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AIDA MARKETING COMMUNICATION MODEL: VEHICLES RUNNING ON LIQUID NATURAL GAS (LNG) IN THE MIND OF UAE CUSTOMERS

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Abstract

This study focuses on the customer perceptions towards the conversion of the cars running on petrol to liquid natural gas (LNG). There are many benefits to using such technology. Therefore, such changes will contribute towards reaching positive long-term results. For instance, such vehicles are likely to be cost effective in nature; they also provide appropriate ground for meeting the future environmental standards due to the fuel being cleaner compared with the other alternatives available. Thus, LNG remains one of the best alternatives of petrol.AIDA marketing communication model used in this research consists of four stages: awareness, interest, desire and action. This model would provide appropriate insights of the customers who are likely to take action to purchase these products in the context of UAE. The research discusses the issue of converting with 50 potential customers who would use the LNG technology. A structured questionnaire that is used for extracting the information. The study findsthat customers are very less likelihood to be interested in the conversion process. While the LNG technology is likely to have many future implications, it is not likely to have current adoption in place.

Keywords:AIDAModel; Customerperceptions; Liquid natural gas (LNG); Environmental pollutants; UAE Energy.

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1. Introduction

The global focuses on the environmental issues are increasing. It is important that the controlling of the emissions take place in line with the global standards. To ensure the environmental safety and benefits are appropriately maintained, one of the major causes of emissions are vehicles. Being able to improve the motor vehicles to reduce the emission levels will benefit many parties including the user of the vehicles. Thus, there are many justifications, which exist to encourage this transformation.

When the fuel life cycle is taken into consideration, the emission levels of the liquid natural gas (LNG) are 6% to 11% lower than the petroleum products [2]. This indicates that the gas would be one of the best resources that can be used for development of energy sources. However, as a source of energy, gas will stay less polluting compared with the other energy sources in the market.

It is important to note that both petrol or gas are environmental pollutants; however, due to the ability of LNG to emit more power when burned would make this higher in efficiency when compared with petrol. On the other hand, it is important to note that LNG is less costly when compared with the petrol and other solutions available for vehicle energy generation. These issues indicate that LNG would provide a better alternative for petrol or even diesel in certain types of vehicles. Thus the overall outcomes associated with the LNG and the vehicle conversion to LNG remains beneficial to the environment and all parties who would carry out this conversion. This is a long-term investment that the parties may have to take and convincing of the customers with.

2. Research Problem& Objective

The petroleum as well as natural gas are limited resource.Their availability is likely to be limited for few decades in the future. Currently, the usage of petrol in the vehicles is prominent and diversification.The cost seems to be an important factor that would lead to conversion of vehicles running from petrol to gas. Thus the overall research has to identify the actual potential that this technology would be adopted under the given conditions for operations.

The knowledge associated with the preference of LNG in UAE has not been identified, and this study would provide the basis for identification the role of LNG and how customers

perceived and behaved towards the new technology. Thus, the outcomes would provide favorable results and achieve appropriate benefits in the future. While the idea of LNG is based on vehicles is positive, it is important to note that thistechnology might not provide appropriate basis for a commercial operation if the market in UAE would not accept it.

The study would use AIDA model [11] for identifyingthe likely purchase action that the customers would take; this will illustrate the feasibility of the idea and the likely benefits that this would bring. The study seeks to identify the market reaction to LNG technology and how it can be used. The purposes of the research aim at achieving the following objectives:

- Understanding customers' awareness of the importance of the emission control through appropriate fuel usage.
- Exploring customers interest and desire of the benefits that they will reach through usage of LNG.
- Identifying the extent the customers would take action to convert current petrol-based to LNG-basedvehicles.

3. Background

The environmental considerations in a global level are increasing and the need to control air pollution is high with more countries joining in the industrialization. The countries gradually identify that they have to work to minimize the environmental impact from the activities they carry out. This remains vital in all contexts. The vehicle related emission standards are gradually changing and becoming stricter [6]. This indicates that there is a need for further standards that provide valuable results in the future.

The increasingly tough environmental standards are in place and the car owners have to make sure that their vehicles would comply with these emission standards and fit withthe appropriate usage of technology that contribute to the changes in the emission levels of their vehicles. This is becoming challenging as these standards continue to increase [3].

LNG is a clearer fuel when compared with the petroleum products; this is due to the fact that the emission levels associated with the petroleum related fuels are lower. Thus, LNG is gaining popularity for the power generation purposes in a global context. This would eventually ensure that fuel is used increasingly [5]. The global environmental considerations are increasing due to the need of a cleaner environment. Thus the overall

outcomes associated with the LNG remains a prominent issue and the benefits could be reached by increasingly use LNG instead of petroleum [9].

Another benefit associated with these changes is the fact that such cars will be able to provide beneficial environmental results. It is identified that appropriate environmental benefits can be reached by usage of the vehicles of this type. The diversification of the fuel types in the usage will allow the resources to be used for a longer period of time and the parties will be able to benefit from these resources usage in appropriate context [4]. As the hydrocarbons remain limited resources. Usage of petroleum as well as LNG for the vehicles would increase the possibility of usage of this hydrocarbon based resources over a longer period of time.

It is identified that from the side of the vehicle, the conversion of the fuel is likely to be beneficial. This is due to the fact that the new fuel will allow the engine to run longer as the emissions are lower. Based on the nature of the fuel LNG is a cleaner fuel compared with the other alternatives available.

The main challenge is the fact that the hydrocarbon prices are reducing; this indicates that any of the cost advantages associated with the usage of LNG would deteriorate. Thus the users will not be able to maximize the returns due to the LNG usage [7]. It is beneficial that appropriate outcomes are developed and the benefits are maximized to reach the intended results. Engine modifications are required in the context of the vehicles when they have to use LGN instead of petroleum. Such modifications would be possible provided that the markets are willing to invest in such changes [4]. In case that the markets would not find these changes attractive, they will not carry them out.

AIDA model [11] consists of four stages of buyer behaviour which are: awareness, interest, desire and action. In this instance, the customer has to be aware of the concept of LNG, they have to be interested and they have to act to convert the vehicles to LNG-based from the conventional petroleum-based[7].

- Awareness – having an awareness is critical in making any purchase decision; it is important to make appropriate purchase decisions that made by the parties with the intention of reaching beneficial outcomes [10]. Creating awareness will ensure that the

companies would be able to reach the intended results and ensure that best of the interests are reached as needed. The information about this new technology has to reach the customers and they have to know about the need for usage of this new technology in their vehicles.

- Interests – This goes beyond the simple awareness of the facts; if the potential customers feel that there is an interest in place to identify the issues and the need for solutions.This indicates that the parties will be able to reach favorableoutcomes in the long term [1]. If the customers are aware and still not interested in the given technology, the companies will not be able to influence the decision making of the customers to use the products and the services that they offer in the market.
- Desire – This represents the level of drive that the customer may face to make the required purchase. It is important to note that this could be the irrational factor; for instance, if the product is fashionable, there is a desire to purchase the product than a rational evaluation. However, even in the case of rational evaluation being present, there is an element of desire in place and the parties will have to make sure that the desire factor is fulfilled in this context [8].
- Action – This represents the action taken to purchase the said item; taking the right action and making sure that appropriate benefits are reached is the critical aspect in this consideration. This indicates that taking the action required to acquire the new products and its benefits.

In this discussion, all the above stated stages are important; the awareness is one of the key aspects that would drive the desire to purchase the items. The users of the normal vehicles have to be aware of the alternative they have and be provided with the needed information to explore the idea. The parties then will have to make sure that they reach the intended results through creating customer's interest.In order to have an interest, they have to identify the benefits that the conversion will provide them with. This is another key area that needs attention. After these key aspects, it is important to have the desire to purchase the product or in this instance to make the conversion. When the desire is in place, the action will be taken and the conversion will be carried out in line with the market needs.

4. Methodology

The sample does not have a clear boundary in this research; therefore, a convenient sample has been selected. A sample size of 50 drivers is selected from vehicles' owner population.As the study is quantitative in nature, a questionnaire is the best approach to collecting information. A questionnaire was developed to collect the primary data needed for this study. It covers the four stages of AIDA model; each stage consists of four questions. Likert five-scale is provided for respondents.All questionnaires were completed and returned back for the purpose of analyzing the collected data.Adescriptive approach approach has been used through the frequency analysis and means scoresstatistical techniques

5. Analysis and Findings

According to AIDA model, the customer responses to each stage of the model can be identified as follows:

Awareness

In order for the customers to be aware of the LNG technology, they have to know the details about it. In case that they do not have the required awareness, actions may have to be taken to solve this issue. The following table represents the awareness related aspects. The role of awareness remains one of the critical stages that trigger the purchase decision-making process associated with the LNG conversion.

Table 1.The summary of the mean scores of the Awareness stage

Awareness aspects of LNG Technology	Mean
I know about the ability to convert vehicles to LNG	4.59
I know this is cost effective	4.49
I know this approach is environmental friendly	4.69
I know this is good for the engine	4.22

It is clear that there is a high level of awareness when the LNG gas conversion is taken into consideration where an average score of 4.5 is reached. It is well known to be environmentally friendly as a technology. It is also evident that the respondents had a high knowledge about the ability to convert the vehicles to LNG instead of petrol. Further, they know that the technology remains cost effective and the approach is likely to be good for

the engine too. Thus, this indicates the fact that the awareness already exists and the customers are aware enough of the LNG.

Interest

This is the stage where the awareness is in place, and the question is about the customers interest in the new technology and its benefits. At this stage, if the customers are interested in the LNG technology,they may work towards making the expected results and purchasing of the LNG technology. The following table represents the customers perception details.

Table 2.The summary of the mean scores of the Interest stage

Action aspects of LNG Technology	Mean
I am interested in environmentally friendly technologies	1.57
I believe if I covert my vehicle, running cost would be low	1.98
I would like to ensure the engine of the car is in good condition	1.73
I am interested in converging the vehicle to LNG	1.78

It is evident that having reached an average score of 1.77 indicates the fact that the actual interest of the requirements is very low. All the related questions have scored low when the interest of the issues are taken into consideration. The highest level of interest (i.e., 1.98) was created due to the lower running costs. However, it remains overall low. The fact that the technology was environmentally friendly was not well accepted by the customers.

Desire

This is the driving force behind the company; they would also make sure that they reach the intended results and achieve the benefits in line with the needs they have. The desire is a driving factor that contributes to purchasing of a given products and a service. Thus, having the required desire to purchase remains highly important and would contribute to beneficial outcomes. The desire factors also are being measured in the following table:

Table 3.The summary of the mean scores of the Desire stage

Desireaspects of LNG Technology	Mean
I feel it is better if I change over to LNG	2.57
It is likely to be trendy if I change over to LNG	1.53
I feel it is beneficial to change the vehicle over to LNG	1.61
I feel an LNG vehicle can create a trend that will ignite interest	1.59

It is interesting to note that most of the respondents did not believe that they have a high level of desire to change from the current to the new LNG based approach with an average score of 1.8. Many did not believe that it is trendy for them to change from the current to LNG. They did not believe that is likely to contribute to create the trend as well. While there is a tendency to think that it is better to change the vehicle to LNG based, there is no concrete desiresassociated with this technology.

Action

This part represents the action that expected to be taken. Taking the right action would make sure that appropriate benefits could be reached in line with the needs of the industry. In this instance, if the customers are willing to take action and convert the systems, it is likely that they will be able to receive appropriate results in line with the expectations in place.

Table 4.The summary of the mean scores of the Action stage

Action aspects of LNG Technology	Mean
I will study the benefits and the costs associated with converting to LNG	2.27
I will inform the others of the benefits of LNG	2.24
I will also evaluate the investment needed to covert the vehicle to LNG	1.45
I will convert my vehicle to LNG	1.45

The average score is 1.85 which indicates the fact that there is very low potential for taking action which means that the respondents are not interested in acquiring the new LNG technology.

6. Discussionand Conclusion

Regarding the LNG technology, the results presented in the previous section showsthat applying AIDA model upon UAE vehicle customers indicates the fact that markets have a high level of awareness to it. It is evident that customers have understood the benefits associated with the technology and the outcomes related to it.This indicates that the markets understand the fact that the LNG conversion would be good for the vehicles as well as environment. The running costs associated are low as well.

However, it is also important to note that just having a high level of awareness has not translated into interest; the customers were not interested in the new technology. This is due to the fact that the benefits they are likely to receive through the technology were not meeting their expectations in the long run.

This naturally leads to lower level of desires, it is interesting to note that the level of desire associated with the purchase intentions was very low and this leads to lower level of action in the context of the purchase decision making.

Results represent that the awareness is in place while the interest and desire to make purchases are not in place.This indicates that there is limited scope and growth for the industry. This shows that the actual concept associated with the new technology is low and they might not be able to reach the desired results in line with the market expectations. Actually, if there is an investment in the filed of LNG and the conversion of the petrol vehicles to the LNG technology, the demand is likely to be very low.

7. Recommendations

It is noted that the customers are aware of the benefits of the new technology. However, this fact is not drivingthe adoption ofit in the market. It is important to identify the other benefits associated with the technology and take appropriate steps to ensure these outcomes are realized. Creating the interest, desire, and translate them into actions are the challenges for the interested parties (i.e., government, environmental agencies, etc.). The cost reduction may be one of the essential factors that affect the expected purchasing decision; this factor could be utilized from some of the parties involved to convince the customers adopting this technology. The environmental appeal alone will not provide the ground required to allow the customers to identify the need for change. This indicates that

if there are any parties involved with promoting the technology, they have to work with the customers and make sure that they reach appropriate benefits in line with the market expectations.

The companies have to work with the regulatory authorities to identify how they are likely to change the emission standardsto target the customers with relatively old vehicles. These customers are likely to be compelled to change their attitudes towards the vehicles and the technology involved with it.Thus any party who is interested in this industry should work with this aspect in mind and make sure they reach the target results in the future.

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