

# Changing Market Scenario of Automobile Sector in Saudi Arabia

Mohammad Rumzi Tausif, Mohammad Imdadul Haque

**Abstract:** *The Saudi Arabian car market is experiencing changes. New entrants to the car market like Kia are gaining popularity. This has led to a drop in the market share of other brands. There is a research gap in terms of studies in the automobile sector of Saudi Arabia. This study tries to fill the gap by identifying those factors which are influencing this change in consumer behavior. It uses six factors namely mileage, resale value, maintenance cost, pollution, product image, and country of make. Using binary logistic regression method the study reports that only fuel efficiency and maintenance cost determines the satisfaction in the car market. Hence, the study identifies improving fuel efficiency and reducing maintenance cost as key factors towards the performance of automobiles. The result of this study can be used by the automobile companies which want to increase their market share.*

**Keywords:** *Automobile market, market environment, consume behavior.*

## I. INTRODUCTION

The economic structure of Saudi Arabia is changing dynamically. These changes have gained momentum after the announcement of the recent structural transformation programs. This aimed at removing the country's dependence away from oil production and oil export. Haque and Khan, [10]. In the process, the country went many changes like the revision of petrol and electricity prices, the introduction of value-added tax (VAT), replacing expatriate labor with domestic labor, to name a few.

These changes have impacted the automobile market of the country. Saudi Arabia is one of the leading automotive markets of the Middle East. In the last few years, the market has witnessed many changes. All these factors had far-reaching effects on the Saudi car market. For the last few years, the Saudi car market has been highly volatile, the market has seen a growth of about 11% in 2014 the witnessed a fall of 21% in 2016 CEIC, [5]. The market scenario has changed greatly. Rising domestic petrol prices have changed people's preferences. Many new brands which were having a very meager market share is now showing exceptional sales growth and are now capturing handsome market share.

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Normally in the automobile sector, consumer buying behavior is based on many factors. Some of the most prominent factors besides price like brand name is a very important factor that affects the buying behavior. Similarly resale value also impacts buying behavior. For some customers, the country of make is very important while for some design and power is more important. Many customers are now conscious about the environment hence pollution can also be a deciding factor. Even mileage (fuel efficiency) is a very important factor that could affect buying decision. Maintenance cost is also considered important by many consumers. There are many other factors also like the color of the car, nearness of the service center, product image, safety features, etc. the list is exhaustive.

Every market has its own unique criteria. Consumer buying behavior is affected by many dynamics like culture, demographics, legal, political, social, economic environment. The Saudi car market is unique. Only recently females have been permitted to drive. Saudi is a big country, intercity distances are large. Railways are not widespread. No river ways are present. The country has abundance of oil and is also priced low. Haque, [11]. Some future trends are pretty negative for the Saudi automobile market. As expatriates are being replaced by domestic labor, the sale of cars to expatriate will decrease. Very soon Riyadh the capital city is going to have its metro rail network. New Saudi cities are being connected by the railway network. Recently two of the holy cities of Saudi Makah and Medina have been connected by train services. Improvements in local city transport and expansion of rail network can have an adverse impact on the car market. Regarding the car market, Toyota is the definite market leader. For the period 2003 to 2010, its market share increased from 33% to 37%. But the share of Chevrolet decreased from 7% to 4% over the same period. Market share of General Motors also decreased from 3% to 2% over the same period. While at the same time market share of Hyundai increased from 7% to 13% and for Kia it increased from 0% to 5%. IHS Automotive, [27]. And as per Industrial Cluster [12]), Toyota is still the market leader with 34% market share followed by Hyundai-Kia (23%).

In the last few years, the Saudi automobile market has witnessed entry and rise of new players like Kia. Customer buying behaviors have shown drastic changes. The brands that used to rule the Saudi roads are losing market share.

There is a need to study these exceptional market trends.



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The brands that were nonexistent a few years back are now gaining popularity. There are quite a few studies on the automobile market of Saudi Arabia, but there is a gap in the literature in terms of what currently impact the consumer buying pattern. Towards this, this current study tries to study the consumer preference towards the technical specifications of automobile

### II. LITERATURE REVIEW

Future prospects are good for Saudi Arabia's automobile market. Arab News [3] quoted Aranca, a reputed global research company, and stated that in Saudi Arabia, the total number of vehicles in its region is about 7.7 million in 2018, about 350,000 new cars and 115,000 new commercial vehicles were sold in this year alone. According to the same study there would be about 10.5 million vehicles on Saudi roads by 2023. As per another report by TechSci Research [24], Saudi Arabia car market is projected to reach 29.3 billion dollars by the year 2022. A different report by CEIC [5] stated that Saudi Arabia's car sales were highest in December 2015 at about 67 hundred thousand. But, the sales showed a negative trend in 2016 and 2017. In June 2016 it touched a low of 26 hundred thousand.

The Gulf Cooperation Council (GCC) market in general and Saudi car market, in particular, is going in for a massive change. Many recent pieces of research have revealed this scenario. According to a study by PWC [18], the Saudi car market is expected to grow by 9% per year, till 2025, this study has based its finding on expectations that, 20% of Saudi women will start driving by 2020. As per U.S.-Saudi Arabian Business Council [25] as of today, Saudi Arabia is the largest importer of the automobile and spare parts in Middle East. As per focus2move [9] the Saudi market is expected to have a positive impact due to female drivers while on the other hand there are some negative factors like introduction of VAT and slower economic recovery because of which the Saudi Arabia automobile markets underperformed in 2018, in comparison to the expectations of the market.

Overall consumer buying behavior is changing in gulf countries. According to a report by McKinsey & Company [17], Gulf consumers, are now more cost-conscious and have become less brand-loyal. The study revealed that about 55% of consumers in Gulf markets, particularly in Saudi Arabia, try to save through innovative ways to reduce their expenditures. According to Kokku [15], public transportation is not very vast and efficient, in Saudi Arabia. Cars are required to serve the basic necessity as a means of transportation.

According to research by Al Sudairi, [2] despite near term volatility, Saudi Arabia is moving in the right direction for long term economic gains. This study is based on the rationalization in the usage of electricity & fuel, higher local employment, higher consumption by women and pick up newer sectors such as e-commerce. Euromonitor [6], the report suggests that Saudis are now more price-conscious which is slowing growth in consumer expenditure. Recent social internal changes, including expanded women's rights and a departure of expats, are expected to significantly redefine the Saudi consumer profile in the coming years.

According to a study by Vatsa [26], green marketing in the automobile industry will be effecting the markets soon in a big way. Rehman [19] feels that the threat of global warming will play very important role in the future, and green marketing (pollution awareness) will become one of the deciding factors rather than an exception.

According to a report by MarketInsightsReports [16], the Saudi Arabia automobile market is slowly becoming a more and more service-oriented model. New entrants in the market are aggressively focusing on customer experience and consumer data. This change in the market creating opportunities for some and is also posing as a threat for others.

According to a study by Al-Ghalayini [1], the automobile industry is one of the main pillars of the global economy. It is an important driver of economic growth and advancement. The value chain of the automobile industry is very extensive and covers many other industries because of this it helps in creating a multiplier. This multiplier effect is much larger than any other contemporary industry.

Tausif and Haque [23] have summarized different studies and reported that cars are an essential element of the population as over 90 % of the households have at least one car and over 50 of the household have two cars; there is an absence of rail routes; non-existent metros and waterways; Airports cannot cover all cities, gasoline prices are low; and roads are in good condition. All these factors make cars as the most desirable means of transportation.

### III. METHODOLOGY

A questionnaire was distributed to 535 people in the AlKharj region of Saudi Arabia. But only 488 filled questionnaires were taken into analysis as the remaining was having incomplete entries. Approximately 61% of the samples were of the less than 25 years of age while the remaining were of more than 25% of age. Around 79% of the respondents of middle income group between 5,001-10,000 riyals, 11% were of lower income and 8% were of higher income category. The respondents preference for car models in increasing order were: hatchbacks, pickups, SUVs, and sedan. The preference of cars in terms of country of make in increasing order: Korean, European, American, and Japanese. The questionnaire had had six questions wherein the respondents have to respond in 'yes' or 'no'. As the data is on categorical scale the method of binary logistic regression is to be applied. Here 0 stands for 'no' and 1 stands for 'yes'. In binary logistic regression, the dependent variable is a dummy variable (coded 0 and 1). It is used instead of simple regression as it saves from heteroscedasticity and non-normal distribution of error terms.

In addition, in regression, the predicted probability can be greater than 1 or less than 0, which is a problem. This model is a non-linear transformation of linear



regression with an S-shaped distribution function. It is similar to standard normal distribution and constrains the estimated probabilities to lie between zero and one. Logistic regression is constructed by an iterative Maximum Likelihood procedure. If  $\text{Exp}(b)$  or the Odds ratio is more than 1, as the predictor increases, the probability of the outcome increases. And if  $\text{Exp}(b)$  is less than 1, as predictor increases, the probability of outcome decreases. Here the equation to be estimated:  $\text{Ln}(p/(1-op)) = a + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7$  The six dimensions considered for this study are, mileage (x2) (fuel efficiency), resale value (x3), maintenance cost (x4), pollution (x5) (environment-friendly), product image (x6), and country of make (x7). In this study, an attempt is being made to understand the Saudi customer buying behavior, in the automobile sector. Six dimensions have been taken to understand buying behavior. Consumer buying behavior is highly influenced by these dimensions.

#### IV RESULTS

Initial descriptive analysis shows that 83.61% of the sample respondents are satisfied with their cars. The purchase decision of the respondents were affected by maintenance issues (72.13%), brand image (68.85%), mileage (77.46), resale value (64.14%), county of make (57.99) and pollution aspect (39.34%) (Table 12).

Table A. Logistic regression results

Variables in the equation			
Variables	B	Sig.	Exp(B)
Constant	1.196	0.002	3.307
Mileage	-1.128	0.001	0.324
Resale value	0.006	0.984	1.006
Maintenance cost	1.913	0	6.77
Pollution	0.227	0.424	1.255
Product image	-0.3	0.349	0.741
Country of make	0.135	0.633	1.145
Model summary			
Chi-square	54.627	Sig	0
Cox & Snell R Square	0.106	Nagelkerke R Square	0.179
Overall percentage correctly predicted	84.8		

The overall model is significant as the p-value for chi-square is 0.00 which is less than 0.05 (Table 6). The significance value of 0.00 is the probability of getting the chi-square value of 54.627 when there is no impact of all the independent variables on the satisfaction from the vehicle. Here the null hypothesis is that there is no effect of the independent variable on the dependent variable. As the significance value is less than 0.05, hence the null hypothesis is not accepted. This implies that there is a significant impact of all independent variable taken together, on the dependent variable. A total of 488 cases are included in the study (Table 1). 11 cases are found to be 0 and are predicted as 0; 403 cases are observed as 1 and are also predicted as 1. 69 cases are observed as 0 but are predicted as 1; 5 cases are as 1 but are predicted as 0. The overall percentage of cases that are correctly predicted by the model is 84.8 (Table 10). 17.9% of the variance in satisfaction is explained by the model as indicated by Nagelkerke R Square (Table 7). The R squared is low but is quite expected

as we deliberately omitted price from the analysis. Price definitely impacts satisfaction. The idea is to see the impact of factors apart from price. The individual variables contribution towards satisfaction from the customer's vehicle is represented through the log-odds unit. B are the values for the logistic regression equation towards forecasting the dependent variable from the independent variable (Table 11).  $\text{log}(p/1-p) = 1.196 - 1.128 * \text{maintenance} + 0.006 * \text{brand} + 1.913 * \text{mileage} + 0.227 * \text{resale} - 0.300 * \text{price} + 0.135 * \text{pollution}$

The above equation gives the association between the predictors and the predicted. It tells the amount of increase or decrease, in the predicted log odds of satisfaction = 1 that would be predicted by a 1 unit increase (or decrease) in the predictor, while the other variables are constant. But as denoted by the significance values, only two variables maintenance and mileage are significant.

Since the coefficients are stated in log-odds, they have transformed into the odds ratio. Every unit increase in the predictor increases the odds by  $\text{Exp}(b)$ . For maintenance, the value is 0.324. This means maintenance is more likely to affect satisfaction by a factor of 0.324. Here as maintenance cost increases, the odds of being satisfied decreases. For mileage, the value is 6.77, that is, for every increase in mileage, the odds of being satisfied increase by a factor of 6.77. As the value is more than one, it means that as mileage increases, so do the odds of being satisfied increases. So the results indicate that price and mileage have an effect on the likelihood of being satisfied with the car. Other variables namely, brand, price of the vehicle, resale, pollution does not affect the satisfaction of the car.

#### IV. CONCLUSION

The study attempts to study the preferences of consumers towards automobiles in the Saudi Arabian market. Consumer behavior was tested on six dimensions: mileage (fuel efficiency), resale value, maintenance cost, pollution (environment-friendly), product image, country of make. Analysis of the results shows that out of these six dimensions, only two dimensions have significant variance. Four dimensions, resale value, pollution (environment-friendly), product image, country of make, do not significantly impact the preference for a particular automobile. This means that these dimensions are not affecting consumer buying behavior. Two dimensions mileage and maintenance cost is showing a significant difference, meaning that these two dimensions are affecting consumer buying behavior.

It can be concluded from the results that when mileage goes up, or when fuel consumption goes down consumer buying behavior becomes positive.

This implies that the customer is preferring fuel-efficient cars. This is understandable since fuel prices have gone up by three folds in the last four years. If we consider the change in the price of 91 Octane in last four years we find that in December 2015 fuel prices went up from 45 halala to 75 halala [19] and in December 2017 price of fuel went up further from 75 halala to 1.37 Riyals Saudi Gazette, [21]. And recently



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there was another hike in April 2019 and the price went up from 1.37 Riyals to 1.44 Riyals, Asharq Al-Awsat [4]. In future also prices are expected to go up further since prices in international markets are going up.

The second dimension that affects consumer buying behavior is maintenance cost, as maintenance cost goes up, consumer buying behavior becomes negative. This means consumer are preferring those cars which have a low maintenance cost. This could be a reason why the sale of American cars has gone down in the last two years, whereas the sale of Japanese and Koreans is going up. According to fin24[8], cars made in Japan have the top five positions for maintenance on the new Car Maintenance Index 2018 as per the figures released by market research group New World Wealth. As per another study by FCFCS [7], the strong showing of Korean cars may surprise many, but the key to their success is their low cost of ownership, it's not only about low initial cost but Korean cars are cheap to maintain and repair as well. According to Japanescartrade.com [13], American automobiles may be ahead in terms of strength and power but they are not that reliability but in reliability Japanese cars have the best track record.

To summarize, it can be said that the Saudi automobile market is going in for a change. Consumers now prefer cars with high mileage and low maintenance cost. As consumer buying behavior is changing the findings of this study gives some very interesting results. Also, as brands and country of make are not significant, this explains the growth of brands like Kia, Renault and other smaller players which can give a tough fight to big American brands like Ford and Chevrolet. An important policy recommendation which emerges is that companies which wish to maintain or increase their sales need to emphasize more on increasing fuel efficiency and decrease maintenance cost. The obvious limitation of this study is not including all the possible factors regarding satisfaction from a car like price, power, looks etc. Hence the scope of future research could be a detailed exploratory analysis for all the possible dimension leading to satisfaction from a car in Saudi Arabia

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VII APPENDIX

1.1.Case Processing Summary			
Unweighted Cases		N	Percent
Selected Cases	Included in Analysis	488	100
	Missing Cases	0	0
	Total	488	100
Unselected Cases		0	0
Total		488	100

a. If weight is in effect, see classification table for the total number of cases.

2.

Dependent Variable Encoding	
Original Value	Internal Value
0	0
1	1

3. Block O Beginning

Classification Table a,b					
	Observed		Predicted		
			VAR00001		Percentage Correct
			0	1	
Step 0	VAR00001	0	0	80	0
		1	0	408	100

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	Overall Percentage				83.6
a. Constant is included in the model.					
b. The cut value is .500					

4.

Variables in the Equation							
		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	1.629	0.122	177.542	1	0	5.1

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Variables not in the Equation					
			Score	df	Sig.
Step 0	Variables	VAR00002	5.182	1	0.023
		VAR00003	0	1	0.983
		VAR00004	45.169	1	0
		VAR00005	1.208	1	0.272
		VAR00006	0.125	1	0.724
		VAR00007	0.757	1	0.384
	Overall Statistics		58.443	6	0

6. Block 1: Method =

Omnibus Tests of Model Coefficients				
		Chi-square	Df	Sig.
Step 1	Step	54.627	6	0
	Block	54.627	6	0
	Model	54.627	6	0

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Model Summary			
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	380.803a	0.106	0.179
a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.			

8

Hosmer and Lemeshow Test			
Step	Chi-square	df	Sig.
1	8.592	8	0.378

9

Contingency Table for Hosmer and Lemeshow Test						
		VAR00001 = .00		VAR00001 = 1.00		Total
		Observed	Expected	Observed	Expected	
Step 1	1	29	24.959	21	25.041	50
	2	10	14.543	42	37.457	52
	3	10	8.696	44	45.304	54



	4	5	5.073	33	32.927	38
	5	8	7.07	47	47.93	55
	6	3	4.245	33	31.755	36
	7	4	7.764	64	60.236	68
	8	7	4.156	42	44.844	49
	9	2	2.149	47	46.851	49
	10	2	1.345	35	35.655	37

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		Observed		Predicted		Percentage Correct
				VAR00001		
				0	1	
Step 1	VAR00001	0	11	69		13.8
		1	5	403		98.8
	Overall Percentage					84.8

a. The cut value is .500

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		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1a	VAR00002	-1.128-	0.338	11.107	1	0.001	0.324
	VAR00003	0.006	0.287	0	1	0.984	1.006
	VAR00004	1.913	0.283	45.597	1	0	6.77
	VAR00005	0.227	0.284	0.638	1	0.424	1.255
	VAR00006	-.300-	0.32	0.878	1	0.349	0.741
	VAR00007	0.135	0.283	0.228	1	0.633	1.145
	Constant	1.196	0.382	9.822	1	0.002	3.307

a. Variable(s) entered on step 1: VAR00002, VAR00003, VAR00004, VAR00005, VAR00006, VAR00007.

**Table 12: Summary of respondent's responses**

	Statement	Yes (in %)	No (in %)
1	Are you satisfied with your car	83.61	16.39
2	Was your purchase affected by maintenance issues	72.13	27.87
3	Was your purchase affected by brand image	68.85	31.15
4	Was your purchase affected by mileage	77.46	22.54
5	Was your purchase affected by resale value of car	64.14	35.86
6	Did the country of make affect your buying decision	57.99	42.01
7	Was your purchase affected by pollution aspects	39.34	60.66

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