Egoism and Altruism in Today's Automotive Market: A Cultural Comparison of the Interaction Effect Between Eco Friendliness, Performance, and Connectedness

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Certification of Research

This is to certify that the research work embodied in this thesis entitled “Egoism and Altruism in Today’s Automotive Market: A Cultural Comparison of the Interaction Effect Between Eco Friendliness, Performance, and Connectedness” was carried out by Mr. Gregory John McLain at Ritsumeikan Asia Pacific University for fulfillment of a Masters of Business Administration in the field of Marketing and Management is the original work of the author and properly referenced.

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Keywords: Eco Friendliness, Performance, Connectedness, Automotive, Egoism, Altruism, Culture, Brand Power, U.S.A., Japan

Abstract: Egoism and altruism are two of the basic foundations of pro environmental behavior, being able to understand them and how they work in society would be a big step towards being able to implement new campaigns to increase pro environmental behavior around the world (Y. Kim, 2011). However, these two concepts are extremely complicated and vary depending on a number of factors. For example, applying these concepts to the organic cleaning products industry could be different than applying these concepts to the renewable energy sector. One way to research these concepts is to test them in different real world situations and try to apply those findings to the theories, and over time the various findings will help to lead to one general theory on egoism and altruism. This research will aim to contribute to that, through a real world application of the theories and at the same time try to discover a change of preference in a real world industry. This real world application will be in the automotive industry, focusing on eco friendly vehicles and the interaction effect of that attribute with vehicle performance and vehicle connectedness.

Research Method: A survey is used, consisting of eight different scenarios based on a 2x2x2 interaction effect between eco friendliness, performance, and connectedness. One of the eight scenarios is randomly given to a respondent. With ten respondents per scenario, a total of 81 respondents were taken from each country (Japan = 81, U.S. = 81, N = 162). The questions consisted of using a 5-point Likert scale, which were answered after the respondents read the scenario.

Findings: This study has shown interesting trends in the Japanese and U.S. automotive consumer base, and revealed an important change in Japanese society and how it relates to the U.S. The real significant difference came in the results for Japan, which showed a different priority than would be expected. As an Asian country and through the establishment of previous theories, it was deemed that Japan was an extremely collectivistic (altruistic) country with an anthropocentric value orientation, and so would favor choices that benefited society over the benefit of one's own self.

Introduction

Egoism and altruism are two of the basic foundations of pro environmental behavior, being able to understand them and how they work in society would be a big step towards being able to implement new campaigns to increase pro environmental behavior around the world (Y. Kim, 2011). However, these two concepts are extremely complicated and vary depending on a number of factors. For example, applying these concepts to the organic cleaning products industry could be different than applying these concepts to the renewable energy sector. One way to research these concepts is to test them in different real world situations and try to apply those findings to the theories, and over time the various findings will help to lead to one general theory on egoism and altruism. This research will aim to contribute to that, through a real world application of the theories and at the same time try to discover a change of preference in a real world industry. This real world application will be in the automotive industry, focusing on eco friendly vehicles and the interaction effect of that attribute with vehicle performance and vehicle connectedness.

Eco friendly vehicles are something that every auto manufacturer produces and sells, making the market saturated with many of the same types of vehicles. With every manufacturer producing eco friendly vehicles, manufacturers need to find some way to distinguish themselves from the competitors and to add a "plus factor" to their eco friendly vehicles. Many manufacturers work on distinguishing themselves from one another by competing on how eco friendly their vehicles are, mainly by trying to decrease fuel consumption, which increases eco friendliness and at the same time makes the vehicles more economical for the consumer. This can be seen in many advertisements by manufacturers, who emphasis how many kilometers the vehicle can go per liter or per tank. However, technology has come to the point of where these numbers are starting to plateau, making it more and more difficult to distinguish one manufacturer's vehicle from another manufacturer’s vehicle. This means manufacturers now need to move on to developing a "plus factor", which compliments the eco friendliness of today's vehicles. In the past, at the beginning of the eco friendly automobile era, one of the major plus factors for eco cars were ones that were eco friendly, but at the same time could still keep some of the driving performance that is usually lost when the vehicle became eco-friendlier. The majority of the time, there is an inverse relationship between driving performance and eco friendliness. As eco friendliness goes up, driving performance goes down. That means a manufacturer needed to compromise on the ratio of eco friendliness and driving performance. As time has gone on, this inverse relationship has decreased somewhat, but still is a major factor in the automotive industry. However, now with the advent of connectedness in the automobile, making automobiles smarter and more convenient in everyday life, there is a possible new plus factor which has emerged. According to a report by Wards Auto

(Sousanis, 2011), in 2010 the number of vehicles on the road passed 1 billion. Also, as more and more people live in ever growing cities, traffic and congestion have become a major factor to be tackled in the automotive industry. It could be seen, as cities grow larger and larger and more people are driving in these cities, that driving performance itself will become less of a plus factor as more people spend more time in traffic, sitting still (Detter, 2015; Taylor, 2002). So now the question is, is the plus factor that used to exist for eco friendly vehicles changing and what is it that drives this change? These factors work well with the theories of egoism and altruism and how they affect pro environmental behavior.

With creating systems or technologies meant to help the eco friendliness of a product, it is important to take into consideration the way these products will be viewed by the consumer. For instance, if a system is created to help consumers save time, money, and at the same time help the environment, the system seems like it would solve many problems. However, this system would most likely rely heavily on the cooperation of all the people using it, meaning if people "cheated" the system for their own benefit, the system would cease to function with its intended use. One of the major hurdles that must be overcome when developing a product is being able to try and predict how people will react and use the product when it is released. Companies always have their desired way to use the product thought out, but do people always use the product the way it was intended? That would be where egoism and altruism come into play, in the decisions of the people using the product. If the product was designed to work as a system with many consumers using it together, it would work perfectly if everyone used it as it was intended. However, this is usually not how things turn out, and people have a tendency to only use a product or system to their own advantage. These kinds of systems, that require the cooperation of groups of people, are the perfect environments to test theories about egoism and altruism. Of course, sometimes their advantage comes from the cooperation as a system or through the help of someone else, but usually in the end decisions are made for one's own benefit. One of the aspects of this research is to investigate how people would act when presented with a system that was designed to help the consumer to save time, money, and also to help the environment. However, this system relies on the cooperation of the consumers using it to make it run smoothly and efficiently, leading to it achieving its intended goal.

An example of self-benefit taking priority over others-benefit can be seen in the 2015 Volkswagen scandal, where Volkswagen admitted to installing "cheat devices" in about 11 million of their diesel vehicles, which allowed the vehicles to pass emissions tests in certain countries and then emit more pollutants when driven normally on the road (Hotten, 2015). This has led to a recall of all affected vehicles in the U.S. However, due to laws relating to recalls in certain states in the U.S., owners of these vehicles with the "cheat devices" are not obligated to bring in their vehicles

for Volkswagen to fix with a software update of the vehicle's ECU (Sage & Carroll, 2015). Where the self-benefit over other-benefit is taking priority is appearing is in the reluctance of these owners to bring their vehicles in to get fixed. Many owners have displayed a reluctance to bring in their vehicles because they do not want the changes to change the performance of the vehicle, both economically in fuel efficiency and in driving performance, which is the reason many of the owners bought the vehicles. They are choosing their own benefit of having a fuel efficient and fun vehicle to drive over the other benefit of helping to reduce the amount of pollutants coming out of the vehicle. This is a recent example showing the relationship between two of the aspects which are tested in this paper, egoism and altruism. From this example we can see that many of the Volkswagen owners are choosing vehicle performance (egoism) over the environmentally friendly aspect of the vehicle (altruism).

Literature Review

When you look at these two possible plus factors, driving performance and connectedness, you can see that both of them deal with satisfying the user of the vehicle. Driving performance affects only the driver directly, providing enjoy-ability. Connectedness can be split into two parts, affecting the driver directly through enjoy-ability and convenience, and also by affecting others through being more eco friendly by reducing emissions, for example through helping the driver to find parking places more efficiently or taking the most efficient driving route to a destination, which reduces driving time. Through previous research, it can be seen that environmentally friendly behavior has been well researched (Abused et al., 2014; Ando, Ohnuma, Blöbaum, Matthies, & Sugiura, 2010; McCarty & Shrum, 2001; Schwartz, 1977; Soyez, 2012; Stern, Dietz, & Kalof, 1993; Vicente-Molina, Fernández-Sáinz, & Izagirre-Olaizola, 2013). From this research it can be seen that pro environmental behavior can be broken down into three aspects, (1) the Socio-altruistic Dimension in which people believe environmental degradation might have a negative effect on humankind in general (Schwartz, 1977), (2) the Egoistic Valued Individuals in which people consider the perceived costs of a specific behavior, own self (Stern et al., 1993), and (3) the Bio-spherically Oriented Individuals in which people value nature for its own sake (Stern et al., 1993). The egoistic valued individual, who looks at pro environmental behavior as something that is financially or socially beneficial to them, for example a hybrid car, while it helps to fight global warming, also helps the owner save money on fuel costs over time, and with the costs of hybrids dropping every year, allows them to save even more money. Stern et al. (1993) found that the egoistic valued orientation is the strongest orientation, influencing people the most. The socio-altruistic dimension, which are those that believe environmental degradation might have a negative effect on humankind in general. This aspect deals with the consumer being concerned with other

peoples' welfare, but at the same time this concern for the welfare of other people and the planet also has an indirect affect on the consumer, meaning these people are not completely acting on a concern for other people. The last is the bio spherically oriented individual, who are concerned for nature for its own sake, that is to say they value nature on a higher level than themselves or others. As it can be seen from the research conducted until now on pro environmental behavior, the different kinds of people have been well documented and it can be observed many of them are driven by egoistical values and non-egoistical values (Schwartz, 1977; Soyez, 2012; Stern et al., 1993). This means we can say that pro-environmental behavior can be a mix of people wanting to satisfy their own needs, however, at the same time would also like to do good for other people and the environment around them.

These two factors can be broken down into two different kinds of personalities, (1) the psychological egoist, who only thinks of the actions that benefit themselves, and (2) the moral or rational egoist, who thinks that one ought to act in ones own self interest or a decision is rational if and only if it satisfies one's own interest (Shaver, 2015). Driving performance is purely egoistical in that it benefits the consumer, where as connectedness can be, such as pro environmental behavior, split into benefiting one's own self and benefiting others. Looking at these two plus factors will allow us to see whether consumers focus more on the aspects of a car that make it better for themselves directly, or make it better for the environment and people around them, or maybe they try and come to a balance. Knowing this will then show the connection between egoism and altruism.

Egoism

According to Ross (2011), egoism is the balancing of two concepts, altruism and hedonism (Slote, 1964). Altruism, such as many of the concepts in this paper, has had varying definitions over time and even in current research (Ross, 2011). Of the many definitions, many of them have typically had attributes that dealt with prosocial behavior, doing things for the greater good, and helping others (Grolleau, Ibanez, & Mzoughi, 2009; Ramayah, Lee, & Mohamad, 2010; Ross, 2011). Much of the literature that exists out there on pro environmental behavior and also prosocial behavior, focus predominately on altruism (Ross, 2011). Also, as marketing focuses more on the altruistic aspect of society, much of the literature is related to philanthropic causes, such as charitable donations (Varadarajan & Menon, 1988; White & Peloza, 2009). The central concept of egoism deals with prosocial behavior, which enhances the benefit of one’s self over the benefit of others (Ross, 2011). Around this central concept there are a multitude of definitions for egoism, but many of them frame egoism in terms of what an individual ought to do (Rand, 1964; Shaver, 2015). Ross (2011) states that egoism is more about self-interest as a primary motivator where an

individual, on a subconscious level, makes their moral tradeoffs, instead of the elaborate what they ought to do concept. From this reasoning, Ross proposes a different definition of egoism as follows:

> *Egoism is a motivational state where individuals make prosocial decisions to maximize their self- happiness. As a result, individuals make moral tradeoffs to engage in prosocial behaviors that are generated by both positive and negative affect. High levels of egoism – while highly correlated with altruism and hedonism – are likely to lead to patterns of reduced volumes of consumption, as well as increased consumption of ethical goods and services.* (Ross, 2011, p. 166)

This is the definition that will be applied in this paper as a basis for analysis. With there being many varying forms of the definition, it is good to make sure that a clear definition for which this paper will be analyzed is established.

Pro environmental Behavior

Pro environmental behavior is a big issue in today's world, as the importance of environmentally friendly technology and products become more important to help reduce environmental damage and global warming. Many companies spend large amounts of money on market research to determine what type of green products appeal to consumers. However, this research is not only confined to companies, and the issue has also drawn a lot of attention in the academic world, where there is much research on the affects of culture on pro environmental behavior. In the academic circle, there is much emphasis on the influence of culture on consumers' attitude and behavior on the issue of environmentally friendly product purchasing. This topic is extremely large and has had much research done in it, however, this research, as mentioned previously, has focused mainly on the cultural aspect of consumers' pro environmental behavior (Abused et al., 2014; Ando et al., 2010; Engqvist Jonsson & Nilsson, 2014; Y. Kim, 2011; Lee, Kim, Kim, & Choi, 2014; McCarty & Shrum, 2001; A. Naoi & Schooler, 1985; Schooler, 1996, 1998; Soyez, 2012). This influence of culture on pro environmental behavior is present throughout all societies, whether they are in developed or developing countries, or eastern or western countries (Ando et al., 2010; Engqvist Jonsson & Nilsson, 2014; Lee et al., 2014; Soyez, 2012; Vicente-Molina et al., 2013). However, the way in which they influence pro environmental behavior will vary in a number of ways. For instance, societies that have already developed will go through a value change based on the development of that society, as the need to purchase based off the necessity to live diminishes, and purchasing for "wants" increases (Soyez, 2012). Over time, these members of industrialized societies experience a value change, which takes them from materialism to post-materialism. Due to this, as individuals develop a better understanding of the relationship

they have with the environment, their pro environmental values change and become more important (Soyez, 2012). This means societies come to realize that humanity affects nature substantially. Out of this has come the New Environmental Paradigm (NEP), which attempts to measure this new type of emerging environmentalism. In the 1970's, Dunlap and Van Liere (1978) argued that within environmentalism, there was an implicit challenge to our views on the relationship between humans and nature. In order to conceptualize these ideas, they created the NEP, which focused on three aspects, (1) the beliefs about humanity's ability to disturb the balance of nature in the world, (2) the existence of the limits to the growth of human societies, and (3) humanity's right to rule over the rest of nature (Riley E. Dunlap, Van Liere, Mertig, & Jones, 2000).

The Anthropocentric Value Orientation/Socio-altruistic Dimension

The anthropocentric/socio-altruistic dimension is the belief that environmental degradation would have an effect on humankind in general (Gagnon Thompson & Barton, 1994). The idea believes that human beings are the central and most significant species on earth, and such, human beings take precedence over all other life forms. This means that issues involving things such as other species or the environment are viewed entirely through the human perspective. This will lead to environmental action if and only if humans think that environmental deterioration might have negative effects on humankind in general (Schwartz, 1977). This value orientation corresponds more with Asian societies, in which people tend to think more about society/humankind in general and the effects that environmental degradation can have on them (Gagnon Thompson & Barton, 1994; Schwartz, 1977; Stern et al., 1993). This was shown in two studies which compared European and Asian groups in Australia and New Zealand. In one study, Leung and Rice (2002) found that among Anglo Australians, using the The New Ecological Paradigm (NEP) scale and assessing the bio spheric dimension, the Anglo Australians rated higher than the Chinese Australians. The result was then shown again by Milfont (2006), who found that among European New Zealanders, they scored significantly higher on their bio spheric concern than Asian New Zealanders.

The Egoistic Valued Individuals

The egoistic valued orientation considers the perceived costs of a specific behavior, focusing on one's own self-interest (Stern et al., 1993). This means people choose to partake in a particular action if and only if it will benefit them in some way, either directly or indirectly. Through various studies, egoism has been found to have a negative effect on pro environmental behavior, often leading to resistance or even opposition to pro environmental behavior (Abused et al., 2014; De Groot & Steg, 2007; Y. Kim & Choi, 2005; Snelgar, 2006). According to Kim (2010), in a three country study in East Asia (Japan, China, and Korea), Japan's egoistic value ranked the

highest among the three, aligning them more closely with individualism. A study by Schooler (1998), in which many previous studies spanning a couple of decades were analyzed, showed that contrary to what is generally thought of about Japan and its "inherent" collectivism and group orientation, is actually mistaken, and egoism is actually on the rise. A number of studies on the subject have found an ever increasing similarity between the U.S. and Japan in many levels of society, ranging from home life (Bornstein, Miyake, & Tamis-LeMonda, 1985; M. Naoi & Schooler, 1990) to the work environment (A. Naoi & Schooler, 1985). These changes in Japan are taking place on the social-structural and psychological level, leading to Japan and the U.S. aligning more closely with each other in terms of individualistic and egoistic values (Schooler, 1996).

The Eco-centric Value Orientation/Bio-spherically Oriented Individuals

The eco-centric/bio spherically oriented value thinks of nature for its own sake and cares for it (Gagnon Thompson & Barton, 1994; Stern et al., 1993). The eco-centric/bio spherically orientated values seem extremely similar to anthropocentric/socio-altruistic dimension, in that they both lead to thinking about the environment, however, according to a study by Snelgar (2006), it was found that in fact eco-centric/bio-spherically and anthropocentric/socio-altruistic are distinctively different. This value orientation has been found to attribute more relevance in European societies as compared to Asian societies (Leung & Rice, 2002; Milfont et al., 2006). People with more of an eco-centric value orientation are more likely to act on their pro environmental beliefs and engage in more pro environmental behavior (Gagnon Thompson & Barton, 1994). Gagnon Thompson and Barton (1994) suggested that people with eco-centric value orientations would be more difficult to convince to conserve for self-interested reasons, such as saving money, but would work well for people with anthropocentric value orientations.

Cultural Influences

Collectivism & Individualism

When discussing the difference in pro environmentalism between countries and cultures, one of the major factors discussed are the concepts of collectivism and individualism. The papers available today say collectivist societies tend to be more on the pro environmental side, while individualistic societies are less pro environmentally minded. According to the idea of a collectivistic society, the people in the society work for the benefit of the society and do/make decisions that are beneficial for all people, not just for themselves (Hofstede, Neuijen, Ohayv, & Sanders, 1990). On the other side of this, individualistic societies are more focused on the individuals within the society and less about the society as a whole. This means people make decisions, which tend to favor the individual more than the society and the people in it (Ando,

Ohnuma, & Chang, 2007). This is related to pro environmental behavior in that making decisions to be pro environmental, the person is doing something that benefits society, leading to a safer and better future for everyone. The contrast to this is not acting pro environmentally, as it does not benefit you directly and more than likely the individual would have to go out of their way to act in that way, leading to less motivation to act in such a way.

This relationship will also be explored in this paper as the same survey was conducted in both the United States and Japan, two countries, which according to Hofstede (2001), fall on completely different ends of the individualist-collectivist scale. According to Hofstede's research, in the scale of individualism vs. collectivism, the United States has a score of 91 (high), while Japan has a score of 46 (low). Countries with high scores value more private opinions and will fulfill obligations to oneself (Hofstede, 2001). These cultures carry more of an "I" consciousness, as apprised to cultures with a low score, who carry more of a "we" consciousness. These cultures focus their priorities on relationships rather than tasks, and work to fulfill obligations to family, society, and in-crowds (Hofstede et al., 1990; Hofstede, 2001). These values carry different penalties with them, for instance, people in highly individualistic societies have the chance of losing one's self-respect if they were to make a mistake or do something wrong. They also face the chance of feeling guilty for their actions or mistakes. This is in contrast to societies with low individualistic values (collectivistic), whose penalties with loss of face for doing something that goes against society or the values/ideas of that society and in turn acquire shame from it. In theory, these look like two different things, however, thinking about the collectivist society and the penalty of losing face and acquiring shame, this is just as much individual as the penalties for the individualistic society, because when losing face in society, it affects the individual at the same time (Hofstede, 1980, 2001). As the the collectivist person is working for society, at the same time they are working for themselves, because if they work for society and people see it, they gain value in the society, which could help them in various aspects of life.

Other studies conducted seem to verify the concepts proposed by Hofstede. Many of the studies show Japanese people are highly influenced by subjective norms. For example, a study by Abrams, Ando, and Hinkle (1998), by using a comparison between British and Japanese workers and looking for a predictor for employee turnover, found that subjective norms in Japan are far more influential than they are in Britain. A more recent study by Ando, Yorifuji, Ohnuma, Mathias, and Kanbara (2015), which focused on a cross-cultural comparison of the transmission of pro environmental behavior to the next generation in Germany and Japan, found that among adults, subjective norms were only significant in Japan. A study by Ando, Ohnuma, and Chang (2007), which compared the United States and Japan on normative influences as environmentally conscious behavior, also found that the effects of subjective norms were only present in Japan and did not

have any significant effect in the U.S. There are other studies that verify these findings and enforce, through the concept of subjective norms, that Japan as a collectivist society relies heavily on an individuals' perception about their own actions (Abrams et al., 1998; Ando et al., 2010, 2007, 2015; Fujii, 2006; Soyez, 2012). However, this concept has been challenged, with research proposing that Japan has actually been moving more toward the U.S. in terms of individualistic and egoistic values (Bornstein et al., 1985; A. Naoi & Schooler, 1985; M. Naoi & Schooler, 1990; Schooler, 1996, 1998). Studies conducted over the last three decades have shown a shift in value orientations in Japan, leading to Japanese people to follow more egoistical tendencies.

Conceptualization

The foundation of pro environmental behavior, mainly egoism and altruism, which have previously been explained in various different forms, present themselves in all aspects of life and cover an extremely broad range of situations in everyone's daily lives. Due to this, conceptualizing and generalizing these ideas to practical insights are extremely difficult. For example, forms of egoism and altruism show up in almost every aspect of our lives, from small things such as deciding what to eat for a meal (i.e. buying organic vs. processed) or taking the time to help some one with directions (i.e. others' needs vs. one's own needs), to large things such as buying a house (i.e. eco friendly power usage, efficient and clean furnace, etc.). To help with trying to explain these concepts and how they fit into society and affect people, researching them in an environment where the difference between egoism and altruism can be clearly distinguished will help to separate the two and clearly test them. The environment chosen for this research is the automotive industry, specifically customers' perceptions of brand power and certain aspects of a brand that contributes to that brand power. In order to test these theories of egoism and altruism, key aspects of an automobile have been chosen as representations of the two foundations of pro environmental behavior. The first aspect is eco friendliness, which can represent both egoism and altruism as discussed earlier, however, with the majority of the eco friendly vehicles on the road today not varying much in the economical savings associated with eco friendly automobiles, the egoist aspect is removed and only the altruistic aspect remains, which is choosing a vehicle solely on its impact on the environment. The second aspect is performance, which represents pure egoism, as this aspect only benefits the driver of the vehicle directly and provides no benefit to society or other people. The third aspect is connectedness, which represents a combination of egoism and altruism. The egoism part is represented by the connected systems that only benefit the driver, such as music, internet, and SNS. The altruism aspect is represented by the connected systems that benefit society and other people, such as the navigation system and the fictional parking-spot assistance system. These systems benefit the group, because they are there to make the road system more efficient for

everyone and at the same time cut down on emissions. However, this system only works if everyone uses it correctly, which accounts for half of the reason for the extra research process that was conducted at the end of survey. This extra process was implemented to test whether the respondent was choosing connectedness for an egoistic reason or an altruistic reason. The extra research process also accomplished another task, as this research is also comparing the U.S. and Japan, and during the literature review there were conflicting theories as to whether Japan was collectivistic (i.e. more altruistic) or individualistic (i.e. more egoistic), it was conducted, using game theory, to test these conflicting theories. The test consisted of a situation in which the respondent must decide to do something that would either be for the benefit of society or for their sole benefit only. This extra research method will be discussed later in the research method section.

Hypotheses

United States

Using the theories and research discussed in the literature review and the idea the U.S. is an individualistic society, the hypotheses for the U.S. are as follows:

H1: When eco friendliness is high and performance goes from low to high, there will be a positive effect on brand power.

H2: When eco friendliness is low and performance goes from low to high, there will be a positive effect on brand power.

H3: When eco friendliness is high and connectedness goes from low to high, there will be no effect on brand power.

H4: When eco friendliness is low and connectedness goes from low to high, there will be no effect on brand power.

As the U.S. is considered an individualistic society, which denotes egoistic tendencies, it is predicted that performance will have a positive effect on brand power regardless of the level of eco friendliness. That is to say that performance has more influence on brand power than eco friendliness. Along with that, it is predicted that connectedness will not have an effect on brand power, as it leans more on the altruistic side.

Japan

For the Japan hypotheses, the opposite interactions were applied. As Japan is predominantly considered a collectivistic society, it is predicted they would have more altruistic tendencies, thus performance would have not effect on brand power, however, connectedness would.

H1: When eco friendliness is high and performance goes from low to high, there will be no effect on brand power.

H2: When eco friendliness is low and performance goes from low to high, there will be no effect on brand power.

H3: When eco friendliness is high and connectedness goes from low to high, there will be a positive effect on brand power.

H4: When eco friendliness is low and connectedness goes from low to high, there will be a positive effect on brand power.

Comparison

This prisoner's dilemma test helped to determine two things, which orientation each country is leaning towards. As discussed previously in the literature review, Japan and the U.S. are on different ends of the collectivist vs. individualist scale, making the U.S. extremely high in individualism and Japan extremely low (Hofstede et al., 1990; Hofstede, 1980, 2001). However, this concept has been challenged in some more recent studies, which say that Japan has moved more toward the U.S. in terms of individualistic and egoistic values (Bornstein et al., 1985; A. Naoi & Schooler, 1985; M. Naoi & Schooler, 1990; Schooler, 1996, 1998). This test determines how willing the respondent is to take a random parking spot despite already being assigned a spot, which will disrupt the system and cause negative effects on other people, but will give positive benefits to their own selves. If they are more willing to take the spot then they favor more their own self, where if they are less willing to take the spot then they are more conscious of the group and the consequences to other people.

H1: Japan as a collectivistic culture, decreases their willingness to take an egoistic action in a prisoner dilemma less than in the U.S.

Research Method

Method

The research for this paper consisted of first literature reviews to conceive the theoretical framework to which the data would be applied. Then a survey was created to test the hypotheses and determine the relations between the three categories, eco friendliness, product performance, and connectedness. These findings would then be applied to the concepts of egoism and altruism to try to determine a relationship. The surveys also used game theory to test peoples' willingness to either follow a system that would either help society or just help themselves. This was used to test the respondents' willingness to act in an egoistical way. This was checked through the creation of a fictional new product based on a networked navigation system that instructed people to a designated parking spot. The survey was translated into Japanese to localize it as to be able to distribute them to the general population, not just English speakers in Japan.

Survey Explanation

The surveys consisted of eight scenarios, which were determined by a 2x2x2 make up of three aspects (eco friendliness, performance, and connectedness), each having two levels (low and high). For each survey, the respondent would randomly choose a number, which corresponded to one of the eight scenarios (See Appendix 1 for surveys). The respondent would then read the scenario, after which they would be presented with seven questions, each one answered on a five-point Likert scale. These questions tested the first impression of the car, the overall performance of the car, how the car compares to other cars on the market, if the combination of features fit with one another, if the car fills the requirements they look for in a car, if they would purchase the car, and their impression of the brand. After the scenario and questions about the test aspects of the research, an additional scenario was described to them in which they would answer one question on a five-point Likert scale such as the previous seven questions. This last scenario described a hypothetical new technology for the car in which the car is equipped with a new, state-of-the-art system that is connected to a network and communicates with other cars and various other services to help you drive more efficiently, saving you time, money, and helping to reduce the emissions of your car. The scenario then went on to describe how that system works and how it will benefit the driver. It works by connecting your car with other cars, parking lots, and traffic information, thus when you are on your way to your destination, the system helps you use the most efficient route to your destination, and also helps you find a parking spot by leading you directly to the parking spot itself. This helps you to cut down on driving time usually spent looking for a parking spot and in traffic, and with the reduced driving time it also helps to reduce emissions, as you will be driving for a shorter period of time. The test for the respondents came from the last part of the scenario in which the weakness in the system is described and what happens to the system and other users of the system when someone decides to “cheat” the system. The technology was described as only working when all cars follow the in car recommender system. It then went on to tell the respondent that there is a possibility that a driver can "cheat" the system, for instance by parking in a spot that has already been assigned to another car that has not arrived there yet, which results in a higher benefit of the system for the "cheater" and the lower benefit for the honest driver. This scenario was then followed by a five-point Likert scale based question, which asked to the respondent how likely they would be to take the spot if they came upon it.

Data Collection and Sampling

Data was collected through surveying people in the United States and Japan. A total of 81 people were surveyed for each country, equaling a total of 162 respondents for this research. The surveys were created using Google Forms and distributed via a link to the survey. The scenarios

were randomly distributed to respondents, with a total of ten respondents per scenario. The link to the survey was posted on various Social Networking Sites and through personal emails. There were only two criteria set for the sampling of respondents. The first criteria for the respondent was they must be from the country in which the survey was being given, i.e., the survey done in America was taken by Americans and the survey done in Japan was done by Japanese. The second criteria specified that the respondents be over the age of 21 years old. The purpose of this criteria was to choose people who were already in the workforce making money and would be the most likely to be thinking about purchasing a car. The answers to the surveys taken online were automatically entered into spreadsheets, which were then downloaded after all the surveys were completed.

Pre-testing

After the survey had gone through several variations to craft a survey that would help to complete the objectives of the research, it went through a pre-testing phase, where the survey was conducted with three people, who were then interviewed after they completed the survey. The purpose of the interview after the survey was to determine whether the survey was conveying the concepts needed in order to collect the data for the research. Various questions about the scenarios described in the survey were asked to determine whether the survey achieved its goal of conveying three different descriptions of eco friendliness, performance, and connectedness, and could also properly convey the high and low aspects of each of the three categories. Through the first pre-testing, it was determined that the scenarios and questions that were created through the various phases before pre-testing had successfully achieved the goal of the survey and was determined that the surveys would work well to collect the data needed for research and analysis. Part way through the collection of data and during pre-analysis, as questionnaires were being analyzed as they came in, it was determined that there may be a problem with the survey and that it might be inadequately measuring one aspect of the research. To try and streamline the survey, two scenarios dealing with the connectedness of the car were combined to remove an extra step for the respondent after the initial scenario and questions. Initially during pre-testing, the conflict did not appear and seemed as if the survey was achieving its goal, however, as the number of surveys increased and more data was available, there seemed to be a problem with adequately measuring the connectedness aspect of the research. To properly evaluate whether there was an issue, some respondents were randomly chosen to take a new version of the survey, in which the previously combined scenarios about connectedness were separated into two separate parts. The respondents were then asked questions relating to the comparison of the two surveys and what they thought about the level of connectedness of the car. It was determined that the original survey, which combined the two scenarios about connectedness, but measured two different concepts, had been increasing the

perceived connectedness of the car, making it as if all scenarios had the same higher level of connectedness. With this discovery, the distribution of the original survey was stopped, and the new survey was distributed in its place. The data for the original survey was discarded for the use in this research and to avoid any bias in answers of the new survey, the new survey was not distributed to any respondents who had previously taken the original survey.

Translation

This research comprises of a comparison between the U.S. automotive consumer market and the Japanese automotive consumer market, and due to this, the survey used to collect data needed to be conducted in both English and Japanese. The survey was first created and written in English and submitted to pre-testing, after which the survey was finalized. The survey was then translated into Japanese. The Japanese translation was done by a native Japanese speaker, who is also extremely proficient in English. The use of a native Japanese speaker who is proficient in English was chosen, because as a Native Japanese speaker, they can more easily translate the nuances of the survey that were needed to be able to convey the ideas that were being researched. Due to it being translated by a native speaker, the survey did not come out sounding like something that was translated directly from English word by world, but was able to sound natural and native, conveying the ideas and thinking needed to research the Japanese consumers. This was important, because the surveys were able to convey, for example, the eco friendliness of a scenario without explicitly saying it and leading on the participants as to specifically what the research was trying to find. In addition to being able to capture all the nuances needed, the native speaker could account for any cultural differences that may affect the purpose of the survey.

Results

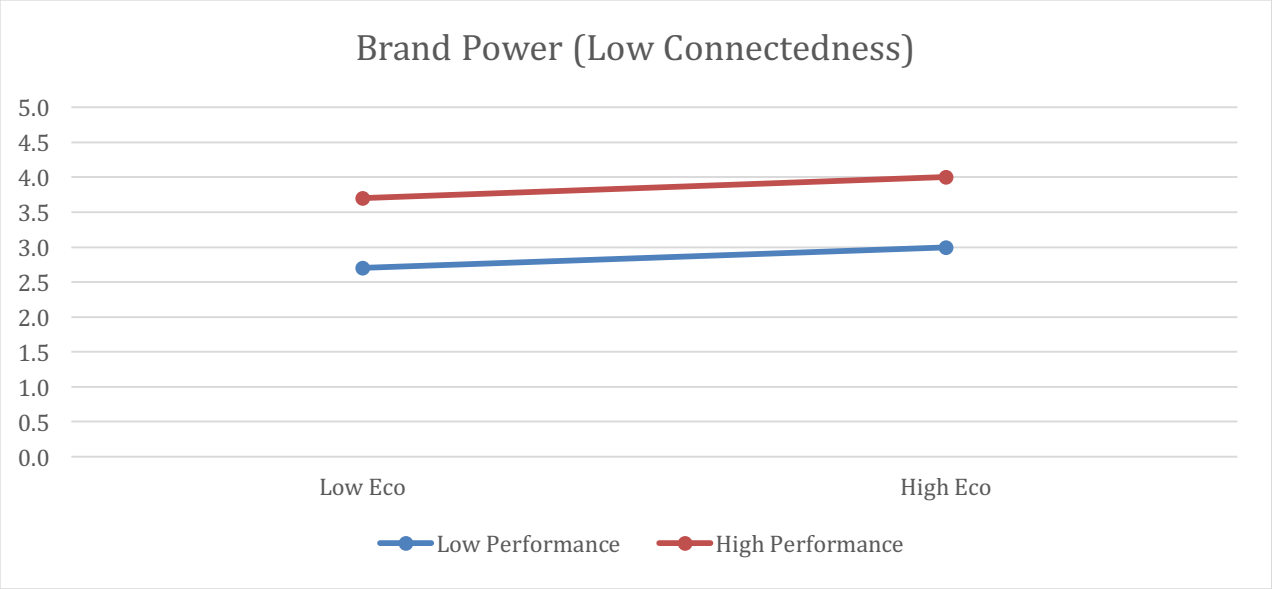
As stated earlier, this research focused mainly on three aspects relating to the interaction effect between eco friendliness, performance, and connectedness. In the following section, the results of the surveys conducted, both in Japan and the United States will be analyzed.

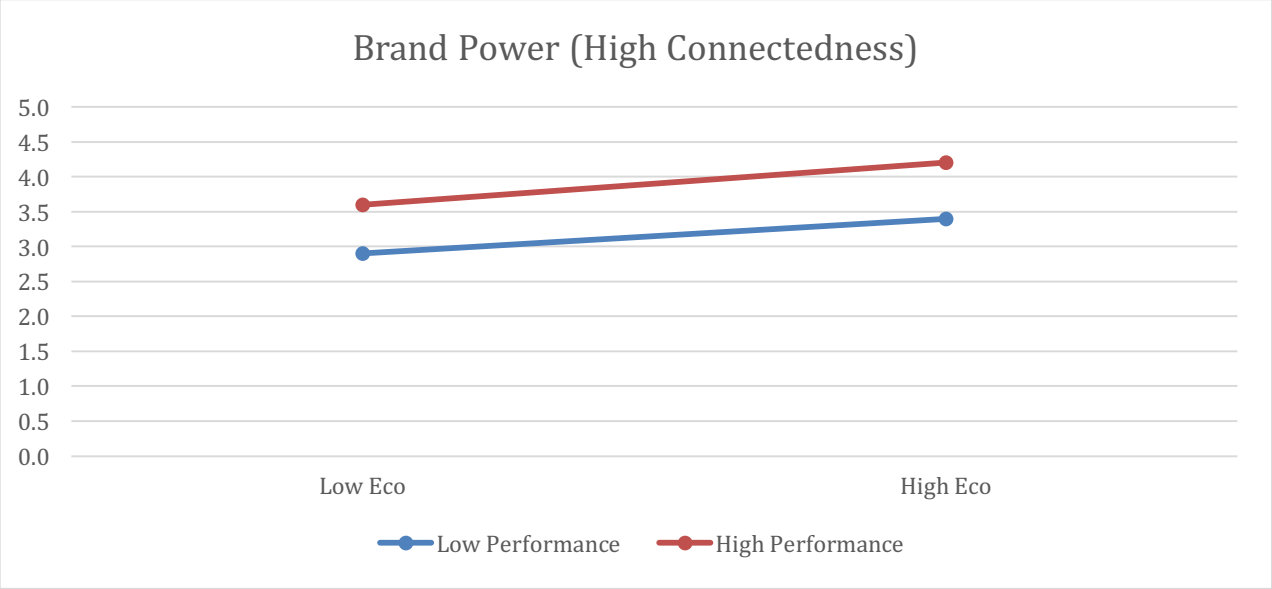
Japan

Brand Power

The results of the hypotheses for the Japan sample ended up being the opposite of what was predicted. With the research that was done before the formulation of the hypotheses, it looked as though Japan, as a collectivistic culture and holding the anthropocentric/socio-altruistic dimension, would favor less performance related aspects (egoistic aspects) of the car and more environmentally friendly aspects (altruistic aspects). Also, as Japan is well known for being an extremely eco friendly conscious society, the anthropocentric/socio-altruistic dimension, which is

associated more with Asian cultures (Gagnon Thompson & Barton, 1994; Schwartz, 1977; Stern et al., 1993).





Data: Appendix 2

H1: When eco friendliness is high and performance goes from low to high, there will be no effect on brand power.

Testing hypothesis number one, we can see that the result was opposite from the predicted outcome for the hypothesis. With High Eco Friendliness and Low Connectedness (N = 21), there was a statistically significant difference between Low and High Performance, Low Performance (M = 3, SD = 1.155) and High Performance (M = 4, SD = 0.632), $t(18.383) = -2.494$, $p \leq .05$, $p = 0.030$. Therefore, there is a difference in ratings between Low Performance and High Performance with High Eco Friendliness and Low Connectedness. We also see that with High Eco Friendliness and and this time High Connectedness (N = 20), there was a statistically significant difference between Low and High Performance, Low Performance (M = 3.4, SD = 0.843) and High

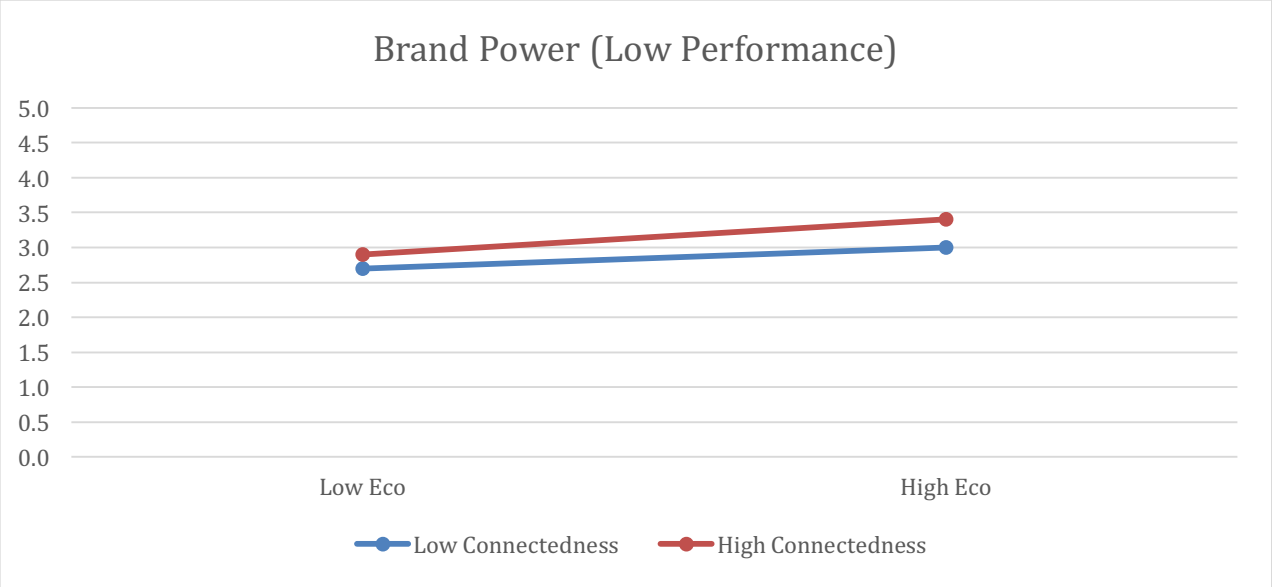
Performance (M = 4.2, SD = 0.632), t(17.252) = -2.4, p ≤ .05, p = 0.028. Therefore, there is a difference in ratings between Low Performance and High Performance with High Eco Friendliness and High Connectedness. This shows that adding performance to a high eco friendly car, regardless of connectedness, will increase brand power. These results show that performance has a positive interaction effect with eco friendliness.

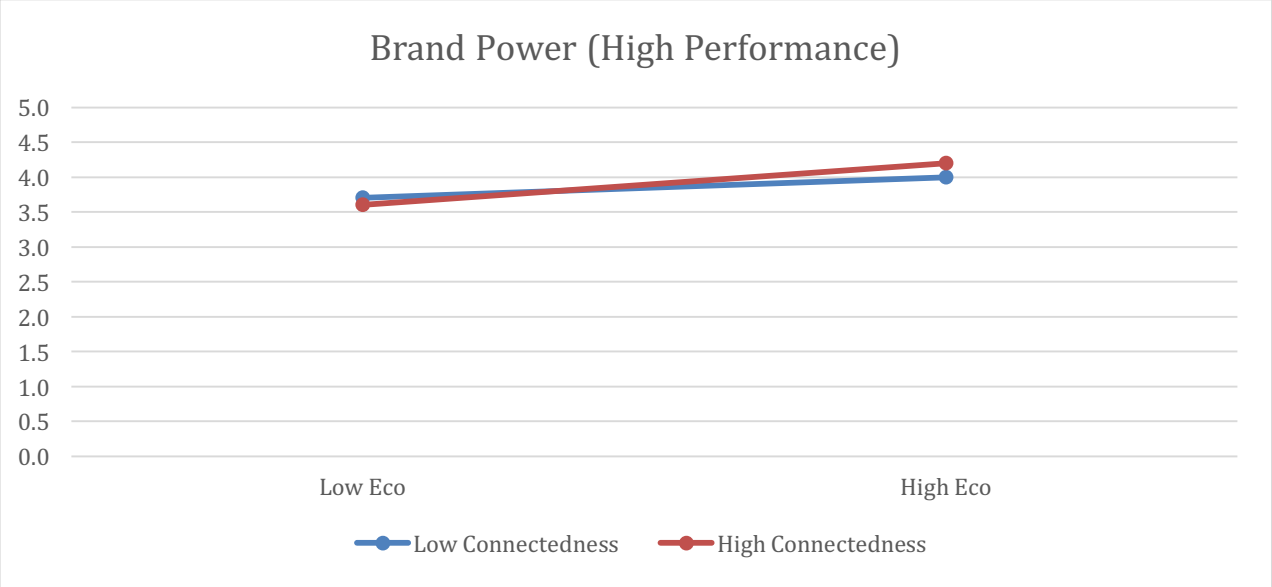
H2: When eco friendliness is low and performance goes from low to high, there will be no effect on brand power.

Although the results for hypothesis one ended with results opposite to the prediction for the hypothesis, this time the results align with them. The results for hypothesis two were correct with the prediction. With Low Eco Friendliness and Low Connectedness (N = 20), there was not a statistically significant difference between Low and High Performance, Low Performance (M = 2.7, SD = 1.252) and High Performance (M = 3.7, SD = 0.949), t(16.468) = -2.013, p ≤ .05, p = 0.060. Therefore, there is no difference in ratings between Low Performance and High Performance with Low Eco Friendliness and Low Connectedness. The results were the same with Low Eco Friendliness and High Connectedness (N = 20). There was not a statistically significant difference between Low and High Performance, Low Performance (M = 2.9, SD = 0.994) and High Performance (M = 3.6, SD = 0.966), t(17.219) = -1.597, p ≤ .05, p = 0.128. Therefore, there is no difference in ratings between Low Performance and High Performance with Low Eco Friendliness and High Connectedness. We can see that when eco friendliness is low, performance does not have an interaction effect on eco friendliness. These results, combined with the results from hypothesis one, show that performance only has an interaction effect on brand power with eco friendliness if eco friendliness is high. If the car is not eco friendly, then the adding performance will not increase the rating for brand power.

Additionally, with High Performance and Low Connectedness (N = 21), there was not a statistically significant difference between Low and High Eco Friendliness, Low Eco Friendliness (M = 3.7, SD = 0.949) and High Eco Friendliness (M = 4, SD = 0.632), t(18.991) = -0.860, p ≤ .05, p = 0.412. Therefore, there is no difference in ratings between Low Eco Friendliness and High Eco Friendliness with High Performance and Low Connectedness. Also, with High Performance and High Connectedness (N = 20), there was not a statistically significant difference between Low and High Eco Friendliness, Low Eco Friendliness (M = 3.6, SD = 0.966) and High Eco Friendliness (M = 4.2, SD = 0.632), t(17.589) = -1.643, p ≤ .05, p = 0.120. Therefore, there is no difference in ratings between Low Eco Friendliness and High Eco Friendliness with High Performance and High Connectedness. These results, when combined with the results from hypothesis one and two, show that when the car has high eco friendliness and performance is added, there is a positive effect on

brand rating. However, when high performance is already present and eco friendliness is added, there is no effect on brand power. This means that high performance on its own creates a high enough rating that when eco friendliness is added, there is no positive effect. Performance alone is enough to produce a high rating for brand power.





Data: Appendix 3

H3: When eco friendliness is high and connectedness goes from low to high, there will be a positive effect on brand power.

The results of hypothesis three, such as the results of hypothesis one shows the opposite to the predicted results for the hypothesis. With Low Performance and High Eco Friendliness (N = 20), there was not a statistically significant difference between Low and High Connectedness, Low Connectedness (M = 3, SD = 1.155) and High Connectedness (M = 3.4, SD = 0.843), t(17.725) = -0.885, $p \leq .05$, p = 0.389. Therefore, there is no difference in ratings between Low Connectedness and High Connectedness with Low Performance and High Eco Friendliness. With High

Performance and High Eco Friendliness (N = 21), there was not a statistically significant difference between Low and High Connectedness, Low Connectedness (M = 4, SD = 0.632) and High Connectedness (M = 4.2, SD = 0.632), t(18.587) = -0.724, $p \leq .05$, p = 0.478. Therefore, there is no difference in ratings between Low Connectedness and High Connectedness with High Performance and High Eco Friendliness. Connectedness had no interaction effect with eco friendliness with concern to brand power.

H4: When eco friendliness is low and connectedness goes from low to high, there will be a positive effect on brand power.

Hypothesis four resulted in the same outcome as hypothesis three, in that the results ended up being opposite to that of the prediction for the hypothesis. It was predicted that connectedness would have a positive interaction effect on brand power, even with low eco friendliness, however, that prediction was false. With Low Performance and Low Eco Friendliness (N = 20), there was not a statistically significant difference between Low and High Connectedness, Low Connectedness (M = 2.7, SD = 1.251) and High Connectedness (M = 2.9, SD = 0.994), t(17.908) = -0.396, $p \leq .05$, p = 0.697. Therefore, there is no difference in ratings between Low Connectedness and High Connectedness with Low Performance and Low Eco Friendliness. Also, with High Performance and Low Eco Friendliness (N = 20), there was not a statistically significant difference between Low and High Connectedness, Low Connectedness (M = 3.7, SD = 0.949) and High Connectedness (M = 3.6, SD = 0.966), t(17.987) = 0.234, $p \leq .05$, p = 0.818. Therefore, there is no difference in ratings between Low Connectedness and High Connectedness with High Performance and Low Eco Friendliness. From the results of hypothesis three and four, whether the car is eco friendly or not, connectedness does not add to brand power. However, if the car has high eco friendliness, then adding performance to the car will increase brand power.

By analyzing the difference in mean values for the given combinations and change from low to high of a single aspect, there is a clear pattern for the brand power in terms of performance. For brand power, going from low to high performance caused the largest increase in mean value than going from low to high of eco friendliness or low to high of connectedness. The average mean value for high performance as an initial value (meaning it was not the aspect changing from low to high) was 3.75. This value compared to the average mean for high eco friendliness, 3.35, and high connectedness, 3.20, was significantly higher. As for the change in mean value going from low to high of one of the aspects, the the largest difference of the change in means between low and high was also from performance. The average change in means going from low to high performance was 0.88. This was more than double that of going from low to high eco friendliness, which was 0.43, and was nearly five times that of going from low to high connectedness, which was 0.18. These

results reinforce the results of the significance tests that show that increasing the performance of the car caused a statistically significant change in brand rating. However, in regards to the significance in change from low to high performance, it seems that the significance was only present when eco friendliness was high. This could just be a result of an insufficient sample size, or this could indicate that while performance influences brand power the most, there is an interaction effect with eco friendliness in which if eco friendliness is already high, adding performance has a more significant effect. However, this may not be true of the reverse. This analysis also reinforces the interpretations of the results from the significance tests, which showed that performance had the greatest affect on brand power in general, followed by eco friendliness and then connectedness, which did not seem to influence brand power much at all.

First Impression

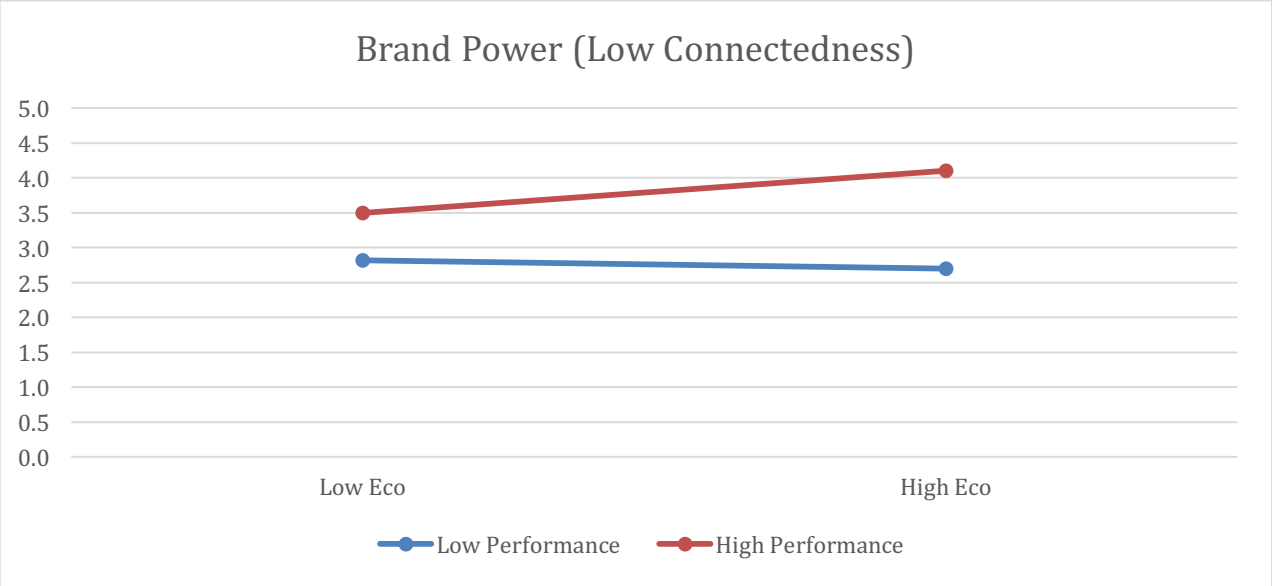
Looking at other results from the surveys also gives an informative look into the preferences of the Japanese respondents. For example, the first question of the survey asked for their immediate impression of the car. The results (Appendix 4) from this show a clear inclination for a certain aspect. Firstly, with Low Eco Friendliness and Low Connectedness (N = 20), there was a statistically significant difference between Low and High Performance, Low Performance (M = 2.8, SD = 0.919) and High Performance (M = 3.7, SD = 0.4839), $t(16.762) = -2.741$, $p \leq .05$, $p = 0.016$. Therefore, there is a difference in ratings between Low Performance and High Performance with Low Eco Friendliness and Low Connectedness. With Low Eco Friendliness and High Connectedness (N = 20), there was a statistically significant difference between Low and High Performance, Low Performance (M = 3, SD = 0.816) and High Performance (M = 3.8, SD = 0.789), $t(17.080) = -2.228$, $p \leq .05$, $p = 0.038$. Therefore, there is a difference in ratings between Low Performance and High Performance with Low Eco Friendliness and High Connectedness. From these two results, adding performance to low eco friendliness, despite the level of connectedness, increased the rating for the initial reaction of the car. The results were also the same with high eco friendliness. With High Eco Friendliness and Low Connectedness (N = 21), there was a statistically significant difference between Low and High Performance, Low Performance (M = 2.9, SD = 1.287) and High Performance (M = 3.909, SD = 0.539), $t(18.315) = -2.385$, $p \leq .05$, $p = 0.0402$. Therefore, there is a difference in ratings between Low Performance and High Performance with High Eco Friendliness and Low Connectedness. Also, with High Eco Friendliness and High Connectedness (N = 20), there was a statistically significant difference between Low and High Performance, Low Performance (M = 3.6, SD = 0.699) and High Performance (M = 4.4, SD = 0.699), $t(17.321) = -2.558$, $p \leq .05$, $p = 0.0197$. Therefore, there is a difference in ratings between Low Performance and High Performance with High Eco Friendliness and High Connectedness. The

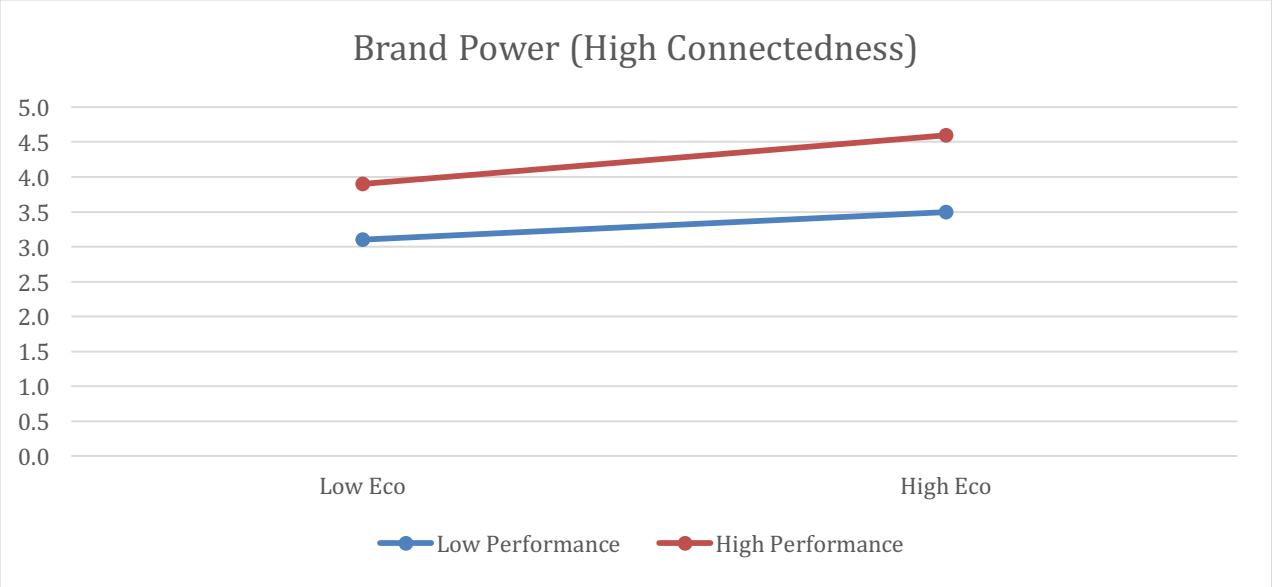
take away from these results is that when adding performance to any combinations of the other two aspects, incites a positive effect on the initial reaction of the respondents. However, when adding either eco friendliness or connectedness to any combination of the other two aspects, for example, adding eco friendliness to performance and connectedness or adding connectedness to eco friendliness, there was no statistical difference. Thus the respondents reacted to performance and performance only with their initial reaction.

United States

Brand Power

The results for the United States were fairly on track with the predictions except for hypothesis two. The U.S. is known for not being eco friendly, especially as the second largest releasers of CO_2 (Boden, Andres, & Marland, 2015). It was predicted that the U.S. would favor performance over connectedness, and that the performance would be effective on brand rating despite the level of eco friendliness. However, the results show that it was not the case and performance and eco friendliness are both needed to have a positive effect on brand power.





Data: Appendix 5

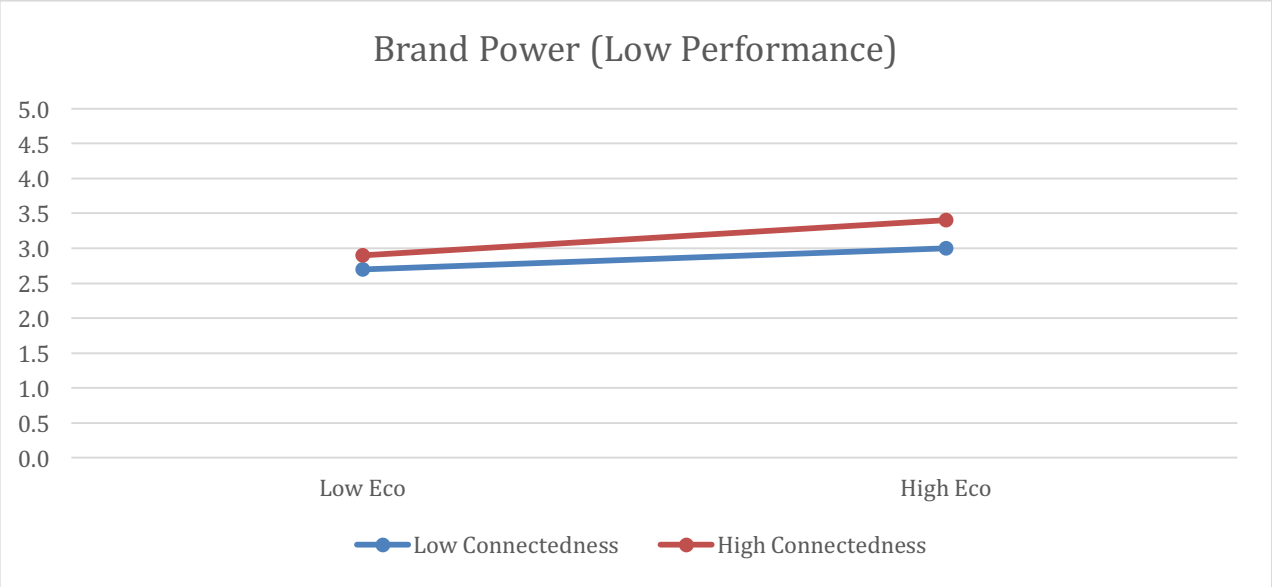
H1: When eco friendliness is high and performance goes from low to high, there will be a positive effect on brand power.

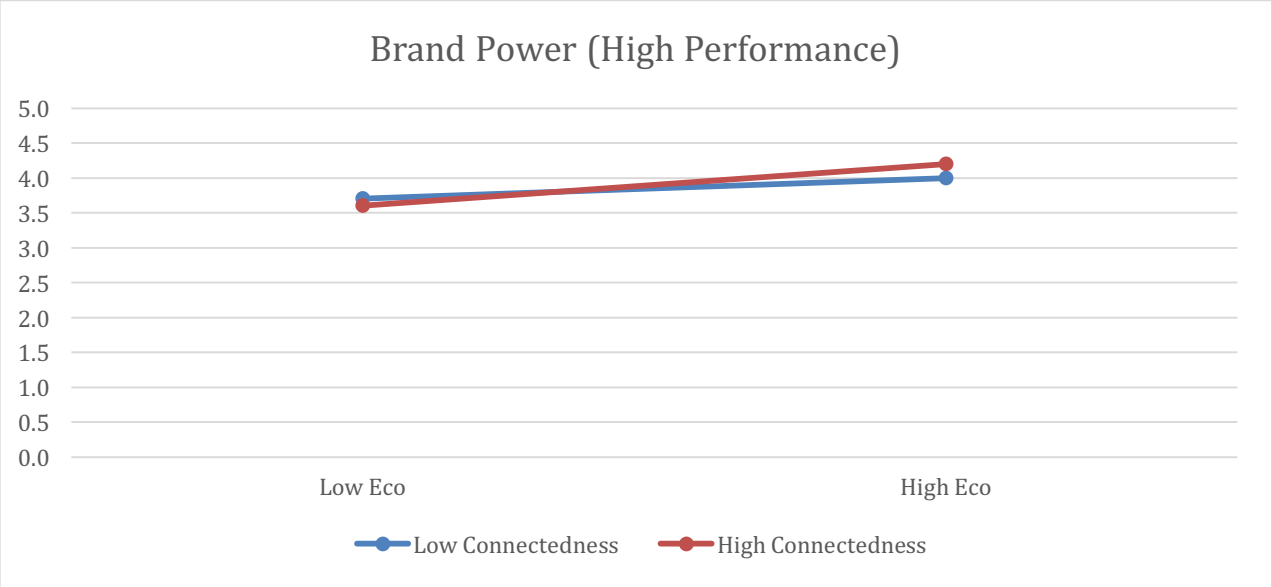
The results of the first hypothesis aligned with that of the prediction. With High Eco Friendliness and Low Connectedness (N = 20), there was a statistically significant difference between Low and High Performance, Low Performance (M = 2.7, SD = 0.823) and High Performance (M = 4.1, SD = 0.568), $t(15.570) = -4.427$, $p \leq .05$, $p = 0.000424$. Therefore, there is a difference in ratings between Low Performance and High Performance with High Eco Friendliness and Low Connectedness. Also, with High Eco Friendliness and High Connectedness (N = 20), there was a statistically significant difference between Low and High Performance, Low Performance (M = 3.5, SD = 0.972) and High Performance (M = 4.6, SD = 0.516), $t(16.805) = -3.161$, $p \leq .05$, $p = 0.007$. Therefore, there is a difference in ratings between Low Performance and High Performance with High Eco Friendliness and High Connectedness. These results show that there is an interaction effect between eco friendliness and performance, which is independent from connectedness.

H2: When eco friendliness is low and performance goes from low to high, there will be a positive effect on brand power.

The results for hypothesis two was the only hypothesis for the U.S. to not align with prediction. With Low Eco Friendliness and Low Connectedness (N = 21), there was not a statistically significant difference between Low and High Performance, Low Performance (M = 2.818, SD = 1.328) and High Performance (M = 3.5, SD = 0.527), $t(17.320) = -1.515$, $p \leq .05$, $p = 0.139$. Therefore, there is no difference in ratings between Low Performance and High Performance with Low Eco Friendliness and Low Connectedness. Also, with Low Eco Friendliness and High

Connectedness (N = 20), there was not a statistically significant difference between Low and High Performance, Low Performance (M = 3.1, SD = 0.994) and High Performance (M = 3.9, SD = 0.876), t(17.128) = -1.909, $p \leq .05$, p = 0.073. Therefore, there is no difference in ratings between Low Performance and High Performance with Low Eco Friendliness and High Connectedness. When theses results are compared to the results from hypothesis one, it can be seen that there is only an interaction effect between eco friendliness and performance in terms of brand power when they are both high. If one of the two is low, adding the other one will not add any value to brand power.





Data: Appendix 6

H3: When eco friendliness is high and connectedness goes from low to high, there will be no effect on brand power.

The third hypothesis' results also fell in line with the prediction. With Low Performance and High Eco Friendliness (N = 20), there was not a statistically significant difference between

Low and High Connectedness, Low Connectedness (M = 2.7, SD = 0.823) and High Connectedness (M = 3.5, SD = 0.972), t(16.910) = -1.986, $p \leq .05$, p = 0.063. Therefore, there is no difference in ratings between Low Connectedness and High Connectedness with Low Performance and High Eco Friendliness. Along with High Performance and High Eco Friendliness (N = 20), there was not a statistically significant difference between Low and High Connectedness, Low Connectedness (M = 4.1, SD = 0.568) and High Connectedness (M = 4.6, SD = 0.516), t(17.767) = -2.060, $p \leq .05$, p = 0.054. Therefore, there is no difference in ratings between Low Connectedness and High Connectedness with High Performance and High Eco Friendliness. These results show that connectedness has no interaction effect with eco friendliness, and in turn does not contribute to an increase in brand power when added.

H4: When eco friendliness is low and connectedness goes from low to high, there will be no effect on brand power.

Again, such as hypothesis three, hypothesis four aligned with the prediction formulated. With Low Performance and Low Eco Friendliness (N = 21), there was not a statistically significant difference between Low and High Connectedness, Low Connectedness (M = 2.818, SD = 1.328) and High Connectedness (M = 3.1, SD = 0.994), t(18.305) = -0.546, $p \leq .05$, p = 0.587. Therefore, there is no difference in ratings between Low Connectedness and High Connectedness with Low Performance and Low Eco Friendliness. Also, with High Performance and Low Eco Friendliness (N = 20), there was not a statistically significant difference between Low and High Connectedness, Low Connectedness (M = 3.5, SD = 0.527) and High Connectedness (M = 3.9, SD = 0.876), t(17.793) = -1.238, $p \leq .05$, p = 0.235. Therefore, there is no difference in ratings between Low Connectedness and High Connectedness with High Performance and Low Eco Friendliness. These results again show that connectedness does not add any value to brand power in any situation and combination of features.

By analyzing the difference in mean values for the given combinations and change from low to high of a single aspect, there is a somewhat clear pattern for the brand power in terms of performance. For brand power, going from low to high performance, similar to Japan, caused the largest increase in mean value than going from low to high of eco friendliness or low to high of connectedness. The average mean value for high performance as an initial value was 3.75. This value compared to the average mean for high eco friendliness, 3.25, and high connectedness, 3.40, was significantly higher. As for the change in mean value going from low to high of one of the aspects, the the largest difference of the change in means between low and high was also from performance. The average change in means going from low to high performance was 1.00. This was more than double that of going from low to high eco friendliness, which was 0.40, and was

exactly double that of going from low to high connectedness, which was 0.50. These results reinforce the results of the significance tests that show that increasing the performance of the car caused a statistically significant change in brand rating. Eco friendliness was the lowest of the three aspects in both the difference in mean values for the given combinations and the change from low to high of a single aspect, however, the significance tests show that there is a significant interaction effect between eco friendliness and performance. This analysis also reinforces the interpretations of the results from the significance tests, which showed that performance had the greatest affect on brand power in general and that the U.S. consumers seem to have little interest in eco friendliness.

Overall Performance

For the U.S. respondents, the results of the analysis for the data (Appendix 7) on their views of the overall performance of the vehicle showed that in their minds, performance dealt only with literal performance of the car. With Low Eco Friendliness and Low Connectedness (N = 21), there was a statistically significant difference between Low and High Performance, Low Performance (M = 2.455, SD = 1.128) and High Performance (M = 4.2, SD = 0.422), $t(14.222) = -4.600$, $p \leq .05$, $p = 0.000364$. Therefore, there is a difference in ratings between Low Performance and High Performance with Low Eco Friendliness and Low Connectedness. With Low Eco Friendliness and High Connectedness (N = 20), there was a statistically significant difference between Low and High Performance, Low Performance (M = 2.9, SD = 1.197) and High Performance (M = 4.2, SD = 0.632), $t(15.992) = -3.036$, $p \leq .05$, $p = 0.00910$. Therefore, there is a difference in ratings between Low Performance and High Performance with Low Eco Friendliness and High Connectedness. From looking at these results it could be concluded that with out eco friendliness, performance would be measured by performance alone, however, we can see that with High Eco Friendliness and Low Connectedness (N = 20), there was a statistically significant difference between Low and High Performance, Low Performance (M = 2, SD = 0.816) and High Performance (M = 4.2, SD = 0.632), $t(12.882) = -6.736$, $p \leq .05$, $p = 3.551E-06$. Therefore, there is a difference in ratings between Low Performance and High Performance with High Eco Friendliness and Low Connectedness. Also, with High Eco Friendliness and High Connectedness (N = 20), there was a statistically significant difference between Low and High Performance, Low Performance (M = 3.3, SD = 0.823) and High Performance (M = 4.7, SD = 0.483), $t(16.139) = -4.638$, $p \leq .05$, $p = 0.000348$. Therefore, there is a difference in ratings between Low Performance and High Performance with High Eco Friendliness and High Connectedness. These results show that with high eco friendliness, just like with low eco friendliness, there is a statistically significant difference with the addition of performance. This shows that to the respondents in the U.S., the performance of the car is measured predominantly in the literal performance of the car, which can

be seen because despite the level of eco friendliness, the rating for overall performance increased with all cases of increased performance.

There was one combination that was an exception that did not deal with performance as a factor for a statistically significant difference in the overall performance rating, especially since the performance aspect was low. It seems that with Low Performance and High Eco Friendliness (N = 20), there was a statistically significant difference between Low and High Connectedness, Low Connectedness (M = 2, SD = 0.816) and High Connectedness (M = 3.3, SD = 0.823), $t(14.826) = -3.545$, $p \leq .05$, $p = 0.00231$. Therefore, there is a difference in ratings between Low Connectedness and High Connectedness with Low Performance and High Eco Friendliness. This could possibly mean that a replacement for literal performance is by having a combination if high eco friendliness *and* high connectedness.

Game Theory Additional Research

The second part of the survey tested the respondents' willingness to take an egoistic action in the form of taking a free parking spot if one was found, despite the fact that it would interfere with the hypothetical system in place. Giving the respondent this choice of taking an action, which would either benefit themselves at the cost of other people's benefit or contribute to the greater good of the society, represents a prisoner's dilemma (game theory) and is a good comparison of the value orientation of the respondents.

H1: Japan as a collectivistic culture, decreases their willingness to take an egoistic action in a prisoner dilemma less than in the U.S.

The results of this prisoner dilemma (Appendix 8) show that with Japan and the U.S. (N = 162), there was a statistically significant difference between Japan's willingness to take an egoistic action than the U.S., Japan (M = 3.716, SD = 0.990) and the U.S. (M = 2.778, SD = 1.313), $t(148.131) = 5.134$, $p \leq .05$, $p = 8.764E\text{-}07$. Therefore, there is a difference in the willingness to take an egoistic action between Japan and the U.S. However, the results are actually more different then predicted. The prediction was based on the concepts of Hofstede, which stated the U.S. was ranked much higher than Japan on the individualistic scale (Hofstede, 1980, 2001). However, the results align more with the research briefly mentioned in the literature review, which stated Japan had actually moved away from their collectivistic orientation and moved closer to an individualistic orientation (Bornstein et al., 1985; A. Naoi & Schooler, 1985; M. Naoi & Schooler, 1990; Schooler, 1996, 1998). While the hypothesis shows that Japan has indeed moved toward a more egoistical orientation, they have, according to the mean values, surpassed the U.S. From comparing the mean values (Japan = 3.716, U.S. = 2.778), it is clear that Japan is far more willing to take an

egoistical action than the U.S. These mean values do not just vary a little, which would make the two countries similar, Japan rated a whole point higher than the U.S.

Conclusion and Recommendations

Discussion

This study has shown interesting trends in the Japanese and U.S. automotive consumer base, and revealed an important change in Japanese society and how it relates to the U.S. However, at the same time it has shown somewhat predictable results. The data shows that the U.S., which is known as an extremely individualistic country and egoistical, did favor less the eco friendliness aspect of the car and favor more the performance aspect of the car. The real significant difference came in the results for Japan, which showed a different priority than would be expected. As an Asian country and through the establishment of previous theories, it was deemed that Japan was an extremely collectivistic (altruistic) country with an anthropocentric value orientation, and thus would favor choices that benefited society over the benefit of one's own self. There was other research that suggested this had changed over time, however, these theories were not well established. However, the results of this study align with the none established theories, and show that Japan is actually just as individualistic and egoistical as the U.S. or maybe even more. They also, such as the U.S., show a preference for performance over eco friendliness, which according to the data, the U.S. leaned more toward eco friendliness as having a connection with brand power.

The results of the game theory test were the most significant in that they showed a clear difference from the established theories presented in the literature review. Japan showed a clear egoistical orientation, more so than the United States. This application of the prisoners' dilemma to testing two different cultural orientations has yielded interesting results. These results should be built upon with additional research and methods with which this study was not not able to apply.

Limitations

A limitation of this study was its focus only on one industry, the automotive industry. Due to that, these results alone cannot be used to generalize theories on egoism and altruism. This study would have had to span many more industries and situations. The results of this study can add to previous research, however, in terms of its original objective, the scope of it ended up being to large for one study to accomplish. Also, due to the study being conducted in the U.S. and Japan only, thus the results may be limited only to similar societies or countries. However, even that may be limited as every society and culture vary slightly. In addition, this research did not investigate into the reasons for which the respondents answered the way they did. This limits the research's

scope to only finding patterns, however, it can not answer why these patterns exists. Those answers would need to be determined through additional research.

A limitation of this research was its use of only two countries, one representing an individualistic orientation and one representing a collectivistic orientation. A future study would be better to include more samples from various societies that represent one of the two orientations. Also, with the political and cultural connectedness of the U.S. and Japan over the last six decades, there are bound to be similarities between the countries, be them known or not yet known similarities that could possibly affect the research.

Another limitation dealing with the use of surveys, especially when they are not given in person, is the validity of the information given by the respondent. There could be bias in the answers that are given or the respondent could have just quickly filled out the survey without fully understanding it. Even when a survey is given in person, these issues are still present. This is a limitation that is present in all uses of surveys, however, it is still important to mention the limitation even though it is widely known.

Future Research

Future research on this topic should first start with a much larger study, utilizing a larger sample size in order to acquire more statistically significant data. The research also needs to look at other industries and areas. This is important because as mentioned at the beginning of the study, egoism and altruism are not easily generalized for use in all situations. For theories on them to be able to evolve and encompass more aspects of society, the fields in which they are studied must also expand. This will allow researchers more data to work with so one day in the future a more generalized theory can be developed, or a more comprehensive theory, which includes variations of egoism and altruism depending on the circumstances. For there to be better understanding of the two concepts, more in-depth research is required, such as utilizing ethnographic based research methods to dwell deeper into the subject and determine the possible reasons for results.

In addition to further research on egoism and altruism as concepts, concerning the results from the game theory test, further research should be conducted on the possible cultural changes happening in Japan. If in fact Japan has moved away from what many researchers have widely accepted as a collectivist society, it could change the way research is conducted on Japan in the future. That type of shift can have a significant affect on how not just researchers approach the society, but also how companies and other organizations approach the society.

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Appendences

Appendix 1: Surveys

Scenario 01

There is a well-regarded brand of automobile that is introducing a new car at the end of the year and the following is a description of the new car.

The car's environmental friendliness exceeds that of normal eco-friendly cars, providing very low emissions and very low environmental impact, which will help with curbing global warming and damage/harm to both the environment and people.

The car is equipped with a new engine that consumes less gas, has lower maintenance costs (for instance less frequent oil changes) and is more silent than conventional engines. It has very good driving performance, making it quicker, more powerful, faster, and nimbler than other cars, giving the driver a competitive advantage on the street and a more exhilarating ride than other drivers would feel. It has the power to easily go up hills and come to a stop on a dime. The driver will not have to worry about what is put in or attached to the car, as it has enough power to handle any situation.

The car is equipped with the most advanced technologies on the market, allowing you to connect to various different services such as SNS, music, and so on, making your drive more enjoyable and comfortable. It also comes with a state-of-the-art navigation and parking-spot location assistance system. As long as everyone in the network uses it correctly and follows the rules, everyone in the system benefits and traffic and parking runs smoother.

Scenario 02

There is a well-regarded brand of automobile that is introducing a new car at the end of the year and the following is a description of the new car.

The car is conventional in terms of its environmental impact and has the same problems of conventional cars in terms of emissions and environmental impact. It contributes to global warming the same as conventional cars and contributes to the damage/harm to both the environment and people.

The car is equipped with a new engine that consumes less gas, has lower maintenance costs (for instance less frequent oil changes) and is more silent than conventional engines. It has very good driving performance, making it quicker, more powerful, faster, and nimbler than other cars, giving the driver a competitive advantage on the street and a more exhilarating ride than other drivers would feel. It has the power to easily go up hills and come to a stop on a dime. The driver will not have to worry about what is put in or attached to the car, as it has enough power to handle any situation.

The car is equipped with the most advanced technologies on the market, allowing you to connect to various different services such as SNS, music, and so on, making your drive more enjoyable and comfortable. It also comes with a state-of-the-art navigation and parking-spot location assistance system. As long as everyone in the network uses it correctly and follows the rules, everyone in the system benefits and traffic and parking runs smoother.

Scenario 03

There is a well-regarded brand of automobile that is introducing a new car at the end of the year and the following is a description of the new car.

The car is conventional in terms of its environmental impact and has the same problems of conventional cars in terms of emissions and environmental impact. It contributes to global warming the same as conventional cars and contributes to the damage/harm to both the environment and people.

The car is equipped with a new engine that consumes less gas, has lower maintenance costs (for instance less frequent oil changes) and is more silent than conventional engines. It has very good driving performance, making it quicker, more powerful, faster, and nimbler than other cars, giving the driver a competitive advantage on the street and a more exhilarating ride than other drivers would feel. It has the power to easily go up hills and come to a stop on a dime. The driver will not have to worry about what is put in or attached to the car, as it has enough power to handle any situation.

The car is average in terms of the features found inside, containing such things as a FM/AM radio, CD player, and other technology that now comes standard on all cars in the market.

Scenario 04

There is a well-regarded brand of automobile that is introducing a new car at the end of the year and the following is a description of the new car.

The car's environmental friendliness exceeds that of normal eco-friendly cars, providing very low emissions and very low environmental impact, which will help with curbing global warming and damage/harm to both the environment and people.

The car is equipped with a new engine that consumes less gas, has lower maintenance costs (for instance less frequent oil changes) and is more silent than conventional engines. It has very good driving performance, making it quicker, more powerful, faster, and nimbler than other cars, giving the driver a competitive advantage on the street and a more exhilarating ride than other drivers would feel. It has the power to easily go up hills and come to a stop on a dime. The driver will not have to worry about what is put in or attached to the car, as it has enough power to handle any situation.

The car is average in terms of the features found inside, containing such things as a FM/AM radio, CD player, and other technology that now comes standard on all cars in the market.

Scenario 05

There is a well-regarded brand of automobile that is introducing a new car at the end of the year and the following is a description of the new car.

The car's environmental friendliness exceeds that of normal eco-friendly cars, providing very low emissions and very low environmental impact, which will help with curbing global warming and damage/harm to both the environment and people.

The car is equipped with a new engine that consumes less gas, has lower maintenance costs (for instance less frequent oil changes) and is more silent than conventional engines.
However, it has less than average driving performance, making it a bit less powerful, and with lower acceleration. The driver may find it takes time to get up to speed and to come to a complete stop. Putting much stuff in the car or attaching heavy stuff to it can lead to lower performance as the car only has a limited amount of power.

The car is equipped with the most advanced technologies on the market, allowing you to connect to various different services such as SNS, music, and so on, making your drive more enjoyable and comfortable. It also comes with a state-of-the-art navigation and parking-spot location assistance system. As long as everyone in the network uses it correctly and follows the rules, everyone in the system benefits and traffic and parking runs smoother.

Scenario 06

There is a well-regarded brand of automobile that is introducing a new car at the end of the year and the following is a description of the new car.

The car's environmental friendliness exceeds that of normal eco-friendly cars, providing very low emissions and very low environmental impact, which will help with curbing global warming and damage/harm to both the environment and people.

The car is equipped with a new engine that consumes less gas, has lower maintenance costs (for instance less frequent oil changes) and is more silent than conventional engines.
However, it has less than average driving performance, making it a bit less powerful, and with lower acceleration. The driver may find it takes time to get up to speed and to come to a complete stop. Putting much stuff in the car or attaching heavy stuff to it can lead to lower performance as the car only has a limited amount of power.

The car is average in terms of the features found inside, containing such things as a FM/AM radio, CD player, and other technology that now comes standard on all cars in the market.

Scenario 07

There is a well-regarded brand of automobile that is introducing a new car at the end of the year and the following is a description of the new car.

The car is conventional in terms of its environmental impact and has the same problems of conventional cars in terms of emissions and environmental impact. It contributes to global warming the same as conventional cars and contributes to the damage/harm to both the environment and people.

The car is equipped with a new engine that consumes less gas, has lower maintenance costs (for instance less frequent oil changes) and is more silent than conventional engines.
However, it has less than average driving performance, making it a bit less powerful, and with lower acceleration. The driver may find it takes time to get up to speed and to come to a complete stop. Putting much stuff in the car or attaching heavy stuff to it can lead to lower performance as the car only has a limited amount of power.

The car is equipped with the most advanced technologies on the market, allowing you to connect to various different services such as SNS, music, and so on, making your drive more enjoyable and comfortable. It also comes with a state-of-the-art navigation and parking-spot location assistance system. As long as everyone in the network uses it correctly and follows the rules, everyone in the system benefits and traffic and parking runs smoother.

Scenario 08

There is a well-regarded brand of automobile that is introducing a new car at the end of the year and the following is a description of the new car.

The car is conventional in terms of its environmental impact and has the same problems of conventional cars in terms of emissions and environmental impact. It contributes to global warming the same as conventional cars and contributes to the damage/harm to both the environment and people.

The car is equipped with a new engine that consumes less gas, has lower maintenance costs (for instance less frequent oil changes) and is more silent than conventional engines.
However, it has less than average driving performance, making it a bit less powerful, and with lower acceleration. The driver may find it takes time to get up to speed and to come to a complete stop. Putting much stuff in the car or attaching heavy stuff to it can lead to lower performance as the car only has a limited amount of power.

The car is average in terms of the features found inside, containing such things as a FM/AM radio, CD player, and other technology that now comes standard on all cars in the market.

1. What's your first reaction to this car?

   Very Negative 1—2—3—4—5 Very Positive

2. Please rate the overall performance of the car using the description above?

   Low 1—2—3—4—5 High

3. Based on the description, how would you say this car performs compared to other cars on the market?

   Much Worse 1—2—3—4—5 Much Better

4. When thinking about the car as a whole, do you think the combination of features fit with one another?

   Contradictory 1—2—3—4—5 Perfect Fit

5. Does this car fill the requirements you look for in a car?

   Not at All 1—2—3—4—5 Completely

6. Assume you had the money available, how likely would you be to buy it?

   Not at All Likely 1—2—3—4—5 Extremely Likely

7. Given this little bit of info, how would you rate the brand?

   Very Low 1—2—3—4—5 Very High

Situation Scenario

The car is equipped with a new, state-of-the-art system, which is connected to a network and communicates with other cars and various other services to help you drive more efficiently, saving you time, money, and helping to reduce the emissions of your car. It works by connecting your car with other cars, parking lots, and traffic information, so when you are on your way to your destination, the system helps you use the most efficient route to your destination, and also helps you find a parking spot by leading you directly to the parking spot itself. This helps you to cut down on driving time usually spent looking for a parking spot and in traffic, and with the reduced driving time it also helps to reduce emissions, as you will be driving for a shorter period of time. However, the technology works only when all cars follow the in car recommender system. There is a possibility that a driver can "cheat" the system, for instance by parking in a spot that has already been assigned to another car that has not arrived there yet. This results in a higher benefit of the system for the "cheater" and the lower benefit for the honest driver.

1. How likely would you be to take a parking spot if you came across one on your way to your assigned spot?

   Not at All Likely 1—2—3—4—5 Extremely Likely

Appendix 2: Japan Brand Power Data Analysis

Low Eco	Low Connectedness	
Low -> High	Performance	
Aspect	BrandPower	
Scenario	8	3
Eco	0	0
Performance	0	1
Connect	0	0

Scenario 8	Scenario 3
4	3
2	5
2	4
2	4
1	3
5	2
2	3
4	4
2	5
3	4

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 8	*Scenario 3*	
Mean	2.7	3.7	
Variance	1.56666667	0.9	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	16.4675769		
t Stat	-2.0134682		
P(T<=t) one-tail	0.03019813		
t Critical one-tail	1.74588368		
P(T<=t) two-tail	0.06039625	Sig	
t Critical two-tail	2.1199053	No	

Low Eco	High Connectedness	
Low -> High	Performance	
Aspect	BrandPower	
Scenario	7	2
Eco	0	0
Performance	0	1
Connect	1	1

Scenario 7	Scenario 2
3	4
4	4
2	3
2	4
3	4
3	2
3	4
1	5
4	4
4	2

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 7	*Scenario 2*	
Mean	2.9	3.6	
Variance	0.98888889	0.93333333	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.2193945		
t Stat	-1.5966004		
P(T<=t) one-tail	0.06388791		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.12777581	Sig	
t Critical two-tail	2.10981558	No	

High Eco	Low Connectedness	
Low -> High	Performance	
Aspect	BrandPower	
Scenario	6	4
Eco	1	1
Performance	0	1
Connect	0	0

Scenario 6	Scenario 4
4	4
1	4
2	4
2	4
2	3
4	4
4	3
3	5
4	4
4	5
	4

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 6	*Scenario 4*	
Mean	3	4	
Variance	1.33333333	0.44444444	
Observations	10	11	
Hypothesized Mean Difference	0	0	
df	18.3833927		
t Stat	-2.4940405		
P(T<=t) one-tail	0.01483067		
t Critical one-tail	1.73406361		
P(T<=t) two-tail	0.02966135	Sig	
t Critical two-tail	2.10092204	Yes	

High Eco	High Connectedness	
Low -> High	Performance	
Aspect	BrandPower	
Scenario	5	1
Eco	1	1
Performance	0	1
Connect	1	1

Scenario 5	Scenario 1
2	4
3	4
3	4
5	5
3	5
4	4
4	4
3	5
4	3
3	4

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 5	*Scenario 1*	
Mean	3.4	4.2	
Variance	0.71111111	0.4	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.2520342		
t Stat	-2.4		
P(T<=t) one-tail	0.0141802		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.02836039	Sig	
t Critical two-tail	2.10981558	Yes	

High Performance	Low Connectedness
Low -> High	Eco

Aspect	BrandPower	
Scenario	3	4
Eco	0	1
Performance	1	1
Connect	0	0

Scenario 3	Scenario 4
3	4
5	4
4	4
4	4
3	3
2	4
3	3
4	5
5	4
4	5
	4

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 3	*Scenario 4*	
Mean	3.7	4	
Variance	0.9	0.44444444	
Observations	10	11	
Hypothesized Mean Difference	0	0	
df	18.9905007		
t Stat	-0.8603835		
P(T<=t) one-tail	0.2057829		
t Critical one-tail	1.73406361		
P(T<=t) two-tail	0.4115658		Sig
t Critical two-tail	2.10092204		No

High Performance	High Connectedness
Low -> High	Eco

Aspect	BrandPower	
Scenario	2	1
Eco	0	1
Performance	1	1
Connect	1	1

Scenario 2	Scenario 1
4	4
4	4
3	4
4	5
4	5
2	4
4	4
5	5
4	3
2	4

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 2	*Scenario 1*	
Mean	3.6	4.2	
Variance	0.93333333	0.4	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.5885853		
t Stat	-1.6431677		
P(T<=t) one-tail	0.06022661		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.12045322		Sig
t Critical two-tail	2.10981558		No

Low Performance	Low Connectedness
Low -> High	Eco

Aspect	BrandPower	
Scenario	8	6
Eco	0	1
Performance	0	0
Connect	0	0

Scenario 8	Scenario 6
4	4
2	1
2	2
2	2
1	2
5	4
2	4
4	3
2	4
3	4

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 8	*Scenario 6*	
Mean	2.7	3	
Variance	1.56666667	1.33333333	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.8038162		
t Stat	-0.557086		
P(T<=t) one-tail	0.29218698		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.58437397		Sig
t Critical two-tail	2.10981558		No

Low Performance	High Connectedness
Low -> High	Eco

Aspect	BrandPower	
Scenario	7	5
Eco	0	1
Performance	0	0
Connect	1	1

Scenario 7	Scenario 5
3	2
4	3
2	3
2	5
3	3
3	4
3	4
1	3
4	4
4	3

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 7	*Scenario 5*	
Mean	2.9	3.4	
Variance	0.98888889	0.71111111	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.5630174		
t Stat	-1.2126781		
P(T<=t) one-tail	0.12067059		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.24134118		Sig
t Critical two-tail	2.10981558		No

Appendix 3: Japan Brand Power Data Analysis [Part 2]

Low Performance	Low Eco	
Low -> High	Connectedness	
Aspect	BrandPower	
Scenario	8	7
Eco	0	0
Performance	0	0
Connect	0	1

Scenario 8	Scenario 7
4	3
2	4
2	2
2	2
1	3
5	3
2	3
4	1
2	4
3	4

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 8	*Scenario 7*	
Mean	2.7	2.9	
Variance	1.56666667	0.98888889	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.9088609		
t Stat	-0.3956283		
P(T<=t) one-tail	0.34863229		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.69726458		Sig
t Critical two-tail	2.10981558		No

High Performance	Low Eco	
Low -> High	Connectedness	
Aspect	BrandPower	
Scenario	3	2
Eco	0	0
Performance	1	1
Connect	0	1

Scenario 3	Scenario 2
3	4
5	4
4	3
4	4
3	4
2	2
3	4
4	5
5	4
4	2

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 3	*Scenario 2*	
Mean	3.7	3.6	
Variance	0.9	0.93333333	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.9865042		
t Stat	0.23354968		
P(T<=t) one-tail	0.40898547		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.81797093		Sig
t Critical two-tail	2.10981558		No

Low Performance	High Eco	
Low -> High	Connectedness	
Aspect	BrandPower	
Scenario	6	5
Eco	1	1
Performance	0	0
Connect	0	1

Scenario 6	Scenario 5
4	2
1	3
2	3
2	5
2	3
4	4
4	4
3	3
4	4
4	3

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 6	*Scenario 5*	
Mean	3	3.4	
Variance	1.33333333	0.71111111	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.7251949		
t Stat	-0.8846517		
P(T<=t) one-tail	0.19453697		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.38907395		Sig
t Critical two-tail	2.10981558		No

High Performance	High Eco	
Low -> High	Connectedness	
Aspect	BrandPower	
Scenario	4	1
Eco	1	1
Performance	1	1
Connect	0	1

Scenario 4	Scenario 1
4	4
4	4
4	4
4	5
3	5
4	4
3	4
5	5
4	3
5	4
4	

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 4	*Scenario 1*	
Mean	4	4.2	
Variance	0.44444444	0.4	
Observations	11	10	
Hypothesized Mean Difference	0	0	
df	18.5874215		
t Stat	-0.7237469		
P(T<=t) one-tail	0.23906304		
t Critical one-tail	1.73406361		
P(T<=t) two-tail	0.47812609		Sig
t Critical two-tail	2.10092204		No

Appendix 4: Japan First Impression Data Analysis

Low Eco	Low Connectedness	
Low -> High	Performance	
Aspect	FirstReaction	
Scenario	8	3
Eco	0	0
Performance	0	1
Connect	0	0

Scenario 8	Scenario 3
4	3
2	4
3	4
2	4
2	3
4	3
2	4
4	4
2	4
3	4

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 8	*Scenario 3*	
Mean	2.8	3.7	
Variance	0.84444444	0.23333333	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	16.7624542		
t Stat	-2.7414346		
P(T<=t) one-tail	0.0081170		
t Critical one-tail	1.7458837		
P(T<=t) two-tail	0.0162340	Sig	
t Critical two-tail	2.1199053	Yes	

Low Eco	High Connectedness	
Low -> High	Performance	
Aspect	FirstReaction	
Scenario	7	2
Eco	0	0
Performance	0	1
Connect	1	1

Scenario 7	Scenario 2
3	4
4	3
2	3
2	5
3	4
4	3
3	4
2	5
4	4
3	3

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 7	*Scenario 2*	
Mean	3	3.8	
Variance	0.66666667	0.62222222	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.0800349		
t Stat	-2.2283441		
P(T<=t) one-tail	0.01943107		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.03886214	Sig	
t Critical two-tail	2.10981558	Yes	

High Eco	Low Connectedness	
Low -> High	Performance	
Aspect	FirstReaction	
Scenario	6	4
Eco	1	1
Performance	0	1
Connect	0	0

Scenario 6	Scenario 4
4	4
1	4
2	4
2	4
2	3
5	4
4	3
2	5
4	4
3	4
	4

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 6	*Scenario 4*	
Mean	2.9	3.90909091	
Variance	1.65555556	0.32222222	
Observations	10	11	
Hypothesized Mean Difference	0	0	
df	18.3146982		
t Stat	-2.3854643		
P(T<=t) one-tail	0.0201344		
t Critical one-tail	1.73406361		
P(T<=t) two-tail	0.04026879	Sig	
t Critical two-tail	2.10092204	Yes	

High Eco	High Connectedness	
Low -> High	Performance	
Aspect	FirstReaction	
Scenario	5	1
Eco	1	1
Performance	0	1
Connect	1	1

Scenario 5	Scenario 1
3	4
3	4
3	4
4	5
3	5
4	5
4	4
4	5
5	3
3	5

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 5	*Scenario 1*	
Mean	3.6	4.4	
Variance	0.48888889	0.48888889	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.3208188		
t Stat	-2.5584086		
P(T<=t) one-tail	0.00987466		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.01974932	Sig	
t Critical two-tail	2.10981558	Yes	

High Performance	Low Connectedness
Low -> High	Eco

Aspect	FirstReaction	
Scenario	3	4
Eco	0	1
Performance	1	1
Connect	0	0

Scenario 3	Scenario 4
3	4
4	4
4	4
4	4
3	3
3	4
4	3
4	5
4	4
4	4
	4

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 3	*Scenario 4*	
Mean	3.7	3.90909091	
Variance	0.23333333	0.32222222	
Observations	10	11	
Hypothesized Mean Difference	0	0	
df	18.9609569		
t Stat	-0.932007		
P(T<=t) one-tail	0.18022139		
t Critical one-tail	1.73406361		
P(T<=t) two-tail	0.36044277		Sig
t Critical two-tail	2.10092204		No

High Performance	High Connectedness
Low -> High	Eco

Aspect	FirstReaction	
Scenario	2	1
Eco	0	1
Performance	1	1
Connect	1	1

Scenario 2	Scenario 1
4	4
3	4
3	4
5	5
4	5
3	5
4	4
5	5
4	3
3	5

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 2	*Scenario 1*	
Mean	3.8	4.4	
Variance	0.62222222	0.48888889	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.6265233		
t Stat	-1.8		
P(T<=t) one-tail	0.04444308		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.08888616		Sig
t Critical two-tail	2.10981558		No

Low Performance	Low Connectedness
Low -> High	Eco

Aspect	FirstReaction	
Scenario	8	6
Eco	0	1
Performance	0	0
Connect	0	0

Scenario 8	Scenario 6
4	4
2	1
3	2
2	2
2	2
4	5
2	4
4	2
2	4
3	3

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 8	*Scenario 6*	
Mean	2.8	2.9	
Variance	0.84444444	1.65555556	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.9778802		
t Stat	-0.2		
P(T<=t) one-tail	0.42197832		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.84395665		Sig
t Critical two-tail	2.10981558		No

Low Performance	High Connectedness
Low -> High	Eco

Aspect	FirstReaction	
Scenario	7	5
Eco	0	1
Performance	0	0
Connect	1	1

Scenario 7	Scenario 5
3	3
4	3
2	3
2	4
3	3
4	4
3	4
2	4
4	5
3	3

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 7	*Scenario 5*	
Mean	3	3.6	
Variance	0.66666667	0.48888889	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.4331078		
t Stat	-1.7650452		
P(T<=t) one-tail	0.04745839		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.09491678		Sig
t Critical two-tail	2.10981558		No

Appendix 5: U.S. Brand Power Data Analysis

Low Eco	Low Connectedness	
Low -> High	Performance	
Aspect	BrandPower	
Scenario	8	3
Eco	0	0
Performance	0	1
Connect	0	0

Scenario 8	Scenario 3
2	3
2	4
1	4
5	4
4	3
4	4
2	3
4	3
3	3
1	4
3	

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 8	*Scenario 3*	
Mean	2.81818182	3.5	
Variance	1.95555556	0.27777778	
Observations	11	10	
Hypothesized Mean Difference	0	0	
df	17.3204318		
t Stat	-1.5157988		
P(T<=t) one-tail	0.06969144		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.13938288		Sig
t Critical two-tail	2.10981558		No

Low Eco	High Connectedness	
Low -> High	Performance	
Aspect	BrandPower	
Scenario	7	2
Eco	0	0
Performance	0	1
Connect	1	1

Scenario 7	Scenario 2
3	5
2	4
4	3
4	5
2	3
5	4
3	4
3	5
2	3
3	3

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 7	*Scenario 2*	
Mean	3.1	3.9	
Variance	0.98888889	0.76666667	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.1280713		
t Stat	-1.9093375		
P(T<=t) one-tail	0.03627499		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.07254999		Sig
t Critical two-tail	2.10981558		No

High Eco	Low Connectedness	
Low -> High	Performance	
Aspect	BrandPower	
Scenario	6	4
Eco	1	1
Performance	0	1
Connect	0	0

Scenario 6	Scenario 4
4	4
2	4
3	4
2	4
2	3
2	4
4	5
3	5
3	4
2	4

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 6	*Scenario 4*	
Mean	2.7	4.1	
Variance	0.67777778	0.32222222	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	15.5703768		
t Stat	-4.4271887		
P(T<=t) one-tail	0.00021196		
t Critical one-tail	1.75305036		
P(T<=t) two-tail	0.00042391		Sig
t Critical two-tail	2.13144955		Yes

High Eco	High Connectedness	
Low -> High	Performance	
Aspect	BrandPower	
Scenario	5	1
Eco	1	1
Performance	0	1
Connect	1	1

Scenario 5	Scenario 1
4	5
4	5
2	4
2	4
3	5
5	4
4	4
4	5
4	5
3	5

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 5	*Scenario 1*	
Mean	3.5	4.6	
Variance	0.94444444	0.26666667	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	16.8048123		
t Stat	-3.1608267		
P(T<=t) one-tail	0.0035488		
t Critical one-tail	1.74588368		
P(T<=t) two-tail	0.00709761		Sig
t Critical two-tail	2.1199053		Yes

High Performance	Low Connectedness
Low -> High	Eco

Aspect	BrandPower	
Scenario	3	4
Eco	0	1
Performance	1	1
Connect	0	0

Scenario 3	Scenario 4
3	4
4	4
4	4
4	4
3	3
4	4
3	5
3	5
3	4
4	4

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 3	*Scenario 4*	
Mean	3.5	4.1	
Variance	0.27777778	0.32222222	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.5674394		
t Stat	-2.4494897		
P(T<=t) one-tail	0.01241592		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.02483183	Sig	
t Critical two-tail	2.10981558	Yes	

High Performance	High Connectedness
Low -> High	Eco

Aspect	BrandPower	
Scenario	2	1
Eco	0	1
Performance	1	1
Connect	1	1

Scenario 2	Scenario 1
5	5
4	5
3	4
5	4
3	5
4	4
4	4
5	5
3	5
3	5

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 2	*Scenario 1*	
Mean	3.9	4.6	
Variance	0.76666667	0.26666667	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.5308094		
t Stat	-2.1775986		
P(T<=t) one-tail	0.02314787		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.04629574	Sig	
t Critical two-tail	2.10981558	Yes	

Low Performance	Low Connectedness
Low -> High	Eco

Aspect	BrandPower	
Scenario	8	6
Eco	0	1
Performance	0	0
Connect	0	0

Scenario 8	Scenario 6
2	4
2	2
1	3
5	2
4	2
4	2
2	4
4	3
3	3
1	2
3	

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 8	*Scenario 6*	
Mean	2.81818182	2.7	
Variance	1.95555556	0.67777778	
Observations	11	10	
Hypothesized Mean Difference	0	0	
df	18.9373314		
t Stat	0.24199538		
P(T<=t) one-tail	0.40377323		
t Critical one-tail	1.73406361		
P(T<=t) two-tail	0.80754645	Sig	
t Critical two-tail	2.10092204	No	

Low Performance	High Connectedness
Low -> High	Eco

Aspect	BrandPower	
Scenario	7	5
Eco	0	1
Performance	0	0
Connect	1	1

Scenario 7	Scenario 5
3	4
2	4
4	2
4	2
2	3
5	5
3	4
3	4
2	4
3	3

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 7	*Scenario 5*	
Mean	3.1	3.5	
Variance	0.98888889	0.94444444	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.7412433		
t Stat	-0.9097177		
P(T<=t) one-tail	0.18749937		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.37499874	Sig	
t Critical two-tail	2.10981558	No	

Appendix 6: U.S. Brand Power Data Analysis [Part 2]

Low Performance	Low Eco	
Low -> High	Connectedness	
Aspect	BrandPower	
Scenario	8	7
Eco	0	0
Performance	0	0
Connect	0	1

Scenario 8	Scenario 7
2	3
2	2
1	4
5	4
4	2
4	5
2	3
4	3
3	2
1	3
3	

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 8	*Scenario 7*	
Mean	2.81818182	3.1	
Variance	1.95555556	0.98888889	
Observations	11	10	
Hypothesized Mean Difference	0	0	
df	18.3046724		
t Stat	-0.5457727		
P(T<=t) one-tail	0.29328957		
t Critical one-tail	1.73406361		
P(T<=t) two-tail	0.58657914		Sig
t Critical two-tail	2.10092204		No

High Performance	Low Eco	
Low -> High	Connectedness	
Aspect	BrandPower	
Scenario	3	2
Eco	0	0
Performance	1	1
Connect	0	1

Scenario 3	Scenario 2
3	5
4	4
4	3
4	5
3	3
4	4
3	4
3	5
3	3
4	3

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 3	*Scenario 2*	
Mean	3.5	3.9	
Variance	0.27777778	0.76666667	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.7932537		
t Stat	-1.2377055		
P(T<=t) one-tail	0.11757342		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.23514684		Sig
t Critical two-tail	2.10981558		No

Low Performance	High Eco	
Low -> High	Connectedness	
Aspect	BrandPower	
Scenario	6	5
Eco	1	1
Performance	0	0
Connect	0	1

Scenario 6	Scenario 5
4	4
2	4
3	2
2	2
2	3
2	5
4	4
3	4
3	4
2	3

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 6	*Scenario 5*	
Mean	2.7	3.5	
Variance	0.67777778	0.94444444	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	16.9103976		
t Stat	-1.9862541		
P(T<=t) one-tail	0.03143605		
t Critical one-tail	1.74588368		
P(T<=t) two-tail	0.06287211		Sig
t Critical two-tail	2.1199053		No

High Performance	High Eco	
Low -> High	Connectedness	
Aspect	BrandPower	
Scenario	4	1
Eco	1	1
Performance	1	1
Connect	0	1

Scenario 4	Scenario 1
4	5
4	5
4	4
4	4
3	5
4	4
5	4
5	5
4	5
4	5

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 4	*Scenario 1*	
Mean	4.1	4.6	
Variance	0.32222222	0.26666667	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.7668117		
t Stat	-2.0604085		
P(T<=t) one-tail	0.02712479		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.05424958		Sig
t Critical two-tail	2.10981558		No

Appendix 7: U.S. Overall Performance Data Analysis

Low Eco	Low Connectedness	
Low -> High	Performance	
Aspect	OverallPerformance	
Scenario	8	3
Eco	0	0
Performance	0	1
Connect	0	0

Scenario 8	Scenario 3
1	4
2	4
2	4
4	4
2	4
4	4
2	4
4	4
2	5
1	5
3	

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 8	*Scenario 3*	
Mean	2.45454545	4.2	
Variance	1.37777778	0.17777778	
Observations	11	10	
Hypothesized Mean Difference	0	0	
df	14.2224974		
t Stat	-4.6003437		
P(T<=t) one-tail	0.00018176		
t Critical one-tail	1.76131014		
P(T<=t) two-tail	0.00036352	Sig	
t Critical two-tail	2.14478669	Yes	

Low Eco	High Connectedness	
Low -> High	Performance	
Aspect	OverallPerformance	
Scenario	7	2
Eco	0	0
Performance	0	1
Connect	1	1

Scenario 7	Scenario 2
3	5
2	4
4	4
2	5
1	4
5	4
2	4
3	5
3	3
4	4

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 7	*Scenario 2*	
Mean	2.9	4.2	
Variance	1.43333333	0.4	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	15.9922998		
t Stat	-3.0361459		
P(T<=t) one-tail	0.00455102		
t Critical one-tail	1.75305036		
P(T<=t) two-tail	0.00910204	Sig	
t Critical two-tail	2.13144955	Yes	

High Eco	Low Connectedness	
Low -> High	Performance	
Aspect	OverallPerformance	
Scenario	6	4
Eco	1	1
Performance	0	1
Connect	0	0

Scenario 6	Scenario 4
3	4
3	4
2	5
2	4
1	3
1	4
3	4
2	5
2	4
1	5

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 6	*Scenario 4*	
Mean	2	4.2	
Variance	0.66666667	0.4	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	12.8820233		
t Stat	-6.7360968		
P(T<=t) one-tail	1.7753E-06		
t Critical one-tail	1.78228756		
P(T<=t) two-tail	3.5505E-06	Sig	
t Critical two-tail	2.17881283	Yes	

High Eco	High Connectedness	
Low -> High	Performance	
Aspect	OverallPerformance	
Scenario	5	1
Eco	1	1
Performance	0	1
Connect	1	1

Scenario 5	Scenario 1
4	5
4	5
3	5
2	4
4	5
4	4
3	4
3	5
4	5
2	5

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 5	*Scenario 1*	
Mean	3.3	4.7	
Variance	0.67777778	0.23333333	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	16.1387503		
t Stat	-4.6381241		
P(T<=t) one-tail	0.00017412		
t Critical one-tail	1.74588368		
P(T<=t) two-tail	0.00034824	Sig	
t Critical two-tail	2.1199053	Yes	

High Performance	Low Connectedness
Low -> High	Eco

Aspect	OverallPerformance	
Scenario	3	4
Eco	0	1
Performance	1	1
Connect	0	0

Scenario 3	Scenario 4
4	4
4	4
4	5
4	4
4	3
4	4
4	4
4	5
5	4
5	5

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 3	*Scenario 4*	
Mean	4.2	4.2	
Variance	0.17777778	0.4	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	18		
t Stat	0		
P(T<=t) one-tail	0.5		
t Critical one-tail	1.73406361		
P(T<=t) two-tail	1		Sig
t Critical two-tail	2.10092204		No

High Performance	High Connectedness
Low -> High	Eco

Aspect	OverallPerformance	
Scenario	2	1
Eco	0	1
Performance	1	1
Connect	1	1

Scenario 2	Scenario 1
5	5
4	5
4	5
5	4
4	5
4	4
4	4
5	5
3	5
4	5

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 2	*Scenario 1*	
Mean	4.2	4.7	
Variance	0.4	0.23333333	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.7769815		
t Stat	-1.9867985		
P(T<=t) one-tail	0.03173485		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.06346969		Sig
t Critical two-tail	2.10981558		No

Low Performance	Low Connectedness
Low -> High	Eco

Aspect	OverallPerformance	
Scenario	8	6
Eco	0	1
Performance	0	0
Connect	0	0

Scenario 8	Scenario 6
1	3
2	3
2	2
4	2
2	1
4	1
2	3
4	2
2	2
1	1
3	

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 8	*Scenario 6*	
Mean	2.45454545	2	
Variance	1.37777778	0.66666667	
Observations	11	10	
Hypothesized Mean Difference	0	0	
df	18.7991236		
t Stat	1.04786069		
P(T<=t) one-tail	0.15055413		
t Critical one-tail	1.73406361		
P(T<=t) two-tail	0.30110827		Sig
t Critical two-tail	2.10092204		No

Low Performance	High Connectedness
Low -> High	Eco

Aspect	OverallPerformance	
Scenario	7	5
Eco	0	1
Performance	0	0
Connect	1	1

Scenario 7	Scenario 5
3	4
2	4
4	3
2	2
1	4
5	4
2	3
3	3
3	4
4	2

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 7	*Scenario 5*	
Mean	2.9	3.3	
Variance	1.43333333	0.67777778	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.7076192		
t Stat	-0.8705715		
P(T<=t) one-tail	0.19844851		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.39689701		Sig
t Critical two-tail	2.10981558		No

Low Performance	Low Eco
Low -> High	Connectedness

Aspect	OverallPerformance	
Scenario	8	7
Eco	0	0
Performance	0	0
Connect	0	1

Scenario 8	Scenario 7
1	3
2	2
2	4
4	2
2	1
4	5
2	2
4	3
2	3
1	4
3	

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 8	*Scenario 7*	
Mean	2.45454545	2.9	
Variance	1.37777778	1.43333333	
Observations	11	10	
Hypothesized Mean Difference	0	0	
df	17.760345		
t Stat	-0.8778407		
P(T<=t) one-tail	0.19632607		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.39265213		Sig
t Critical two-tail	2.10981558		No

High Performance	Low Eco
Low -> High	Connectedness

Aspect	OverallPerformance	
Scenario	3	2
Eco	0	0
Performance	1	1
Connect	0	1

Scenario 3	Scenario 2
4	5
4	4
4	4
4	5
4	4
4	4
4	4
4	5
5	3
5	4

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 3	*Scenario 2*	
Mean	4.2	4.2	
Variance	0.17777778	0.4	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	18		
t Stat	0		
P(T<=t) one-tail	0.5		
t Critical one-tail	1.73406361		
P(T<=t) two-tail	1		Sig
t Critical two-tail	2.10092204		No

Low Performance	High Eco
Low -> High	Connectedness

Aspect	OverallPerformance	
Scenario	6	5
Eco	1	1
Performance	0	0
Connect	0	1

Scenario 6	Scenario 5
3	4
3	4
2	3
2	2
1	4
1	4
3	3
2	3
2	4
1	2

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 6	*Scenario 5*	
Mean	2	3.3	
Variance	0.66666667	0.67777778	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	14.8256019		
t Stat	-3.5454545		
P(T<=t) one-tail	0.00115569		
t Critical one-tail	1.76131014		
P(T<=t) two-tail	0.00231137		Sig
t Critical two-tail	2.14478669		Yes

High Performance	High Eco
Low -> High	Connectedness

Aspect	OverallPerformance	
Scenario	4	1
Eco	1	1
Performance	1	1
Connect	0	1

Scenario 4	Scenario 1
4	5
4	5
5	5
4	4
3	5
4	4
4	4
5	5
4	5
5	5

t-Test: Two-Sample Assuming Unequal Variances

	Scenario 4	*Scenario 1*	
Mean	4.2	4.7	
Variance	0.4	0.23333333	
Observations	10	10	
Hypothesized Mean Difference	0	0	
df	17.7769815		
t Stat	-1.9867985		
P(T<=t) one-tail	0.03173485		
t Critical one-tail	1.73960673		
P(T<=t) two-tail	0.06346969		Sig
t Critical two-tail	2.10981558		No

Appendix 8: Game Theory Data Analysis

Game Theory	
Japan	US
4	2
1	1
4	2
4	3
2	1
4	2
5	1
4	4
4	2
4	3
5	2
5	2
3	1
4	2
4	4
4	2
3	3
3	2
3	3
4	2
5	1
4	2
4	4
3	5
4	3
1	1
4	3
4	2
3	4
2	3
3	3
4	3
3	3
4	3
4	2
2	5
5	3
3	5
4	3
2	1
5	5
5	5
4	3
4	2
3	1
4	2
5	4
2	2
4	5
2	5
4	4
4	1
4	1
5	5
4	2
5	4
4	4
5	3
4	5
3	5
4	2
4	5
4	1
4	3
5	3
4	5
4	2
2	4
5	1
2	4
4	2
4	3
3	1
3	3
3	1
4	2
5	1
5	4
3	2
5	2
2	3

t-Test: Two-Sample Assuming Unequal Variances

	Japan	*U.S.*
Mean	3.71604938	2.77777778
Variance	0.9808642	1.725
Observations	81	81
Hypothesized Mean Difference	0	0
df	148.13097	
t Stat	5.13355341	
P(T<=t) one-tail	4.3819E-07	
t Critical one-tail	1.65521451	
P(T<=t) two-tail	8.7638E-07	Sig
t Critical two-tail	1.97612249	Yes