

AN ASSESSMENT OF CAR OWNERS INTEREST AND PERCEPTION OF THE USE OF GLOBAL POSITIONING SYSTEM IN AUTOMOBILE VEHICLES

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ABSTRACT

The research was based on the assessment of car owners' interest and perception of the use of global positioning system in automobile vehicles. Two research questions and one hypothesis were used in the study. Survey research design was used for the study. The population of the study comprises of 400 car owners in Ogboloma Community in Yenegoa Local Government Area, Bayelsa State. Simple random sampling technique was used to sample out 200 car owners from Ogboloma Community in Yenegoa, Bayelsa State. The research instrument for the study was a structured questionnaire item titled car owners interest on GPS [COIGPS] and Car Owners Understanding on the Operation of GPS [COUOGPS]. The instruments were face validated by two experts from the department of environmental sciences in Niger Delta University. Reliability coefficient was calculated using Pearson product moment correlation coefficient, which yielded 0.84. The questionnaire items were administered directly to the respondents by the researchers. The research questions were answered using mean and standard deviation based on five point Likert Scale. The null hypothesis was tested using Z-test at 0.05 level of significance. Results from the study showed that majority of car owners in Ogboloma community in Bayelsa State are interested on the use of GPS equipment in their vehicles. Also, 40% of car owners within the community do not have proper understanding of the use of GPS equipment, while 60% have knowledge of the use of GPS equipment. The null hypothesis was rejected as Z- calculated value was higher than Z- tabulated value, thereby implying that there is no significant difference between car owners' interest on the use of GPS and their understanding of its operation in Ogboloma Community Yenegoa Local Government Area, Bayelsa State. Therefore, it will be recommended that GPS trackers for vehicles should be made available and affordable for car owners. Also, car owners should be trained on the use of GPS equipments.

KEYWORDS: Geographical Positioning System, Automobile Vehicles, Perception and Interest.

INTRODUCTION

The global positioning system [GPS] is a satellite-based navigation system made up of a network of 24 satellites placed into orbit by the US department of defence. GPS was originally intended for military applications, but in the 1980's, the government made the system available for civilians use. Moshe, [2016] contributed that the GPS is a constellation of 24 satellites that orbits the earth and make it possible for people with ground receives to pinpoint their geographical location. The location accuracy is anywhere from 100 to 10 metres for most equipment. GPS equipment is widely used in science technology.

Margaret,[2016] stated that the GPS works in this manner;

- 21 GPS satellites and three spare satellites are in orbit at 10,600 miles above the earth. The satellites are spaced so that from any point on earth, four satellites will be above the horizon.
- Earth satellite contains a computer, an atomic clock, and with a radio with an understanding of its own orbit and the clock, it continually broadcast its changing position and time. Once a day, each satellite checks its own sense of time and position with a ground station and makes any minor correction.
- On the ground, any GPS receiver contains a computer that triangulates its own position by getting bearing from three of the four satellites. The result is provided in the form of a geographical position- longitude and latitude, for most receivers, within 100 metres.
- If the receiver is also equipped with a display screen that shows a map, the position can be shown on the map.
- If a fourth satellite can be received, the receiver/computer can figure out the altitude as well as the geographical position.
- If you are moving, your receiver may also be able to calculate your speed and direction of travel and give you estimated time of a specified destination.

GPS receivers are becoming consumer products. In addition to their outdoor use, receivers can be used in cars to relate the driver's location with traffic and weather information. Track your truck vehicle tracking solutions combine sophisticated GPS tracking technology with flexible, advanced mapping and reporting software. TYT,[2016] stated that a GPS-enabled vehicle tracking device is installed on each vehicle to collect and transmit tracking data via a cellular or satellite network. The device then delivers the data to the track your truck hosted application net track, which you can access through the web anytime. Clabum, [2009] revealed that a vehicle tracking system combines the use of automatic vehicle location in individual vehicles with software that collects these modern vehicle tracking systems commonly use GPS or GLONASS technology for locating the vehicle.

TST,[2016] stated that Nigeria is no more among the list of nations with a poor geo spatial data gathering and visualization record. This is brought about by the booming business of vehicle tracking, facilities management in car navigation system and online interactive mapping. This further enhanced by the launch of the two Nigerian satellites which easily generates data for use within these applications. Observation shows that most vehicles in Nigeria do not have GPS tracking system. Also, most road users may not be informed of the importance and use of the GPS programme. There is therefore the need find out the perception of car owners on the use of GPS equipment in automobile vehicles.

PURPOSES OF THE STUDY

The aims of the study are to;

1. Find out the interest of car owners on the use of GPS tracking system in their vehicle.
2. Ascertain the level of understanding car owners have towards the use of GPS equipment in their vehicles.

SCOPE OF THE STUDY

The study is limited to the use of GPS on automobile in Ogboloma Community in Yenegoa Local Government Area, Bayelsa State. It is also limited to vehicle products like Toyota, Kia, Nissan and Mazda.

RESEARCH QUESTIONS

The following research questions guided the study;

1. To what extent are car owners interested on the use of GPS in their vehicles in Ogboloma Community, Bayelsa State?
2. To what extent do car owners understand the operation of GPS in their vehicles in Ogboloma community, Bayelsa State?

HYPOTHESIS

The null hypothesis was tested at 0.05 level of significance.

There is no significant difference between car owners' interest on the use of GPS and their understanding of its operation in Ogboloma Community Yenegoa Local Government Area, Bayelsa State.

METHODS

Survey research design was used for the study. The population of the study comprises of 400 car owners in Ogboloma Community in Yenegoa Local Government Area, Bayelsa State. Simple random sampling was used to sample out 200 car owners from Ogboloma Community in Yenegoa, Bayelsa State.

The research instrument for the study was a structured questionnaire item titled car owners interest on GPS [COIGPS] and Car Owners Understanding on the Operation of GPS [COUOGPS]. This was developed to collect data based on the research question 1 that guided the study, with response mode of highly interested [HI], interested [I], moderately interested [MI], not interested [NI] and undecided[UN].The response items were rated as 5,4,3,2and1. Response items for research question 2 were strongly agree [SA], agree [A], disagree [D], strongly disagree [SD] and undecided [UN].

The instruments were face validated by two experts from the department of environmental sciences in Niger Delta University. The reliability coefficient was calculated using Pearson product moment correlation coefficient which yielded 0.84. The questionnaire items were administered directly to the respondents by the researchers. The research questions were answered using mean and standard deviation based on five point Likert Scale. Any item with a mean of 3.0 or above was agreed to a great extent, while items that had mean less than 3.0 implies disagree. The null hypothesis was tested using Z- test at 0.05 level of significance.

RESULTS

RESEARCH QUESTION 1

To what extent are car owners interested on the use of GPS in their vehicles in Ogboloma Community, Bayelsa State?

TABLE 1: Car owners interest on the use of GPS in vehicles

S/N	ITEMS	HI 5	I 4	MI 3	NI 2	UN 1	MEAN	STANDARD DEVIATION	REMARK
1	I love to install GPS in my car.	84	40	36	25	15	3.8	0.26	Accept
2	I would love to use the GPS to know different places.	100	50	40	10	-	4.2	0.29	Accept
3	I would love to spot the location of my car any place and any time.	120	49	31	-	-	4.4	0.32	Accept
4	I love to be trained further on the use of GPS tracker.	58	52	70	10	10	3.7	0.25	Accept
5	I love to install an inbuilt GPS system in my car.	90	60	20	20	10	4.0	0.28	Accept

Based on the result of table 1, it revealed that responses from item 1 to 5 were all accepted to the various questions.

RESEARCH QUESTION 2

To what extent do car owners understand the operation of GPS in their vehicles in Ogboloma community, Bayelsa State?

TABLE 2: Car owners understanding on the operation of GPS in their vehicles.

S/N	ITEMS	SA 5	A 4	D 3	SD 2	UN 1	MEAN	STANDARD DEVIATION	REMARK
1	I have seen a GPS in vehicle before.	30	40	20	70	40	2.8	0.2	REJECT
2	I can put on my GPS tracker in my vehicle.	30	39	41	70	30	3.0	0.2	ACCEPT
3	I can locate my position on the GPS tracker.	25	40	50	60	25	2.9	0.2	REJECT
4	I can identify places on the GPS tracker.	45	22	78	55	-	3.3	0.2	ACCEPT
5	I can read map of areas and places with my GPS system in my car.	32	31	77	50	10	3.1	0.2	ACCEPT

Based on the result of table 2, it revealed that responses from item 2, 4 and 5 were all accepted to the various questions. While response items 1 and 3 were rejected.

HYPOTHESIS

There is no significant difference between car owners' interest on the use of GPS and their understanding of its operation in Ogboloma Community Yenegoa Local Government Area, Bayelsa State.

TABLE 3: Z- test on car owners' interest and understanding on the use of GPS operation

ITEMS	MEAN	STANDARD DEVIATION	N	DEGREE OF FREEDOM	Z-CAL.	Z-TAB.	DECISION
Car owners interest on GPS	4.0	0.3	200	398	39.2	1.96	REJECT
Car owners understanding of GPS operation.	3.0	0.2	200				

From table 3, it revealed that Z-calculated value of 39.2 is greater than Z- tabulated value of 1.96 thereby rejecting the null hypothesis. This indicates that there is significant difference between car owners' interest on the use of GPS and their understanding of it's operation.

SUMMARY OF FINDINGS

The following are the summary of finding;

1. Research question1 revealed that responses from item 1 to 5 were all accepted to the various questions. This show that most car owners within that region are interested in the use of GPS equipments in their vehicles.
2. Research question 2, revealed that responses from item 2, 4 and 5 were all accepted to the various questions. While response items 1 and 3 were rejected. This indicates that about 40% of car owners do not understand the operation of GPS equipment in vehicles, while about 60% of car owners understand the operation of GPS equipment.
3. The hypothesis revealed that Z-calculated value of 39.2 is greater than Z- tabulated value of 1.96 thereby rejecting the null hypothesis. This indicates that there is significant difference between car owners' interest on the use of GPS and their understanding of its operation.

CONCLUSION AND RECOMMENDATIONS

In conclusion, results of the study showed that majority of car owners in Ogboloma community in Bayelsa State are interested on the use of GPS equipment in their vehicles. Also, 40% of car owners within the community do not have proper understanding of the use of GPS equipment, while 60% have knowledge of the use of GPS equipment. The null hypothesis was rejected as Z- calculated value was higher than Z- tabulated value, thereby implying that there is no significant difference between car owners' interest on the use of GPS and their understanding of its operation in Ogboloma Community Yenegoa Local Government Area, Bayelsa State. Therefore, it will be recommended that GPS trackers for

vehicles should be made available and affordable for car owners. Also, car owners should be trained on the use of GPS equipments.

REFERENCES

1. Clabum, T. [2009]. *Vehicle tracking system*. [www. Autotracking.com](http://www.Autotracking.com).
2. Moshe, P. [2016] *Global Positioning System [GPS]*. [www.searchmobile computing.com](http://www.searchmobile.computing.com)
3. Margaret, R. [2016]. *How the GPS work*. [www. techtarget production.com](http://www.techtarget production.com)
4. TYT [2016]. *How GPS tracking vehicle works*. www.GPS fleet tracking.com
5. TST [2016]. *Introduction of new car navigation system in Nigeria*. www.leaserweb.com