Innovations in In-Vehicle Infotainment and the Consumer Behaviour towards it

[1]Azhar Shaikh, [2]Dr. Uttam Kinange
[1]Research Scholar, [2]Dean and Professor, [1,2]Kousali Institute of Management Studies, Karnatak University Dharwad, India.
[1]azharshaheen@live.com, [2]uttam2020@gmail.com

Abstract - For many years, car infotainment was assumed to be just a radio. Later, tape decks started showing up and eventually a replaced by a CD player. However, now it has changed drastically. It is not just the entertainment what the system can provide but also the information. The information of the car and the surroundings too. The newer technologies are able to connect with other cars and infrastructure to get information which will help the drive more comfortable. This study attempts to identify the infotainment available in cars. Further, it examines the attitude of consumers on the basis of gender and level of technical literacy. Data is collected with the help of a questionnaire and SPSS20 is used to analyse the data. It can be seen that the awareness about the innovative features in infotainment category was high among the respondents. Most of the respondents found these innovative features very important. There was no difference found in the attitude of people who had technical literacy and the one who did not. A slight variation was seen among the female respondents in comparison with male respondents.

Keywords: Innovation, infotainment, technical literacy, resistance, car

I. INTRODUCTION

In-Vehicle Infotainment (IVI) is an automobile sector terminology that refers to vehicle system that mix information and entertainment provide to people travelling in it. IVI systems use audio/video (A/V) interfaces, touchscreens, keypads and other types of devices to deliver these kinds of facilities. Infotainment in cars started many years ago. Radios began to be fitted to cars in the 1930s [1]. Demand for IVI and telematics is accelerating and the industry has to have strategic tie-ups with companies who would help them to have the competitive advantage [2].

IVI, also called as automotive infotainment evolved out as the need for enhanced system to help the driver of automobiles, especially cars. One more motivating factor was to offer good quality rear seat entertainment services. This way, IVI transformed the ordinary car into an extraordinary machine by making it smarter. This smarter car can offer high class entertainment features such as audio, video etc. along with driver assisting technologies. IVI also be defined as "a set of solutions and applications for vehicles that address various customer priorities, such as entertainment, safety, maintenance, communication, and navigation" [2].

Consumers want PC-like responsiveness, human-machine interface and power from every device on the go. Meeting this growing demand for the best possible consumer experience, within time to market demands, is increasingly falling in the infotainment domain. IVI gives the customers the same digital experience as they enjoy at their homes and offices [3]

It is seen that younger generation is quick to adopt innovation in comparison with the older generation [4]. Today's consumer wants a personal computer in the car, an interface of human and machine which can tell the driver about the condition of the car. A system which can keep updating the driver about any change in the car. They are the hardware devices used in cars to provide connectivity, navigation, audio and video entertainment. It is also seen that the consumers resist to use IVI system if they had any negative experience. [5]

II. OBJECTIVES

- To identify the infotainment available in cars
- To examine the attitude of consumers on the basis of gender and level of technical literacy

III. METHODOLOGY

A sample of 452 was collected using the questionnaire and fed in the software to analyse. SPSS 20 is put into use to analyse the data. Data was collected using snowball sampling and random sampling techniques. The present study has secondary data composed from numerous journals and news articles and magazines. A thorough study of these information is done to understand the subject under study.

Some of the essential infotainment features are as follows.

Vehicle-to-vehicle communication:

It's a technology that lets the car to communicate with other cars and surrounding infrastructure which will keep feeding information to the system help driver. This is an important technology as cars will communicate with each other take drive more safely. Cars share important information giving the road condition ahead, any accident location, a heavy traffic jam or any other invent which may obstruct your travel [6].

 DOI : 10.18231/2454-9150.2018.0159

Satellite-navigation systems:

It is one of the most essential infotainment features. GPS navigation system is widely used in cars these days. These can be of three forms; map systems on smart gadgets, a committed navigation system or an integrated satellite-navigation system. These are convenient to move from one location to another without worrying about getting lost. It improves the overall style of the car dashboard to give a rich look when sat inside the car [7].

Steering wheel controls:

This feature in cars can save lot of unwanted diversion while driving. All the buttons required to control the audio/video panel are moved to the steering wheel. Along with these controls, adoptive cruise control is integrated in steering. These help the driver to concentrate more on driving than searching for the buttons to control some features [7].

Bluetooth connectivity:

Bluetooth connectivity helps the driver in many ways. It lets the driver to play the music from the cell phone with effortlessly. Along with this it can do a lot of work for the driver. It lets the car automatically find the driver's smartphone. With the help of the car's app, the Bluetooth lets the user get connected to the car all the time. In case of electric cars, the Bluetooth can help to detect the charge of the battery, it can even start the car and pre-condition to occupy it. It can help to unlock the car without really unlocking it [6].

Touchscreen systems:

It acts link between human and the machine in some aspect. It is a console to control audio/video in the car. This is helpful to navigate while travelling. It used the internet from the smartphone and gets connected to internet to online streaming. The quality of the screen decides the responsiveness of the panel. It was first introduced way back in 1987, but lately, it has become popular among the car owners [8].

Some of the other features are - WiFi and LTE 4G connectivity, Apple CarPlay and Android Auto compatibility, Voice control, Wireless charging capabilities, Back-up cameras and Blind spot awareness, Over-the-air updates, Night vision, Heads-up display, A semi-autonomous driving system, Self-parking

IV. ANALYSIS

For analysis of the data SPSS 20 was used. Following is the list of innovative features considered under Infotainment features.

Table 1 List of Infotainment features

USB port and SD card	Infotain1
Bluetooth Connectivity	Infotain2
Touchscreen Display Control	Infotain3
Navigation and Connectivity	Infotain4
Steering Mounted Audio and Phone Controls	Infotain5
Voice command control	Infotain6

Table 2 Importance level of infotainment features among the consumers

Importance Level	Infotain1	Infotain2	Infotain3	Infotain4	Infotain5	Infotain6
Not important at all	6	22	12	14	18	19
Of little importance	48	33	8	34	30	44
Of average importance	92	115	68	82	77	92
Very important	167	160	147	150	166	146
Most important	132	107	194	152	154	109
Not aware	7	15	23	20	7	42
Mean	3.87	3.76	4.27	4.00	3.95	3.90
Std. Deviation	1.042	1.139	1.012	1.130	1.094	1.256

Table 3 Association between the technical illiteracy and the attitude towards Infotainment features

	Technical literacy	N	Mean	Std. Deviation
INFOTAIN	No	376	3.9574	.77625
	Yes	76	3.9539	.73009

Table 4 Association between the gender and the attitude towards Infotainment features

	Gender	N	Mean	Std. Deviation
INFOTAIN	Female	104	4.0577	.74165
	Male	348	3.9267	.77406

From the Table no. 2 it can be seen that the awareness about the innovative features in infotainment category was high. It was seen that most of the respondents found these innovative features very important. Touch screen control was found to be most important among the features followed by navigation and connectivity. Overall, consumers found these features very important.

From Table no. 3, it can be inferred that there was no difference found in the attitude of people who had technical literacy and the one who did not. Both the categories agreed that they infotainment features in a car are very important.

A slight variation was seen among the female respondents in comparison with male respondents. As in Table no. 4, though both the genders agreed upon the importance of

 DOI : 10.18231/2454-9150.2018.0159

these innovative infotainment features, it was found out that female respondents had rated these innovative infotainment features a little higher than men.

V. CONCLUSION

Consumers do find the innovative features related to infotainment highly relevant to the present generation. Technical illiteracy has no visible effect on attitude towards infotainment innovative features. Consumers belonging to both the categories find infotainment features important. It helps the driver in many way as well the other passengers in the car. The communication between cars helps to avoid any mishaps or road blocks. Technical literacy is a big concern for the car manufacturers as the consumers will not be able to understand the innovative features provided in the car.

Some of the consumers are still unaware of the innovative features in infotainment category Innovative features like Voice command are still unknown to some consumers. This unawareness can eradicated by creating more awareness about these features. More the awareness about the innovative features, better the adoptability will be among the consumers. It is important to increase the technical literacy level among the consumers to penetrate the market well.

REFERENCE

[1] Gitlin, J. M. (2014, June 3). The past, present, and future of in-car infotainment. Retrieved 1 May 2018, from https://arstechnica.com/cars/2014/06/the-past-present-and-future-of-in-car-infotainment/

[2] Accenture. (2011). Perspectives on In-Vehicle Infotainment Systems and Telematics.

[3] Justin M Owens, Jonathan F Antin, Zachary Doerzaph, and Susan Willis. (2015). Cross-generational acceptance of and interest in advanced vehicle technologies: a nationwide survey. Transportation Research part F: Traffic Psychology and Behaviour 35, 139--151

[4] Aadarsh Kenia, Sneha Kadam, P. P. (2013). in-Vehicle Infotainment Systems. International Journal of Advanced Computational Engineering and Networking, 1(7), 27–32.

[5] Kim J. et al. (2016), User resistance to acceptance of In-Vehicle Infotainment (IVI) systems. Telecommunications Policy. Volume 40, Issue 9, Pages 919-930

[6] Cadie Thompson. (2017). Vehicle-to-vehicle communication. Retrieved 30 April 2018, from https://www.businessinsider.in/These-are-the-tech-features-you-should-get-in-your-next-car/articleshow/58149652.cms

[7] Bantick, M. (2015, October 9). Top 10 infotainment essentials. Retrieved 30 April 2018, from https://www.motoring.com.au/top-10-infotainment-essentials-100005/

[8] Mark Narakaden. (2017). All about car touchscreen systems. Retrieved 30 April 2018, from http://www.autocarindia.com/auto-features/all-about-car-touchscreen-systems-405762

 DOI : 10.18231/2454-9150.2018.0159