



# Factors affecting use of nudge a New marketing Tools of Modern times in Car marketing

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## Abstract

Today's marketing issues being that in spite thousands of new product launches every year, most product fail in market, as some are using older marketing ideas, only few succeed, and those succeeding in becoming market leaders are those with most nudges. Nudge had been used in industry knowingly or unknowingly, to study same car marketing industry was chosen. This study is a descriptive research based on secondary data and field research on car marketing in India. The main issue resolved by Nudge is that it makes the user feel importance, remove confusions in decision making, makes features appear beneficial and useful in perception. Nudges are present everywhere product we use as being a part of product and choice architecture, the world is moving from traditional marketing concepts to value and retention focused marketing due to change in market from monopolistic market to highly liberalised market. The aim of study was to find Nudges in cars features and how it adds value perception in cars marketing and analysis of factors affecting them, Indian car market also experienced this change over from monopolistic market to highly liberalised market for cars with almost all car players putting plants in India and each competing to get customers. Use of Nudge a marketing tool is gaining acceptance in field of education, sustainability, hospitality, safety and marketing.

**Keywords:** Nudge, Cars, nudges factors..

## Introduction

In theories of behavioural science and economics Nudge theory is gaining rapid acceptance, It says that Positive reinforcement and indirect suggestions are effective in getting achieved non forced compliance motives, incentives and in group decision making. The theory was propagated by Thaler and Sunstein in 2008 and has found wide acceptance in all fields where human behaviour is involved. People's behaviour can be changed in predictable way without forbidding any options or significant changing their economic incentives by Nudge a gentle push via choice architecture. To be counted as pure Nudge, the intervention must be easy and cheap to avoid<sup>1</sup>.

A choice architect is a person who has the responsibility for organizing the context in which people make decisions and making the user- friendly environment. A good system of choice architecture helps people in improving their ability to choose and select options that will make them better off. The features on cars or on marketing tools are choices which act as Nudge, Nudges remove the biases, makes decision making easier and act till the subtlety remains on same and competitors have not caught up in market.

**Literature review:** Thaler and Sunstein explain that humans have biases and we blunder often in making decisions, have temptations, follow sometimes herd mentality. They have given

examples of nudges in automobile field mainly in safety area, vehicle features, and vehicle and insurance choices. The short form of NUDGE: iNcentives, Understanding mappings, Defaults Give feedback, Expect errors, structured complex choices<sup>1</sup>. Neelamegham has done a case study on Maruti Udyog Ltd<sup>2</sup>.

Mullainathan has highlighted about how nudges can solve social issues, where last mile issues are always there<sup>3</sup>. The speaker Eliassons talks about experiences of Sweden Stockholm where nudges were used order to solve traffic congestion in 2006<sup>4</sup>. Hansen and Jaspersen thinking as per Kahneman noble laureate is either automatic (Type 1) or reflective (Type 2), transparent and non-transparent<sup>5</sup>.

Ly, Mazar, Zhao and Soman describe framework of nudges share some common characters. The factors like operational cost, bottlenecks, reach, adoption, risk, user habits etc. involved should be looked into in nudges<sup>6</sup>.

Dolan, Hallsworth, Halpers, King, Metcalfe and Vlaev came out with a frame work of called MINDSPACE framework of influences<sup>7</sup>. Camilleri and Larrick state in automobile field use of nudges in labels scales<sup>8</sup>. Menon and Jagathyraraj have by a structured diagram explained the factors in car purchase decision making<sup>9</sup>.

Shende in his study on the consumers behaviour the complexities in car purchase<sup>10</sup>. As per Subadra, Murugesan, Ganpati in car marketing factors influencing sales are driving comfort, fuel economy, spare parts availability, price, etc<sup>11</sup>. Sinaravelu studied the influence of source of information to buy a car which media is better, repurchase behaviours of buyers and influence of special features of cars on car sales<sup>12</sup>.

As per Kaul experimental marketing seeks to make consumer experience richer by multiple facilities and senses<sup>13</sup>. As per author Kapoor in liberalised era brand loyalty does not exist only perceived value loyalty exists. The author mentions about a new segment Look, Feel and do good<sup>14</sup>. Indian car market also experienced this change over from monopolistic market to highly liberalised market for cars with almost all car players putting plants in India<sup>15</sup>.

History of car making in India is also studied as the study involves Indian car manufacturers and features given by them in cars<sup>16</sup>. Nudges blog has examples of features on cars which act as nudges<sup>17</sup>. Auto tech review magazines issue highlighting the features in cars which are evolving with changing need of customers<sup>18-19</sup>.

Over drive auto magazine in which features of automobiles and features on head lamp were also studied<sup>20</sup>.

**Importance and objective of proposed investigation:** All car manufacturers are using choice architecture as USP (Unique selling proposition) on the products they are selling, the intention of the study is to search for following: i. Find how some of these choices can act as nudges in cars. ii. To study how nudges create values in cars. iii. To study factors affecting nudges and deduce important factors from same.

### Research Methodology

The research methodology adopted for the study comprised of following: i. Descriptive research is based on secondary data on Nudge, literature reviews on the topic and on observations in car market. ii. Quantitative research based on field survey via structured questionnaire on nudges in cars in 5 districts of Maharashtra Mumbai, Pune, Nashik, Aurangabad and Nagpur. The sample was chosen based convenience sampling on new car consumers found in showrooms and societies. The questionnaire was administered to 490 new car consumers in urban areas of these 5 districts. iii. Parametric testing used with SPSS software as sample used are some to some extent random

### Findings and Analysis

**Reliability Statistics:** Cronbach's alpha value 0.833 was seen in the study for the 63 variables studied, for the standardised items Cronbach's alpha 0.785 was seen for the refined scales as reliable and consistent. As per standards Cronbach's alpha value above

0.8 is considered to be reliable for basic research, hence data collected is demonstrating highly reliability

**Table-1**  
**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.833	0.785	63

**T Test –Hypothesis testing:** t distribution approaches Z distribution with large sample size, compared value of t will be same as Z value, p value in all above is found to be 0.00 (two tailed) which is less than 0.05, t test values also be very high, we can conclude from above to reject null hypothesis, (Null hypothesis being  $H_0: \mu=3$ ; alternate hypothesis  $H_1: \mu>3$ ), making alternate hypothesis to be true, hence we can say that nudges are there in cars, people find nudges to be beneficial in cars, the nudges remove fears and confusions in cars, nudges makes life easier for car drivers, nudges as people will last long in cars, even if people are told of nudge effect of features on cars they will still go for these nudge features in cars, people want more and more such nudge features on cars, nudge features increases the value of cars in perceptions of look good, feel good and do good (safety), the effectiveness of nudge features can be increased by higher education, movements promoting same (social campaigns) and by government regulations.

p value in all above is found to be 0.00 (two tailed) which is less than 0.05, t test values also be very high, we can conclude from above to reject null hypothesis, (Null hypothesis being  $H_0: \mu=4$ ; alternate hypothesis  $H_1: \mu<4$ ), making alternate hypothesis to be true. In look good features in cars price, colour of car, display of cars, personality endorsement, green tag/ stickers and car as safer mode of transport are important.

In feel good features like steering (power steering, adjustable steering, AMT), keyless entry, parking assist, driving modes, button start, LED light, multitasking (GPS, music system, s.m.s, tele-call, navigation etc.), follow me home headlamp, price difference between fuel prices and engine technology, resale value, EMI scheme, show room ambience, advertisement, signboard, mileage stickers, endorsement by family and friends, comparative with other cars, labels on spare parts, double air conditioner., interior space and head lamp are important features. In do good features (safety) like horn, airbags, seatbelt indicator, safety child seat, braking features, taller body, warranty, free insurance, distance meter, tubeless tires are important features.

The effectiveness on Nudges can be improved by higher education, movement (social campaign) and government regulation.

**Table-2**  
**One sample Test on nudge properties**

	Test Value = 3						Remark ( H0: $\mu=3$ ; H1: $\mu>3$ )
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		
					Lower	Upper	
There are Nudges in cars	39.158	489	.000	1.19184	1.1320	1.2516	P value=0.00 is less than $\alpha= 0.05$ ,t value 39.15 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Nudges features are Benifitcal	37.048	489	.000	1.06939	1.0127	1.1261	P value=0.00 is less than $\alpha= 0.05$ ,t value 37.04 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Nudges Features removes bottleneck	24.473	489	.000	.93673	.8615	1.0119	P value=0.00 is less than $\alpha= 0.05$ ,t value 24.47 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Nudges features makes life/work easier	28.637	489	.000	.99796	.9295	1.0664	P value=0.00 is less than $\alpha= 0.05$ ,t value 28.63 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Nudges features will last long	22.676	489	.000	.91020	.8313	.9891	P value=0.00 is less than $\alpha= 0.05$ ,t value 22.67 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
if known earlier on the nudge features your decision will remain same	19.862	489	.000	.81224	.7319	.8926	P value=0.00 is less than $\alpha= 0.05$ ,t value 19.86 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
People want- more nudges features in cars.	28.012	489	.000	1.07959	1.0039	1.1553	P value=0.00 is less than $\alpha= 0.05$ ,t value 28.01 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Nudge features increase the Value of car in terms of look good	33.133	489	.000	1.10000	1.0348	1.1652	P value=0.00 is less than $\alpha= 0.05$ ,t value 33.13 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Nudge features increases the Value of car in terms of feel good	39.607	489	.000	1.17143	1.1133	1.2295	P value=0.00 is less than $\alpha= 0.05$ ,t value 39.60 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Nudges features increases the Value of car in terms of do good	36.057	489	.000	1.17755	1.1134	1.2417	P value=0.00 is less than $\alpha= 0.05$ ,t value 36.05 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Effectiveness of Nudges features can be increased by higher education	29.755	489	.000	1.02041	.9530	1.0878	P value=0.00 is less than $\alpha= 0.05$ ,t value 29.75 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true

	Test Value = 3						Remark ( H0: $\mu=3$ ; H1: $\mu>3$ )
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		
					Lower	Upper	
Effectiveness of Nudges features can be increased by a Movement.(Campaign)	20.679	489	.000	.80816	.7314	.8850	P value=0.00 is less than $\alpha= 0.05$ ,t value 20.67 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Effectiveness of Nudges features can be increased by a regulation.	30.226	489	.000	1.06735	.9980	1.1367	P value=0.00 is less than $\alpha= 0.05$ ,t value 30.22 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true

**Table-3**  
**One-Sample Test on Nudge value perception**

	Test Value = 4						Remark ( H0: $\mu=4$ ; H1: $\mu<4$ )
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		
					Lower	Upper	
Importance of a look good feature like Price in purchase of car	-45.970	489	.000	-1.92245	-2.0046	-1.8403	P value=0.00 is less than $\alpha= 0.05$ ,t value 45.97 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a look good feature like Colour in purchase of car	-31.427	489	.000	-1.30204	-1.3834	-1.2206	P value=0.00 is less than $\alpha= 0.05$ ,t value 31.42 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a look good feature like display in purchase of car	-10.239	489	.000	-.54286	-.6470	-.4387	P value=0.00 is less than $\alpha= 0.05$ ,t value 10.23 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a look good feature like personality endorsement in purchase of car	-6.477	489	.000	-.41224	-.5373	-.2872	P value=0.00 is less than $\alpha= 0.05$ ,t value 6.477 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a look good feature like green tag/sticker in purchase of car	-14.004	489	.000	-.75510	-.8610	-.6492	P value=0.00 is less than $\alpha= 0.05$ ,t value 14.00 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a look good feature like car as a safe mode of transport in	-44.227	489	.000	-2.00000	-2.0889	-1.9111	P value=0.00 is less than $\alpha= 0.05$ ,t value 44.22 very high than table value 1.96, Hence null

	Test Value = 4						Remark ( H0: $\mu=4$ ; H1: $\mu<4$ )
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		
					Lower	Upper	
purchase of car							Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a feel good feature like steering features in purchase of car	-51.929	489	.000	-2.08980	-2.1689	-2.0107	P value=0.00 is less than $\alpha=0.05$ ,t value 51.92 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a feel good feature like parking assist features in purchase of car	-33.336	489	.000	-1.60204	-1.6965	-1.5076	P value=0.00 is less than $\alpha=0.05$ ,t value 33.33 very high, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a feel good feature like keyless entry features in purchase of car	-24.354	489	.000	-1.31633	-1.4225	-1.2101	P value=0.00 is less than $\alpha=0.05$ ,t value 24.35 very high, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a feel good feature like driving modes features in purchase of car	-19.293	489	.000	-1.11837	-1.2323	-1.0045	P value=0.00 is less than $\alpha=0.05$ ,t value 19.29 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a feel good feature like button start features in purchase of car	-18.539	489	.000	-1.13265	-1.2527	-1.0126	P value=0.00 is less than $\alpha=0.05$ ,t value 18.53 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a feel good feature like LED light features in purchase of car	-20.682	489	.000	-1.19592	-1.3095	-1.0823	P value=0.00 is less than $\alpha=0.05$ ,t value 20.68 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a feel good feature like multitasking features in purchase of car	-38.355	489	.000	-1.84898	-1.9437	-1.7543	P value=0.00 is less than $\alpha=0.05$ ,t value 38.35 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a feel good feature like follow me home head lamp features in purchase of car	-27.749	489	.000	-1.28163	-1.3724	-1.1909	P value=0.00 is less than $\alpha=0.05$ ,t value 27.74 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a feel good feature like fuel price difference(Petrol/diesel/cng)	-48.159	489	.000	-1.87551	-1.9520	-1.7990	P value=0.00 is less than $\alpha=0.05$ ,t value 48.15 very high than table value 1.96, Hence null

	Test Value = 4						Remark ( H0: $\mu=4$ ; H1: $\mu<4$ )
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		
					Lower	Upper	
features in purchase of car							Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a feel good feature like resale value features in purchase of car	-45.095	489	.000	-1.85918	-1.9402	-1.7782	P value=0.00 is less than $\alpha=0.05$ ,t value 45.09 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a feel good feature like EMI features in purchase of car	-32.714	489	.000	-1.64082	-1.7394	-1.5423	P value=0.00 is less than $\alpha=0.05$ ,t value 32.71 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a feel good feature like showroom ambience features in purchase of car	-20.328	489	.000	-1.00612	-1.1034	-.9089	P value=0.00 is less than $\alpha=0.05$ ,t value 20.32 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a feel good feature like advertisement features in purchase of car	-22.147	489	.000	-1.06122	-1.1554	-.9671	P value=0.00 is less than $\alpha=0.05$ ,t value 22.14 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a feel good feature like signboard features in purchase of car	-15.589	489	.000	-.74490	-.8388	-.6510	P value=0.00 is less than $\alpha=0.05$ ,t value 15.58 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a feel good feature like mileage sticker features in purchase of car	-24.187	489	.000	-1.19796	-1.2953	-1.1006	P value=0.00 is less than $\alpha=0.05$ ,t value 24.18 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a feel good feature like endorsement by family/friends in purchase of car	-33.167	489	.000	-1.53878	-1.6299	-1.4476	P value=0.00 is less than $\alpha=0.05$ ,t value 33.16 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a feel good feature like comparative with other cars features in purchase of car	-43.929	489	.000	-1.63061	-1.7035	-1.5577	P value=0.00 is less than $\alpha=0.05$ ,t value 43.92 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a feel good feature like labels on spares as features in purchase of car	-24.323	489	.000	-1.18367	-1.2793	-1.0881	P value=0.00 is less than $\alpha=0.05$ ,t value 24.32 very high than table value 1.96, Hence null

	Test Value = 4						Remark ( H0: $\mu=4$ ; H1: $\mu<4$ )
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		
					Lower	Upper	
							Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a feel good feature like double a.c. features in purchase of car	-16.960	489	.000	-.85714	-.9564	-.7578	P value=0.00 is less than $\alpha=0.05$ ,t value 16.96 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a feel good feature like space and head height features in purchase of car	-47.451	489	.000	-1.85306	-1.9298	-1.7763	P value=0.00 is less than $\alpha=0.05$ ,t value 47.45 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a do good feature like horn features in purchase of car	-47.475	489	.000	-2.08367	-2.1699	-1.9974	P value=0.00 is less than $\alpha=0.05$ ,t value 47.47 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a do good feature like airbag features in purchase of car	-55.139	489	.000	-2.17143	-2.2488	-2.0941	P value=0.00 is less than $\alpha=0.05$ ,t value 55.13 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a do good feature like seat belt indicator features in purchase	-51.904	489	.000	-2.11020	-2.1901	-2.0303	P value=0.00 is less than $\alpha=0.05$ ,t value 51.9 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a do good feature like safety child seat features in purchase of car	-38.409	489	.000	-1.86531	-1.9607	-1.7699	P value=0.00 is less than $\alpha=0.05$ ,t value 38.40 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a do good feature like safe braking features in purchase of car	-56.599	489	.000	-2.24082	-2.3186	-2.1630	P value=0.00 is less than $\alpha=0.05$ ,t value 56.59 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a do good feature like taller body features in purchase of car	-34.493	489	.000	-1.66122	-1.7559	-1.5666	P value=0.00 is less than $\alpha=0.05$ ,t value 34.49 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true

	Test Value = 4						Remark ( H0: $\mu=4$ ; H1: $\mu<4$ )
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		
					Lower	Upper	
Importance of a do good feature like warranty/extended warranty features in purchase of car	-51.051	489	.000	-1.99796	-2.0749	-1.9211	P value=0.00 is less than $\alpha=0.05$ ,t value 51.05 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a do good feature like free insurance features in purchase of car	-43.309	489	.000	-1.67347	-1.7494	-1.5975	P value=0.00 is less than $\alpha=0.05$ ,t value 43.3 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a do good feature like distance meter feature features in purchase of car	-54.850	489	.000	-1.91224	-1.9807	-1.8437	P value=0.00 is less than $\alpha=0.05$ ,t value 54.85 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true
Importance of a do good feature like tubeless tire features in purchase of car	-56.126	489	.000	-2.12245	-2.1968	-2.0481	P value=0.00 is less than $\alpha=0.05$ ,t value 56.12 very high than table value 1.96, Hence null Hypothesis H0 is rejected and alternate Hypothesis H1 is true

**Rank Order Analysis:** Rank order analysis shows that people rank 1<sup>st</sup> do good features i.e. safety features in a car, then 2<sup>nd</sup> feel features and lastly on the looks features.

**Table-4**  
**Rank distribution**

Rank		Look Good Frequency	Feel Good Frequency	Do Good Frequency
Valid	1.00	44	87	359
	2.00	85	327	78
	3.00	361	76	53
	Total	490	490	490

**Factor Analysis:** As Kaiser –Meyer-Olkin (KMO) statistics is 0.908 (which is much >0.50) which is quite high, hence Factor analysis can be used for reducing down factors. Bartlett’s test of sphericity shows that the co-relations between matrix of variables is significant, indicated by p value 0.000 corresponding. Chi-square statistics, which is less than 0.05, indicating rejection of Hypothesis that the co relation matrix of variable is insignificant, sample size being 630.

**Table-5**  
**Cumulative ranking**

Factor	Summarized rank order	Ranked by customer
Look good	1297	3
Feel Good	969	2
Do good	674	1

**Table-6**  
**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.908
Bartlett's Test of Sphericity	Approx. Chi-Square	7974.029
	df	630
	Sig.	0.000

**Table-7**  
**Communalities**

	<b>Initial</b>	<b>Extraction</b>
Price	1.000	0.650
Colour 1	1.000	0.759
Display 4	1.000	0.719
Personality Endorsement	1.000	0.641
Green Tag/ Sticker	1.000	0.568
Car as safe/ Better Mode	1.000	0.515
Steering Features	1.000	0.591
Key less entry	1.000	0.592
Parking assist	1.000	0.641
Driving modes 3	1.000	0.728
Button start 7	1.000	0.703
Led light	1.000	0.647
Multitasking	1.000	0.552
Head lamp feature	1.000	0.539
Fuel price difference Petrol-Diesel-CNG	1.000	0.610
Resale value	1.000	0.529
EMI	1.000	0.652
Showroom ambience 9	1.000	0.682
Advertisement	1.000	0.654
Signboard	1.000	0.665
Mileage sticker	1.000	0.639
Endorsement by family 8	1.000	0.694
Comparative	1.000	0.653
Labels	1.000	0.657
Double A.C.	1.000	0.621
Space and head height	1.000	0.512
Horn	1.000	0.552
Airbag 6	1.000	0.705
Seat belt indicator 2	1.000	0.738
Safety child seat	1.000	0.694
Safe braking feature5	1.000	0.708
Taller body	1.000	0.599
Warranty	1.000	0.559
Free insurance	1.000	0.639
Distance Feature	1.000	0.639
Tubeless tire	1.000	0.601
Extraction Method: Principal Component Analysis		

**Table-8**  
**Eigen Values**

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	11.102	30.840	30.840
2	2.459	6.829	37.669
3	1.974	5.483	43.152
4	1.491	4.141	47.293
5	1.327	3.685	50.978
6	1.295	3.598	54.577
7	1.128	3.132	57.709
8	1.065	2.959	60.668
9	1.009	2.803	63.471
10	0.878	2.439	65.911
11	0.857	2.381	68.292
12	0.816	2.267	70.559
13	0.790	2.194	72.753
14	0.742	2.060	74.813
15	0.704	1.957	76.770
16	0.640	1.777	78.547
17	0.621	1.724	80.270
18	0.596	1.655	81.926
19	0.530	1.473	83.399
20	0.521	1.446	84.845
21	0.500	1.389	86.234
22	0.473	1.313	87.547
23	0.441	1.226	88.773
24	0.419	1.163	89.936
25	0.400	1.110	91.046
26	0.384	1.067	92.113
27	0.364	1.010	93.123
28	0.355	0.985	94.108
29	0.328	0.911	95.019

Component	Total	% of Variance	Cumulative %
30	0.307	0.853	95.871
31	0.289	0.802	96.674
32	0.276	0.768	97.441
33	0.250	0.693	98.135
34	0.241	0.669	98.804
35	0.230	0.640	99.444
36	0.200	0.556	100.000
Extraction Sums of Squared Loadings			
Component	Total	% of Variance	Cumulative %
1	11.102	30.840	30.840
2	2.459	6.829	37.669
3	1.974	5.483	43.152
4	1.491	4.141	47.293
5	1.327	3.685	50.978
6	1.295	3.598	54.577
7	1.128	3.132	57.709
8	1.065	2.959	60.668
9	1.009	2.803	63.471
Rotation Sums of Squared Loadings			
Component	Total	% of Variance	Cumulative %
1	3.880	10.779	10.779
2	3.702	10.282	21.061
3	3.668	10.189	31.250
4	2.800	7.779	39.029
5	2.211	6.140	45.169
6	1.980	5.500	50.670
7	1.835	5.097	55.767
8	1.488	4.132	59.899
9	1.286	3.572	63.471

Extraction Method: Principal Component Analysis

**Component Matrix:** Out of above 36 variables, 9 variables have Eigen value more than 1 are accepted and rest of factors which have lower than 1 Eigen values are rejected in reducing down the factors to important factors. These 9 variables explain 63.74% of variations in the entire data set, the percentage of variation of 1<sup>st</sup> factor is 30.84%, 2<sup>nd</sup> factor 6.82%, 3<sup>rd</sup> factor 5.48%, 4<sup>th</sup> factor 4.14%, 5<sup>th</sup> factor 3.685%, 6<sup>th</sup> factor 3.59%, 7<sup>th</sup> factor 3.13%, 8<sup>th</sup> factor 2.95%, 9<sup>th</sup> factor 2.80%.

**Table-9**  
**Component Matrix**

	Component								
	1	2	3	4	5	6	7	8	9
Price	0.508	0.134	0.173	-0.195	-0.348	0.361	-0.203	-0.096	0.060
Colour	0.411	-0.155	-0.026	-0.074	-0.071	0.299	0.514	0.239	0.379
Display	0.384	-0.440	-0.298	0.065	0.066	0.500	0.145	-0.071	-0.062
Personality Endorsement	0.488	-0.386	-0.161	0.068	0.064	0.305	0.004	-0.281	0.216
Green tag/ sticker	0.541	-0.190	-0.117	-0.025	0.034	0.103	-0.458	-0.053	0.014
Car as safe/ better mode	0.512	0.297	0.086	-0.240	-0.114	-0.180	-0.136	0.180	0.058
Steering features	0.578	0.104	-0.200	-0.328	-0.289	-0.023	0.074	-0.039	0.091
Key less entry	0.626	-0.293	-0.256	0.023	-0.167	-0.100	0.093	-0.006	0.036
Parking assist	0.666	-0.006	-0.273	0.122	-0.066	-0.202	-0.021	0.241	0.064
Driving modes	0.588	-0.205	-0.279	0.158	-0.292	-0.139	-0.120	0.127	-0.321
Button start	0.672	-0.187	-0.289	0.095	-0.242	0.005	0.062	0.102	-0.227
Led light	0.626	-0.231	-0.233	0.169	-0.219	-0.166	-0.005	-0.170	-0.120
Multitasking	0.640	-0.091	0.033	-0.145	-0.154	-0.251	0.122	-0.029	0.099
head lamp feature	0.554	-0.161	0.022	0.273	0.015	-0.294	-0.038	-0.002	0.208
Fuel Price difference Petrol-Diesel-CNG	0.491	0.269	0.225	-0.175	-0.380	0.172	-0.111	0.170	-0.028
Resale value	0.569	0.026	0.107	-0.422	-0.091	0.018	-0.022	0.059	-0.046
EMI	0.607	-0.087	0.107	-0.422	0.056	0.102	-0.263	-0.058	-0.027
Showroom ambience	0.567	-0.373	0.146	-0.196	0.234	-0.180	0.060	-0.131	0.230
Advertisement	0.564	-0.399	0.261	-0.131	0.268	-0.122	-0.054	-0.028	0.030
Signboard	0.617	-0.450	0.186	0.034	0.150	-0.013	0.028	-0.072	-0.131
Mileage sticker	0.568	-0.181	0.436	-0.038	0.047	-0.156	0.093	-0.127	-0.201
Endorsement by family	0.562	-0.134	0.413	-0.069	0.115	-0.140	0.168	0.265	-0.230
Comparative	0.440	0.110	0.539	0.225	0.079	0.100	0.212	0.184	-0.103
Labels	0.464	-0.179	0.074	0.074	0.324	0.255	-0.383	0.283	0.043
Double A.C.	0.516	-0.034	-0.029	0.439	-0.047	-0.058	-0.016	0.313	0.238
Space and Head height	0.468	0.247	0.263	0.205	-0.109	0.167	-0.047	0.179	0.217
Horn	0.578	0.260	-0.033	-0.188	0.103	0.114	0.260	0.003	-0.152
Airbag	0.590	0.395	-0.282	-0.111	0.165	-0.030	0.098	-0.176	0.198
Seat belt indicator	0.608	0.390	-0.210	-0.098	0.387	0.052	0.084	0.017	-0.057
Safety child seat	0.482	0.268	-0.330	0.102	0.338	0.218	-0.120	0.247	-0.181
Safe braking feature	0.617	0.395	-0.272	-0.085	0.180	-0.195	0.117	-0.071	0.035
Taller body	0.633	0.279	-0.191	0.037	0.186	-0.145	0.009	-0.072	-0.146
Warranty	0.510	0.300	0.114	0.297	-0.012	0.160	0.032	-0.199	-0.204
Free insurance	0.503	0.175	0.229	0.224	-0.097	0.198	0.167	-0.367	-0.205
Distance Feature	0.548	0.247	0.195	0.200	0.067	-0.124	-0.238	-0.264	0.231
Tubeless tire	0.541	0.293	0.194	0.322	-0.136	-0.005	-0.068	-0.167	0.174

Extraction Method: Principal Component Analysis. a. 9 components extracted.

**Table-10**  
**Rotated Component Matrix<sup>a</sup>**

	Component								
	1	2	3	4	5	6	7	8	9
Price	0.049	0.041	0.079	0.702	0.264	0.143	0.226	0.074	0.020
Colour	0.135	0.158	0.107	0.165	0.019	0.043	0.283	-0.020	0.771
Display	0.057	0.111	0.305	-0.006	0.120	-0.204	0.677	0.216	0.221
Personality Endorsement	0.085	0.244	0.213	0.069	0.057	0.170	0.690	0.072	0.099
green tag/ sticker	0.121	0.225	0.301	0.296	-0.040	0.206	0.318	0.352	-0.236
Car as safe/ better mode	0.339	0.176	0.157	0.481	-0.003	0.203	-0.257	0.072	0.033
Steering features	0.364	0.100	0.342	0.513	-0.043	0.058	0.124	-0.174	0.132
Key less entry	0.184	0.270	0.600	0.139	-0.019	0.121	0.259	-0.031	0.151
Parking assist	0.359	0.153	0.581	0.131	-0.038	0.265	-0.020	0.182	0.170
Driving modes	0.098	0.121	0.796	0.161	0.122	0.007	0.036	0.150	-0.076
Button start	0.206	0.146	0.722	0.194	0.166	-0.025	0.170	0.107	0.112
Led light	0.162	0.224	0.669	0.088	0.148	0.172	0.230	-0.075	-0.073
Multitasking	0.244	0.415	0.379	0.291	0.024	0.207	0.020	-0.164	0.144
Head lamp feature	0.131	0.350	0.388	-0.040	0.043	0.484	0.045	0.051	0.079
Fuel price difference Petrol-Diesel-CNG	0.090	0.032	0.150	0.674	0.263	0.108	-0.125	0.102	0.133
Resale value	0.267	0.362	0.153	0.542	0.030	-0.053	0.017	0.026	0.071
EMI	0.244	0.446	0.091	0.543	-0.014	0.007	0.203	0.183	-0.126
Showroom Ambience	0.180	0.704	0.118	0.093	-0.112	0.209	0.255	-0.031	0.098
Advertisement	0.084	0.743	0.134	0.096	0.012	0.121	0.166	0.161	0.014
Signboard	0.035	0.652	0.316	0.044	0.206	0.043	0.260	0.156	0.032
Mileage sticker	0.060	0.660	0.171	0.164	0.369	0.072	-0.029	-0.036	-0.020
Endorsement by family	0.105	0.635	0.197	0.156	0.283	-0.046	-0.237	0.180	0.214
Comparative	0.042	0.358	-0.021	0.094	0.564	0.149	-0.192	0.202	0.308
Labels	0.088	0.295	0.075	0.144	0.009	0.158	0.190	0.689	0.018
Double A.C.	0.090	0.086	0.403	-0.019	0.115	0.479	-0.020	0.306	0.326
Space and Head height	0.104	0.043	0.040	0.309	0.317	0.413	-0.054	0.233	0.274
Horn	0.550	0.193	0.119	0.262	0.286	-0.108	0.039	0.020	0.187
Airbag	0.743	0.035	0.098	0.194	0.051	0.258	0.162	-0.062	0.068
Seat Belt indicator	0.790	0.132	0.063	0.112	0.157	0.048	0.055	0.216	0.062
Safety child seat	0.575	-0.071	0.202	0.036	0.135	-0.030	0.071	0.540	0.030
Safe Braking feature	0.767	0.107	0.219	0.129	0.070	0.190	-0.025	-0.037	0.030
Taller body	0.631	0.165	0.295	0.085	0.205	0.141	-0.009	0.096	-0.087
Warranty	0.300	0.027	0.154	0.118	0.615	0.192	0.076	0.088	-0.054
Free insurance	0.193	0.141	0.117	0.154	0.692	0.131	0.191	-0.108	-0.023
Distance Feature	0.288	0.211	0.032	0.186	0.257	0.614	0.060	0.045	-0.164
Tubeless tire	0.205	0.054	0.138	0.211	0.424	0.557	0.026	0.008	0.029

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 20 iterations.

With rotation component matrix cut off score 0.50, for factor loading to naming the important factors, we can make 9 important factor groups and rename them. Factor 1 comprises of following factors, Safe braking features, airbag, seat belt indicator, safety child seat, horn, taller body combining these same can named as safety factor lookout. Factor 2 comprises of following factors Show room ambience, advertisement, signboard, mileage sticker, endorsement by family and friends combining same can be named as perception seen by others. Factor 3 comprises of following factors Button start, driving modes, parking assist, keyless entry, combining same can be named as unique feel feature. Factor 4 comprising of Price, steering features, fuel price difference, resale value, EMI, combing same can be named as Cost of Driving. Factor 5 comprises of following factors free insurance, warranty, comparatives, combining same can be named as post sale assurance. Factor 6 comprises of following factors distance meter, tubeless tire, combining same can be named as travel assurance. Factor 7 comprises of following factors display, personality endorsement, combining same can be named as look perception. Factor 8 comprises of following features label on spare parts, safety child seat, combining same can be named as Genuine Concern. Factor 9 comprises of only 1 factor colour which are unique, hence can be named as unique look identity.

## Conclusion

We can conclude from above analysis that, there are nudge features in cars, which are beneficial to us as they remove our confusions in decision making and make life and work easier. People perceive that these nudges will last long, people want more such nudges. People also say that if they knew nudges change our behaviour they will still follow herd mentality and their decision will remain same. These nudges in car add value in car in terms of look, feel and do good (safety). The effectiveness of these nudge features can be increased by higher education, movement (social campaign) and by government regulation. In ranking nudges in cars we rank do good (safety) nudges as most important, then feel nudges and look nudges in cars. The 36 above factors studied can be reduced to 9 major factors as safety factor lookout, perception seen by others, unique feel feature, cost of driving, post sale assurance, travel assurance, look perception, genuine concern, and unique look identity.

From above analysis we can say that Nudges when put on 7ps (marketing mix) of marketing, changes a traditional marketed product to value and retention focused marketed product by improving value perception in look, feel and do good perception. Whether we like or not we are living in world full of nudges and there is no neutral architecture the current products have nudges and choices as per the architect of that product, we now live in world full of technology, we are impacted by technology like media, internet, wireless blue tooth, radio frequency technologies, our behaviours are changing as we use

more and more of technology where touch and feel is more important.

The main issue resolved by Nudge is that it makes the user feel importance, remove confusions in decision making, makes features appear beneficial and useful in perception. The heart of Nudge are product and feature innovations, where it is felt that, Necessity is mother of all inventions; Nudge makes us feel the importance of features on choice architecture. Study of Nudge in automobile field can be used by car manufacturers on making better automobile for the community, which connects with people instantly and make the automobile successful in market. To consumers the study of nudges in automobile field is important so they become aware on technology their or choices there for them to know and satisfy their hidden needs.

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