Confirmatory Factor Modeling On Emerging Consumer Purchase Behaviour Of Passenger Cars

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ABSTRACT

With globalization and liberalization, many world leaders in automobile manufacturing such as Ford, General Motors, Honda, Toyota, Suzuki, Hyundai, Renault, Mitsubishi, Benz, BMW, Volkswagen and Nissan set up their manufacturing units in India in joint venture with their Indian counterpart companies, by making use of the Foreign Direct Investment policy of the Government of India. With a multiplicity of choices available to the Indian car buyers, it drastically changed the car purchase scenario in India, and particularly in the State of Kerala. This transformed the automobile scene from a sellers' market to a buyers' market. The main purpose of this paper was to develop a model with major variables that influenced the consumer purchase behaviour of passenger car owners in the State of Kerala. The results of the research contribute to the practical knowledge base of the automobile industry, specifically to the passenger car segment. It would also lend a great contributory value addition to the manufacturers and dealers for customizing their marketing plans in the State.

Keywords: Consumer Behaviour, Passenger Cars, Security Features, External Influence, Comfort Factors, Convenience Factors

INTRODUCTION

In India, until the early eighties, consumers had very limited options for passenger cars. The Automobile Industry has been in the booming phase for the past ten 10 years, on the strength of the Indian Government's liberalized economy policy and freedom from the License Raj. The Government of India allowed Foreign Joint Venture in the industry since early 1990, which saw many automobile giants entering the Indian market with their models, readily available, without much waiting time for delivery. Sudden interest of major global players has made the Indian auto industry very competitive, as India provides the twin benefits of ready market and a low cost manufacturing base for them. With the explosion of the automobile industry, due to its globalization and liberalization, car manufacturers introduced much innovative and technological advancement in their models. To suit their changing lifestyles, customers have started thinking about changing over to the new models of cars, with related ease than before.

LITERATURE REVIEW

The researchers evaluated various secondary studies conducted on consumer behaviour towards passenger cars by other researchers in the relevant area, in different countries, and also with reference to India, with specific reference to the state of Kerala.

Sagar et al. (2004) discussed as to how the Indian car industry has advanced technologically, driven by a confluence of factors such as intense competition, demanding consumer preferences, government policies (especially tightening emission standards), and the global strategies of various players. They elaborated that cars manufactured in India are based on designs incorporating advanced technologies, that are often comparable with those available globally and Indian car exports are also growing.

Mukherjee and Sastry (1996) discussed that the penetration of passenger cars in rural and semi-urban areas is extremely low and could provide fresh markets to automobile manufacturers. They opined that the new entrants will have to deal with uncertainty of demand, different and evolving customer needs, a relatively poor supplier base, a market crowded with competition and industry-wide capacity shortages.

As per Kotwal (2009), face off buyers now prefer to have cars with the space, comfort and luxury of a mid - size saloon or sedan. With growing affluence and technological advancement, there develops a certain maturity in taste, as evidenced by the growing popularity of the Indian Hatchback market.

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❖ **Role of Internet Marketing In Consumer Decision Making Process :** As the Internet is rapidly growing and providing the platform for e-commerce marketing, many customers use the Internet partly or even fully, for all the buying process stages. Just about one in seventeen people may have access to the Internet in India, but every third car buyer in the country's top cities start their search on the world-wide web. As per Sharma (2010), four out of every ten new-car buyers, and three in every ten used car buyers use the Internet to do the initial research before making the purchase.

❖ **Consumer Politeness and Complaining Behaviour :** Research suggests that in many cases, companies make good-faith efforts to address the complaints of their disgruntled customers. Many managers, in certain cases, are often prepared to exceed consumer expectations beyond-the-contract or above the prescribed job specification, aimed at striving to address consumer complaints, as notified by Resnik and Harmon (1983).

❖ **Family Influence In Consumer Behavior :** White (2004) discussed the factors that affect car-buyers' choices and comments - that people expect to haggle with dealers over price and to receive substantial rebates or incentives as well as low-interest payment plans. He pointed out that with an increase in multi-car households, car dealers and advertisers need to target the right audience, taking into account the pester power of children and the importance of life stages. Despite the fact that women are the primary buyers of most new cars, he admitted that the motor trade has traditionally been contemptuous of women's role in the car-buying process.

❖ **Virtual Brand Community Effect :** The importance of virtual brand communities is growing day by day as a result of consumers increasingly using online tools to contact fellow consumers in order to get information on which to base their decisions. Luis et al. (2007) proposed the positive effects of participation in a virtual community on both consumer trust and loyalty to the product, brand or organization around which the community is developed.

❖ **Relationship, Service Package and Price :** In the car industry, which is predominantly driven by product characterization, classification and orientation, establishing a long-term relationship is considered to be an essential marketing strategy at all distribution levels. Thus, customer knowledge and relationship building, by constantly addressing the customers' needs, are considered to be vitally important selling ingredients to contribute to a car dealer's competitive advantage, as ascertained by Chojkacki (2000). Sharma and Patterson (1999) stated that car dealers were implementing a strategy to position themselves, more effectively in the market place than before, by means of continuous improvement of quality maintenance through services delivery packages, as car dealers are increasingly being confronted by demanding and technologically knowledgeable consumers, shortened product model life cycles, intensified competition and fragmented market segments.

❖ **Customer Satisfaction and Loyalty :** Customer satisfaction is often used as a predictive measurement of future consumer purchases as hypothesized by Newman and Werbel (1973). Satisfied customers are more likely to resort to repeating purchases in the time of actual instance, as reported in the studies by Zeithaml, Berry and Parasuraman (1996). Moreover, highly satisfied customers will convey their success stories of satisfaction and directly recommend that others try the source of satisfaction, as stated in the studies conducted by Reynolds and Arnold (2000).

❖ **Brand and Retail Loyalty :** Customer satisfaction can be considered to be the central determinant in all phases of the contact chain. Multi-dimensional recording of customer loyalty reveals clear differences in the interactions, first with brand loyalty and second, with dealer loyalty. In contrast to the opinion widely held in practice, customers in the automotive sector definitely do not perceive the brand and the dealer as one unit.

The results obtained by Huber and Herrmann (2001) are so fundamental that they can be translated into implications even by internationally operating companies.

Ewing (2000) investigated brand loyalty by examining actual past behaviour and its impact on future behavioral intentions, as well as willingness to recommend the brand to another customer known to him. Findings indicated that purchase expectation / intention remains a valid research metric.

Dharmaraj (2010) conducted a study on brand preference dimensions on customer satisfaction with reference to passenger cars by considering four parameters – information factors, psychological factors, economic factors and product factors. The study reported that in the category of information factors, advertisements, friends, relatives and decisions influenced by the spouse topped the list. In the 'psychological factors' category, brand name, brand

superiority and brand loyalty played a major role in influencing car preference. In the 'economic factors' category, mileage, maintenance cost and price played a major role in influencing passenger car customers. In 'product factors' category, quality, comfort and technology, brakes, power steering and durability played an influencing role for car owners.

Kaushik and Kaushik (2008) reported in their study conducted in south west Haryana region that customers are more influenced by friends and relatives than dealers and salespersons. Their study also brought out that brand name, fuel efficiency and price were found to be the primary determinant for buying a car in this region.

Menon (2012) and Jacob & Khan (2010) reported in their studies that there was considerable proportion of modern women car buyers, which has increased three fold in the recent years. Companies have started to dig deep into the Indian women's psyche and are paying great attention to their eye for detail. Marketers may need to look at the needs of women customers, who are increasingly growing with respect to this segment. There is also a substantial influence of women in the car purchase decision of the family. The trend has been replicated in the State of Kerala as well, where we can see many women driving in the city and towns.

Menon (2012) also observed that car makers have woken up to the new reality of the internet providing a key role in their marketing and communication strategies. The internet has witnessed increased brand building efforts by car companies over the past few years.

RATIONALE AND SIGNIFICANCE OF THE STUDY

Though there are customer satisfaction surveys conducted by car manufacturers / dealers and other agencies, there is still a research gap, as there is no organized comprehensive research study of the passenger car segments that has been conducted in the state of Kerala or in India. Kerala market is considered to be different from other states, due to its high consumerism. Consumerism in the state is also attributed to high literacy and booming economic conditions, in the middle class, due to the inflow of NRI Remittances, predominantly from the Gulf, USA and European countries. Manufacturers and marketers treat Kerala as a test market, by launching their models in the city of Cochin. Thus, the study is quite relevant to measure the emerging customer preferences and tendencies in the passenger car industry, which can be very useful for the car manufacturers and marketers to better understand, strategize and orient their marketing programs accordingly. The study was initiated in January 2010. Thereafter, the literature review, methodology and research design was finalized. The data collection was conducted during April-May 2011. Further data feeding, analysis and interpretation were undertaken during July – October 2011. Thus, the period of the study was from January 2010 to January 2012.

STATEMENT OF THE PROBLEM

With the proliferation of many passenger car makes and models in India, which are mostly offering similar value proposition in the passenger car segment, various car segments have become hugely differentiated. The present study intended to explore and unearth the differentiating parameters in such a homogenous and synchronized passenger car market, thus influencing the consumer purchase behavior of passenger cars in the State of Kerala.

OBJECTIVES OF THE STUDY

The major objective was to build up a Consumer Purchase Behaviour Model, with major parameters influencing the behavioural patterns of the passenger car owners. More specifically, the objectives were to study the influence in terms of :

❖ **Information Gathering and Consumer Purchase Initiation :** From peers, internet websites, advertisements, visit to the dealer.

❖ **Personal Preferences of Car Features :** Based on personal needs, convenience factors, and comfort factors.

❖ **Influence Factors Based on the Car Manufacturer / Dealer :** Dealer and showroom experience, status symbol, after-sales service, Dealer offers.

❖ **Influence Factors Based On Car Model :** Advanced technology, mileage, market value of the brand & model, price, interior and exterior design, security and safety features, driving comfort and entertainment features.

❖ **External Influence :** Family, parents, friends, colleagues, market goodwill and car loan availability.

❖ **Satisfaction Level :** Mileage, brand, model, re-sale value, technology, safety, security, riding comfort, performance and style.

RESEARCH METHODOLOGY

The research methodology adopted in this research study comprised of the following stages :

❖ Literature Review, that is the secondary research.

❖ An exploratory stage that is the Primary Research, consisting of depth interviews with car dealers of new and second-sale cars, car financing agencies and car owners in the city of Cochin. Questionnaires were devised to conduct in-depth interviews with car dealers of various manufacturers, second-hand car dealers, car financing agencies, and car owners in the city of Cochin, Kerala.

❖ For depth interviews, sample selection of dealers of 10 major car brands such as Maruti Suzuki, Tata Motors, Ford, Toyota, General Motors, Skoda, Hyundai, Honda, Renault, Mitsubishi, Hindustan Motors, Tata Motors, and Fiat India were chosen from the city of Cochin. A few of the second-sale dealers were chosen from the city of Cochin, again randomly, to get their views on preferences of buyers of second-sale cars. Similarly, agents of most of the car financing agencies were chosen randomly from the city of Cochin. Twenty five car owners were chosen randomly from the city neighborhood, to elicit their preferences while taking a decision to purchase a car and related features.

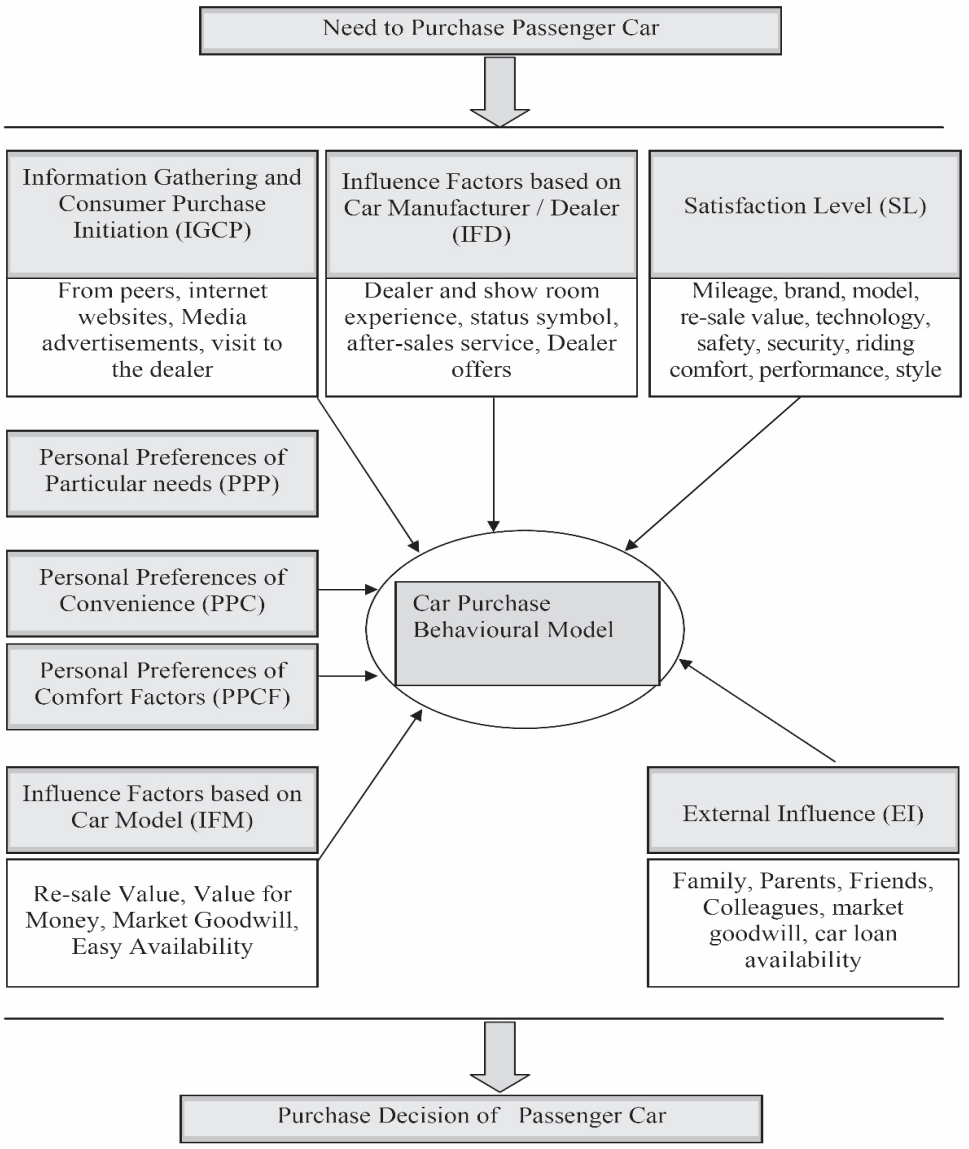
❖ The study was targeted at the passenger car owners in the State of Kerala as a population. All the brands of car users in the segments of Small Car, Hatchback, Sedan, Higher Sedan and Multi Purpose Vehicle (MPV) consisted of the population size. Both new cars and used cars were covered as the population. Both rural and urban areas of the State were considered. The population was synchronous, as the car market in the State is highly developed, and the dealers had been following well-defined operational procedures mandated by their manufacturers to conduct the sales, delivery and service in their premises.

❖ The sampling strategy implemented for the research study was multistage sampling method. Firstly, all the 14 districts of the State were considered in the first stage. In the second stage, 5 districts were short listed. It was seen that the number of cars sold in these districts were the highest, based on the data obtained from the Motor Vehicles Department of the State. In the third stage, two municipalities (urban area) and two Panchayats (rural area) were identified within each district by the random sampling method. From each of the identified areas in the districts, every 10th household owning a car was chosen for the sample survey. The final questionnaire was administered to 750 respondents, who were car owners from the rural and urban areas of the five districts of the State. Survey was conducted by in-person structured interview method, using a pre-determined questionnaire.

❖ **Theoretical Model For The Study :** Based on the information collated through literature review, in-depth interviews and the subsequent final version of the questionnaire, the researchers conceptualized a model of consumer purchase behaviour, with major factors influencing the purchase of passenger cars as shown in the Figure 1.

❖ **Usage of Statistical Tools and Application :** The data collected from the respondents was examined, verified, edited wherever necessary for completeness, accuracy and reliability. Thereafter, data was further analyzed by using statistical package SPSS version 17.0 and Amos Version 2.0. The data collected by using a well - structured questionnaire was classified and tabulated for analysis in compliance with the framework laid down and clearly defined, in accordance with the objectives framed at the time of the research methodology. The researchers sought Confirmatory Factor Analysis (CFA) method to identify the dominating factors. Confirmatory Factor Analysis (CFA) is a type of Structural Equation Modeling (SEM), which deals specifically with measurement models, that is the relationship between observed measures or indicators (e.g. Test items, test scores, etc.) and latent variables or factors. It is important to examine whether the measure was appropriate for the population included in the current study. In using SEM, it is a common practice to use a variety of indices to measure the fitness of the model.
In addition to the ratio of the χ^2 statistic to its degree of freedom, with a value less than 5 indicating acceptable fit, the researchers recommended a handful of fit indices to assess the model fit. These are the Goodness of Fit (GFI), Normed Fit Index (NFI), Standardized Root Mean Residual (SRMR), and the Comparative Fit Index (CFI).

Figure 1 : Car Purchase Behaviour Model Consisting of Input - Need to Purchase Car, Process -Eight influencing factors, and Output – Purchase Decision of Passenger Car



Source: Authors' Research

A five-point scale was used to measure the sub - items of each of the 8 major variables mentioned above. In the questionnaire, the respondents were asked to specify their choices for each of the sub - items of these major variables, using the five-point Likert's scale (strongly agree, agree, neutral, disagree, and strongly disagree). The score 1 was represented for the option "strongly disagree", while the score 5 on the scale represented the category "strongly agree", for all the positive questions. A reverse scoring pattern was used for all those negative questions, using a five-point scale (5 representing strongly disagree and 1 representing strongly agree). Cronbach's reliability test was used to test the degree of dependability, consistency or stability of the scale adopted. CFA method was also used to establish validation and acceptability of the Purchase Behaviour Model, which was also one of the major objectives of the study. One-sample Z-test was used to establish dominance of various factors influencing the purchase behaviour of cars to test the hypotheses.

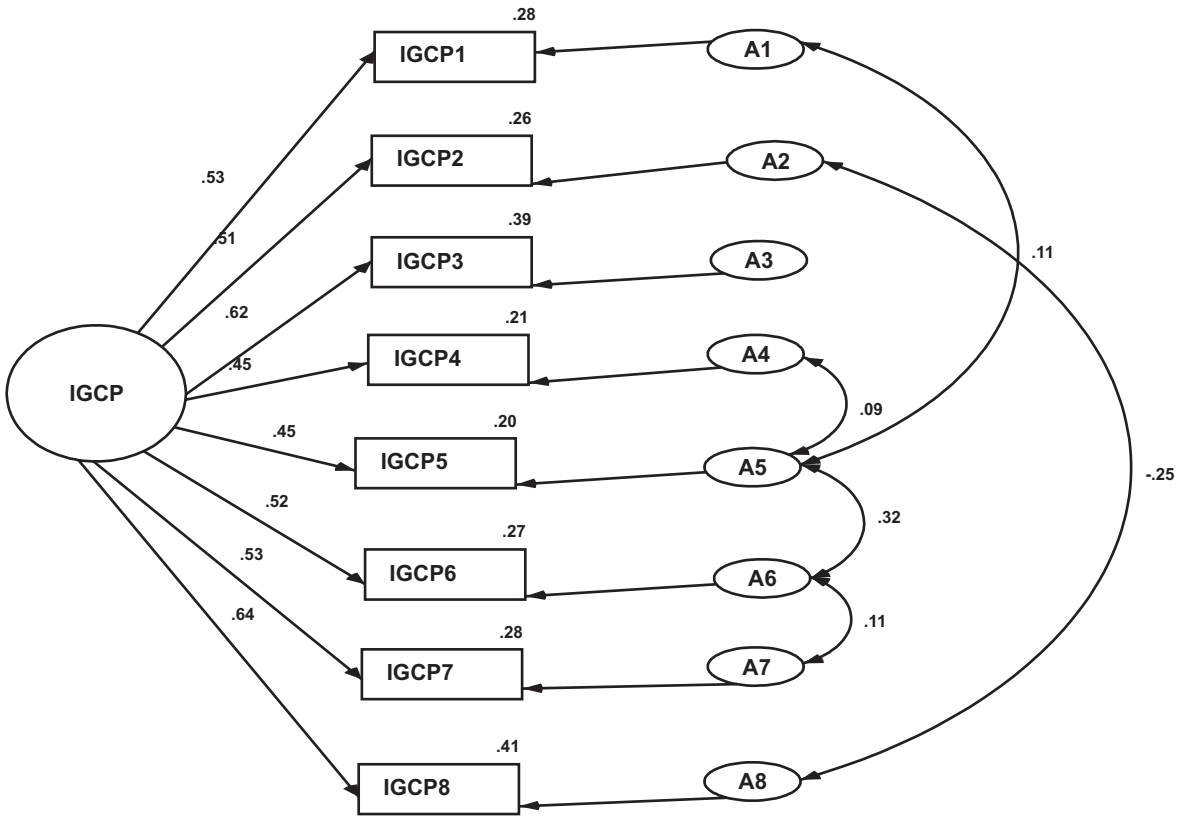
DATA ANALYSIS, RESULTS AND INTERPRETATION

In tune with the research objectives, this section has been structured into major sections, dealing with the data analysis of various major parameters, which influence the purchase behavior of the passenger car customers, in terms of :

(1) Information Gathering and Consumer Purchase initiation (IGCP)
(2) Preference based on Personal needs (PPP)
(3) Personal Preference based on Convenience factors (PPC)
(4) Personal Preference based on Comfort Factors (PPCF)
(5) Influence Factor based on car Manufacturers / Dealers (IFD)
(6) Influence Factor based on car model (IFM)
(7) External Influence (EI)
(8) Satisfaction Level (SL)

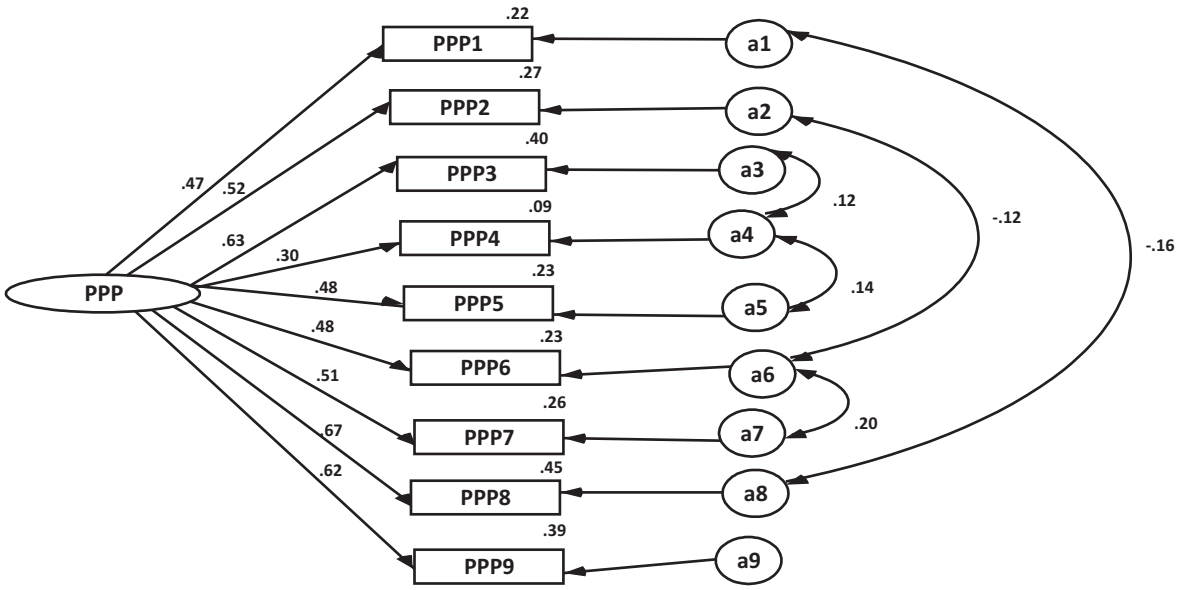
❖ **Information Gathering and Consumer Purchase Initiation (IGCP) :** This is the beginning of the purchase process of passenger cars, wherein the customers started identifying the need for a passenger car and started collecting information of various car manufacturers and models. This main variable was explored using a set of 8 factors (IGCP1 to IGCP8). From the CFA regression coefficients and the relative ranks, it was established that '*Dealer sales staff*' (IGCP8) occupied the first rank, '*Information received from office colleagues'* (IGCP3) took the 2nd rank and *'Visit to dealers/ distributors'* (IGCP7) was placed at the third rank. The Figure 2 represents the confirmatory factor modeling done for the IGCP variable connecting to its factors. In the Figure 2, 0.53, 0.51, 0.62 etc. are the regression coefficients showing their contributing share in the influence on the IGGP variable by the sub - factors IGCP1, IGCP2, IGCP3 and so on. Again, the figures 0.28, 0.26, 0.39 etc. are the squares of correlation coefficients between the IGCP and its sub -

Figure 2 : Figure Showing The Correlations And Regression Coefficients Of IGCP Variable And Its Factors



Source: The Figure was conceptualized and developed by the Authors, based on the data collected and fed into Amos Version 2.0 software

Figure 3 : Figure Showing The Correlations And Regression Coefficients of PPP Variable And Its Factors



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factors IGCP1, IGCP2, IGCP3 and so on.

❖ **Preference Based On Personal Needs (PPP) :** Personal Preference based on Personal needs (PPP) was the second major variable identified for the study and data analysis. Once a need was identified and a few initial information-gathering process steps were done, the car customers started short listing their preferred manufacturers and models based on certain preferences. Preference based on Personal Needs (PPP) was one of them. This main variable was explored by using a set of 9 factors (PPP1 to PPP9). From the CFA regression coefficients and the relative ranks, it was established that the *'Need to suit social standings'* (PPP8) occupied the first rank, *'Peer pressure from other family members owning a car'* (PPP3) took the second rank and *'Social pressure from friends / neighbours / family members'* (PPP9) captured the 3rd rank. The Figure 3 shows the confirmatory factor modeling of the PPP variable and its factors. In the Figure 3, 0.47, 0.52, 0.63 etc. are the regression coefficients showing their contributing share in the influence on

Figure 4 : Figure Showing The Correlations And Regression Coefficients Of PPC Variable And Its Factors

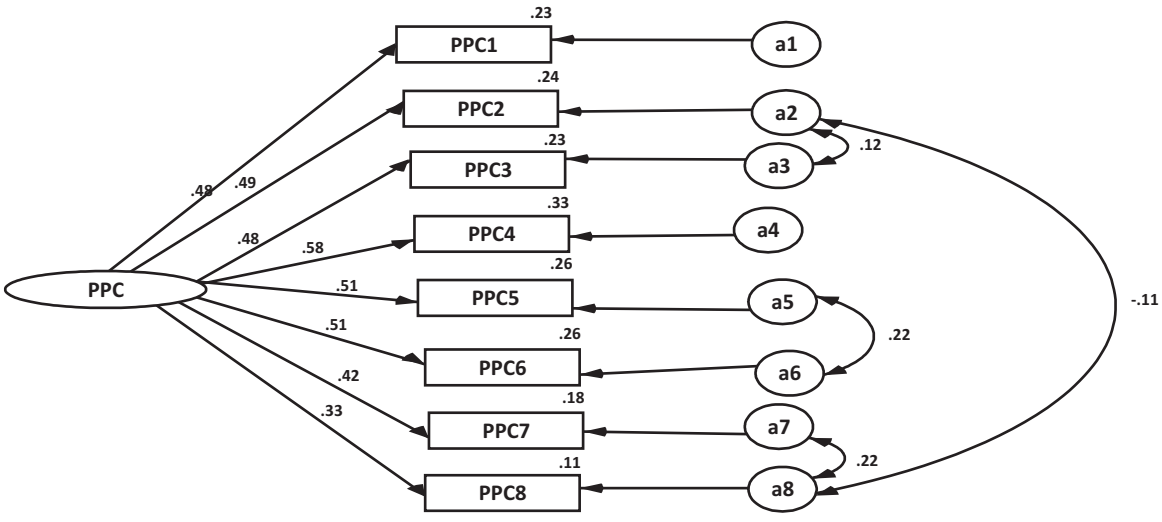

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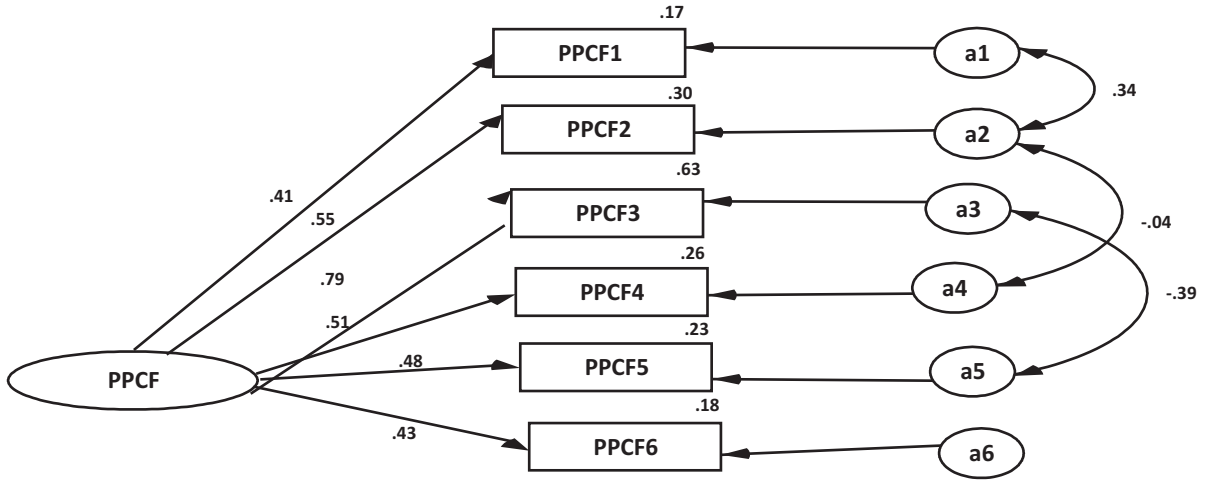
Figure 5 : Figure Showing The Correlations And Regression Coefficients Of PPCF Variable And Its Factors



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the IGGP variable by the sub -factors PPP1, PPP2, PPP3 and so on. Again, the figures 0.22, 0.27, 0.40, etc. are the squares of the correlation coefficients between the PPP variable, and its sub - factors PPP1, PPP2, PPP3 and so on.

❖ **Personal Preference Based On Convenience Factors (PPC) :** Personal Preference based on Convenience needs (PPC) was the third major variable identified for the study and data analysis. When the car customers started short listing their preferred manufacturers and models based on certain criteria, preference based on convenience needs (PPC) was yet another major variable contributing to the influence of purchase behaviour. This PPC variable was explored using a set of 8 factors (PPC1 to PPC8). From the CFA regression coefficients and the relative ranks, *'A compact car'* (PPC4) occupied the 1st rank, *'Re-sale value'* (PPC6) occupied the 2nd rank and *'Good after-sales services'* (PPC5) occupied the 3rd rank. The Figure 4 shows the confirmatory factor modeling of the PPC variable and its factors. In the figure, 0.48, 0.49, 0.48 etc. are the regression coefficients showing their contributing share in the influence on the PPC variable by the sub - factors PPC1, PPC2, PPC3 and so on. Again the figures, 0.23, 0.24, 0.23 etc. are the squares of correlation coefficients between the PPC and its sub - factors PPC1, PPC2, PPC3 and so on.

❖ **Personal Preference Based On Comfort Factors (PPCF) :** Personal Preference based on Comfort needs (PPCF) was the fourth major variable identified for the study and data analysis. When the car customers started to shortlist their manufacturers and models (based on certain criteria), preference based on comfort factor (PPCF) was yet another major variable contributing to the influence of purchase behaviour. This PPCF variable was identified by using the Questionnaire on Passenger Car Customers. This PPCF variable was explored by using a set of 6 factors (PPCF1 to PPCF6). From the CFA regression coefficients and the relative ranks, it was established that the dominant factors - *'Interior Design'* (PPCF3) occupied the 1st rank, *'Exterior Design'* (PPCF2) occupied the 2nd rank and *'Comfort in Driving'* (PPCF4) was placed at the 3rd rank. The Figure 5 shows the confirmatory factor modeling of the PPCF variable and its factors. In the Figure 5, 0.41, 0.55, 0.79 etc. were the regression coefficients showing their contributing share in the influence on the PPCF variable by the sub factors PPCF1, PPCF2, PPCF3 and so on. Again, the figures 0.17, 0.30, 0.63 etc. are the squares of the correlation coefficients between the PPCF and its sub - factors PPCF1, PPCF2, PPCF3 and so on.

❖ **Influence Factor Based On Car Dealer (IFD) :** Influencing Factor based on Car Dealer (IFD) was the fifth major variable identified for the study and data analysis. When the customers finally decided the model and brand from the available short listed alternatives, the Influencing Factor based on Car Dealer (IFD) was a major substantial variable contributing to the influence of purchase behaviour. In many cases, it was found that the car manufacturer / dealer of the specific brand played a major part in the customers' decision of brand choice. This IFD variable was explored using a set of 7 sub - factors (IFD1 to IFD7). From the CFA regression coefficients and the relative ranks, it was established that the *'Dealer and Showroom Experience'* (IFD1) factor captured the 1st rank, *'The car as a status symbol*

Figure 6 : Figure Showing The Correlations And Regression Coefficients of IFD Variable And Its Factors

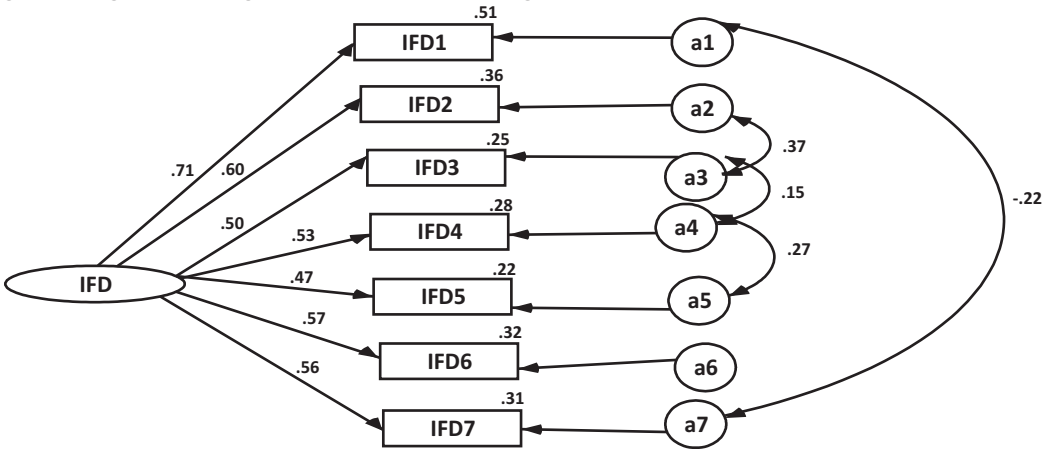

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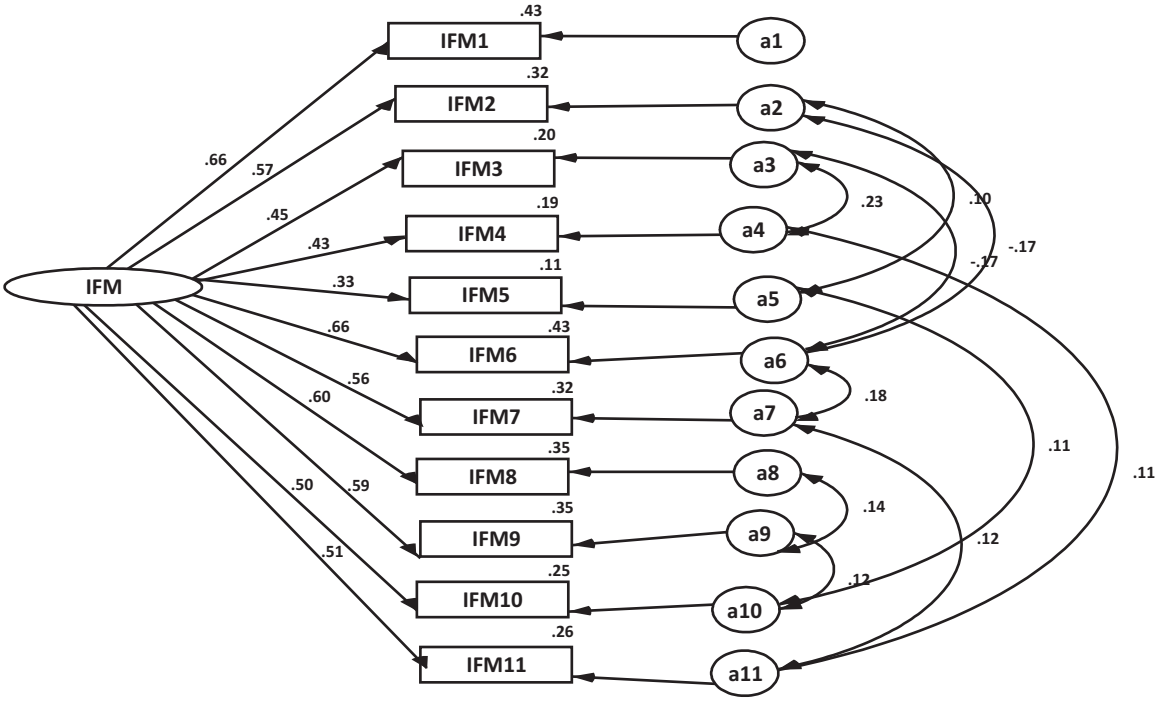
Figure 7 : Figure Showing The Correlations And Regression Coefficients of IFM Variable And Its Factors



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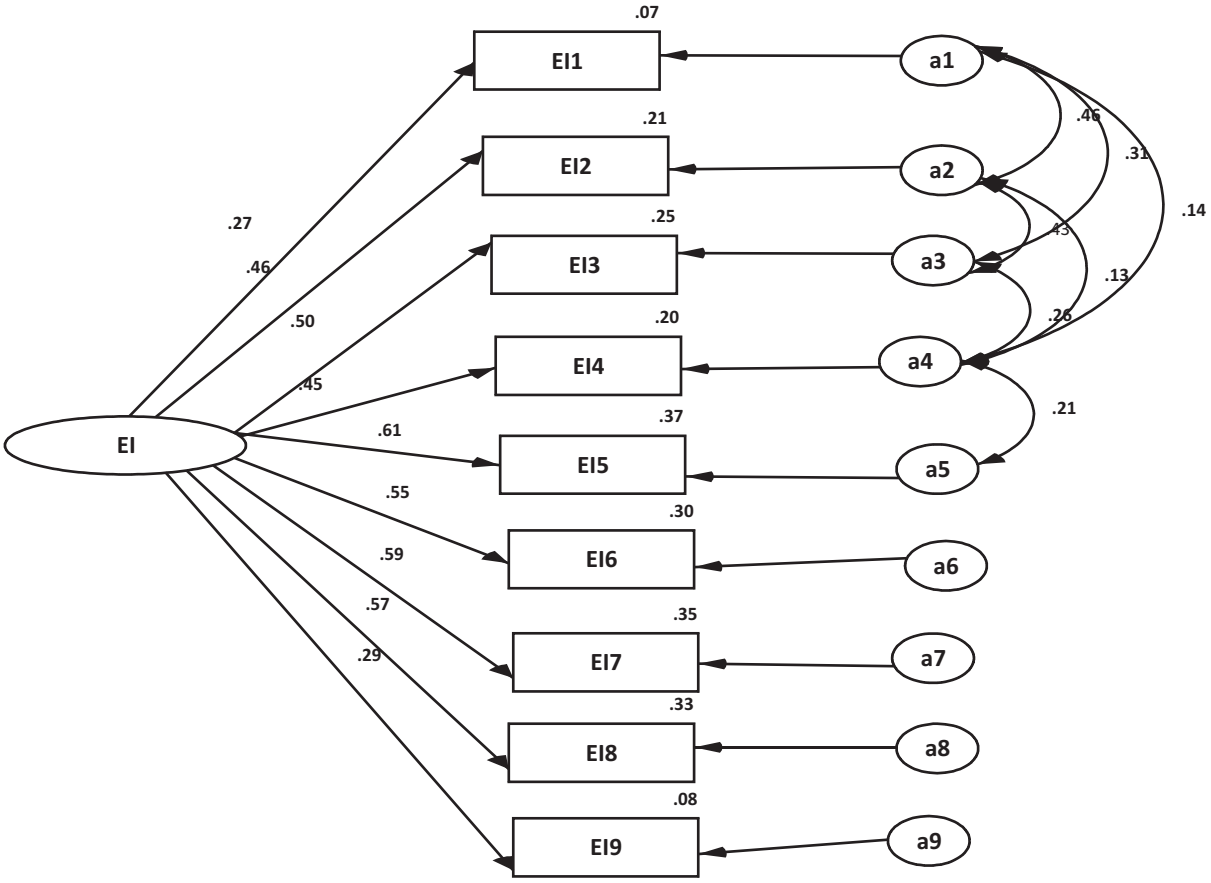
/ prestige value factor' (IFD2) took the 2nd rank and *'Dealer Offers on your chosen car model'* (IFD6) factor was ranked 3rd.

The Figure 6 shows the confirmatory factor modeling of IFD variable and its factors.In the Figure 6, 0.71, 0.60, 0.50 etc. are the regression coefficients showing their contributing share in the influence on the IFD variable by the sub-factors IFD1, IFD2, IFD3 and so on. Again, the figures 0.51, 0.36, 0.25 etc. are the squares of the correlation coefficients between the IFD and its sub - factors IFD1, IFD2, IFD3 and so on.

❖ **Influence Factor Based On Car Model (IFM) :** Influencing Factor based on Car Model (IFM) was the sixth major variable identified for the study and data analysis. When the car customers finally chose a model from the available short listed alternatives, the Influencing Factor based on car Model (IFM) was yet another substantial variable contributing to the closing influencing phenomenon of purchase behaviour. In many cases, it was found that the car

Figure 8 : Figure Showing The Correlations And Regression Coefficients Of EI Variable And Its Factors



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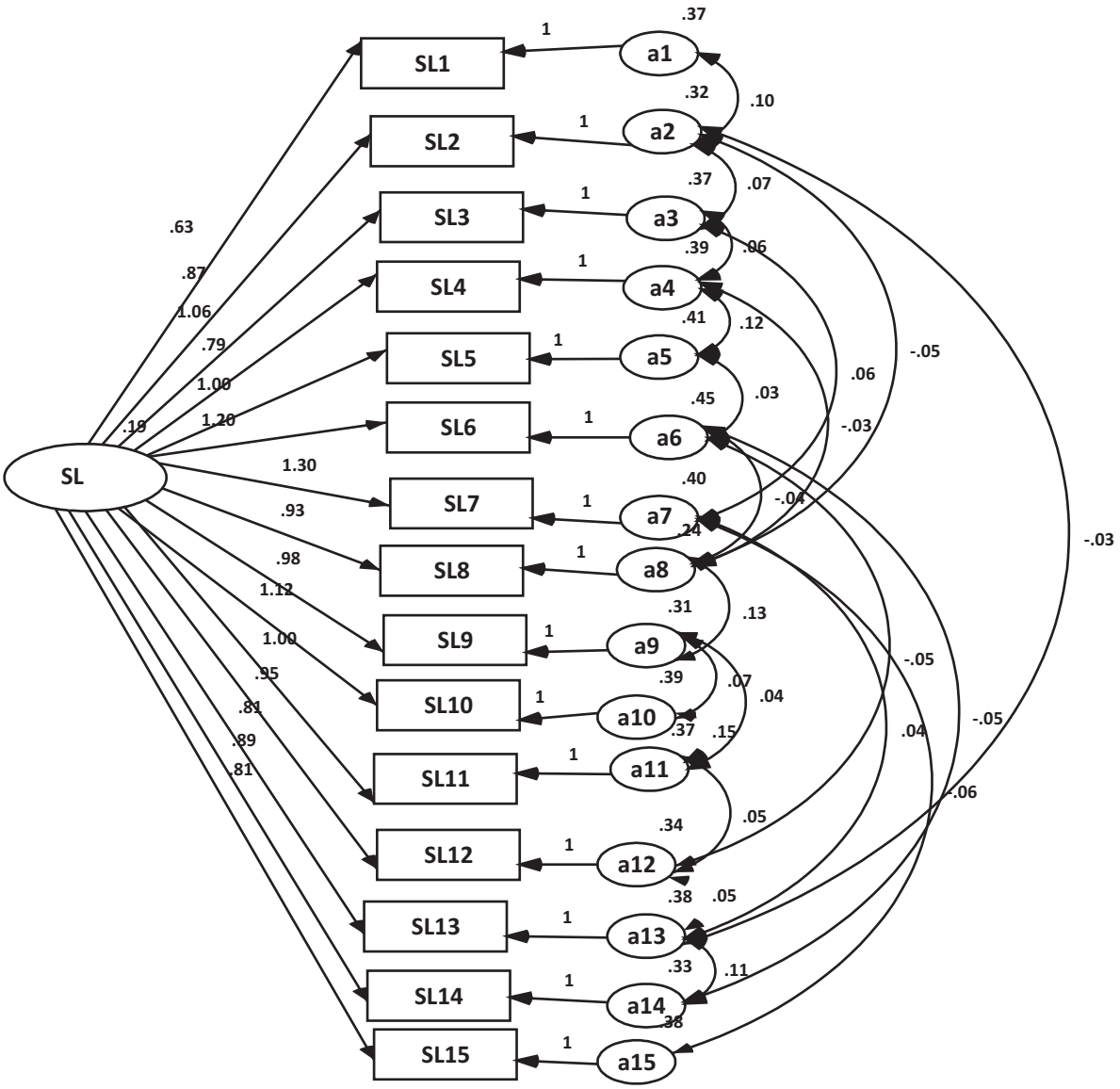
model of a specific brand plays a major part in the customers' decision of their car choice. This IFM variable was explored by using a set of 11 factors (IFM1 to IFM11). From the CFA regression coefficients and the relative ranks, it was established that *'Interior Design'* (IFM6) took the 1st rank, '*Advanced Technology of your model'* (IFM1) was placed at the 2nd rank and *'Security features of the specific model'* (IFM8) bagged the 3rd rank. The Figure 7 shows the confirmatory factor modeling of IFM variable and its factors. In the Figure 7, 0.66, 0.57, 0.45 etc. are the regression coefficients showing their contributing share in the influence on the IFM variable by the sub - factors IFM1, IFM2, IFM3 and so on. Again, the figures 0.43, 0.32, 0.20 etc. are the squares of correlation coefficients between the IFM and its sub - factors IFM1, IFM2, IFM3 and so on.

❖ **External Influence (EI) :** Influencing Factor based on car model (EI) was the seventh major variable identified for the study and data analysis. When the car customers finally chose from the available alternatives, the External Influence (EI) was a major variable contributing to the influence of the purchase behaviour. In many cases, it was found that the car model of a specific brand played a major part in the customers' decision of their choice of brand. This EI variable was explored by using a set of 9 sub - factors (EI1 to EI9).

From the CFA regression coefficients and the relative ranks, it was established that the '*Opinion of your colleagues'* (EI5) occupied the 1st rank, *'Car loan availability'* (EI7) took the 2nd rank and *'Advertisement of Cars'* (EI8) captured the 3rd rank. The Figure 8 shows the confirmatory factor modeling of the EI variable and its factors. In the Figure 8, 0.27, 0.46, 0.50 etc. are the regression coefficients showing their contributing share in the influence on the EI variable by the sub - factors EI1, EI2, EI3 and so on. Again, the figures 0.07, 0.21, 0.25 etc. are the squares of correlation coefficients between the EI and its sub factors EI1, EI2, EI3 and so on.

Figure 9 : Figure Showing The Correlations And Regression Coefficients of SL Variable And Its Factors



Source: The Figure was conceptualized and developed by the Authors, based on the data collected and fed into Amos Version 2.0 software

❖ **Satisfaction Level (SL) :** Customer Satisfaction Level (SL) was the seventh major variable identified for the study and data analysis. Customer satisfaction acts as a strong contributing factor to spread word-of-mouth publicity to other customers. It also influences customers for their future purchase behaviour. This SL variable was explored by using a set of 15 sub- factors (SL1 to SL15). From the CFA regression coefficients and the relative ranks, it was established that the factor *'Technology'* (SL7) occupied the 1st rank, *'Safety'* (SL8) took the 2nd rank and *'Security'* (SL9) captured the 3rd rank. The Figure 9 shows the confirmatory factor modeling of SL variable and its factors. In the Figure 9, 0.63, 0.87, 1.06, etc. are the regression coefficients showing their contributing share in the influence on the SL variable by the sub-factors SL1, SL2, SL3 and so on. Again, the figures 0.37, 0.32, 0.37, etc. are the squares of the correlation coefficients between the SL and its sub- factors SL1, SL2, SL3 and so on.

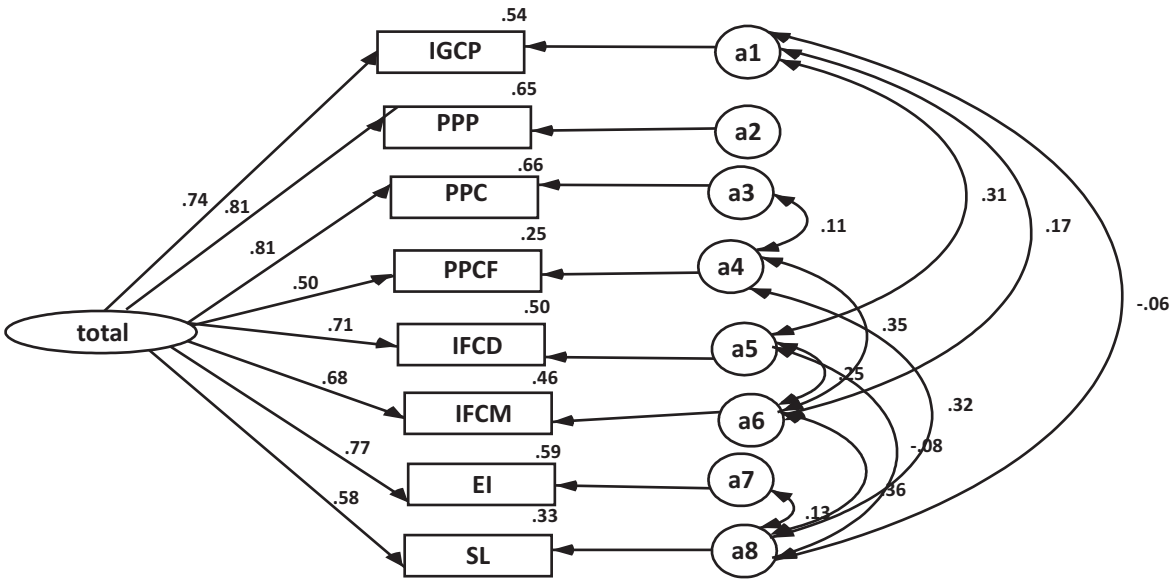
VALIDATION AND ACCEPTABILITY OF THE MODEL

❖ **Reliability Analysis :** It was seen that all the values of Cronbach Alpha calculated for the 8 major variables considered for the study are all above the value of 0.70. The values showed that the refined scale is reliable and

Table 1 : Structural Equation Modeling - CFA Model Fit for Eight Variables					
Fitness Indices / Parameters	**Recommended Level of Fit Values**	**IGCP**	**PPP**	**PPC**	**PPCF**
χ^2		23.121	35.532	22.421	11.823
DF		15	22	16	6
P	>0.05	0.082	0.034	0.13	0.066
Normed χ^2	<3	1.541	1.615	1.401	1.971
GFI	>0.90	0.992	0.988	0.992	0.994
AGFI	>0.91	0.98	0.976	0.982	0.98
NFI	>0.92	0.978	0.969	0.971	0.983
TLI	>0.93	0.985	0.98	0.985	0.978
CFI	>0.94	0.992	0.988	0.991	0.991
RMR	<1	0.016	0.018	0.013	0.011
RMSEA	<0.05	0.028	0.03	0.024	0.037
Fitness Indices/ Parameters	**Recommended Level of Fit Values**	**IFD**	**IFM**	**EI**	**SL**
χ^2		17.162	47.591	29.195	169.345
DF		10	35	20	70
P	>0.05	0.071	0.076	0.084	0
Normed χ^2	<3	1.716	1.36	1.46	2.419
GFI	>0.90	0.993	0.988	0.991	0.966
AGFI	>0.91	0.98	0.977	0.979	0.942
NFI	>0.92	0.984	0.972	0.978	0.954
TLI	>0.93	0.986	0.988	0.987	0.958
CFI	>0.94	0.993	0.977	0.993	0.972
RMR	<1	0.015	0.013	0.013	0.022
RMSEA	<0.05	0.032	0.023	0.026	0.045

Source: The Table was conceptualized and developed by the Authors, based on the data collected and fed into Amos Version 2.0 software

Figure 10 : Figure Showing The Purchase Intention Model, Variables, Their Correlations And Regression Coefficients



Source: The Figure was conceptualized and developed by the Authors, based on the data collected and fed into Amos Version 2.0 software

Table 2 - Z-test (One Sided Tailed Test To The Right)

(H_0: Mean % score = 70 against H_1: Mean % score > 70). Significant Level 5%, Z-Table value for right one-tailed right sided test at 5% level = 1.645

Hypotheses Testing	Mean	Std. Deviation	Mean % Score	Z-Value	Test Result
H01: After sales services have a dominant positive influence on the purchasing behavior.	7.56	1.16	75.58	12.68	H01 .Accepted
H02: There is a positive influence of dealers and showroom experience, which affect the purchasing decision of the customers.	3.74	0.77	74.86	8.27	H02 Accepted
H03: Price of the car has a positive influence on the purchasing decision.	3.92	0.74	78.41	14.97	H03 Accepted
H04: Advanced technology used in a car model casts a positive image of the model.	3.97	.641	79.34	19.17	H04 accepted
H05: There is a significant majority of the customers who prefer second-hand cars due to their personal and market considerations.	**3.27**	**0.57**	**65.31**	**-2.88**	**H05 is rejected**
H06: The make and brand name have no dominance on the purchase behavior of low-end cars.	3.70	0.74	36.97	-116.98	H06 is Accepted

Source: The Table was conceptualized and developed by the Authors, based on the data collected and fed into the SPSS Version 17.0

consistent, as the calculated values of Cronbach Alpha are well above the recommended value of 0.70, demonstrating a high reliability of the data collected.

❖ **CFA Model Fitness :** The Table 1 shows the level of acceptable fit and the fit indices for the proposed research model of 8 variables used in this study. All values satisfied the recommended level of acceptable fit. However, the results of the normed χ^2 (χ^2 / df) value in the present study is well within the recommended χ^2 / df < 3.

The Figure 10 shows the diagrammatic representation of the entire confirmatory factor modeling with eight major influencing variables – IGCP, PPP, PPC, PPCF, IFD (IFCD), IFM (IFCM), EI and SL. In the Figure 10, 0.74, 0.81, 0.81 etc. are the regression coefficients showing their contributing share in the influence on the Total Purchase Intention (Total PI) variable by the sub-factors IGGP, PPP, PPC and so on. Again, the figures 0.54, 0.65, 0.66 etc. are the correlation coefficients between the Total (PI) and IGCP, PPP, PPC and so on.

The model of Purchase Intention (PI) can be expressed in the form of the following equation :

$$PI = 0.735\ IGGP + 0.808\ PPP + 0.810\ PPC + 0.496\ PPCF + 0.705\ IFCD + 0.681\ IFCM + 0.771\ EI + 0.578\ SL$$

❖ **Testing of Hypotheses :** There were many hypotheses which were tested and validated. A few of them are listed in the Table 2. The mean percentage score is above 70% in all the cases, except for H05. It indicates that the values had a positive influence on the purchasing decision, except for H05, which is for second-hand cars. Further, to test whether this value is significant or not (i.e. Mean % Score is above 70 or not), the researchers conducted the one sample Z test, and the results are exhibited in the Table 2. The Test is found to be significant in all the cases (except for H05), as the calculated Z-value is greater than the tabled value of 1.645 at 5% level of significance. In the case of H05, it is insignificant, as the Z-value calculated is less than the value of 1.645.

SUMMARY OF MAJOR FINDINGS

❖ About one-third of the car owners possessed diesel vehicles. This showed a preference towards diesel passenger cars. The research results showed that about one - seventh of the car owners owned a second car in the family, which indicated an increasing trend for buying another passenger car for the city dwellers for family usage, while using the first car for office and business usage.

❖ Foreign manufacturers occupied a majority market share of the cars purchased by the car owners, depicting a clear preference for foreign brands in the Kerala car market.

❖ It was found that there was a significant difference between the five car segments, while customers evaluated their customer satisfaction level for their passenger cars.

❖ It was observed that in the information gathering and consumer purchase initiation stage, *'Dealer Sales Staff '*,

'Information received from office colleagues' and *'Visit to dealers/ distributors'* were the prime sources from where customers gathered information on car models and brands.

❖ There was a positive influence of dealers and showroom experience, which affected the car purchase decision of customers.

❖ When it came to short listing from the alternative brands and models, personal preference based on personal needs was one of the criterion used by car owners. In this criterion, prime requirement needs in the top slots were - *'The need to suit social standings'*, *'Peer pressure from other family members owning a car'* and *'Social pressure from friends / neighbours /family members'*.

❖ Personal preference based on convenience factors was yet another criterion to short list brands and models. *'Compact car', 'Resale value'* and *'Good after-sales services'* topped the consumer requirement list.

❖ In the category of personal preferences based on the comfort factor of the car owners, dominant factors were *'Interior design', 'Exterior design'* and *'Comfort in driving'*.

❖ In the category of identifying the cars based on manufacturer criterion, it was established that the dealer and show room experience, the car as a status symbol / prestige value and dealer offers for your specific car model were the dominant factors.

❖ When it came to the question of why the customers choose their favorite brands based on the influencing factor of specific car models, *'Interior design'*, *'Advanced technology of the model'* and *'Security features of the specific model'* were the dominant factors.

❖ External Influence was a dominating influential factor in car customers choosing their selected car models. The *'Opinion of your colleagues'*, *'Car loan availability'* and *'Advertisement of cars'* topped the list of criteria for selection.

❖ On the question of customer satisfaction on their chosen models, car customers selected *'Technology', 'Safety'* and *'Security'* as the top reasons for their satisfaction.

❖ Price of the car had a positive influence on the purchasing decision of the customers.

❖ When it came to specific hypothesized statements on the chosen models, *'Price of the car', 'Advanced technology', 'Market re-sale value of the brand and model', 'Security features', 'Safety features' and 'Driving comfort'* were the consolidating factors which contributed to the ultimate selection of their chosen models.

❖ After sales service had a dominant positive influence on the purchasing behavior of the consumers.

❖ Based on the hypotheses, it was shown that there were no significant majority of the customers who preferred second-hand cars.

❖ The make and brand name had no dominance on the purchase behavior of low-end cars.

MAJOR RECOMMENDATIONS

❖ An increasing number of women car owners used the car for their office, personal and family work, thus becoming an influential group, and this group calls for the attention of car manufacturers and marketers to focus their strategic efforts in this direction.

❖ Since there was a perceptible and significant difference between the five car segments, marketers might need to address segment wise behavioral patterns and preferences to meet up their requirements.

❖ Since, *'Dealer Sales Staff'*, *' Information received from office colleagues'* and *'Visit to dealers/ distributors'* were the prime sources from where customers gathered information on car models and brands, marketers might want to focus on these factors to catch the attention of the intending future customers, by creating a very positive showroom experience in the minds of the potential customers.

❖ When it came to personal preferences based on personal needs, the top slot needs were - *'The need to suit social standings'* , *'Peer pressure from other family members owning a car'* and *'Social pressure from friends / neighbours / family members'*. These requirements call for segment wise marketing, as the needs varied from segment to segment.

❖ External Influence was a dominating influential factor for car customers while choosing their selected car models.

'Opinion of colleagues', 'Car loan availability' and *'Advertisement of cars'* topped the list of criteria for selection. Marketing techniques to influence these deciding factors might be useful for the dealers and manufacturers.

❖ On the question of customer satisfaction on their chosen models, car customers chose *'Technology'*, *'Safety'* and *'Security'* as the top reasons for their satisfaction. Manufacturers might need to focus on these factors to ensure higher customer satisfaction for their models.

❖ Manufacturers and marketers need to focus of the price and after-sales services, as these factors had a tremendous influence on the purchase decision of passenger cars.

LIMITATIONS OF THE STUDY AND SCOPE FOR FUTURE RESEARCH

The study was restricted to the passenger car owners of the State of Kerala. Due to the wide spread of the city, the questionnaire was administered to the urban and rural areas of only five districts of the State. The sample size of 750 was also chosen, considering the cost involved in covering more units in each selected district. The survey was also limited to five car segments – Small Car, Hatchback, Sedan, Higher Sedan and Multi-Purpose Vehicle (MPV).

There is further scope to cover other car segments, like Sports Utility Vehicle (SUV), Executive Sedan, Luxury Segments, etc. Furthermore, a study could be extended to other districts of the State. There is also scope for conducting a study in other States of India, as that would reveal more findings.

CONCLUSION

As in other industries, the scenario in the domestic Indian Automobile Industry is quite different from the Global Automobile Industry. The industry actually developed in two clear stages - the Maruti era (1983 onwards) and the post-liberalization era (1992 onwards). As compared to the global automobile sector, where substantial research has been done, very little empirical research has been conducted on the Indian automobile industry. With many car manufacturers launching their products in Kerala, the study will definitely benefit the stakeholders of car manufacturers, dealers, and financing agencies to formalize and strategize their policies towards an effective marketing strategy. Eight major parameters were developed and the model which was conceptualized was tested by using extensive research and quantitative analysis to establish its acceptability.

REFERENCES

1) Chojnacki, K. (2000). "Relationship Marketing at Volkswagen in Hennig Thurau." T and Hansen, U. (Eds), *"Relationship Marketing: Gaining Competitive Advantage Through Customer Satisfaction and Customer Retention."* Springer, Berlin, pp. 49-59.

2) Dharmaraj, C. (2010). "Impact of Brand Preference Dimensions On Customer Satisfaction A Meta Analysis On Passenger Cars." *Indian Journal of Marketing*, 40(11), New Delhi, pp. 30-32.

3) Ewing, Michael, T. (2000). "Brand and Retail Loyalty: Past Behaviour and Future Intentions." *Journal of Product and Brand Management*, 9(2), pp. 120-127.

4) Huber, Frank & Herrmann, Andreas (2001). "Achieving Brand and Dealer Loyalty: The Case Of The Automotive Industry." *The International Review of Retail, Distribution and Consumer Research*, 11(2), pp. 97-122.

5) Jacob, Sara and Khan, Sobia. "Designed For The Women Today." *The Economic Times*, May 25, 2010.

6) Kaushik V.K. and Kaushik Neeraj (2008). "Buying behaviour For Passenger Cars: A Study In South West Haryana." *Indian Journal of Marketing*, 38(5), pp. 50-51.

7) Kotwal, Shapur (2009, February, 12). "The Automobile Segment Is All Poised For Steady Growth." *Auto Focus, The Hindu*, p. 5.

8) Luis, CasalÃ, Carlos, FlaviÃ¡n & Miguel, GuinalÃu (2007). "The Impact Of Participation In Virtual Brand Communities On Consumer Trust And Loyalty: The Case Of Free Software." *Online Information Review*, 31(6), pp. 775-792.

9) Menon, Balakrishnan, (2012). "Parameters and Framework Development to Study Consumer Behaviour Patterns of Passenger Cars." *Drishtikon: A Management Journal,* 3(1), pp. 27-75.

10) Mukherjee, Avinandan & Sastry, Trilochan (1996). *"Recent Developments and Future Prospects in the Indian Automotive Industry."* Indian Institute of Management, Ahmedabad.

11) Newman, J.W., & Werbel, R.A. (1973). "Multivariate Analysis of Brand Loyalty For Major Household Appliances." *Journal of Marketing Research*, 10(4), pp. 404-409.

12) Resnik, A.J. & Harmon, R.R. (1983). "Consumer Complaints And Managerial Response: A Holistic Approach." *Journal of Marketing*, 47(1), pp. 86-97.
13) Reynolds, K., & Arnold, M. (2000). "Customer Loyalty To The Salesperson And The Store: Examining Relationship Customers In An Upscale Retail Context." *Journal of Personal Selling & Sales Management*, 20(4), pp. 89-97.
14) Sagar, Ambuj, D., & Chandra, Pankaj (2004, 05). "Technological Change in the Indian Passenger Car Industry." *BCSIA Discussion Paper 2004-05*, Energy Technology Innovation Project, Kennedy School of Government, Harvard University.
15) Sharma, Amit (2010, January 12). "When Mouse Helps You In Buying Car." *The Economic Times*, p. 14.
16) Sharma, N., & Patterson, P.G. (1999). "The Impact of Communication Effectiveness and Service Quality On Relationship Commitment In Consumer, Professional Services." *Journal of Services Marketing*, 13(2), pp. 151-170.
17) White, R. (2004). "How People Buy Cars." *Admap Journal*, 39(3), pp. 41-43.
18) Zeithaml, V., Berry, L., & Parasuraman, A. (1996). "The Behavioural Consequences of Service Quality." *Journal of Marketing*, 60(2), pp. 31-46.