H8: Conscientiousness positively moderates the effect of luxury vehicle ownership on happiness, whereby the effect is stronger when the conscientiousness score is high.	**REJECTED**
H9: Openness to experience negatively moderates the effect of luxury vehicle ownership on happiness, whereby the effect is weaker when the openness to experience score is high.	**REJECTED,** but find indication

5. CONCLUSION AND FUTURE RESEARCH

A relatively small part of past literature has addressed the impact of certain patterns in luxury goods consumption on happiness, with even less research that specifically discusses the impact of luxury vehicle ownership on the reported happiness of the owners. Moreover, findings on this relationship are still far from conclusive. This study aims to re-examine the relationship between luxury consumption, specifically luxury vehicle ownership, and happiness. It also discusses the influence of personality traits on this relationship.

In exploring the relationship between luxury vehicle ownership and happiness, this study looks deeply into the aspects of luxury vehicle consumption that are correlated with happiness. These aspects are vehicle ownership, vehicle price and luxury vehicle ownership. Indeed, according to the literature, luxury vehicle ownership is ownership of the most expensive vehicle. This study uses the OLS model to explore variations in happiness determinants and their effects on happiness.

After controlling income and personal characteristics, the regression results from OLS clearly indicate that though owning such a vehicle does make people happier, in the end, this ownership does not necessarily bring more happiness. It turns out that the happiness of vehicle owners depends on the vehicle price and category. Happiness grows along with the vehicle's price. The more expensive the vehicle is, the higher the happiness level gained by the owner. A luxury vehicle, which is the most expensive vehicle among a category of vehicles, has the strongest positive impact on happiness. In this study, luxury vehicles owners are proven to be happier than frugal vehicles owners. As suggested by previous literature, the most convincing reason why luxury vehicles ownership give their owners more happiness than frugal vehicles is the prestige that is inherent to luxury vehicles, whereby prestige promotes the formation of relative income and relative consumption, as well as creating social capital. Fundamentally, it seems that luxury vehicles ownership can make people feel good about themselves which results in them being happier.

Prior to exploring the moderating effect of big five personality traits on the relationship between luxury vehicle ownership and happiness, this study examines the impact of big five personality traits into happiness. The regression results confirm the finding of previous literature, that with the exception of openness to experience, the other big five personality

traits do affect happiness. Happy people are those who have either a high extraversion score, or a high agreeableness score, or a high conscientiousness score, or a high emotional stability score. Happiness is unaffected by a high openness to experience score. Personality traits as happiness determinants retain their high significance in all model specifications.

Simultaneously, in testing the moderating effect of big five personality traits on the relationship between luxury vehicle ownership and happiness, the interaction terms between big five personality traits and aspects of consumption of a luxury vehicle are regressed on happiness, while retaining the same set of personal characteristics and income in the model. The interaction between the agreeableness personality trait and vehicle ownership is found to be significant. Agreeableness negatively moderates the effect of vehicle ownership on happiness. Previous literature states that limited interaction with other people when driving vehicles may cause people with a high agreeableness score to gain less happiness from vehicle ownership, whereby, not surprisingly, the owners of vehicles are often the ones who drive. A high agreeableness score also reduces the positive effect of vehicle price on happiness. Previous literature finds that a higher price can be perceived as uneconomical by agreeable people who do not infer the quality of a product based on the price. For the same reason, people with high emotional stability are shown to gain less happiness from an increase in their vehicle's value.

Certain big five personality traits are found capable of explaining the variation of reported happiness by vehicle owners in general. People with a high agreeableness score suffer more from 'junk vehicles'. A high emotional stability score moderates negatively the effect of 'a vehicle that works' on happiness. On the contrary, a high extraversion score and a high agreeableness score amplify the positive effect of a 'reliable vehicle' on happiness. However, big five personality traits are not proved significant in interaction with the 'luxury vehicle' category. Except for conscientiousness, this study finds that big five personality traits potentially moderate the effect of luxury vehicles ownership on happiness, as proposed in the hypotheses. People with a high agreeableness score, or a high emotional stability score or a high openness to experience score are shown indications gaining less happiness from luxury vehicles ownership, whereas people with a high extraversion score gain more happiness from luxury vehicles ownership. Instead of a positive effect, a high conscientiousness score

potentially has a negative moderating effect on the relationship between luxury vehicles ownership and happiness.

In assessing the potential moderating effect of personality traits on the relationship between luxury vehicle ownership and happiness, this study notes the importance of value as another individual difference that can influence purchasing behavior (Vinson et al., 1977). Roccas et al. (2002) identify the correlations between personality traits and values. They suggest that even though traits and values are known to mutually influence one another, in certain situations they can also supersede one another. Therefore, in term of luxury vehicle ownership, it is possible that values play a greater role compared to personality traits. Indeed, Okulicz-Kozaryn et al. (2015) argue that luxury vehicles ownership often serves as a proxy for their owners' values. Unfortunately values are not available in the LISS data used in this study. Future research could consider controlling values as other individual attributes that correlate with vehicles and which could explain the variation in luxury vehicles owners' reported happiness.

Specifically related to luxury vehicle ownership, Heath and Gifford (2002) suggest that social norms, i.e. what the majority of others are doing, significantly influence what people feel about their choice of transportation mode. Positively, social norms also play a role in defining happiness (Ahuvia, 2002). Johansson-Stenman & Martinsson, 2015 further argue that the pleasure in making a vehicle choice is driven by the need to be socially accepted, so people choose the option that comply with social norms. The LISS survey only provides observations from the Netherlands, where a social norm regarding transportation in the Netherlands may exist. For future research it would be interesting to consider examining the moderating effect of personality on the relationship between luxury vehicle ownership and happiness in other countries or even other continents – for example Asia – which presumably might provide more variation in term of social norms.

Nonetheless, after the interactions are added into the model, the regression result of the 'luxury vehicle' category on happiness still shows significant effect. This result reaffirms previous findings on the relationship between luxury vehicles ownership and happiness. In fact, luxury vehicle ownership increases happiness, even without high big five personality trait scores. Arguably, these findings may alter when different circumstances are controlled (Dolan, Peasgood & White, 2008). This study has relatively limited variables for measuring

happiness in relation to vehicles, such as distance, frequency of travelling, purpose of travelling, public transportation quality and indebtedness. Other than that, due to the data availability, vehicles in this study refers to a group of several vehicle types. It would be interesting to explore their impact on happiness separately. Future research could address these issues.

The findings from this study provide an alternative perspective in examining another aspect of luxury consumption that can influence happiness. However, due to the multidimensionality of happiness determinants, care and meticulous consideration are needed when comparing these findings to those of other studies (Dolan et al., 2008). This study does not jump easily to any conclusion that promotes purchasing behavior in the direction of luxury vehicles, but merely gives new insight to help people make better informed decisions that eventually lead to greater happiness. It is important to bear in mind that a vehicle is one of the most expensive goods most people will buy during their lifetime, and one for which – on average – people spend many years working. It is therefore always important, especially for those with limited resources, to think critically about their reasons for purchasing luxury goods, more specifically a luxury vehicle.

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APPENDICES

Appendix A: Common survey questions used in happiness measurement

(Veenhoven, 2012)

Single questions:

"Taking all together, how happy would you say you are: very happy, quite happy, not very happy, not at all happy?" (Standard item in the World Value Studies)

"How satisfied are you with the life you lead? Very satisfied, fairly satisfied, not very satisfied, not at all satisfied?" (Standard item in Euro-barometer surveys)

"Here is a picture of a ladder. Suppose the top of the ladder represents the best possible life for you and the bottom of the ladder the worst possible life. Where on the ladder do you feel you personally stand at the present time?" (0-10 ladder-like rating scale) (Cantril's, 1965 present life ladder rating)

Multiple questions (summed):

Same question asked twice: at the beginning and at the end of interview.

"How do you feel about your life-as-a-whole? Delighted, pleased, mostly satisfying, mixed, mostly dissatisfying, unhappy, terrible?" (Andrews & Withey, 1976: Life 3)

Five questions, rated on a 1-7 scale ranging from strongly agree to strongly disagree. (Diener, 1985 Satisfaction With Life Scale (SWLS)):

1) In most ways my life is close to ideal
2) The conditions of my life are excellent
3) I am satisfied with my life
4) So far I have gotten the important things I want in life
5) If I could live my life over, I would change almost nothing.[4]

Appendix B: Visibility Index

(Heffetz, 2011)

TABLE 3.—VISIBILITY INDICES AND RANKINGS

Category	Normalized Mean			Response 1 or 2			Response 4 or 5		
	Index	(S.E.)	[Rank]	Index	(S.E.)	[Rank]	Index	(S.E.)	[Rank]
Cig (cigarettes)	0.76	(0.01)	[1]	0.81	(0.02)	[1]	0.87	(0.02)	[2]
Car (cars)	0.73	(0.01)	[2]	0.71	(0.02)	[3]	0.89	(0.01)	[1]
Clo (clothing)	0.71	(0.01)	[3]	0.72	(0.02)	[2]	0.84	(0.02)	[5]
Fur (furniture)	0.68	(0.01)	[4]	0.66	(0.02)	[4]	0.86	(0.02)	[3]
Jwl (jewelry)	0.67	(0.02)	[5]	0.63	(0.02)	[6]	0.80	(0.02)	[7]
Ot1 (recreation 1)	0.66	(0.01)	[6]	0.64	(0.02)	[5]	0.85	(0.02)	[4]
FdO (food out)	0.62	(0.01)	[7]	0.58	(0.02)	[7]	0.82	(0.02)	[6]
AlH (alcohol home)	0.61	(0.01)	[8]	0.57	(0.02)	[8]	0.76	(0.02)	[12]
Brb (barbers etc.)	0.60	(0.01)	[9]	0.54	(0.02)	[9]	0.77	(0.02)	[8]
AlO (alcohol out)	0.60	(0.01)	[10]	0.52	(0.02)	[10]	0.77	(0.02)	[9]
Ot2 (recreation 2)	0.58	(0.01)	[11]	0.51	(0.02)	[11]	0.76	(0.02)	[10]
Bks (books etc.)	0.57	(0.01)	[12]	0.48	(0.02)	[13]	0.76	(0.02)	[11]
Edu (education)	0.56	(0.01)	[13]	0.49	(0.02)	[12]	0.73	(0.02)	[13]
FdH (food home)	0.51	(0.01)	[14]	0.40	(0.02)	[16]	0.68	(0.02)	[14]
Hom (rent/home)	0.50	(0.02)	[15]	0.41	(0.02)	[14]	0.60	(0.02)	[16]
Cel (cell phone)	0.47	(0.02)	[16]	0.40	(0.02)	[15]	0.58	(0.02)	[18]
Air (air travel)	0.46	(0.01)	[17]	0.35	(0.02)	[17]	0.62	(0.02)	[15]
Htl (hotels etc.)	0.46	(0.01)	[18]	0.33	(0.02)	[19]	0.60	(0.02)	[17]
Bus (public transportation)	0.45	(0.02)	[19]	0.34	(0.02)	[18]	0.57	(0.02)	[19]
CMn (car repair)	0.42	(0.01)	[20]	0.29	(0.02)	[21]	0.55	(0.02)	[20]
Gas (gasoline)	0.39	(0.02)	[21]	0.31	(0.02)	[20]	0.48	(0.02)	[21]
Med (health care)	0.36	(0.01)	[22]	0.23	(0.02)	[23]	0.44	(0.02)	[22]
Cha (charities)	0.34	(0.01)	[23]	0.22	(0.02)	[25]	0.43	(0.02)	[23]
Lry (laundry)	0.34	(0.02)	[24]	0.24	(0.02)	[22]	0.41	(0.02)	[24]
Utl (home utilities)	0.31	(0.02)	[25]	0.23	(0.02)	[24]	0.36	(0.02)	[25]
Tel (home phone)	0.30	(0.02)	[26]	0.20	(0.02)	[26]	0.36	(0.02)	[26]
Fee (legal fees)	0.26	(0.01)	[27]	0.13	(0.02)	[28]	0.29	(0.02)	[27]
CIn (car insurance)	0.23	(0.01)	[28]	0.16	(0.02)	[27]	0.25	(0.02)	[28]
HIn (home insurance)	0.17	(0.01)	[29]	0.09	(0.01)	[29]	0.17	(0.02)	[29]
LIn (life insurance)	0.16	(0.01)	[30]	0.07	(0.01)	[31]	0.16	(0.02)	[30]
Und (underwear)	0.13	(0.01)	[31]	0.07	(0.01)	[30]	0.12	(0.01)	[31]

Source: Author's visibility survey (480 respondents).

Appendix C: Robustness of big five personality model through years

(Digman, 1990)

Author	I	II	III	IV	V
Fiske (1949)	social adaptability	conformity	will to achieve[a]	emotional control	inquiring intellect
Eysenck (1970)	extraversion	——————Psychoticism——————		neuroticism	
Tupes & Christal (1961)	surgency	agreeableness	dependability	emotionality	culture
Norman (1963)	surgency	agreeableness	conscientiousness	emotional	culture
Borgatta (1964)	assertiveness	likeability	task interest	emotionality	intelligence
Cattell (1957)	exvia	cortertia	superego strength	anxiety	intelligence
Guilford (1975)	social activity	paranoid disposition	thinking introversion	emotional stability	
Digman (1988)	extraversion	friendly compliance	will to achieve	neuroticism	intellect
Hogan (1986)	sociability & ambition	likeability	prudence	adjustment	intellectance
Costa & McCrae (1985)	extraversion	agreeableness	conscientiousness	neuroticism	openness
Peabody & Goldberg (1989)	power	love	work	affect	intellect
Buss & Plomin (1984)	activity	sociability	impulsivity	emotionality	
Tellegen (1985)	positive emotionality		constraint	negative emotionality	
Lorr (1986)	interpersonal involvement	level of socialization	self-control	emotional stability	independent

Appendix D: Summary of possible contribution of personality trait to happiness through outcome

(Ozer & Benet-Menitez, 2006)

	Individual outcomes	Interpersonal outcomes	Social institutional outcomes
Extraversion	Happiness subjective well-being Spirituality & virtues: existential well-being, gratitude, inspiration Health: longevity, coping, resilience Psychopathology: (–) depression, (–/+) personality disorders Identity: majority culture identification (for minorities)	Peer & family relations: peers' acceptance and friendship (children and adults); dating variety, attractiveness, status (adults) Romantic relations: satisfaction	Occupational choice & performance: social and enterprising interests, satisfaction, commitment, involvement Community involvement: volunteerism, leadership
Agreeableness	Spirituality & virtues: religious beliefs and behavior, gratitude, forgiveness, humor Health: longevity, (–) heart disease Psychopathology: (–/+) personality disorders Identity: ethnic culture identification (for minorities)	Peer & family relations: peers' acceptance and friendship (children) Romantic relations: satisfaction (dating couples only)	Occupational choice & performance: social interests, job attainment, (–) artistic success Community involvement: volunteerism, leadership Criminality: (–) criminal behavior
Conscientiousness	Spirituality & virtues: religious beliefs and behavior Health: longevity, (–) risky behavior Psychopathology: (–) substance abuse, (–/+) personality disorders Identity: achievement, ethnic culture identification (for minorities)	Peer & family relations: family satisfaction Romantic relations: satisfaction (dating couples only)	Occupational choice & performance: performance, success Political attitudes & values: conservatism Criminality: (–) antisocial and criminal behavior
Neuroticism	Happiness (–) subjective well-being Spirituality & virtues: (–) existential well-being, (–) humor Health: (–) coping Psychopathology: anxiety, depression, (+/–) personality disorders Identity: (–) identity integration/consolidation	Peer & family relations: (–) family satisfaction, (–) status (males only) Romantic relations: dissatisfaction, conflict, abuse, dissolution	Occupational choice & performance: (–) satisfaction, (–) commitment, (–) financial security, (–) success Criminality: antisocial behavior
Openness	Spirituality & virtues: existential/phenomenological concerns, forgiveness, inspiration Psychopathology: substance abuse Identity: (–) foreclosure, identity integration/consolidation, majority culture identification (for minorities)		Occupational choice & performance: investigative and artistic interests, success Political attitudes & values: (–) right-wing authoritarianism, liberalism

*Note: (–) indicates a negative relation between the trait and outcome.

Appendix E: Summary of relationship between big five personality traits and luxury goods' product attributes

Big-5 Personality Traits	Prestige Sensitivity (Casidy, 2012)	Trusted Brand (Mulyanegara et al., 2009)	Personal Value (Roccas et al., 2002)
Extraversion			**Positive**
Agreeableness	**Negative**		
Conscientiousness	**Positive**	**Positive**	
Emotional stability		**Negative**	
Openness to experience	**Negative**		

Appendix F: Categories of cars by price range

(Okulicz-Kozaryn, Nash & Tursi, 2015)

Categories of cars by price range

Price range	Name	Description	Frequency
$0	No car	No car	1,464
$0–5k	Junk car	More trouble than help	700
$5–15k	A car that works	This should increase happiness	808
$15–23k	Reliable car	This should increase happiness even more	668
$23–35k	Very good car	But not much more happiness from it than that form a reliable car	583
$>35k	Luxury car	No happiness from its use over cheaper cars, perhaps unhappiness due to opportunity cost, etc	191

Appendix G: Goldberg's Big-Five Factor Markers

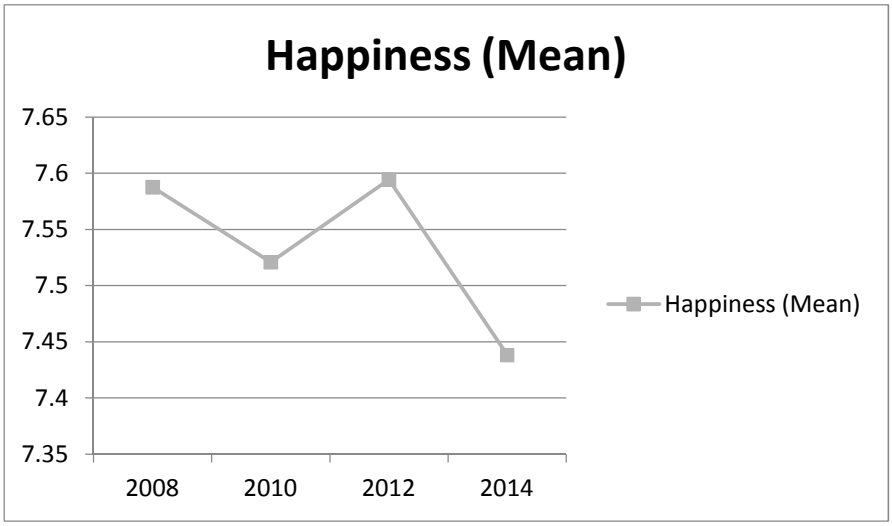
(http://ipip.ori.org/newBigFive5broadKey.htm)

Big-Five Factor Markers	Type	Statements
Factor I: Extraversion	(+) Big-Five	Am the life of the party
		Feel comfortable around people
		Start conversations
		Talk to a lot of different people at parties
		Don't mind being the center of attention
	(-) Reversed	Don't talk a lot
		Keep in the background
		Have little to say
		Don't like to draw attention to myself
		Am quiet around strangers
Factor II: Agreeableness	(+) Big-Five	Am interested in people
		Sympathize with others' feelings
		Have a soft heart
		Take time out for others
		Feel others emotions
		Make people feel at ease
	(-) Reversed	Am not really interested in others
		Insult people
		Am not interested in other people's problem
		Feel little concern for others
Factor III: Conscientiousness	(+) Big-Five	Am always prepared
		Pay attention to details
		Get chores done right away
		Like order
		Follow a schedule
		Am exacting in my work
	(-) Reversed	Leave my belongings around
		Make a mess of things
		Often forget to put things back in their

		proper place
		Shirk my duties
Factor IV: Emotional Stability	(+) Big-Five	Am relaxed most of the time
		Seldom feel blue
	(-) Reversed	Get stressed out easily
		Worry about things
		Am easily disturbed
		Get upset easily
		Change my mood a lot
		Have frequent mood swings
		Get irritated easily
		Often feel blue
Factor V: Intellect	(+) Big-Five	Have a rich vocabulary
		Have a vivid imagination
		Have excellent ideas
		Am quick to understand things
		Use difficult words
		Spend time reflecting on things
		Am full of ideas
	(-) Reversed	Have difficulty understanding abstract ideas
		Am not interested in abstract ideas
		Do not have good imagination

Appendix H: Reported Happiness

On the whole, how happy would you say you are?			
Happiness Scale	**Freq.**	**Percent**	**Cum.**
0 totally unhappy	5	0.06	0.06
1	20	0.25	0.31
2	40	0.5	0.81
3	75	0.94	1.76
4	97	1.22	2.97
5	299	3.75	6.72
6	628	7.87	14.59
7	2,222	27.86	42.45
8	**3,301**	**41.39**	**83.84**
9	**1,021**	**12.8**	**96.64**
10 totally happy	**268**	**3.36**	**100**
Total	**7,976**	**100**	



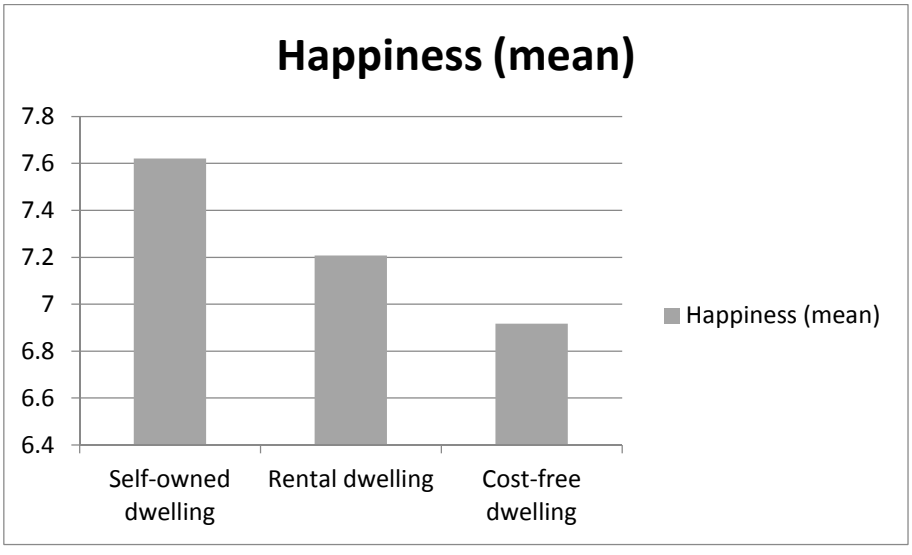
Appendix I: Happiness Statistics According to Personal Characteristics and Income

Happiness	0 (Totally unhappy)	1	2	3	4	5	6	7	8	9	10 (Totally happy)	%
Income												
Lowest quartile	**0.1**	**0.35**	**0.6**	1.2	1.45	5.27	8.93	27.7	**36.4**	**13.4**	**4.66**	%
Next to lowest quartile	**0.1**	**0.4**	**0.6**	1.15	1.86	4.01	8.53	28.9	**39.3**	**11.8**	**3.41**	%
Next to highest quartile	**0**	**0.15**	**0.65**	0.85	0.85	3.66	8.07	27.8	**42.6**	**12.2**	**3.11**	%
Highest quartile	**0.05**	**0.1**	**0.15**	0.55	0.7	2.06	5.97	27.1	**47.3**	**13.8**	**2.26**	%
Age												
0-24	**0.11**	**0.43**	**0.21**	1.07	1.5	3.32	8.88	30.2	**39.1**	**12.1**	**3.1**	%
25-39	**0.06**	**0.44**	**0.5**	0.94	1.38	4.34	8.68	28	**40.1**	**13.1**	**2.45**	%
40-54	**0.15**	**0.15**	**0.81**	0.91	1.36	3.99	9.13	29.8	**39.7**	**11**	**3.03**	%
55+	**0**	**0.17**	**0.4**	0.92	0.98	3.46	6.51	26.1	**43.6**	**13.9**	**4.04**	%
Gender												
Male	**0.05**	**0.26**	**0.55**	0.99	1.22	3.64	7.7	27.4	**42.2**	**12.8**	**3.28**	%
Female	**0.07**	**0.24**	**0.46**	0.9	1.21	3.85	8.04	28.3	**40.7**	**12.8**	**3.44**	%
Marital status												
Married	**0.09**	**0.16**	**0.28**	0.68	0.59	2.59	5.37	25.1	**45.3**	**15.5**	**4.28**	%
Separated	**2.17**	**0**	**4.35**	0	6.52	13	23.9	23.9	**21.7**	**2.17**	**2.17**	%
Divorced	**0**	**0.13**	**1.62**	1.62	3.24	5.8	13.8	30.9	**32.9**	**7.56**	**2.43**	%
Widow or widower	**0**	**0.23**	**0.68**	2.04	0.68	6.33	9.5	32.4	**37.8**	**7.69**	**2.71**	%
Never been married	**0**	**0.44**	**0.44**	1	1.68	4.48	9.8	30.9	**38.2**	**10.8**	**2.2**	%
Woning												
Self-owned	**0.04**	**0.18**	**0.32**	0.69	0.99	2.35	6.58	27.2	**44.4**	**14.2**	**3.11**	%
Rental	**0.13**	**0.4**	**0.9**	1.57	1.66	7.28	10.8	29.6	**34.1**	**9.49**	**4.05**	%
Cost-free	**0**	**1.19**	**2.38**	1.19	4.76	4.76	17.9	23.8	**33.3**	**8.33**	**2.38**	%
Occupation												
Employed	**0.08**	**0.17**	**0.39**	0.66	0.83	2.79	7.91	28.4	**42.4**	**13.2**	**3.15**	%
Self-Employed	**0**	**0**	**0.81**	0.81	1.36	3.79	8.13	28.7	**40.4**	**13**	**2.98**	%
Voluntary Work	**0**	**0**	**0.54**	2.15	1.61	6.45	8.6	26.3	**39.8**	**11.3**	**3.23**	%
Unemployed	**0**	**0.66**	**1.32**	2.63	1.97	7.89	9.87	35.5	**27.3**	**9.54**	**3.29**	%
Retired/Unable to Work	**0.05**	**0.44**	**0.69**	1.09	1.73	4.69	7.46	25.8	**42.3**	**12**	**3.75**	%
Student and Home	**0.07**	**0.2**	**0.27**	0.95	1.22	3.59	7.78	27.7	**41**	**13.7**	**3.45**	%

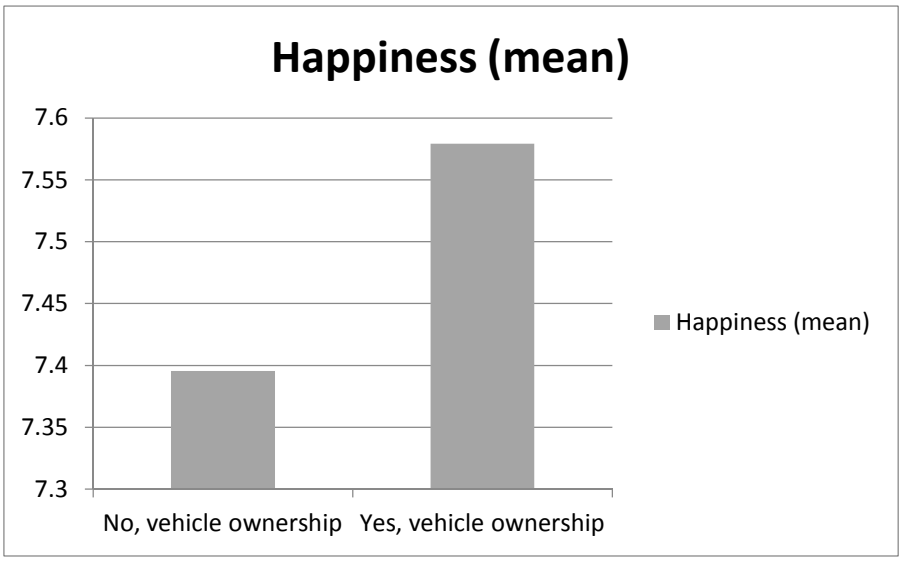
Education												
Primary School	**0.22**	**0.22**	**0.67**	1.12	1.79	5.58	6.03	26.3	**36.6**	**11.8**	**9.6**	%
Secondary School	**0.03**	**0.31**	**0.59**	1.07	1.18	4.98	8.45	28.4	**39.5**	**12.1**	**3.5**	%
College and University	**0.07**	**0.2**	**0.44**	0.86	1.14	2.81	7.71	27.7	**43.2**	**13.4**	**2.5**	%
Not (yet) completed	**0**	**1.14**	**0**	0	3.41	2.27	6.82	28.4	**35.2**	**11.4**	**11.36**	%
Origin												
Dutch background	**0.06**	**0.24**	**0.38**	0.81	1.07	3.19	7.39	27.9	**42.8**	**13.1**	**3.13**	%
1st generation – western	**0**	**0**	**1.13**	1.88	1.5	5.26	9.4	24.8	**36.8**	**12.4**	**6.77**	%
1st generation - non western	**0.29**	**0.58**	**2.05**	0.58	2.34	9.36	13.7	26.6	**29.5**	**10.2**	**4.68**	%
2nd generation – western	**0**	**0.26**	**0.52**	1.81	1.81	5.68	8.27	31.3	**36.4**	**10.9**	**3.1**	%
2nd generation - non western	**0**	**0.54**	**1.09**	3.26	2.72	7.61	12	25.5	**29.4**	**13**	**4.89**	%
Year												
2008	**0.06**	**0.17**	**0.51**	0.97	1.19	3.69	5.91	25.9	**43.7**	**14.1**	**3.86**	%
2010	**0**	**0.24**	**0.49**	0.86	1.34	4.89	7.95	27.1	**37.9**	**14.3**	**4.89**	%
2012	**0.1**	**0.21**	**0.21**	0.83	0.83	3.13	8.34	27.5	**40.3**	**13**	**5.53**	%
2014	**0.07**	**0.29**	**0.56**	0.97	1.28	3.69	8.54	28.9	**41.4**	**12**	**2.41**	%

Appendix J: Happiness Statistics According to Consumption Pattern

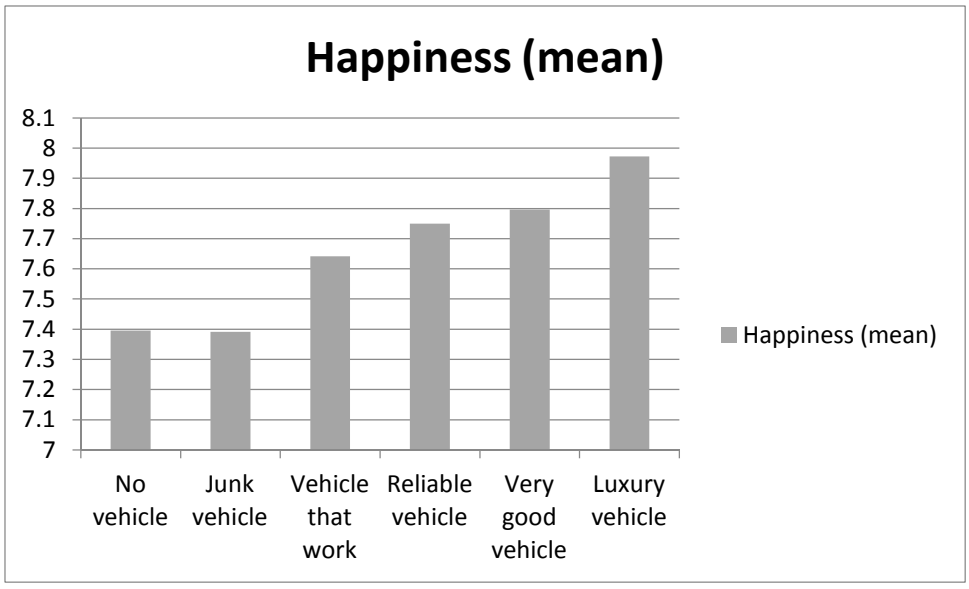
Happiness	0 (Totally unhappy)	1	2	3	4	5	6	7	8	9	10 (Totally happy)	%
Vehicle ownership												
No	**0.09**	**0.31**	**0.66**	0.94	1.8	4.9	9.18	28.6	**37.5**	**12.4**	**3.73**	%
Yes	**0.04**	**0.2**	**0.38**	0.94	0.76	2.84	6.85	27.3	**44.5**	**13.1**	**3.07**	%
Vehicle value (quartile)												
Lowest quartile	**0.09**	**0.31**	**0.65**	0.96	1.79	4.88	9.13	28.7	**37.4**	**12.4**	**3.74**	%
Next to lowest quartile	**0.2**	**0.8**	**1**	1.59	0.6	6.18	9.96	29.3	**37.9**	**9.16**	**3.39**	%
Next to highest quartile	**0.05**	**0.15**	**0.3**	0.94	0.99	2.76	8.04	29.5	**42.6**	**12.5**	**2.27**	%
Highest quartile	**0**	**0.1**	**0.31**	0.73	0.57	2.08	4.84	24.3	**48.4**	**14.9**	**3.8**	%
Vehicle category												
No vehicle	**0.09**	**0.31**	**0.65**	0.96	1.79	4.88	9.13	28.7	**37.4**	**12.4**	**3.74**	%
Junk vehicle	**0.06**	**0.41**	**0.59**	1.17	1.05	4.39	8.78	29	**41.3**	**10.7**	**2.52**	%
A vehicle that works	**0.06**	**0.11**	**0.28**	0.68	0.51	1.97	6.6	28.7	**43.8**	**14.4**	**2.93**	%
Reliable vehicle	**0**	**0**	**0.18**	1.58	0.53	1.93	4.39	22.1	**51.1**	**13.9**	**4.39**	%
Very good vehicle	**0**	**0**	**0.46**	0	1.85	1.85	4.17	19.9	**53.2**	**13.4**	**5.09**	%
Luxury vehicle	**0**	**0**	**0**	0	0	1.09	2.73	20.8	**51.4**	**21.3**	**2.73**	%



Average Happiness According to Dwelling Status



Average Happiness According to Vehicle Ownership



Average Happiness According to Vehicle Category

Appendix K: Happiness Statistics According to Big Five Personality Traits

Happiness	0 (Totally unhappy)	1	2	3	4	5	6	7	8	9	10 (Totally happy)	%
Extraversion												
Low score	**0.07**	**0.31**	**0.49**	1.11	1.33	4.41	8.76	29.9	**39.9**	**11**	**2.69**	%
High score	**0.05**	**0.05**	**0.53**	0.37	0.85	1.6	4.97	21.3	**46.2**	**18.5**	**5.56**	%
Agreeableness												
Low score	**0.06**	**0.23**	**0.47**	0.99	1.31	4.13	8.42	29.2	**40.9**	**11.5**	**2.78**	%
High score	**0.06**	**0.33**	**0.61**	0.78	0.89	2.45	6	23.4	**43**	**17.2**	**5.34**	%
Conscientiousness												
Low score	**0.06**	**0.29**	**0.5**	1.12	1.36	4.16	8.72	29	**40.8**	**11.4**	**2.65**	%
High score	**0.06**	**0.11**	**0.5**	0.33	0.72	2.34	4.96	24.1	**43.5**	**17.6**	**5.8**	%
Emotional stability												
Low score	**0.07**	**0.32**	**0.65**	1.2	1.58	4.73	9.71	31.3	**38.4**	**9.71**	**2.35**	%
High score	**0.05**	**0.05**	**0.05**	0.15	0.1	0.76	2.28	17.4	**50.5**	**22.2**	**6.44**	%
Openness to experience												
Low score	**0.08**	**0.2**	**0.53**	1	1.18	4.01	8.24	28.8	**40.8**	**11.8**	**3.36**	%
High score	**0**	**0.41**	**0.41**	0.77	1.33	2.96	6.74	25.1	**43.1**	**15.9**	**3.37**	%

Appendix L: Correlational Matrix

MATRIX	Happiness	Vehicle ownership	Vehicle value (IHS)	Vehicle category	Income (IHS)	Age	Gender	Marital Status	Dwelling	Occupation	Education
Happiness	1.000										
Vehicle ownership	0.070*** (0.000)	1.000									
Vehicle value (IHS)	0.088*** (0.000)	0.977*** (0.000)	1.000								
Vehicle category	0.111*** (0.000)	0.780*** (0.000)	0.870*** (0.000)	1.000							
Income (IHS)	0.051*** (0.000)	0.307*** (0.000)	0.311*** (0.000)	0.260*** (0.000)	1.000						
Age	0.053*** (0.000)	0.261*** (0.000)	0.271*** (0.000)	0.262*** (0.000)	0.186*** (0.000)	1.000					
Gender	-0.003 (0.781)	-0.184*** (0.000)	-0.199*** (0.000)	-0.202*** (0.000)	-0.176*** (0.000)	-0.069*** (0.000)	1.000				
Marital Status	-0.140*** (0.000)	-0.263*** (0.000)	-0.285*** (0.000)	-0.281*** (0.000)	-0.099*** (0.000)	-0.525*** (0.000)	0.070*** (0.000)	1.000			
Dwelling	-0.144*** (0.000)	-0.200*** (0.000)	-0.224*** (0.000)	-0.232*** (0.000)	-0.079*** (0.000)	-0.074*** (0.000)	0.059*** (0.000)	0.230*** (0.000)	1.000		
Occupation	-0.029*** (0.010)	-0.231*** (0.000)	-0.224*** (0.000)	-0.169*** (0.000)	-0.173*** (0.000)	0.063*** (0.000)	0.112*** (0.000)	0.054*** (0.000)	0.112*** (0.000)	1.000	
Education	0.025*** (0.026)	0.161*** (0.000)	0.164*** (0.000)	0.140*** (0.000)	0.161*** (0.000)	-0.021** (0.063)	-0.090*** (0.000)	-0.017 (0.133)	-0.106*** (0.000)	-0.314*** (0.000)	1.000
Origin	-0.076*** (0.000)	-0.102*** (0.000)	-0.104*** (0.000)	-0.095*** (0.000)	-0.077*** (0.000)	-0.110*** (0.000)	-0.007 (0.522)	0.086*** (0.000)	0.121*** (0.000)	0.032*** (0.004)	0.009 (0.439)

Extraversion	0.146*** (0.000)	0.004 (0.726)	0.011 (0.347)	0.025** (0.026)	0.019** (0.087)	-0.110*** (0.000)	-0.005 (0.66)	0.045*** (0.000)	-0.002 (0.875)	-0.043*** (0.000)	0.029*** (0.010)
Agreeableness	0.089*** (0.000)	-0.032*** (0.005)	-0.038*** (0.001)	-0.043*** (0.000)	-0.025** (0.028)	0.022* (0.053)	0.236*** (0.000)	-0.014 (0.219)	0.030*** (0.008)	0.031*** (0.006)	-0.014 (0.223)
Conscientiousness	0.122*** (0.000)	0.053*** (0.000)	0.062*** (0.000)	0.064*** (0.000)	0.044*** (0.000)	0.098*** (0.000)	0.073*** (0.000)	-0.077*** (0.000)	-0.029** (0.011)	-0.043*** (0.000)	0.011 (0.351)
Emotional stability	0.257*** (0.000)	0.087*** (0.000)	0.096*** (0.000)	0.103*** (0.000)	0.094*** (0.000)	0.092*** (0.000)	-0.120*** (0.000)	-0.076*** (0.000)	-0.070*** (0.000)	-0.058*** (0.000)	0.065*** (0.000)
Openness to experience	0.048*** (0.000)	0.006 (0.606)	0.011 (0.347)	0.018 (0.116)	0.054*** (0.000)	-0.094*** (0.000)	-0.060*** (0.000)	0.091*** (0.000)	0.014*** (0.219)	-0.077*** (0.000)	0.131*** (0.000)
Year	-0.046*** (0.000)	-0.011 (0.331)	-0.019* (0.095)	-0.034*** (0.003)	-0.012 (0.264)	0.015 (0.178)	0.007 (0.519)	0.052*** (0.000)	0.034*** (0.003)	0.029*** (0.009)	0.035*** (0.002)

MATRIX	Origin	Extraversion	Agreeableness	Conscientiousness	Emotional stability	Openness to experience	Year
Origin	1.000						
Extraversion	-0.021* (0.066)	1.000					
Agreeableness	-0.012 (0.297)	0.206*** (0.000)	1.000				
Conscientiousness	-0.012 (0.281)	0.109*** (0.000)	0.223*** (0.000)	1.000			
Emotional stability	-0.033** (0.003)	0.166*** (0.000)	0.078*** (0.000)	0.173*** (0.000)	1.000		
Openness to experience	-0.006 (0.606)	0.235*** (0.000)	0.183*** (0.000)	0.157*** (0.000)	0.147*** (0.000)	1.000	
Year	0.052*** (0.000)	-0.003 (0.803)	-0.011 (0.313)	0.001 (0.961)	0.039*** (0.001)	-0.002 (0.887)	1.000

Appendix M: Regression Table – Set A (Full Table)

N F-Test R-Squared Happiness	7,976 16.08 0.008 A1	7,976 13.81 0.008 A2	7,976 14.92 0.070 A3	7,976 35.72 0.143 A4
Vehicle ownership				
Yes	0.181*** (0.033)	0.155*** (0.034)	0.045 (0.035)	0.030 (0.034)
Income		0.009** (0.004)	0.009** (0.004)	0.005 (0.004)
Age				
25 - 39			-0.160** (0.075)	-0.154** (0.072)
40 – 54			-0.259*** (0.080)	-0.228*** (0.078)
55+			0.090 (0.080)	0.068 (0.075)
Gender				
Female			0.059* (0.034)	0.079** (0.034)
Marital Status				
Separated			-1.283*** (0.282)	-1.188*** (0.271)
Divorced			-0.567*** (0.066)	-0.570*** (0.062)
Widow or widower			-0.435*** (0.079)	-0.443*** (0.075)
Never been married			-0.300*** (0.048)	-0.259*** (0.039)
Dwelling				
Rental dwelling			-0.235*** (0.041)	-0.219*** (0.039)
Cost free dwelling			-0.461** (0.182)	-0.386** (0.175)
Occupation				
Self-employed			-0.080 (0.075)	-0.096 (0.070)
Voluntary work			-0.256** (0.109)	-0.268** (0.105)
Unemployed			-0.392*** (0.096)	-0.338*** (0.093)
Retired/unable to work			-0.268***	-0.212***

			(0.054)	(0.051)
Student and home			-0.031 (0.056)	-0.011 (0.054)
Education				
Secondary school			-0.169** (0.085)	-0.194** (0.081)
College and university			-0.065 (0.087)	-0.113 (0.083)
Not(yet) completed any education			0.189 (0.184)	0.159 (0.172)
Origin				
1st generation foreign, western background			-0.049 (0.103)	0.010 (0.098)
1st generation foreign, non-western background			-0.280*** (0.105)	-0.227** (0.103)
2nd generation foreign, western background			-0.134 (0.085)	-0.126 (0.081)
2nd generation foreign, non-western background			-0.234* (0.125)	-0.225* (0.118)
Extraversion				
High score extravert				0.290*** (0.035)
Agreeableness				
High score agreeable				0.120*** (0.037)
Conscientiousness				
High score conscientiousness				0.174*** (0.034)
Emotional stability				
High score emotional stability				0.660*** (0.031)
Openness to experience				
High score openness				-0.036 (0.037)
Year				
2010	-0.059 (0.057)	-0.061 (0.057)	0.037 (0.056)	0.045 (0.054)
2012	0.005 (0.051)	0.002 (0.051)	0.037 (0.050)	0.026 (0.049)
2014	-0.146*** (0.032)	-0.145*** (0.032)	-0.085*** (0.032)	-0.111*** (0.031)
Constant	7.484*** (0.037)	7.422*** (0.046)	7.933*** (0.114)	7.687*** (0.109)

Appendix N: Regression Table – Set B (Full Table)

N	**7,976**	**7,976**	**7,976**	**7,976**
F-Test	**20.86**	**17.17**	**15.05**	**35.85**
R-Squared	**0.010**	**0.011**	**0.070**	**0.143**
Happiness	**B1**	**B2**	**B3**	**B4**
Vehicle value	0.024***	0.022***	0.009**	0.007*
	(0.003)	(0.003)	(0.003)	(0.004)
Income		0.008*	0.008**	0.004
		(0.004)	(0.004)	(0.004)
Age				
25 - 39			-0.170**	-0.161**
			(0.074)	(0.071)
40 – 54			-0.269***	-0.235***
			(0.079)	(0.077)
55+			0.079	0.059
			(0.078)	(0.075)
Gender				
Female			0.064*	0.083**
			(0.034)	(0.034)
Marital Status				
Separated			-1.282***	-1.118***
			(0.282)	(0.271)
Divorced			-0.563***	-0.566***
			(0.065)	(0.062)
Widow or widower			-0.431***	-0.439***
			(0.080)	(0.075)
Never been married			-0.294***	-0.254***
			(0.048)	(0.046)
Dwelling				
Rental dwelling			-0.227***	-0.213***
			(0.041)	(0.039)
Cost free dwelling			-0.456**	-0.382**
			(0.182)	(0.175)
Occupation				
Self-employed			-0.084	-0.099
			(0.075)	(0.070)
Voluntary work			-0.252**	-0.264**
			(0.109)	(0.105)
Unemployed			-0.389***	-0.336***
			(0.096)	(0.093)
Retired/unable to work			-0.266***	-0.210***
			(0.054)	(0.051)

Student and home			-0.025 (0.056)	-0.007 (0.054)
Education				
Secondary school			-0.172** (0.085)	-0.197** (0.081)
College and university			-0.071 (0.087)	-0.117 (0.083)
Not(yet) completed any education			0.188 (0.184)	0.159 (0.172)
Origin				
1st generation foreign, western background			-0.047 (0.103)	0.011 (0.098)
1st generation foreign, non-western background			-0.272*** (0.105)	-0.221*** (0.103)
2nd generation foreign, western background			-0.133 (0.085)	-0.126 (0.081)
2nd generation foreign, non-western background			-0.232* (0.125)	-0.224* (0.118)
Extraversion				
High score extravert				0.289*** (0.035)
Agreeableness				
High score agreeable				0.121*** (0.037)
Conscientiousness				
High score conscientiousness				0.173*** (0.034)
Emotional stability				
High score emotional stability				0.659*** (0.031)
Openness to experience				
High score openness				-0.036 (0.037)
Year				
2010	-0.053 (0.057)	-0.055 (0.057)	0.036 (0.056)	0.045 (0.054)
2012	0.005 (0.051)	0.002 (0.051)	0.035 (0.050)	0.025 (0.049)
2014	-0.142*** (0.032)	-0.142*** (0.032)	-0.084*** (0.032)	-0.110*** (0.032)
Constant	7.458*** (0.037)	7.409*** (0.045)	7.921*** (0.114)	7.678*** (0.109)

Appendix O: Regression Table – Set C (Full Table)

N F-Test R-Squared Happiness	7,976 18.91 0.016 C1	7,976 17.01 0.017 C2	7,976 14.32 0.074 C3	7,976 32.82 0.145 C4
Vehicle category				
Junk vehicle	-0.004	-0.025	-0.066	-0.053
	(0.042)	(0.044)	(0.044)	(0.042)
A vehicle that works	0.244***	0.220***	0.105***	0.073*
	(0.039)	(0.040)	(0.041)	(0.039)
Reliable vehicle	0.342***	0.316***	0.149**	0.099*
	(0.059)	(0.059)	(0.059)	(0.056)
Very good vehicle	0.388***	0.361***	0.174**	0.116
	(0.084)	(0.084)	(0.085)	(0.080)
Luxury vehicle	0.576***	0.554***	0.359***	0.311***
	(0.073)	(0.073)	(0.077)	(0.072)
Income		0.008**	0.009**	0.005
		(0.004)	(0.004)	(0.004)
Age				
25-39			-0.159**	-0.153**
			(0.075)	(0.072)
40-54			-0.266***	-0.233***
			(0.079)	(0.077)
55+			0.076	0.057
			(0.078)	(0.075)
Gender				
Female			0.072**	0.087***
			(0.034)	(0.034)
Marital status				
Separated			-1.290***	-1.193***
			(0.281)	(0.270)
Divorced			-0.547***	-0.554***
			(0.065)	(0.062)
Widow or widower			-0.419***	-0.430***
			(0.080)	(0.075)

Never been married			-0.289***	-0.251***
			(0.048)	(0.046)
Dwelling				
Rental dwelling			-0.213***	-0.203***
			(0.041)	(0.039)
Cost-free dwelling			-0.439**	-0.370**
			(0.181)	(0.175)
Occupation				
Self-employed			-0.096	-0.108
			(0.075)	(0.070)
Voluntary work			-0.254**	-0.267**
			(0.110)	(0.105)
Unemployed			-0.395***	-0.340***
			(0.095)	(0.093)
Retired/unable to work			-0.273***	-0.216***
			(0.054)	(0.051)
Student and home			-0.033	-0.013
			(0.056)	(0.054)
Education				
Secondary school			-0.172**	-0.195**
			(0.085)	(0.081)
College and university			-0.071	-0.117
			(0.087)	(0.083)
Not(yet) completed any education			0.182	0.155
			(0.184)	(0.172)
Origin				
1st generation foreign, western background			-0.056	0.003
			(0.102)	(0.098)
1st generation foreign, non-western background			-0.269**	-0.220**
			(0.105)	(0.103)
2nd generation foreign, western background			-0.127	-0.121
			(0.085)	(0.081)
2nd generation foreign, non-			-0.243*	-0.232**

western background				
			(0.125)	(0.118)
Extraversion				
High score extraversion				0.285***
				(0.035)
Agreeableness				
High score agreeableness				0.125***
				(0.037)
Conscientiousness				
High score conscientiousness				0.169***
				(0.034)
Emotional stability				
High score emotional stability				0.656***
				(0.031)
Openness to experience				
High score openness				-0.038
				(0.037)
Year				
2010	-0.040	-0.043	0.044	0.051
	(0.057)	(0.057)	(0.056)	(0.054)
2012	0.014	0.011	0.041	0.030
	(0.051)	(0.051)	(0.050)	(0.049)
2014	-0.131***	-0.131***	-0.077**	-0.105***
	(0.032)	(0.032)	(0.032)	(0.031)
Constant	7.472***	7.417***	7.917***	7.677***
	(0.037)	(0.045)	(0.114)	(0.109)

Appendix P: Regression Table – Set D (Full Table)

N F-Test R-Squared Happiness	7,976 34.68 0.143 D1	7,976 34.73 0.143 D2	7,976 34.67 0.143 D3	7,976 34.71 0.143 D4	7,976 34.64 0.143 D5	7,976 31.09 0.144 D6
Vehicle ownership						
Yes	0.024	0.062*	0.057	0.051	0.026	0.077*
	(0.038)	(0.038)	(0.038)	(0.039)	(0.038)	(0.046)
Income	0.005	0.005	0.005	0.005	0.005	0.005
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Age						
25 - 39	-0.154**	-0.153**	-0.159**	-0.157**	-0.154**	-0.162**
	(0.072)	(0.072)	(0.072)	(0.072)	(0.072)	(0.072)
40 - 54	-0.228***	-0.228***	-0.233***	-0.231***	-0.228***	-0.238***
	(0.077)	(0.077)	(0.077)	(0.077)	(0.077)	(0.077)
55+	0.068	0.069	0.061	0.065	0.068	0.058
	(0.075)	(0.075)	(0.075)	(0.075)	(0.075)	(0.075)
Gender						
Female	0.079**	0.080**	0.079**	0.078**	0.079**	0.079**
	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)
Marital Status						
Separated	-1.188***	-1.188***	-1.187***	-1.188***	-1.188***	-1.187***
	(0.271)	(0.270)	(0.271)	(0.271)	(0.271)	(0.271)
Divorced	-0.570***	-0.571***	-0.571***	-0.569***	-0.570***	-0.572***
	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)
Widow or widower	-0.443***	-0.442***	-0.444***	-0.444***	-0.443***	-0.444***
	(0.075)	(0.075)	(0.075)	(0.075)	(0.075)	(0.075)
Never been married	-0.258***	-0.258***	-0.259***	-0.259***	-0.259***	-0.257***
	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)
Dwelling						
Rental dwelling	-0.219***	-0.219***	-0.220***	-0.218***	-0.219***	-0.219***
	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)

Cost free dwelling	-0.386**	-0.387**	-0.384**	-0.384**	-0.385**	-0.380**
	(0.175)	(0.176)	(0.175)	(0.175)	(0.175)	(0.176)
Occupation						
Self-employed	-0.096	-0.095	-0.096	-0.095	-0.096	-0.094
	(0.070)	(0.070)	(0.070)	(0.070)	(0.070)	(0.070)
Voluntary work	-0.268**	-0.268**	-0.265**	-0.264**	-0.268**	-0.264**
	(0.105)	(0.105)	(0.105)	(0.105)	(0.105)	(0.105)
Unemployed	-0.338***	-0.337***	-0.335***	-0.337***	-0.338***	-0.334***
	(0.093)	(0.093)	(0.093)	(0.093)	(0.093)	(0.093)
Retired/unable to work	-0.211***	-0.214***	-0.211***	-0.211***	-0.212***	-0.212***
	(0.051)	(0.051)	(0.051)	(0.051)	(0.051)	(0.051)
Student and home	-0.011	-0.01	-0.01	-0.011	-0.011	-0.008
	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)
Education						
Secondary school	-0.194**	-0.195**	-0.194**	-0.194**	-0.193**	-0.195**
	(0.081)	(0.081)	(0.081)	(0.081)	(0.081)	(0.081)
College and university	-0.113	-0.114	-0.115	-0.113	-0.112	-0.115
	(0.083)	(0.083)	(0.083)	(0.083)	(0.083)	(0.083)
Not(yet) completed any education	0.160	0.160	0.159	0.160	0.159	0.162
	(0.172)	(0.172)	(0.172)	(0.172)	(0.172)	(0.172)
Origin						
1st generation foreign, western background	0.009	0.012	0.008	0.01	0.01	0.011
	(0.098)	(0.098)	(0.098)	(0.098)	(0.098)	(0.098)
1st generation foreign, non-western background	-0.228**	-0.225**	-0.226**	-0.226**	-0.228**	-0.225**
	(0.103)	(0.103)	(0.103)	(0.103)	(0.103)	(0.102)
2nd generation foreign, western background	-0.126	-0.125	-0.125	-0.126	-0.126	-0.123
	(0.081)	(0.081)	(0.081)	(0.081)	(0.081)	(0.081)
2nd generation foreign, non-western background	-0.225*	-0.227*	-0.224*	-0.223*	-0.226*	-0.227*
	(0.118)	(0.118)	(0.118)	(0.118)	(0.118)	(0.118)

Extraversion						
High score extravert	0.278***	0.291***	0.290***	0.289***	0.290***	0.255***
	(0.055)	(0.035)	(0.035)	(0.035)	(0.035)	(0.057)
Agreeableness						
High score agreeable	0.120***	0.195***	0.119***	0.120***	0.120***	0.193***
	(0.037)	(0.056)	(0.037)	(0.037)	(0.037)	(0.057)
Conscientiousness						
High score conscientiousness	0.174***	0.174***	0.246***	0.173***	0.174***	0.227***
	(0.034)	(0.034)	(0.058)	(0.034)	(0.034)	(0.058)
Emotional stability						
High score emotional stability	0.660***	0.660***	0.659***	0.715***	0.660***	0.710***
	(0.031)	(0.031)	(0.031)	(0.049)	(0.031)	(0.051)
Openness to experience						
High score openness	-0.036	-0.037	-0.037	-0.036	-0.042	-0.065
	(0.037)	(0.037)	(0.037)	(0.037)	(0.057)	(0.059)
Interaction						
Own vehicle & high score extraversion	0.022					0.062
	(0.065)					(0.069)
Own vehicle & high score agreeableness		-0.140**				-0.136*
		(0.069)				(0.072)
Own vehicle & high score conscientiousness			-0.119*			-0.088
			(0.069)			(0.071)
Own vehicle & high score emotional stability				-0.09		-0.081
				(0.059)		(0.062)
Own vehicle & high score openness to experience					0.011	0.047
					(0.068)	(0.073)
Year						
2010	0.045	0.044	0.046	0.045	0.045	0.046

	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)
2012	0.026	0.026	0.026	0.026	0.026	0.026
	(0.049)	(0.049)	(0.049)	(0.049)	(0.049)	(0.049)
2014	-0.111***	-0.110***	-0.109***	-0.111***	-0.111***	-0.108***
	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)
Constant	7.689***	7.669***	7.678***	7.679***	7.688***	7.669***
	(0.110)	(0.109)	(0.109)	(0.109)	(0.110)	(0.110)

Appendix Q: Regression Table – Set E (Full Table)

N F-Test R-Squared Happiness	7,976 34.86 0.143 E1	7,976 34.85 0.144 E2	7,976 34.81 0.143 E3	7,976 34.87 0.144 E4	7,976 34.76 0.143 E5	7,976 31.27 0.144 E6
Vehicle value	0.006	0.010***	0.010**	0.010**	0.007*	0.013***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)
Income	0.004	0.004	0.004	0.004	0.004	0.004
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Age						
25 - 39	-0.162**	-0.161**	-0.167**	-0.166**	-0.161**	-0.171**
	(0.072)	(0.072)	(0.072)	(0.072)	(0.072)	(0.072)
40 - 54	-0.236***	-0.236***	-0.241***	-0.240***	-0.235***	-0.246***
	(0.077)	(0.077)	(0.077)	(0.077)	(0.077)	(0.077)
55+	0.059	0.06	0.052	0.055	0.06	0.049
	(0.075)	(0.075)	(0.075)	(0.075)	(0.075)	(0.075)
Gender						
Female	0.083**	0.084**	0.082**	0.083**	0.083**	0.084**
	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)
Marital Status						
Separated	-1.188***	-1.189***	-1.187***	-1.187***	-1.187***	-1.187***
	(0.271)	(0.270)	(0.271)	(0.272)	(0.271)	(0.272)
Divorced	-0.566***	-0.568***	-0.567***	-0.566***	-0.566***	-0.568***
	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)
Widow or widower	-0.439***	-0.439***	-0.440***	-0.442***	-0.439***	-0.441***
	(0.075)	(0.075)	(0.075)	(0.075)	(0.075)	(0.075)
Never been married	-0.254***	-0.253***	-0.254***	-0.254***	-0.254***	-0.253***
	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)
Dwelling						
Rental dwelling	-0.213***	-0.213***	-0.213***	-0.211***	-0.213***	-0.212***
	(0.039)	-0.039	(0.039)	(0.039)	(0.039)	(0.039)
Cost free dwelling	-0.382**	-0.383**	-0.380**	-0.378**	-0.384**	-0.377**

	(0.175)	(0.176)	(0.175)	(0.175)	(0.175)	(0.176)
Occupation						
Self-employed	-0.099	-0.099	-0.099	-0.098	-0.099	-0.097
	(0.070)	(0.070)	(0.070)	(0.070)	(0.070)	(0.070)
Voluntary work	-0.264**	-0.266**	-0.262**	-0.260**	-0.264**	-0.260**
	(0.105)	(0.105)	(0.104)	(0.105)	(0.105)	(0.105)
Unemployed	-0.336***	-0.335***	-0.333***	-0.334***	-0.336***	-0.331***
	(0.093)	(0.093)	(0.093)	(0.093)	(0.093)	(0.093)
Retired/unable to work	-0.210***	-0.213***	-0.210***	-0.210***	-0.210***	-0.211***
	(0.051)	(0.051)	(0.051)	(0.051)	(0.051)	(0.051)
Student and home	-0.007	-0.006	-0.006	-0.007	-0.007	-0.005
	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)
Education						
Secondary school	-0.197**	-0.198**	-0.197**	-0.197**	-0.197**	-0.199**
	(0.081)	(0.081)	(0.081)	(0.081)	(0.081)	(0.081)
College and university	-0.117	-0.119	-0.119	-0.118	-0.117	-0.120
	(0.083)	(0.083)	(0.083)	(0.083)	(0.083)	(0.083)
Not(yet) completed any education	0.16	0.161	0.16	0.161	0.16	0.164
	(0.172)	(0.172)	(0.172)	(0.172)	(0.172)	(0.172)
Origin						
1st generation foreign, western background	0.011	0.013	0.009	0.012	0.011	0.013
	(0.098)	(0.098)	(0.098)	(0.098)	(0.098)	(0.098)
1st generation foreign, non-western background	-0.221**	-0.219**	-0.220**	-0.219**	-0.221**	-0.218**
	(0.103)	(0.103)	(0.103)	(0.103)	(0.103)	(0.102)
2nd generation foreign, western background	-0.126	-0.124	-0.124	-0.126	-0.126	-0.123
	(0.081)	(0.081)	(0.081)	(0.081)	(0.081)	(0.081)
2nd generation foreign, non-western background	-0.224*	-0.226*	-0.224*	-0.221*	-0.223*	-0.224*
	(0.118)	(0.118)	(0.118)	(0.118)	(0.118)	(0.118)

Extraversion						
High score extravert	0.279***	0.290***	0.289***	0.288***	0.289***	0.251***
	(0.054)	(0.035)	(0.035)	(0.035)	(0.035)	(0.056)
Agreeableness						
High score agreeable	0.121***	0.194***	0.119***	0.121***	0.120***	0.189***
	(0.037)	(0.055)	(0.037)	(0.037)	(0.037)	(0.057)
Conscientiousness						
High score conscientiousness	0.173***	0.173***	0.239***	0.172***	0.173***	0.215***
	(0.034)	(0.034)	(0.057)	(0.034)	(0.034)	(0.058)
Emotional stability						
High score emotional stability	0.659***	0.660***	0.659***	0.734***	0.659***	0.728***
	(0.031)	(0.031)	(0.031)	(0.048)	(0.031)	(0.050)
Openness to experience						
High score openness	-0.035	-0.037	-0.036	-0.035	-0.021	-0.043
	(0.037)	(0.037)	(0.037)	(0.037)	(0.056)	(0.058)
Interaction						
Vehicle value & high score extraversion	0.002					0.007
	(0.007)					(0.007)
Vehicle value & high score agreeableness		-0.015**				-0.014*
		(0.007)				(0.007)
Vehicle value & high score conscientiousness			-0.012*			-0.008
			(0.007)			(0.007)
Vehicle value & high score emotional stability				-0.013**		-0.012*
				(0.006)		(0.006)
Vehicle value & high score openness to experience					-0.003	0.001
					(0.007)	(0.008)
Year						

2010	0.045	0.044	0.046	0.045	0.045	0.045
	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)
2012	0.025	0.024	0.025	0.025	0.025	0.025
	(0.049)	(0.049)	(0.049)	(0.049)	(0.049)	(0.049)
2014	-0.110***	-0.109***	-0.109***	-0.110***	-0.110***	-0.108***
	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)
Constant	7.680***	7.662***	7.670***	7.666***	7.675***	7.657***
	(0.110)	(0.109)	(0.109)	(0.110)	(0.110)	(0.110)

Appendix R: Regression Table – Set F (Full Table)

N	**7,976**	**7,976**	**7,976**	**7,976**	**7,976**	**7,976**
F-Test	**29.39**	**29.09**	**29.10**	**29.19**	**28.79**	**20.00**
R-Squared	**0.146**	**0.146**	**0.146**	**0.146**	**0.146**	**0.148**
Happiness	**F1**	**F2**	**F3**	**F4**	**F5**	**F6**
Vehicle category						
Junk vehicle	-0.063	-0.02	-0.01	-0.052	-0.079	-0.032
	(0.048)	(0.047)	(0.047)	(0.049)	(0.048)	(0.058)
A vehicle that works	0.092**	0.106**	0.104**	0.122***	0.079*	0.159***
	(0.044)	(0.044)	(0.045)	(0.047)	(0.044)	(0.055)
Reliable vehicle	0.042	0.106*	0.124*	0.145**	0.112*	0.122
	(0.067)	(0.063)	(0.067)	(0.070)	(0.063)	(0.083)
Very good vehicle	0.155*	0.142	0.114	0.122	0.190**	0.208*
	(0.094)	(0.091)	(0.099)	(0.104)	(0.090)	(0.121)
Luxury vehicle	0.296***	0.343***	0.326***	0.387***	0.337***	0.388***
	(0.080)	(0.082)	(0.086)	(0.092)	(0.085)	(0.105)
Income	0.005	0.005	0.005	0.005	0.005	0.005
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Age						
25 - 39	-0.151**	-0.152**	-0.159**	-0.156**	-0.153**	-0.159**
	(0.072)	(0.072)	(0.072)	(0.072)	(0.072)	(0.072)
40 - 54	-0.232***	-0.234***	-0.240***	-0.237***	-0.232***	-0.242***
	(0.077)	(0.077)	(0.077)	(0.077)	(0.077)	(0.077)
55+	0.061	0.058	0.05	0.054	0.059	0.052
	(0.075)	(0.075)	(0.075)	(0.075)	(0.075)	(0.075)
Gender						
Female	0.089***	0.089***	0.087**	0.088***	0.086**	0.089***
	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)
Marital Status						
Separated	-1.192***	-1.189***	-1.193***	-1.191***	-1.193***	-1.187***
	(0.272)	(0.271)	(0.271)	(0.271)	(0.271)	(0.275)
Divorced	-0.554***	-0.555***	-0.556***	-0.555***	-0.554***	-0.555***
	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)

Widow or widower	-0.434***	-0.430***	-0.431***	-0.436***	-0.431***	-0.440***
	(0.075)	(0.075)	(0.075)	(0.075)	(0.075)	(0.075)
Never been married	-0.250***	-0.250***	-0.251***	-0.250***	-0.251***	-0.247***
	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)
Dwelling						
Rental dwelling	-0.202***	-0.204***	-0.204***	-0.201***	-0.202***	-0.201***
	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)
Cost free dwelling	-0.373**	-0.372**	-0.369**	-0.366**	-0.366**	-0.365**
	(0.174)	(0.175)	(0.175)	(0.174)	(0.175)	(0.175)
Occupation						
Self-employed	-0.111	-0.109	-0.108	-0.108	-0.109	-0.109
	(0.070)	(0.070)	(0.070)	(0.070)	(0.070)	(0.070)
Voluntary work	-0.270**	-0.266**	-0.264**	-0.267**	-0.267**	-0.266**
	(0.105)	(0.105)	(0.105)	(0.105)	(0.105)	(0.105)
Unemployed	-0.341***	-0.339***	-0.338***	-0.339***	-0.339***	-0.334***
	(0.093)	(0.093)	(0.093)	(0.093)	(0.093)	(0.093)
Retired/unable to work	-0.218***	-0.217***	-0.215***	-0.215***	-0.217***	-0.219***
	(0.051)	(0.051)	(0.051)	(0.051)	(0.051)	(0.051)
Student and home	-0.012	-0.012	-0.011	-0.014	-0.013	-0.008
	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)
Education						
Secondary school	-0.195**	-0.196**	-0.196**	-0.196**	-0.197**	-0.197**
	(0.081)	(0.081)	(0.081)	(0.081)	(0.081)	(0.081)
College and university	-0.117	-0.117	-0.119	-0.117	-0.117	-0.121
	(0.083)	(0.083)	(0.083)	(0.083)	(0.083)	(0.083)
Not(yet) completed any education	0.154	0.156	0.155	0.156	0.156	0.157
	(0.172)	(0.172)	(0.172)	(0.172)	(0.172)	(0.172)
Origin						
1st generation foreign, western background	0.001	0.004	0.002	0.004	0.005	0.005
	(0.098)	(0.098)	(0.098)	(0.097)	(0.098)	(0.098)
1st generation foreign, non-western background	-0.221**	-0.219**	-0.218**	-0.218**	-0.220**	-0.217**

	(0.103)	(0.103)	(0.103)	(0.103)	(0.103)	(0.103)
2nd generation foreign, western background	-0.121	-0.12	-0.121	-0.123	-0.118	-0.119
	(0.080)	(0.081)	(0.081)	(0.081)	(0.080)	(0.080)
2nd generation foreign, non-western background	-0.235**	-0.235**	-0.230*	-0.232**	-0.234**	-0.237**
	(0.118)	(0.118)	(0.118)	(0.118)	(0.118)	(0.118)
Extraversion						
High score extravert	0.278***	0.286***	0.285***	0.285***	0.287***	0.254***
	(0.055)	(0.035)	(0.035)	(0.035)	(0.035)	(0.057)
Agreeableness						
High score agreeable	0.124***	0.191***	0.126***	0.125***	0.126***	0.183***
	(0.037)	(0.056)	(0.037)	(0.037)	(0.037)	(0.057)
Conscientiousness						
High score conscientiousness	0.168***	0.169***	0.252***	0.168***	0.168***	0.234***
	(0.034)	(0.034)	(0.057)	(0.034)	(0.034)	(0.058)
Emotional stability						
High score emotional stability	0.658***	0.656***	0.654***	0.725***	0.656***	0.718***
	(0.031)	(0.031)	(0.031)	(0.049)	(0.031)	(0.050)
Openness to experience						
High score openness	-0.037	-0.039	-0.039	-0.036	-0.041	-0.065
	(0.037)	(0.037)	(0.037)	(0.037)	(0.057)	(0.059)
Interaction						
Junk vehicle & high score extraversion	0.051					0.072
	(0.086)					(0.091)
A vehicle that works & high score extraversion	-0.076					-0.021
	(0.079)					(0.085)
Reliable vehicle & high score extraversion	0.211**					0.264**
	(0.107)					(0.114)
Very good vehicle & high score	-0.126					-0.044

extraversion						
	(0.164)					(0.175)
Luxury vehicle & high score extraversion	0.069					0.139
	(0.142)					(0.150)
Junk vehicle & high score agreeableness		-0.133				-0.125
		(0.092)				(0.098)
A vehicle that works & high score agreeableness		-0.146*				-0.121
		(0.084)				(0.087)
Reliable vehicle & high score agreeableness		-0.017				-0.041
		(0.125)				(0.129)
Very good vehicle & high score agreeableness		-0.110				-0.041
		(0.180)				(0.188)
Luxury vehicle & high score agreeableness		-0.144				-0.105
		(0.149)				(0.148)
Junk vehicle & high score conscientiousness			-0.197**			-0.190**
			(0.092)			(0.095)
A vehicle that works & high score conscientiousness			-0.126			-0.08
			(0.080)			(0.082)
Reliable vehicle & high score conscientiousness			-0.104			-0.078
			(0.111)			(0.116)
Very good vehicle & high score conscientiousness			-0.002			0.032
			(0.153)			(0.151)
Luxury vehicle & high score conscientiousness			-0.065			-0.009
			(0.148)			(0.149)

Junk vehicle & high score emotional stability				-0.008		0.002
				(0.079)		(0.082)
A vehicle that works & high score emotional stability				-0.179**		-0.158**
				(0.069)		(0.072)
Reliable vehicle & high score emotional stability				-0.163		-0.167
				(0.102)		(0.106)
Very good vehicle & high score emotional stability				-0.038		-0.046
				(0.145)		(0.142)
Luxury vehicle & high score emotional stability				-0.245*		-0.234
				(0.135)		(0.145)
Junk vehicle & high score openness to experience					0.107	0.144
					(0.087)	(0.092)
A vehicle that works & high score openness to experience					-0.026	0.04
					(0.082)	(0.088)
Reliable vehicle & high score openness to experience					-0.052	-0.06
					(0.121)	(0.135)
Very good vehicle & high score openness to experience					-0.272	-0.239
					(0.181)	(0.203)
Luxury vehicle & high score openness to experience					-0.086	-0.033
					(0.140)	(0.159)
Year						
2010	0.051	0.049	0.052	0.052	0.054	0.054

	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)
2012	0.029	0.031	0.033	0.03	0.031	0.032
	(0.049)	(0.049)	(0.049)	(0.049)	(0.049)	(0.049)
2014	-0.107***	-0.103***	-0.102***	-0.104***	-0.105***	-0.103***
	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)
Constant	7.678***	7.661***	7.665***	7.664***	7.677***	7.654***
	(0.110)	(0.110)	(0.109)	(0.110)	(0.110)	(0.110)