

THE YOUNG CONSUMERS PREFERENCES FOR BUYING ATTRIBUTES: A CONJOINT ANALYSIS APPROACH

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Abstract

Young consumers' preferences shifted from only emotional to both emotional and rational while buying their preferred product or service. They are looking for more benefits than they are getting versus the cost it is to them. In this, we can see the young consumers' buying decision making which does not depend on one or two attributes or one or two brands. It may have combinations. There is a wide scope to the young consumers when companies are offering a competitive edge within the expected price range of young consumers. There are several studies conducted in developed countries. No study was carried out to denote exclusively young consumers' mindset towards automobiles, attributes that are influencing buying decisions. Many studies proved that young consumers' buying preferences are more on branded clothing, automobiles, and cell phones. Hence this study has taken up to study the young consumers' buying preferences in an automobile (midrange car) attribute. There is a paucity of specific literature also. The main purpose of this paper is to identify the most influencing attributes of a product on young consumers' who are in the age group of 21 to 35. The present study was done just a month before the pandemic across India through an online survey. The conjoint analysis is administered to identify the most preferable attributes rank wise. This study found the fact that young consumers have a higher preference for a brand in a car purchase. At the same time, the preference is going for low priced cars. It is a fact from this study that there is the least priority for Safety in a car by young consumers.

Key Words: *Consumer Preferences, Product Attributes, Conjoint Analysis.*

Introduction

Young consumer preferences are rational and emotional (Ebrahim, et al. (2016), (Lin, et al. (2007). They like a wider variety of lifestyles and choose the products/ brands according to their personal characteristics (Valentine & Powers, 2013). In purchasing automobiles, consumers are more rational (Bobeth, S., & Kastner, I. (2020) than emotional. Consumers will look for several features/ attributes that are more influential, comparable, and highly involved while buying an automobile (Liao, F., Molin, E., & van Wee, B. 2017). The reports are saying Mileage, Fuel type, Brand, Safety and are more preferred attributes in a midrange car for a young buyer (Kukova, M., Diels, C., et al., 2016)

A young consumer will look at several referential information for knowing the things. Indian consumers consider the brand as a key attribute in the selection of a car (Deloitte 2014). Maruti is the most preferred brand in India and followed by Hyundai and Honda (Economic Times 2019). Consumers consider the price of a car as one of the main attributes while purchasing a car (Dong, X., Zhang, B., Wang, B., & Wang, Z. (2020). The car buyers consider fuel type (A. Chtinicht, 2002; Kabadayi et al., 2013), consumers value fuel economy (Sallee, J. M., West, S. E., & Fan, W. 2016), car buyers' preference is very high toward safety (Dangi, A. (2017).

Regarding 'safety', the most common point is the New Car Assessment Program (NCAP). As per the global New Car Assessment Program (NCAP) safest cars 2020 in India Mahindra XUV 300 ranked first and followed by Tata Nexon, Tata Altroz, Tata Tiago, and Mahindra Marazzo(Hindustan Times July 2020). These cars incorporated advanced features like dual front airbags, electronic stability program, hill-start assists, reverse parking assist camera to augment safety. Young consumers are willing to accept multiculturalism and look for international brands (Ercis, Unal, and Bilgili 2016). These consumers' exhibit rational behaviours and they pay attention to the utility value of a product/service very much. (Mitchell, Walsh, 2004).

Automobile companies are targeting young consumers as this segment is considered as one the most lucrative segment for mid range cars. Mid-range car is an automobile with a size between compact and full-size cars, and the price range is between INR. 7 lakhs to INR 14 lakhs. Most of the automakers such as Maruti, Hyundai, Tata Motors, Ford, GM are manufacturing these range cars. A study estimated that 51 percent of new car buyers are young consumers (Deloitte 2019). The consumer buying behavior goes through different stages like awareness, knowledge, liking, preference, conviction, and purchase (Weilbacher, W. M. (2001). These stages also play a significant role in driving consumers for a purchase decision. Many studies conducted on young consumer preferences on fashion brands (Sidorchuk, R., Mkhitaryan, S. V., Musatov, B. V., Meshkov, A. A., & Tultaev, T. A. 2018) and mobile phones (Kulshreshtha, K., Tripathi, V., & Bajpai, N. 2017). This study is intended to examine young consumers' preferences for mid-range cars which are not studied earlier. Young consumers are influenced by multiple factors within their social environment and more independent in the purchase of various goods/services. (Brown, K., McIlveen, H., & Strugnell, C. (2000). This study was carried out to gain insights about young consumers' preferences for mid-range cars. To meet changing young consumer preferences, the marketers focused on facts from the research to understand buyers' preferences for product specifications which could be more valued (Anojan, V., & Subaskaran, T. 2015). This type of study certainly helps marketers to redesign their strategies based on young consumers' ever-changing preferences to stay ahead in the highly competitive environment.

Research Gap

The past research work on consumer preferences toward midrange cars related to different product attributes and these studies focused only on different age groups of consumers. But the factors which influence young consumers' preferences are the area of the study that is not well researched. This paper has considered attributes such as brand, fuel type, safety, price, mileage, and similar other studies not considered these attributes in their studies.

Importance of the Study

Understanding the Consumer preference for mid-range cars is one of the key reasons for a firm to accomplish higher sales volumes. Hence, it is substantiated to know about the influencing factors of young consumer preferences for mid-range cars. This study might help the car makers to gain more insights to capture more sales and market share. It is also indispensable to study the impact of car attributes such as brand, fuel type, safety, price, and mileage on the purchase decisions of young consumers.

Young Consumers

Young-adult, the age group of 21 years to 35 Years occupy a predominant position in the overall consumers (Vespa, J., 2017; Gunter, B., & Furnham, A., 2014). Young consumers have their unique consumption patterns which are affected by many factors such as their personality, attitude, values, and behavior. They are in the progression of identity formation; hence, they buy things to define themselves (Holbrook and Schindler 1989). In India, young-adult consumers are having plenty of choices than ever before in buying goods and services, making it a significant segment in consumer research. In general, the tech-savvy Gen Y and Gen Z are having more vibrant preferences for technically advanced products and services (Sproles and Kendall, 1990). They are a more potent spending group (Grant and Waite, 2003) and are a specialized influential segment in the automobile market (Leslie, Sparling, and Owen, 2001; Waite, 2003). Is projected young consumer segment is going to become a major segment of new car buyers by the year 2020, and hence requires attention by researchers as there is a paucity of research work on young car buyers in the Indian context (Kristian Bannister, 2017). According to the study conducted in the UK, Young consumers are highly influenced by social media, and changing technology plays a key role in the buying behavior of cars. Hence, this study is focused on young consumers' buying preferences and inducing attributes of a car. A survey was conducted during Jan – Feb 2019 and the most popular tool 'Conjoint Analysis' (Vriens, Gerard, Edward and Dick, 1998) is administered in this study to identify the right set of car attributes. Being a popular tool Though the conjoint analysis is originally developed by experts in mathematics (Luce and statistician Tukey (1964) but this tool has drawn attention from the area of marketing research to understand customers' buying decisions. (Oyatoye, et al. 2016). Consumers' preferences are based on certain desired functional and emotional factors that lead to purchase decision making (Lautiainen, T. 2015). Consumer Preferences can be triggered by the product features such as shape, size, taste, color, consistency, packaging, etc. (Berkowitz, M.1987; Bloch, P., H. 1995; Labrecque, L. I., Patrick, V. M., & Milne, G. R. 2013), and so a similar set of preferences for car purchase were considered in the present study.

Background of the Study

The Indian automobile market has reached to the 4th position in the world with a handsome growth of 9.5 percent in the year 2017 (Automobile Industry in India 2018). In recent times the automobile market has

witnessed intense competition creating a challenging environment for automobile marketers. The growing younger population also provides an attractive opportunity for the automakers in India (Ernst & Young 2016). There are huge opportunities in the Indian market for compact, Sedan, and SUV cars (Ernst & Young 2017). It is thus imperative to work for the still untapped market. This is how the companies will be able to prepare the strong ground for the car market growth. Companies are eagerly working on different strategies to attract customers based on their wants and preferences (Robertson, 2016). Consumer preference varies with age, gender, income, and other characteristics (Prakash 2011). It also motivates them to involve in their buying decision making process i.e. acquiring, using, and disposing of goods and services (Engel et, al. 1986). Companies like consumer goods, automobiles, and telecom have always shown their affinity toward ‘Rurban’ markets to unleash the potential. According to the report “What marketers can do to unlock India’s booming Rurban potential” by (Viveat Susan Pinto, 2018),. Likewise, a passenger-car makers market receives 30 percent of its revenue from the countryside. Rurban areas are constantly evolving, similar to their urban counterparts (Viveat Susan Pinto, 2018) and so this study stands important and critical at this juncture.

Exploration of consumer preference through literature

There is a paradigm shift in consumer preferences for cars. The ever-changing consumer preferences are reshaping the automotive industry (Prasad Satyvolu, 2018). Thence, Marketing practitioners and scholars have tried to examine the consumer preferences for cars in different countries with a different context. Indian car buyers are both rational and emotional. Especially, young consumers seek value for money and demand advanced features in a car (Deloitte, 2014). The purchase decision also depends on factors like country-of-origin (COO) which has led to a change in consumer preference to have a particular brand or product (Bilkey et.al., 1982, Papadopoulos et al., 1993). Consumers’ preferences are frequently shaped by a process of elicitation. It is the ordering of options (e.g., prices and choices) available for decision making which results in systematic responses (Lichtenstein & Slovic, 2006). It is observed that the options and choices presently available may bring changes in preferences (Yanoff & Hansson, 2009). Preferences can be rational or true based on how logically they are connected (Egonsson, 2016).

Past studies on car attributes have attempted to identify the significance of crucial attributes for different products in different market segments. For instance, Darzianzizi, Ghasemi, Mosavi Majd(2013) conducted a conjoint simulation to identify the important car attributes in Tehran and found the attributes such as convenience, warranty, fuel consumption, promotions, and after-sales service as the influencing attributes in a car purchase decision.

A summary of studies that use conjoint analysis to identify car attributes is shown in Table 1 & followed by Selection of Key attributes in Table 2.

Table 1: Recent studies using conjoint techniques to identify car attributes

Authors	Results
Mokonyama & Venter(2013)	This research paper identified security, reliability, stfee respect, and service frequency as the prime indicators for the satisfaction of public transport contacts in South Africa.
Darzianazizi, Ghsemi, Mosavi Majd(2013)	This study found that convenience, fuel economy, promotion, and after-sales service the prime attributes expected by the car buyers in Tehran.
Kaday, Aln, and Ozkan(2013)	By administering conjoint analysis, this study identified that, among car selected car attributes, fuel type is having the most significant effect on consumer’s car selection in Turkey, followed by price, Euro NCAP security level.
Orbch and Fruchter(2011)	By adopting the conjoint technique, this stud tried to estimate the rise in sales through market preferences and purchase intention toward the improvisations of the main attributes of car-like fuel price, price premium, battery replacement cost, and favored style of hybrid electric cars.
Eggers and Eggers(2011)	This research study identified switching cost, price, and timing of entry, range, and environmental evolution as the significant factors to forecast the green trend of all-electric vehicles by using a choice-based conjoint adoption model.
Odekerken-Schroder et al.,(2003)	By adopting conjoint analysis; this study argued that different consumer segments tend to have diverse preferences, about dealer relationships and service packages, but not in price.
Vriens, Losschilder, Resebergen, & Wittink(1998)	Using a conjoint study of car stereo equipment, this paper found an in-dash player system, remote control, and the antitheft system as three key attributes of a car stereo system.

Source: Review of Literature

Table 2: Selection of Key Attributes of a Car

Item	Key Attributes				
	Hanwlt & Rouse (2007)	Cernov (2010)	Consumer Report(2010)	WannYih Wu(013)	This study
Styling	✓		✓		
Flexibility	✓				
Technology Innovation	✓		✓		
Horsepower	✓	✓		✓	
Fuel economy (Mileage)	✓			✓	✓
Price	✓	✓		✓	✓
Quality	✓	✓	✓		
Safety			✓	✓	✓
Fuel consumptions		✓	✓	✓	
Fuel type					✓
Brand					✓
Maximum Speed		✓			
Gadgets				✓	
Acceleration		✓			
Value					
Performance		✓	✓		
Appearance			✓	✓	

Source: Review of Literature

Based on the above literature and in consultation with several experts like academicians, sales managers, car showroom owners, and car owners, the five most important car attributes namely Fuel Economy (Mileage), Price, Safety, Fuel Type, and Brand were identified. The research carried out on said attributes is synonymous with our research objective is discussed below.

Brand

The brand name of a car is a very important element in vehicle preference and choice (Train and Winston, 2007; McCarthy and Tay, 1989, 1998; Tay and McCarthy, 1991). The automobile brand name reflects the image of the automobile (King, 2007) and it signals the quality and reliability (McCarthy and Tay 1989; Tay and McCarthy, 1991), which a consumer confers (Lane, 2007) to his/her social status. Brands can enhance consumer identities by fulfilling their goals and hence consumers use a brand as a tool for the depiction of their values and identity (Swaminathan, V. et al., 2007). The young consumers are more expressive that explain the anticipation of expressing one’s status and /or identity through visible consumption beyond the economic and /or physical benefits of goods (Topcu, U.C., 2018). The person’s identity/self-image is congruent with the product image (Jamal, A. et al., 2001). Though the consumer preferences may vary from fast-moving consumer goods (FMCGs) to durables (Alreck, P. L., & Settle, R. B., 1999) it is specified brand loyalty in durables which congruence the personality with the brand image (Lau, G.T., et al., 1999). The perception of consumers toward foreign brands is higher than local brands. Most consumers also associated greater accessibility of foreign brands in the Indian market with better quality at lower prices (Kinra, N., 2006). Only very few people (4.5 percent) will consider the Country-of-Origin (COO) while purchasing a good, most of the consumer may not look into COO (Ismail, et al. 2012).

Price

Price is one of the prominent attributes of a product that helps to constitute purchase; it is an amount paid in exchange for goods or a socially acceptable unit against the desired product or services (Aaker, 1996). Price is considered as one of the most key factors in the context of automobile purchase (McCarthy and Tay, 1998; Hensher et al., 2011; Lebeau et al., 2012), also creates or eliminates the attitude-behavior gap (Lane 2007). In a common understanding, consumers believe that the high price indicates superior quality and low price indicates an inferior quality of a product. This leads to less attention towards the physical attributes of a product/service (Zeithmal 1998; Choi et al., 2010; Iacocca et.al., 2015; Roy et al., 2016). Car buyers might evaluate products based on information uses which were both extrinsic and intrinsic. Price is considered a significant factor in the final purchase decision.

Fuel Type

The car buyers consider fuel type (A. Chtinicht, 2002; Kabadayi et al., 2013) and emissions (A. Chtinicht, 2002) as the important factors along with price, horsepower, fuel costs, and fuel availability. Fuel type is the most significant attribute of consumer's car choice in Turkey among five pre-selected attributes (Kabaday, Alan, and Ozkan. 2013), price, EuroNCAP, fuel consumption, and automobile style, where the attributes like fuel consumption level and automobile style have the minimum impact on consumer's purchasing decision. For the convenience of customers, car manufacturers released alternative fuel vehicles that are not usually preferred in India by the passenger car owners. Among selected car attributes, fuel type is the most preferred over other attributes, followed by price and Euro NCAP security level Kabaday et al. (2013). The attributes fuel consumption level and style of the automobile had less impact on the purchase decision of a car. Diverse customer segments have different preferences for car attributes (Odekerken-Schroder, Ouwersloot, Lemmink, and Semeijn (2003). Fuel Type in China, Consumers differentiate between the types of alternative fuel cars and are more likely to consider moving from petrol fuel vehicles to a hybrid than to electric cars. (Qian, L., & Soopramanien, D., 2011).

Mileage (Fuel Economy)

The other key attributes that influence consumer preferences and choices for cars are Fuel economy and fuel cost (Train and Winston, 2007; Dixon and Hill, 2009; McCarthy and Tay, 1989, 1998; Tay and McCarthy, 1991; Hensher et al., 2011). The preference for mileage is high among Indian consumers (Nandini Sen Gupta, 2016) and also looks for fuel economy to save money. Fuel-efficient cars are more preferred by the people (Dardis, et al., 1994) alongside heavier, less maintenance cost, and lower depreciation cars. Limited service and maintenance points, few fuel filling stations impact moderately in consumer purchase preference (Horne et al., 2005; Potoglou, et al. 2007) of a vehicle. Consumers prefer specific cars on the fuel type itself (Ewing and Sarogollu, 1998). Many households are willing to pay considerable amounts for greater fuel economy and emission reduction improved driving range and charging infrastructure are most preferred b consumers (Hackbarth, A., & Madlener, R., 2013)

Safety

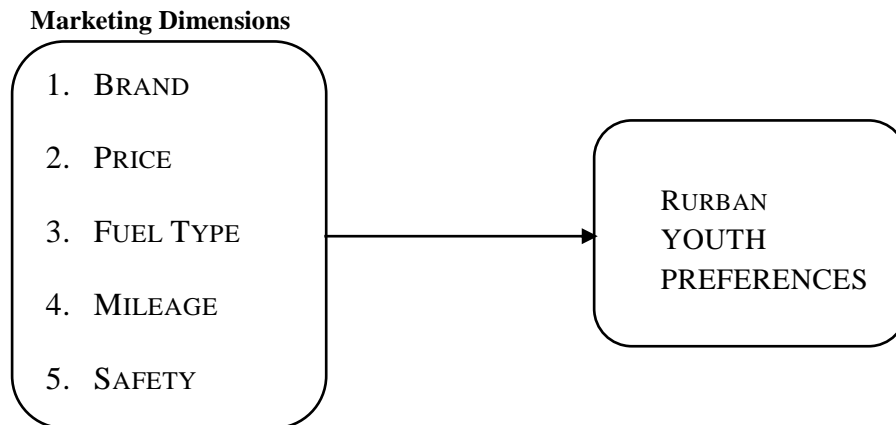
Safety is considered one of the prime factors in car purchase decision by the buyers. Consumers look for safety in a new car (J.D.Power and associates) The car marketers are focusing on to reduce fatality rates even further; the focus has been moved to active safety systems and advanced driver assistance systems (ADAS). The intense competition is influencing the introduction of advanced safety systems. This would lead to achieve the highest safety ratings on their vehicles and to distinguish their products from their rivals. Such systems include Blind Spot Detection (BSD), Lane Departure Warning (LDW), Adaptive Front Lighting (AFL), Night Vision Systems (NVS), Driver Drowsiness Warning (DDW), and Occupant Monitoring systems. Young consumers' behavior is identified as more aggressive/ impatient in driving, as well as at-risk driving behavior (Boyce, T. E., & Geller, E. S., 2002).

Methodology

To understand the consumer preferences among young which was not discussed in detail in the past, a specific effort was made to pick up valid literature from contemporary studies.

A conceptual framework (as shown in figure 1) was designed to check how these young consumers living in an urban area might have got influenced by the brand, price, fuel type, mileage (fuel economy), and safety while purchasing a car. The major cities such as Delhi, Bengaluru, Chennai, Mumbai, and Hyderabad have been selected for this study.. An automobile is considered as a product with a package of attributes. Even though full-profile conjoint experiments (such as Adaptive Choice-Based Conjoint – (Eggers and Eggers, 2011) could accommodate a large number of attributes, but it creates confusion among the respondents if there were more than five attributes Orme (2002). Therefore, the research is focused on a set of five attributes namely Brand, Price, Fuel Type, Mileage, and Safety which are the most significant in consumers' choice for cars.

Figure 1: Conceptual framework for measuring consumer preference



Source: Review of Literature

As this study is concentrated on youth living in urban areas, the behavior might vary and can be much different from general consumers. Keeping this in view, the objectives of this research are as follows.

- To analyze the factors influencing the young consumers’ preferences for cars
- To identify the relative importance of the features young consumers’ consider while purchasing cars.

The above-indicated objectives could be well addressed through a primary study. As the behaviour of urban youth varies from that of general consumers, the results might help the marketers to analyze the urban markets comprehensively. Based on the conceptual framework, the following research questions will be addressed during this study.

RQ-1: The perceived utility of the purchase of a car will be higher at a lower price compared to the higher price of a car. (McCarthy and Tay, 1998; Hensher et al., 2011; Lebeau et al., 2013)

RQ-2: The perceived utility of the purchase of a car will be higher with a higher mileage compared to a car with lesser mileage (Nandini Sen Gupta, 2016).

RQ-3: The perceived utility of the purchase of a car will be higher for a car with diesel compared to other fuel types of cars.

RQ-4: The relative importance of a car for safety is the highest among all other preferred attributes.

RQ-5: The perceived utility of purchase of a car for Indian originated Brand ‘Maruti’ among other cars is the highest than foreign originated brands.

Conjoint Analysis: Attributes and Levels

Conjoint Analysis (CA) is designed on the view that consumer's values are based on the utility, offered by-products’ attributes. There are three main steps involved in conjoint analysis. Identifying suitable attributes and levels is the first step in the method. The second step is to create a combination of factor levels using orthogonal design, of which few combinations will be treated as experimental and others as hold out sets. Based on the total combinations, a questionnaire is designed to collect data. The third step in the method is selecting a most appropriate composition model linking the estimated buyer part-worth utilities (Harrison, Ozayan and Meyers, 1998) and the attributes with their levels form the basis for decision criteria that a respondent uses to choose a product (Hair et al., 1998). The conjoint analysis test was administered on five attributes of a car i.e., brand, price, fuel type, mileage, and safety (Table 2). Table 3 explains different levels of attributes and an example of the conjoint profile has been shown in Table 4.

Table 3: Conjoint attributes and Levels

Attributes	Number of Levels	Attribute Levels
BRAND	3	Maruti, Hyundai, Honda
PRICE	3	<6 LACS, 6-8 LACS, >8 LACS
FUEL	3	Petrol, Diesel, CNG
MILEAGE	3	<15 KMPL, 15-18 KMPL, >18 KMPL
SAFETY	3	High, Medium, Low

Source: Review of Literature

Combining all the attributes and levels it comes to $(3 \times 3 \times 3 \times 3 \times 3) = 243$ profiles. By using a fractional factorial design (Cochran and Cox, 1957), the number of profiles i.e., 243 was significantly reduced to 22 profiles with a high probability of combinations using SPSS 21 – orthogonal design. Respondents were asked to rate the 22 profile combinations according to their preference (Annexure 1).

Table 4: An example of a Conjoint Profile

Attributes	Levels in one of the profiles
BRAND	MARUTI SUZUKI
PRICE	6-8 LACS
FUEL	CNG
MILEAGE	<15 KMPL
SAFETY	MEDIUM

Source: Orthogonal Design SPSS 21

Sampling Procedure

A judgmental sampling procedure was adopted to select the sample with condition 1 being ‘respondent age should be in the age group of 21 to 35 and must know for the selected attributes. Condition two beings ‘respondent would have purchased a car during the last one year. Respondents are selected from a large pool of recently passed out MBA Graduates (in the last 36 months) who are currently working with the corporate or handling business. Around 280 young consumers participated in filling the questionnaire and finally, 256 questionnaires were found valid.

Findings

The results of the conjoint analysis bring in a few interesting behavior patterns from urban youth, much away from traditional purchasing behavior. It was understood that the higher the utility value among all the combinations higher is the preference by the consumer. With the results of conjoint, when the output or rather part-worth utilities were analyzed, one of the combinations (*with brand Hyundai; fuel as CNG; mileage as < 15 kmpl; price as less; and safety as LOW*) is having the highest utility with a score of 0.338. This is to indicate that all other combinations are less preferred by the consumer than the one indicated above. Table 5 provides the detailed utility scores for each of the attributes and across the levels. This table contains five different attributes and three different levels held by each attribute.

Under the brand, the utility score of Maruti Suzuki is 0.034, Honda -0.108, and Hyundai is 0.074, indicating Hyundai the most preferred brand among all three and with the least being Honda. It was understood that the home grown Indian car brand ‘Maruti’ is not so preferred by urban youth when compared to one of the foreign brands ‘Hyundai’. Hence, our research question 5 which states that young consumers prefer Indian originated car brands to that of foreign originated car brands stands declined.

For petrol, the utility score stood at -0.613 which was least compared to the other two diesels and CNG with utility scores of -0.045 and 0.208 respectively. This brings to understanding that among urban youth, CNG is

the highly preferred fuel type in a car purchase. CNG preference by rural youth among all other fuels indicates that traditional fuels viz., petrol and diesel are not of their choice, thus declining the research question 3, which assumes that diesel is the most preferred fuel compared to other fuel types.

When checked for the ‘Mileage’ attribute, much away from the general consumer, young consumers preferred ‘low mileage (utility score of -0.109)’ than other levels, concluding youth prefers for higher pick-up than mileage (rurban youth feels.....higher mileage indicates low pick-up speed). Our research question 2, which states that the perceived utility of the purchase of a car will be higher with a higher mileage compared to that of a lower mileage car stand Unsupported.

Price was one attribute that was in line with general consumer behavior, with a lower price <6 lakhs as highly preferred and >8 lacs as the least preferred price category. This concludes that the lower-priced car is highly preferred by urban youth, supporting research question 1 which states that the perceived utility of purchase of a car will be higher at a lower price compared to the higher price of a car.

Surprisingly, high safety was not given top priority by young consumers. The safety levels High, Medium, and Low received part-worth utility scores of 0.066, 0.132, and 0.198 respectively. Even when analyzed among other attributes the relative importance of safety stood at last position, declining research question 4, which states that urban youth’s relative importance to car safety is the highest among other attributes.

Table 5: Utilities Score: Conjoint Analysis

<i>Attributes</i>	<i>Attribute level</i>	<i>Utility Estimate</i>	<i>Std. Error</i>	<i>Preferences</i>
Brand	Maruti Suzuki	0.034	0.195	Hyundai >> Maruti >> Honda
	Honda	-0.108	0.229	
	Hyundai	0.074	0.229	
Fuel Type	Petrol	-0.163	0.195	CNG >> Diesel >> Petrol
	Diesel	-0.045	0.229	
	CNG	0.208	0.229	
Mileage	<15 kmpl	-0.109	0.177	<15kmpl >> 15-18 kmpl >> above 18 kmpl
	15-18 kmpl	-0.218	0.353	
	>18 kmpl	-0.327	0.53	
Price	<6 Lakhs	-0.033	0.177	Below 6 Lacs >> 6-8 Lakhs >> More than 8 Lacs
	6-8 Lakhs	-0.065	0.353	
	>8 Lakhs	-0.098	0.53	
Safety	High	0.066	0.177	Low safety >> Medium safety >> High Safety
	Medium	0.132	0.353	
	Low	0.198	0.53	
(Constant)		8.665	0.559	

Source: SPSS 21

Table 6: Correlations

	Value	Sig.
Pearson's R	.833	.047
Kendall's tau	.710	.048
Kendall's tau for Holdouts	.633	.040
a. Correlations between observed and estimated preferences		

Source: SPSS 21

The above table-6 reveals the Pearson’s R and Kendall’s tau, which gives the measures of correlation between observed and estimated preferences. The values of correlation with person’s R- 0.833; Kendall’s tau – 0.710 indicate the model provided is a good fit. The holdout combinations also show good prediction as it was found significant.

Table 7: Relative Importance Values

Product Attribute	Relative Importance (%)	Preference Order
Brand (B)	27.936	Brand >> Fuel >> Price >> Mileage >> Safety
Fuel Type (F)	26.119	
Price (P)	16.53	
Mileage (M)	15.52	
Safety (S)	13.895	

Source: SPSS 21

The above table 7 indicates the range of utility scores (highest to lowest) for each of the attributes provides a measure of how important the attribute was to the overall purchase preference of young consumers.. The higher the percentage of relative importance, the higher the contribution of that attribute will be during the consumer buying decision.

The results show that the ‘Brand with 27.936%’ has the most influence on overall purchase preference. Hence, there is a large difference in preference between the combinations containing the most desired Brand – Hyundai (table-5) to that of the least desired brand – Honda (table-5). ‘Safety with 13.895%’ is identified as an attribute with the least influence on overall purchase preference among urban youth. It was identified that ‘fuel type – 26.119%’ (closer to brand-27.936%) is the second most important attribute after ‘Brand’ and so it has a significant influence on car purchase preference. Also, it can be noted that only these two attributes – ‘brand’ and ‘fuel type’ account for 54% of the impact on car purchase preference among urban youth. ‘Price-16.53%’ and ‘Mileage-15.52%’ though not so significant, still influence overall purchase preference.

Table 8: Coefficients

	B Coefficient
	Estimate
Mileage	-.109
Price	-.033
Safety	.066

Source: SPSS 21

The above table-8 shows the linear regression coefficients of attributes that have a linear relationship. With the help of this table, we can compute the total utility score basing on the attributes that have an only linear relationship. The utility for a particular attribute level is determined by multiplying the level by the coefficient. (Reference: SPSS notes chapter 5)

$$\text{Preference} = (-0.109) (\text{mileage}) + (-0.033) (\text{price}) + 0.066(\text{safety})$$

For example, the predicted utility for the mileage as medium -16 kmpl; safety-high (rated as 5 on the scale of 1-5) and price – 7 lakhs (medium) will be...-1.645. The higher the utility score, the better is the combination of attributes having a linear relationship given the other non-linear attributes present.

Table 9: Number of Reversals

Number of Reversals	
Mileage	108
Safety	93
Price	92

Source: SPSS 21

Table-9 displays the number of subjects that have the given number of reversals – showing the opposite of the expected relationship. This indicates that 108 subjects showed reversals for mileage (*linear relationship of high mileage – highly preferred was considered for the study*). Similarly, 93 subjects showed reversals for safety and 92 subjects showed reversals for price.

Discussion

The respondents in this study were asked to reveal their preferences for attributes in a car. Five attributes namely Brand, Fuel Type, Price, Mileage, and Safety were given in the study to determine the most preferred attribute by young consumers. This study analyzed the relevance of the brand, price, fuel type, mileage, and safety in consumers' preference.

This research has two implications. Firstly, the theoretical implication that a conceptual framework for measuring consumer preference was drawn with five attributes and assessed the influence of these attributes on young consumers' preferences which can be taken into consideration by researchers, scholars, and academia. The second managerial implication includes the clear cut inference made based on the utility estimates and relative importance which can be used by marketers before the new product launch. Marketers must pay attention to the importance of attributes according to their weight.

The Brands Maruti, Hyundai, and Honda considered for the study since these brands are the highest selling cars in the year 2017-18. Though Maruti stands on top in terms of market share, the research found Hyundai with utility estimate (0.074) is the most preferred brand among young consumers. The relative importance for the brand is high (27.936) among other attributes. Another important attribute of a car Fuel type (26.119) stands next to Brand in terms of relative importance. Among Fuel types, CNG (0.208) has a higher preference than Diesel (-0.045) and Petrol (-0.163). Mileage is another key attribute of car, surprisingly, Low mileage i.e., < 15 KMPL (-0.109) is preferred most by young consumers. Mileage stands fourth in terms of relative importance (15.52). Price is considered to be a very important factor in a car purchase decision, a low price below 6 lakhs price tag is preferred most with utility estimate of (-0.033). Price stands the third attribute in terms of relative importance (16.53). Though safety is considered a key attribute of a car, the inference is drawn from this study that low safety has the highest utility estimate (0.198) among young consumers. Safety also stands last in terms of relative importance (13.895).

About the utilities scores of different attributes of cars, the Hyundai brand is the most preferred by young consumers than Maruti and Honda. Among Fuel type, CNG is the most preferred by car buyers than Petrol and Diesel versions. Regarding mileage, preference is most for 15 kmpl than 15-18 kmpl and above 18 kmpl. Young car buyers' preference is more for 6 lakhs priced car than 6-8 lakhs and above 8 lakhs. Rurban consumers prefer less safe cars than medium and high safety cars.

The outcome of the research study suggests that out of the three different brands, the foreign brand is preferred over the local brand.

Limitations

This study is confined to two nonlinear attributes namely Brand and Fuel Type and linear attributes like Fuel Economy (mileage), Price, and Safety, hence, the results may not be generalized. The respondents also had a limited choice, since; this study is confined to only three brands and three levels. This study is confined to mid-range cars from the Indian perspective and the brands were selected as the top three brands based on sales volume for the year 2017-18. So, the respondents' opinions may be varied to his/ her preferences.

Further Research

The research can be explored to measure the impact of safety features on brand vice versa. In the same way, the study also can be extended towards the impact of Fuel Type (as a non-linear attribute) on any linear attributes of a car. Since the results are lack of heterogeneity, as the respondents are from urban and in the same age group i.e. in between 21 and 35, well-educated, recently earning groups, the future research can be conducted with different demographic and geographic characteristics. Further study also can be explored by selecting more than three levels. Similar studies can also be executed in other product categories.

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Annexure

Card List

	Card ID	safety levels	price	in kmpls mileage	type of fuel
1	1	HIGH	6-8 LAKHS	15-18 KMPL	CNG
2	2	MEDIUM	<6 LAKHS	>18 KMPL	CNG
3	3	MEDIUM	6-8 LAKHS	<15 KMPL	PETROL
4	4	LOW	6-8 LAKHS	<15 KMPL	CNG
5	5	LOW	>8 LAKHS	<15 KMPL	DIESEL
6	6	HIGH	>8 LAKHS	>18 KMPL	CNG
7	7	MEDIUM	>8 LAKHS	15-18 KMPL	DIESEL
8	8	HIGH	<6 LAKHS	<15 KMPL	PETROL
9	9	LOW	<6 LAKHS	>18 KMPL	DIESEL
10	10	LOW	6-8 LAKHS	>18 KMPL	PETROL
11	11	LOW	<6 LAKHS	15-18 KMPL	CNG
12	12	MEDIUM	6-8 LAKHS	>18 KMPL	DIESEL
13	13	LOW	>8 LAKHS	15-18 KMPL	PETROL
14	14	HIGH	6-8 LAKHS	15-18 KMPL	DIESEL
15	15	MEDIUM	<6 LAKHS	15-18 KMPL	PETROL
16	16	HIGH	<6 LAKHS	<15 KMPL	DIESEL
17	17	HIGH	>8 LAKHS	>18 KMPL	PETROL
18	18	MEDIUM	>8 LAKHS	<15 KMPL	CNG
19 ^a	19	HIGH	>8 LAKHS	15-18 KMPL	DIESEL
20 ^a	20	LOW	<6 LAKHS	>18 KMPL	DIESEL
21 ^a	21	HIGH	6-8 LAKHS	<15 KMPL	PETROL
22 ^a	22	HIGH	>8 LAKHS	<15 KMPL	DIESEL

a. Holdout

Source: *Orthogonal Design SPSS 21*