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ANALYTICAL HIERARCHY PROCESS APPROACH ON CONSUMER PREFERENCE IN CHOOSING LOW COST GREEN CAR (LCGC)
(CASE STUDY: TOYOTA AGYA, DAIHATSU AYLA, AND DATSUN GO+)

PROSES ANALISA HIRARKI TERHADAP PREFERENCI KONSUMEN DALAM MEMILIH LOW COST GREEN CAR (LCGC)
(STUDI KASUS: TOYOTA AGYA, DAIHATSU AYLA, DAN DATSUN GO+)

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Abstract: Indonesian ministry of industry has made a policy about cheap cars yet eco-friendly or used to be called LCGC. LCGC is an abbreviation of Low Cost Green Car. Literally means 'cheap car environmental friendly' in Indonesian. Production development of four wheels vehicle which using low energy and affordable. Indonesian government also want to increase the standard of living of Indonesian people with producing this car. This research aims to analyze the most important criteria for consumer to choose the LCGC and the most preferable LCGC for customer. This research used analytical hierarchy process with sample is 30 respondents that were obtain from citizen of Manado City. The result from this research shown that safety, price, and quality are the most important things that influence the consumer. Every car's company should pay more attention to this factor. Consumer will seek a car with an excellent safety features, with an affordable price and good quality. Daihatsu Ayla and Datsun GO+ as the competitor of Toyota Agya should improve their car's feature and performance to attract the consumer.

Keywords: *consumer preference, analytical hierarchy process, low cost green car*

Abstrak: *Kementerian industri Indonesia telah membuat kebijakan tentang mobil murah namun ramah lingkungan atau biasa disebut mobil LCGC). LCGC adalah singkatan dari Low Cost Green Car. Secara harfiah berarti 'mobil murah ramah lingkungan' dalam bahasa Indonesia. Pengembangan produksi kendaraan roda empat yang menggunakan energi rendah dan terjangkau. Pemerintah Indonesia juga ingin meningkatkan taraf hidup masyarakat Indonesia dengan memproduksi mobil ini. Penelitian ini bertujuan untuk menganalisis kriteria paling penting bagi konsumen untuk memilih LCGC dan LCGC yang paling disukai bagi pelanggan. Penelitian ini menggunakan proses analisa hierarki dengan sampel sebanyak 30 responden yang diperoleh dari warga Kota Manado. Hasil dari penelitian ini menunjukkan bahwa keselamatan, harga, dan kualitas merupakan hal terpenting yang mempengaruhi konsumen. Setiap perusahaan mobil harus lebih memperhatikan faktor ini. Konsumen akan mencari mobil dengan fitur keselamatan yang baik, dengan harga terjangkau dan kualitas bagus. Daihatsu Ayla dan Datsun GO+ selaku pesaing Toyota Agya harus memperbaiki fitur dan performa mobil mereka untuk menarik konsumen.*

Kata Kunci: *preferensi konsumen, proses analisa hierarki, mobil murah ramah lingkungan*

INTRODUCTION

Research Background

Transportation plays a vital role in today's world and become one of important things in people's daily lives. Transportation helps people to move from one place to another place faster in a short time., a transportation become so useful because people no need to go to other place by walking. People need transportation to make their daily lives become easier. Talked about transportation, car is the most used by people nowadays. It helps people to go to work, school, or another place.

Recently, automobile industry has experienced variants motivations in terms of the application of update vehicle's technology and fuel efficiency. One of the innovation is the adaption of green technology. Green innovation is the use of environmentally friendly material with an aim of avoiding the destruction of the environment. The part of green innovation is the vehicles company released the green vehicle which is a motor vehicle that less deadly effects to the environment than any regular gasoline or diesel-powered vehicles.

Manado as a developing city that always follow the current trend, has begun to use the small car. In other side, Manado people usually have intention to buy something not just based on their needs but also something that become trend and easy to being influenced by their friends, or suggestion from family. It became more attract the consumer to buy the LCGC because the traffic jam on the city that day by day increased also, the air pollution in Manado City also increased. The air pollution can be caused by the industry and also the vehicle.

There are several cars that have a same model and type but produced with different brand because of the competition of automobile market in this country. Usually consumer will compare towards a brand, quality of product, quality of service and color. Sometimes, effect of advertisement can influence consumer preference.

Research Objective

Based on the research problem, the objectives of this research are:
1. To know the most important criteria for customer in selecting the LCGC in Manado.
2. To know the most preferable LCGC car for the customer in Manado.

THEORETICAL REVIEW

Marketing

According to Philip Kotler (1994:6) marketing is a social and managerial process by which individuals and groups obtain what they want and need through creating, offering, and exchanging products of value with others. It defines, measures and quantifies the size of the identified market and the profit potential. It pinpoints which segments the company is capable of serving best and it designs and promotes the appropriate products and services. Burns and Bush (2006:4) defined marketing as "an organization function, not a group of persons or separate entity within the firm. In other words, marketing is the activity, set of institutions and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large.

Consumer Behavior

Consumer Behavior is the study of the processes involved when individuals or groups select, purchase, use or dispose of products, services, ideas or experiences to satisfy needs and desires. (Solomon, Bamossy, Askegaard, and Hogg., 2006:7). Schiffman and Kanuk (2004) also defined that consumer behavior as the behavior that consumers display in searching for purchasing, using, and disputing of products and services that they expect will satisfy their needs. In other words, consumer behavior is the study of how people make decisions about what they buy, want, need or act in regards to a product, service, or company. It is critical to understand consumer behavior to know how potential customers will respond to a new product or service.

Consumer Preference

Consumer preferences are defined as preferred or disliked by a person against a good or service consumed. Consumer preferences show consumers' preference for variety selection of existing products (Larasati, 2013). Consumer preference is a general term applied to all facets of marketing products and services. This is not to be confused with the more-specific term brand preference, which relates to consumers preferring one brand over competing brands. The concept of preferences comes from economic theory, with preferences defined as individual's utility for consuming goods and services (Philips, Jhonson, and Mandala., 2002). According to Rajpurohit and Vasita (2011), preferences indicate choices among neutral or more valued option available. In other words, consumer preferences are defined as the subjective (individual) tastes, as measured by utility, of various bundles of goods. They permit the consumer to rank these bundles of goods according to the levels of utility they give the consumer. Note that preferences are independent of income and prices. Ability to purchase goods does not determine a consumer's likes or dislikes. Preference indicates choices among neutral or more valued options available (Ubeja and Jain, 2013).

Price

Price is that which is given up in an exchange to acquire a goods or service. Price plays two roles in the evolution of product alternatives: as a measure of sacrifice and as information cue (McDaniel, Agarwal, Huelser, McDermott, Roediger., 2011). Price is the amount of money charged for a product or service (Strydom, 2005). Setting and managing a product's price is one of the most critical decisions a company must take, because price is the only element in a company's marketing mix that produces revenue.

Quality

Quality is how the recipient of the product or service views the product or service: before buying, upon delivery, and after the delivery-and use. In other words, quality is satisfying the customer and it is defines by customer. Quality is exceeding the customer expectations and the extent to which the customers or users believe the product or service surpasses their needs and expectations (Alfred Owusu, 2013).

Safety

Safety is relative freedom from danger, risk, or threat of harm, injury, or loss to personnel and/or property, whether caused deliberately or by accident. Safety is relative freedom from danger, risk, or threat of harm, injury, or loss to personnel and/or property, whether caused deliberately or by accident (business dictionary, 2015).

Vehicle Interior

Interior of vehicle is an important factor for costumers' satisfaction. Most vehicle owners are proud to drive a shiny, sparkling clean car for everyone to see. To achieve an optimized product subjective evaluation method as well as analysis and prediction tools have to be combined to provide reliable information relevant for the judgment of product quality and comfort situation (Krebber., 2000).

Vehicle Comfortable

According to Parson, Taylor, and Francis (1993:359), comfort is influenced by a combination of physical, physiological and psychological factors. Some factors include solar radiation and glazing, inside and outside colors, the size of the vehicle, the clothing type of the passengers and passenger capacity of the vehicle cabin.

Advertisement

Advertising is a primary tool for firms to affect the performance of their products, especially in markets for consumer goods such as cars, computers, cell phones, and digital cameras. Such markets are characterized

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by the continuous turnover of multiple relatively close substitute products. Advertisement is indispensable for both the sellers and the buyers. However, it is more important for the sellers. In the modern age of large scale production, producers cannot think of pushing sale of their products without advertising them.

Previous Research

Apak, Gogus and Karakadilar (2014) conducted a research on novel framework for luxury car selection. This paper researches consumer preferences of luxury car features using an analytic hierarchy process (AHP). Initially the most important key factors which influencing the choosing the car brands were identified. This paper results have carried that flexibility and then brand image are the customers' most important criteria for car selection. Initially the most important key factors which influencing the choosing the car brands were identified. Then these factors have been evaluated by the experienced car sale representatives. At the evaluation procedure, the AHP was applied to determine the relative weights of evaluation criteria.
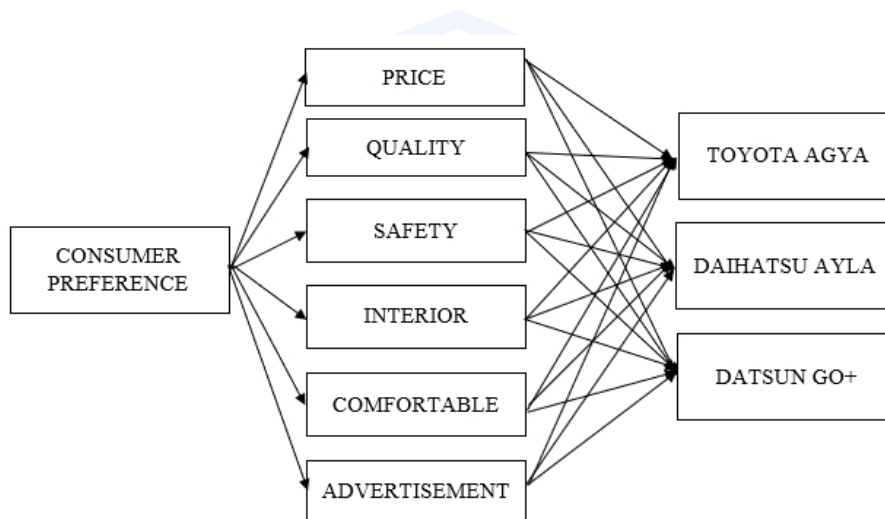
Conceptual Framework

Figure 1. Conceptual Framework

RESEARCH METHOD

Type of Research

This research used quantitative method. The method used in this research is Analytical Hierarchy Process (AHP).

Place and Time of Research

This research is conducted in Manado city. This research was conducted from April-May 2017.

Population and Sample

Population refers to the entire group of people, events, or things of interest that the researcher wishes to investigate. It is the group of people, events, or things of interest for which the researcher wants to make inferences based on sample statistics (Sekaran and Bougie, 2009:262). Population in this research is people in Manado who has planned to by the LCGC.

The sample of this research is all people that have experience ride or drive the LCGC (Toyota Agya, Daihatsu Ayla, and Datsun GO+) as many as 30 respondents. This research takes 30 respondents because to find the respondent that have experience in ride or drive the three LCGC is quite difficult.

Data Collection Method
    This research used primary data. Primary data refer to information obtained first-hand by the researcher on the variables of interest for the specific purpose of the study (Sekaran and Bougie, 2009:180).

Data Analysis Method
Multi-Criteria Decision Making
    Most decision making involves complicated procedures in which decision makers rank the alternatives of a choice according to multiple criteria (Saaty, 2008). There have been many studies that have provided solutions for complicated decision making including multiple criteria. Multiple criteria decision making (MCDM) refers to making decisions in the presence of multiple, usually conflicting, criteria. MCDM problems are common in everyday life.

Analytical Hierarchy Process
    The Analytic Hierarchy Process (AHP) is due to Saaty (1980:55) and is often referred to, eponymously, as the Saaty method. It allows users to assess the relative weight of multiple criteria or multiple options against given criteria in an intuitive manner. In case quantitative ratings are not available, policy makers or assessors can still recognize whether one criterion is more important than another.

RESULT AND DISCUSSION

Result
    The result of this research was obtained by using Analytical Hierarchy Process (AHP) by comparing three Low Cost Green Cars that are Toyota Agya, Daihatsu Ayla and Datsun GO+ based on several criteria such as price, quality, safety, interior, comfortable, advertising.
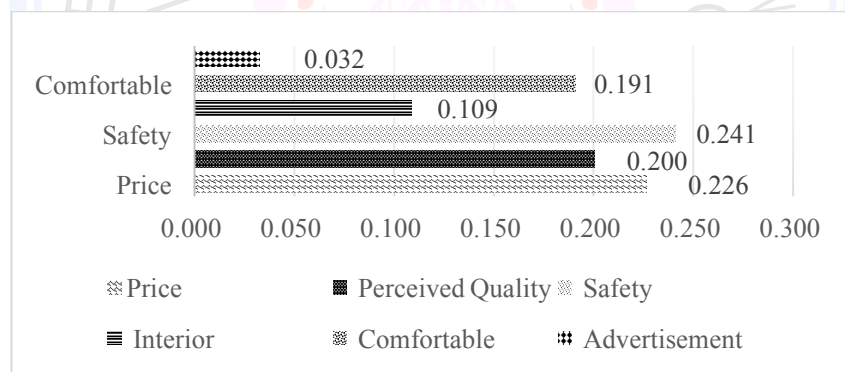
Analytical Hierarchy Process (AHP) Results

Figure 2. Analytical Hierarchy Process (AHP) Results
Source: Data Processed (2017)

    Figure 2 shows safety is the criteria that have a highest score (0.241), it means safety is the factor that have influence the most people to choose a car among the others criteria. The second is price (0.226), perceived quality is in third position with score 0,2, followed by comfortable (0.191). The rest filled by interior (0.109), and advertising as the lowest score (0,032). As the overall inconsistency = 0.028 (2,8%), it means the data comparison in this result is valid and consistent.

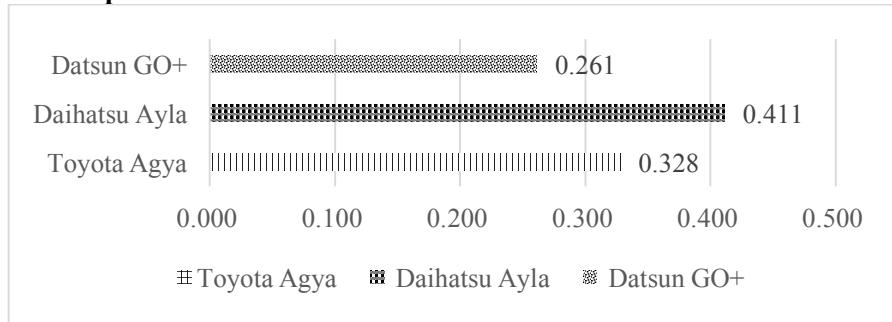**Result of Pair Wise Comparison of Price**

Figure 3. Result of Pair Wise Comparison of Price
Source: Data Processed (2017)

Figure 3 shows that Daihatsu Ayla is the most preferred by respondent (0.411), second is Agya (0.328), followed by Datsun GO+ with the lowest score by respondents (0.261) and the overall inconsistency for result of price is (0.046), it means the data comparison by respondents is valid and consistent.

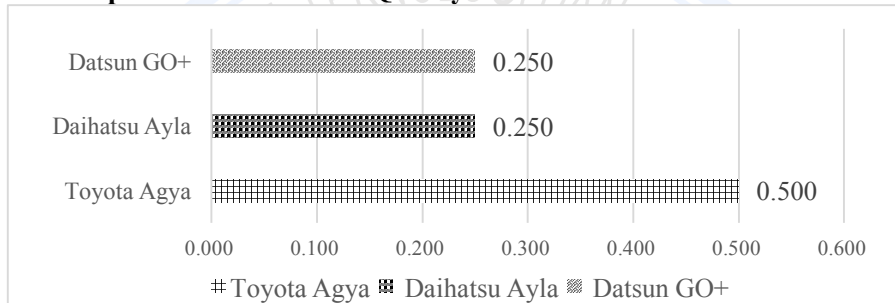**Result of Pair Wise Comparison of Perceived Quality**

Figure 4. Result of Pair Wise Comparison of Perceived Quality
Source: Data Processed (2017)

Figure 4 shows that Toyota Agya is the most preferred by respondent (0.5), followed by Daihatsu Ayla and Datsun GO+ with the same score by respondents (0.25) and the overall inconsistency for result of quality is 0 it means the data comparison by respondents is valid and consistent.
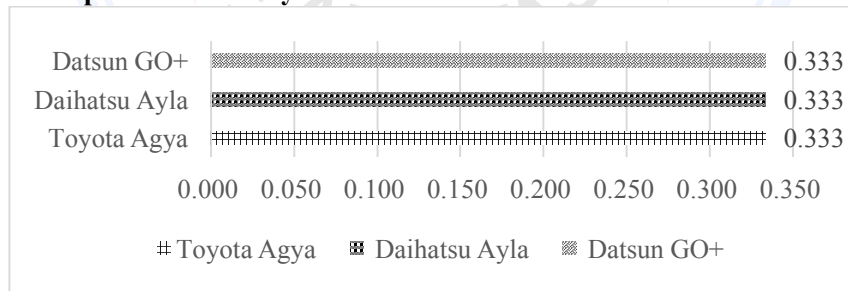
Result of Pair Wise Comparison of Safety

Figure 5. Result of Pair Wise Comparison of Safety
Source: Data Processed (2017)

Figure 5 shows that Agya, Ayla and Datsun GO+ has the same result (0,333) and the overall inconsistency for result of safety is (0), it means the data comparison by respondents is valid and consistent.

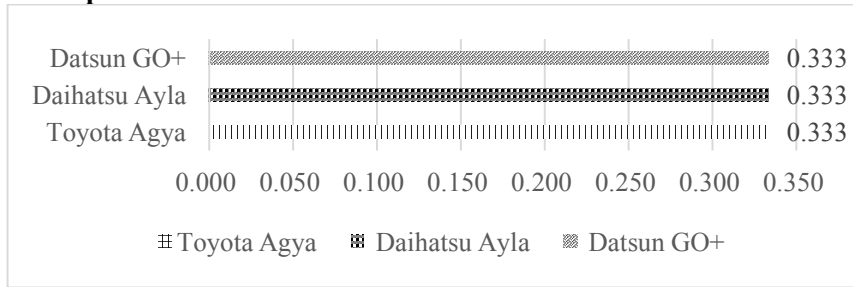**Result of Pair Wise Comparison of Interior**

Figure 6. Result of Pair Wise Comparison of Interior
Source: Data Processed (2017)

Figure 6 shows that Agya, Ayla and Datsun GO+ has the same result (0,333) and the overall inconsistency for result of interior is 0, it means the data comparison by respondents is valid and consistent.

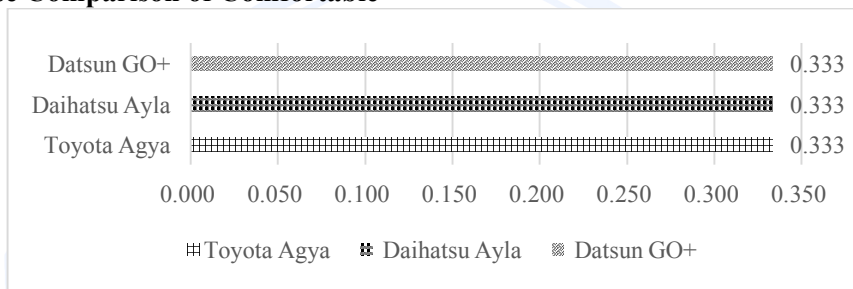**Result of Pair Wise Comparison of Comfortable**

Figure 7. Result of Pair Wise Comparison of Comfortable
Source: Data Processed (2017)

Figure 7 shows that Agya, Ayla and Datsun GO+ has the same result (0,333) and the overall inconsistency for result of comfortable is (0), it means the data comparison by respondents is valid and consistent.

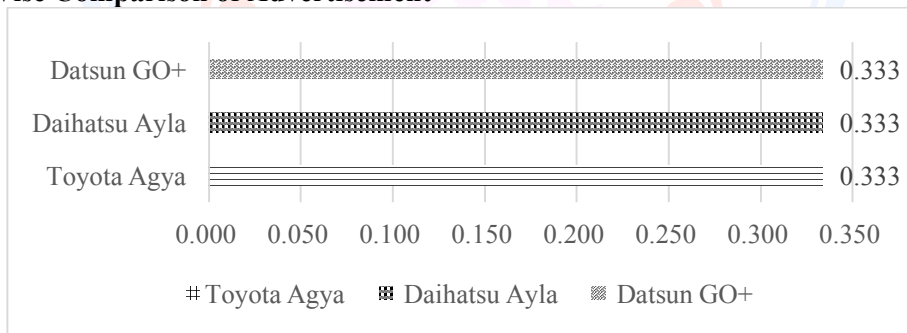**Result of Pair Wise Comparison of Advertisement**

Figure 8. Result of Pair Wise Comparison of Advertisement
Source: Data Processed (2017)

Figure 8 shows that Agya, Ayla and Datsun GO+ has the same result (0,333) and the overall inconsistency for result of advertisement is 0, it means the data comparison by respondents is valid and consistent.

Result of Analytical Hierarchy Process of Consumer Preferred LCGC
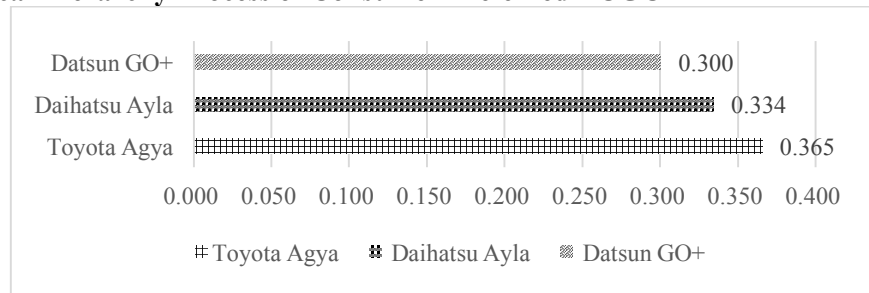
Figure 9. Result of Analytical Hierarchy Process of Consumer Preferred LCGC
Source: Data Processed (2017)

Based on the observation, this research shows that people choose Agya as the most preferred Low-Cost Green Cars for them to shop among the other alternatives. Agya have the highest score with 0.365, in the second position is Daihatsu Ayla with score 0.334, and followed by Datsun GO+ in the last position with score 0.3. In this result the overall inconsistency indicated = 0.022, it shows that the comparison of data in this research is valid and consistent.

Discussion

Firstly, for the overall of main criteria (price, quality, safety, interior, comfortable, advertising), the most important criteria that influence customer is safety. When choose a car, people must give an attention about the safety, because it concerns with the people life. People will choose the car that have a safety assurance, and also already pass a safety test. The respondents are those who already have an experience on each alternative provided which are the three LCGC Cars based on the requirement of using AHP method. So, in this research, according to the respondent, safety became the most preferred factor for the costumer in selecting the preferred LCGC in Manado.

Second is price. Have low price does not mean that the cheap one does not have good quality, so people nowadays look goods with low price and have good quality. The role of price allocation, the price function in helping buyers to decide which car they want to buy. The consumer think that higher the price, higher the quality,

Third position is quality. Every people want a product with a good quality. Before they buy something, they will make sure that the product has a good quality, so it can durable for a long time. Consumer will choose a product with affordable price and good quality as well.

Next position is comfortable. In selecting a car, people also tend to choose a car with comfortable seat. It will make them enjoy the trip. Usually when launch new car, company will have held test drive and let the people try to drive the car, to see the interior inside, feel the comfortable seat, and make sure a quality of the machine. It can convenience customer to buy a car.

In fifth place is interior. Every type of car has a different interior design. There are standard and luxurious interior, but in this case because these three cars are a part of LCGC, so these three cars just has a standard interior. Interior mostly being concerned by young people. They tend to choose a car with good interior or in other word, the eye-catchy car interior that makes them feel cozy.

Next is car advertising. The primary function of advertising is to persuade people to buy something. Advertising also is a media to introduction a new product to a consumer. Car advertising was made as attractive as possible to attract consumer attention, and to reassure consumer that the product is good and there are some people buy a product just only an attractive advertising. Some customer will remember the brand and their advertising in TV or other social media.

Based on the overall data, customer will choose Toyota Agya as the preferred LCGC in Manado compares to the rest of alternatives. This result already shown that when people want to buy a car, they prefer to

choose Agya as the most preferred LCGC among the other alternatives. These three Low Cost Green Cars produced from different brand, that are Toyota, Daihatsu and Datsun. Agya is a product from Toyota. From the data, Toyota became the most favorite brand in Indonesia. Therefore, Toyota Agya is the most preferred than Daihatsu Ayla and Datsun GO+. Agya got the first place, followed in the second place by Daihatsu Ayla and in the last place is Datsun GO+. The overall inconsistency indicated = (0.022), it shows that the comparison of data in this research is valid and consistent.

CONCLUSION AND RECOMMENDATION

Conclusion

Based on the result of analyzing and discussing, then two conclusions can be purposed.
1. Based on six criteria (price, quality, safety, interior, comfortable, advertising), there are top three criteria that has the most influence for consumer to choose Low Cost Green Cars in Manado city. In the first place and got the highest total score goes to safety. According to the data comparison that developed in pairwise comparison of Analytical Hierarchy Process (AHP), safety become the most preferred criteria for consumer when choose Low Cost Green Cars in Manado city. Second position of the highest score goes to price. Third position is for perceived quality criteria. The data shows that safety, price and quality are the most important thing that influence consumer to choose a Low-Cost Green Cars. The rest criteria that are comfortable, interior, and advertising are not the main thing that influence the consumer.
2. Based on the overall result that developed using Analytical Hierarchy Process (AHP), shows that Toyota Agya become the most preferred Low Cost Green Cars by the consumer with score 0.365, followed by Daihatsu Ayla (0,334) and Datsun GO+ in the last place with score 0,3.

Recommendation

There are several recommendations that can be concluded from the overall result in this research, which are listed as follow:
1. Safety, price, and perceived quality are the most important things that influence consumer in selecting a Low-Cost Green Cars particularly in Manado. Therefore, every car company in Manado have to pay attention seriously toward this factor. Consumer will seek a car with a excellent safety features, with an affordable price and good quality. From the data, Toyota is the most preferred brand for consumer. That is why Agya more preferred than Daihatsu Ayla and Datsun GO+ in this research.
2. Daihatsu Ayla and Honda Datsun GO+ as the competitors of Toyota Agya, have to improve their performances, that can attract more customer, especially for some criteria that make customer tend to choose Toyota Agya. And for Toyota Agya that lead the competition, they should keep their performance and also make an innovation to attract more consumer.

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