INVTESTIGATING ELEMSNTS AFFECTING THE PURCHASING DECISIONS OF LOW EMISSION CARS: A STUDY OF EGYPT

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1.   ABSTRACT: : This article provides a study about the customers' priorities and point of views about alternative fuel vehicles. Presently green technology and specifically green transport have grown to be of great importance for car manufacturers, customers, and energy providers in most of the developed countries. However, in developing countries this idea is considered rather new and is not considered a priority for the manufacturers nor the customers.

Worldwide many governments and business field stakeholders are pouring a great deal of endeavor to understand the customer's behavior in order to enhance their green product and make it more appealing for customers. While in Egypt the low percentage of private investment in the energy sector is an obstacle for the technological aspects of energy production, distribution and consumption. The study involves nearly 1086 respondents to define the most significant customer behavior parameters related to buying alternative fuel vehicles. The questionnaire hence involves various variables such as financial considerations at the time of purchase, Long term financial concerns, gasoline and efficiency, fuel consumption, external and internal design characteristics, cargo capacity, and climate change.

Keywords: *Low emission cars, Buying behavior, Green customers and Green marketing.*

2.   INTRODUCTION

For most of the last 200 years, the steady growth in energy consumption has been closely tied to rising levels of prosperity and economic opportunity in much of the world However, it's become clear that current patterns of energy use are environmentally unsustainable; humanity currently finds itself attempt higher emissions by fossil fuels resulted in an exceedingly dramatic rise in the level of gases in the atmosphere (Tatsutani, 2009), and it is expected that it will keep rising continually and that petroleum products will continue to be the primary source of energy (Matjaz Knez, 2014). In the situation of the global warming that the world currently facing and for the purpose of implementing environmental regulations that manage air pollution and fossil fuel consumption, various countries are actively encouraging electric vehicle (Liu et al., 2020); a vital goal of the European Union (EU) is to decrease house emission to be greenhouse by 40% as a minimum by 2030, compared to 1990. Concerning transportation, the EU objective for 2050 is to decrease CO_2 emissions by 60%, considering that transport is liable for 30% of total CO_2 emissions, and 72% of this caused by road transport (Brătucu et al., 2019).

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Transportation is one of the most carbon provider worldwide that could decrease its emissions by electrification (Brückmann, Willibald, & Blanco, 2021). Environment change caused by the emission of greenhouse gases (GHGs) is considered as the most vital environmental problem in society. While there are numerous sources of GHGs, those emitted from vehicles can be decreased by alternative fuel vehicles (AFVs) or green cars. The advanced alternative fuel technologies can split the amount of fuel utilized and decrease carbon dioxide (CO_2) emissions and associated environmental influences. These fuel-efficient technologies involve advanced internal combustion engines, hybridization of vehicles, and electric or fuel cell vehicles (Saleem, Eagle, & Low, 2021); subsequently the generation of electricity gradually moves towards renewable energy sources (Brückmann et al., 2021)

Renewable energy sources (RES), that embody hydro energy, wind energy, solar power, biomass, heat, tidal, and wave energy, are seen as a way to short reduction also as a semi-permanent resolution to economic, political, and social vulnerability. Sustainable energy policy suggests that an efficient provision of energy so as to fulfill future wants, needs and requirements without decreasing the flexibility of future generations to fulfill their own needs (Obrecht, 2013). Recently, though, this pattern of continuous renewal has begun to derail. Our planet is being suffering from continuous and dramatic changes that it doesn't recover every year. One modification from that the planet doesn't recover is that the rising level of carbon dioxide (CO_2) within the atmosphere, the yearly average concentration of CO_2 in the last thousand years remained nearly constant at 280 ppm. Nevertheless, that concentration began to rise in the nineteenth century, then the speed of increase has accelerated dramatically in half of the twentieth century. In 2007 the concentration was about 384 ppm. And eventually if the carbon dioxide concentration continues to extend at the current rate, it'll be double the pre-industrial concentration of 280 ppm by the end of the twenty first century (Komiyama, 2008).

Decreasing CO_2 emissions is a global matter that can be partly solved by substituting fossil fuel- powered vehicles with electrically driven ones. in that regard, there is a need to promote sustainable development policies to expedite public awareness of new advances

in the automotive industry (Brătucu et al., 2019). From the perspective of the supporters of sustainability, a shift toward low- carbon mobility is required as a current trends of the transportation sector worldwide also requiring investment publically transportation, facilitation of inter-modality, and reduction of private vehicles, as well as encouraging use of economical vehicle technologies (Litman, 2012).

Attaining a sustainable economy is relying on low carbon footprint necessitates entails significant transformation for customer patterns, mainly emphasis on clean acquisition. As claimed by many specialists, this behavioral change can be reached by shifting to electric vehicles. This is a necessity not only for the reason of very high CO_2 emissions and air pollution but also the high consumption of fossil fuels (Brătucu et al., 2019).

Two critical factors are expected to drive significant changes in the transportation industry: the advent of alternate fuels and the significant negative consequences of transportation on the climate. At the moment, low oil resources and their accompanying cultural and economic consequences are presently. One of the primary problems confronting for any sustainable system the primary drivers of the demand for alternate fuels and a reduction in reliance on fuel imports and to balance the environmental, economic, and social dimensions within decision-making processes (laurence Turcksin, 2013). In addition, as mentioned above that transportation sector is the second largest contributor to carbon dioxide (CO_2) emissions due to fossil fuel combustion. Therefore, it has a great effect on the portion of pollution gases into the atmosphere, which have an effect on people, material, agricultural, environment, and biosphere both intrinsically and extrinsically. Thus, characterizing a sustainable transportation system taking into account all transportation modes and their negative externalities will therefore provide appealing alternative for reducing the environmental footprint of private transportation, reducing hazardous emissions, and increasing the efficiency and effectiveness of limited sources of energy.

To accomplish these goals, bicycles should be used and public transport should be encouraged to reduce the use of personal transportation (Luis Velazquez, 2015) as well as encouraging the purchase of environmentally

friendly alternative vehicles instead of gasoline and diesel engines is important, which use alternative fuels such as liquefied natural gas (LNG), compressed natural gas (CNG), bioenergy, and hydrocarbons, as well as drive trains such as electric cars (ECs), plug-in hybrid electric vehicles , and hydrogen fuel cell vehicles (HFCVs) offer an attractive solution for reducing the carbon footprint of the vehicles fleet. (laurence Turcksin, 2013)

Adoption of these AFVs on a global level is a significant hurdle. It depends on large scale infrastructure expenses (refueling and repairing facilities on the stockpile) as well as it has a huge dependence on the acquiescence by the end-users on the consumer side. In this regard, it is critical to understand consumers' views and preferences about AFVs in order to formulate effective policy actions (Matjaz Knez, 2014). However, humanity currently finds itself attempt an infinite energy challenge. This challenge has at least two important dimensions. The irresistible dependence on fossil fuels, threatens to change the Earth's climate and its consequences on the integrity for both natural systems and vital human systems. On the other hand, a large fraction of the world's population still lacks access to at least one or many sorts of basic energy services, as well as electricity, clean cookery fuel associate degreed an adequate means that of transportation. (Tatsutani, 2009)

The forecast of the International Energy Agency (IEA) in its reference scenario estimate is that world energy demand from 2005 to 2030 will rise by approximately 52%, while predictions of World Energy Council estimate that energy demand will double by 2050, which is comparable to IEA's prediction. Fossil fuels will continue to be the primary source of energy, which will cover roughly three quarters of elevated world power needs (Denac, 2011).

Stefan Schaltegger (2012) demonstrated that on a comprehensive level, for more over a decade, the relationship among economic and environmental performance has been a source of contention in the literature. they agreed on that in order to create a sustainability as a business case it will entails management strategy to recognize, establish and strengthen ties between not only non-monetary social and environmental performance but also with business and economic success.

Matjaz Knez (2014) point out that the main questions in terms of developing a value proposition for sustainable business is how corporate sustainability management can help develop and manage business cases for sustainability, as well as how profit may be discovered and gained from increasing social and environmental actions. Consequently, stakeholders must conduct an accurate economic analysis of the economic value provided by new sustainable and friendly enterprises. While a strangely stable global environment needs prerequisite for extraordinary human development over the last ten thousand years, this stability is now under threat from human activity (nation, 2013), (Ministry of Economy, 2002) standardized the process for investing in eco-friendly businesses. It endorses comparing economic assessment, such as net present value in addition to benefits associated with the reduction of dangerous substances in the environment, such as greenhouse gas reduction. Executives are then required to make a judgment call based on both financial and physical value (Minato, 2011).

The initial obstacle appears from unsustainable consumption and production patterns that have established in developed countries followed by developing countries. consequently, developed economies have to address those patterns and their continuously growing environmental impact, while developing countries need to follow the aim of greening their growth (nation, 2013).

(Rodney Duffett, 2018) argue that corporates apply green marketing strategies can lead to competitive advantage which can be perceived by consumers and predictions in the form of lower prices or better value offers. (Fairchild, 2008) utilizes a game-theoretic method determined that the investment charge and consumer awareness of ecological issues have an effect on business motivation to invest in the environment. Kokubu (1999) implies that green parties, such as green customers, as well as acting sustainably is economically achievable as consumers and green investors are willing to accept paying more for investments in sustainable products (Henderson, 2015). Green stakeholders, approve the premium pricing comparable to the economic value on the environmental reduction effects. Thus, the socially responsible benefit established from environmental investments can be leveraged to provide

internal organization value (Matjaz Knez, 2014). While HEVs are costly at first, the fuel savings are recovered based on mileage and driving conditions. Examination has demonstrated that the HEV life cycle cost, including the expense of procurement, fuel and maintenance costs, are, -mostly- less than owning a regular vehicle. However, these calculations are emphatically reliant on fuel costs and taxes.

Potoglou and Kanaroglou (2007) analyzed the variables and motivations which probably Canadians' adaptability to greener automobiles is influenced by these factors. As results demonstrated a decrease in the money related liability, buying tax incentives and low carbon rates may urge householders to embrace a greener vehicle; then again, motivations, for example, special parking spot and authorization to drive on high traffic vehicle lanes were not shown to have huge impact on these vehicles' adaptations. (Popp, 2009) determined that fuel costs are very important when purchasing a new vehicle and this relevance is amplified when there is increasing confidence in the vehicle's ability to have a positive impact on the environment. Kishi and Satoh (2005) researched the people's awareness toward buy of a low carbon vehicle in Tokyo and Sapporo and discovered that Sapporo locals were concerned about the environment; however, concerns about nature don't really urge them to buy low-pollution vehicles. Kahn (2006) inspected the contrasts in utilization patterns among two types: environmental activists and non-environmentalists. The findings indicate that environmentalists are more likely to take public transportation, purchase hybrid cars, and consume less gasoline than non-environmentalists.

O'Garra et al. (2007) compared the people's ability to pay for the decreases in air-pollution related to Berlin, London, Luxembourg, and Perth all have hydrocarbons buses, the findings indicate that there is a positive WTP for hybrid busses, as well as qualities are fundamentally the same among geographical areas. Buyers anticipate that EV makers should concentrate on different aspects, for example, vehicle performance, safety, dependability and cost adequacy (Lee and Lovellette, 2015). Brückmann et al. (2021) Stated that the energy efficiency of (BEVs) is greater than that of other EVs and their battery capacity is better, resulting to possibly larger implications for electricity grids while it recharged

at peak hours and peak locations (Achterberg et al. 2010) conducted a study on purchase behavior in the Dutch and discovered that three most significant factors influencing the purchase of new hybrid vehicles are trust in technology, concern of the environment, and a sense of social responsibility for nature. Designing sustainable development strategies requires the integration of complicated processes across the macroeconomic, the energy sector, policies for social, economic and environment and the positioning of technology. Therefore, the world needs a big push based on international development collaboration, and capable to stimulate private sector investment and innovation in order to sustainably transform the energy system (nation, 2013). The ability of developed and developing countries needs to significantly accelerate growth toward higher efficiency, more de-carbonization, greater fuel diversity and lower emission of pollutants to manage the consequences of growing consumption and demand for commercial forms of energy (Tatsutani, 2009).

Many European countries promote laws that support the accelerated replacement of the car fleet with electric vehicles. France, UK intending to ban the sale of gas or diesel cars by 2040. as well as 15 years ago Norway decided to substitute its car fleet through subsidies and tax exemptions consequently the electric vehicles became much accessible and convenient, and momentarily, the percentage of electric vehicles in the total of purchased vehicles has risen a lot, from 5% in 2013 to over 30% in 2018 and 60% in 2019 (Brătucu et al., 2019).

Although there are a great understanding of the danger and threats with automobile dependence globally, nowadays car possession remains still in continuous increase globally, especially in developing countries (IMF, 2008). Egypt ranks 6th in the most polluted countries in the world, and is more polluted than Nigeria. Cairo ranks 2nd in most polluted cities, only less polluted than Delhi (awad, 2018), (Information and decision support center. IDSC, 2007) and (Information and decision support center IDSC, 2008) showed that from the beginning of 2000's, there were an increase in private vehicle licensing at a high rate of 7.4% annually, and 58% of them only in Cairo.

The need for a thoughtful transformation of the world's energy-producing has been extensively recognized. Previous studies on the prospective market for AFVs began in the late 1980s and has been explored using a variety of existing theories. Numerous reports have been written on the subject of sustainable energy, but few have been done from the developing country perception. Specially in nations where they have a large percentage of unawareness and lacks access to basic energy services, many studies reveal that no prior research is made which guides the type of EVs that could be more effective in the developing countries (Rajper & Albrecht, 2020; Tatsutani, 2009).

The purchase of electric cars is affected by environmental matters, economic and technical concerns, and also by personal and demographic circumstances (Biresselioglu, Kaplan, & Yilmaz, 2018). simultaneously, the intention to purchase a new car is affected by the consumers' background and antecedents related to national cultural differences (Barbarossa, Beckmann, De Pelsmacker, Moons, & Gwozdz, 2015); some consumers may have bought electric vehicles based on the future sustainable energy behavior and ecological motivations, while others, may have bought them for financial or technological reasons, having no link to the ecological viewpoints (Brătucu et al., 2019).

3.   METHODOLOGY

This paper presents a research study. The research applies a deductive research approach incorporating both quantitative and qualitative research methodologies, followed by explaining the two data collection instruments. Interviews and survey are used to gather all reliable data to allow for method and data triangulation so that to increase the strength of the findings of the study and fill in the gaps missed in the literature. In addition to the primary data, a variety of secondary data should be collected from statistical records, work process documents, handouts and annual reports for the concerned companies. For the primary data collection, a pre-structured questionnaire from (Matjaz Knez 2014) was modified and distributed in Egypt by researchers. Research was done from April to August in 2021.

Starting from the research problem (the identification of the aspects related to the Egyptian customer's behavior regarding the potential green acquisitions, particularly electric vehicle) and based on the analysis of the literature. In order to reach the research objectives, a quantitative marketing research was carried out, based on the survey A sample of 1086 individuals was carried out to ascertain their current perceptions of relevant vehicle performance and financial factors affecting car purchasing decisions.

The questionnaire population consists of households that presently have a car and individuals who do not currently own a vehicle or who do not have daily access to a car when they require one, following by conducting semi-structured interviews to review the results in order to verify and ensure the results that will be found. The Seminars and focus group of our study was adults. Along with many participants in the study, 93% (1010 out of 1086) of study participants already possess daily access to a car, whereas only 7% (77 out of 1086) currently do not own or have daily access to a car. Given Egypt's gender imbalance, 51.5 % of participants were men and 48.5% participants were women.

SPSS is the statistical software tool that has been used in collecting and analyzing data, the acquired Data-Means Cluster Analysis was used to classify the data, which was accomplished by grouping the data to assist analysis of the data. Principle Component Pattern Analysis was used to limit the number of contextual variables, which resulted in the identification of seven broad factors as provided in Table 1.

Secondary data were compiled in this study using a compilation approach from books, online references, periodicals and specialized journals in sustainability, as well as numerous scientific and professional papers, researches, and project reports focusing on the research topic at hand.

Additionally, the study had some limitations, including a restricted time span and the subjectivity of people's opinions, which can be dynamic and change over time. Additionally, the statistical sample may not accurately represent the entire population.

Table1. Important situational elements to consider while making a future automobile purchase choice
Source: (Borthwick and Carreno, 2012)

Factors	Attributes
Financial considerations at the time of purchase	• Car price · VAT and other buying taxes · Value for money
Future financial considerations	• Insurance set for vehicle · Maintenance/repair charges · Warranty (length and coverage) · Biannual/annual VED · Trade-in value
Fuel and performance gallon/kilometers/liter)	• Fuel consumption (miles per · Engine category/size · Fuel category · Fuel economy · Performance/drive ability
Exterior design features	• Vehicle make · Model of car · Vehicle size · Style/presence/color
Interior design characteristics	• Safety characteristics · Security characteristics · Equipment ranks · Entertainment scheme · Acceleration period
Load space	• Baggage/storage space · Passenger capability · Body shape
Environmental considerations	• Emissions of CO_2 and other greenhouse gases · Emissions of other air pollutants • Vehicle noise

4.   RESULTS AND DISCUSSION

The results are grouped on the main objectives of the research, and the analysis and statistical tests performed are presented in a logical sequence, which allowed obtaining relevant results.

This section discusses the main results obtained by the researcher through analyzing a sample of 1086 respondents. Results display the important vehicle performance factors, financial considerations and Environmental considerations. Results also show the reasons beyond future decision to buy a lower emission car as well as the gender and age distribution between different segments of consumers. Bar charts are used to show different results. Regarding Figure 1, results indicate that there is no difference between Women and Men in almost everything. However, it could be noted that Luggage/storage space is more important for women, while, Body shape (e.g. hatchback, saloon, estate), Mileage (if you buy a used car), Acceleration time, Fuel type, and Model of vehicle (e.g. Golf, Clio) are more important for men all figures (On a scale of 1 to 7, 1 indicates NOT Vital and 7 indicates VERY Vital).
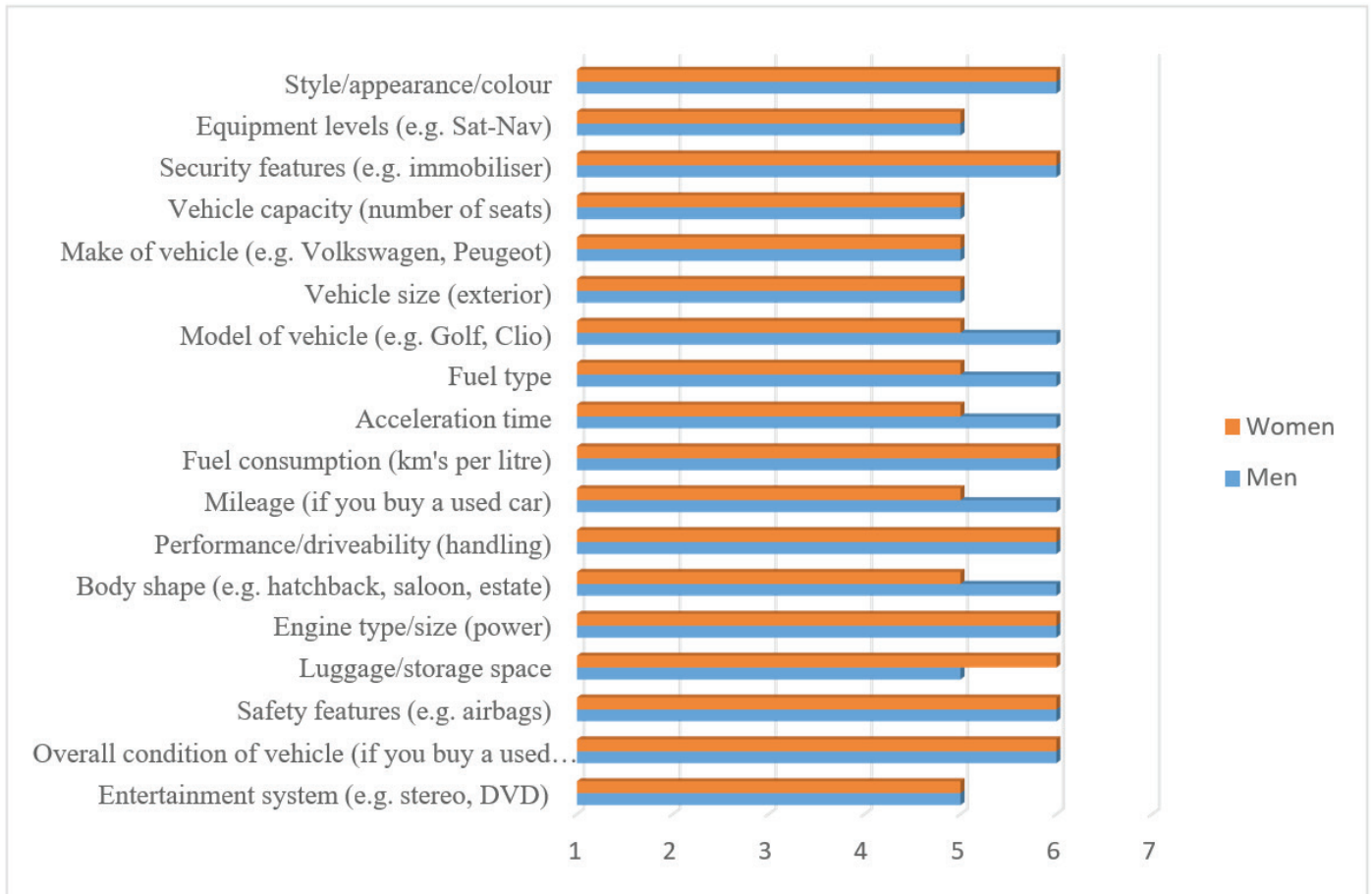
Figure 1: Important Vehicle Performance Factors

Figure 2 displays the results obtained for different financial considerations between gender groups. It could be observed that there is no difference between Women and Men in almost all considerations discussed. However, it could be noted that Maintenance/repair costs, Insurance group for vehicle, and Annual road tax Fuel economy (How much fuel it uses per km) are more important for women.
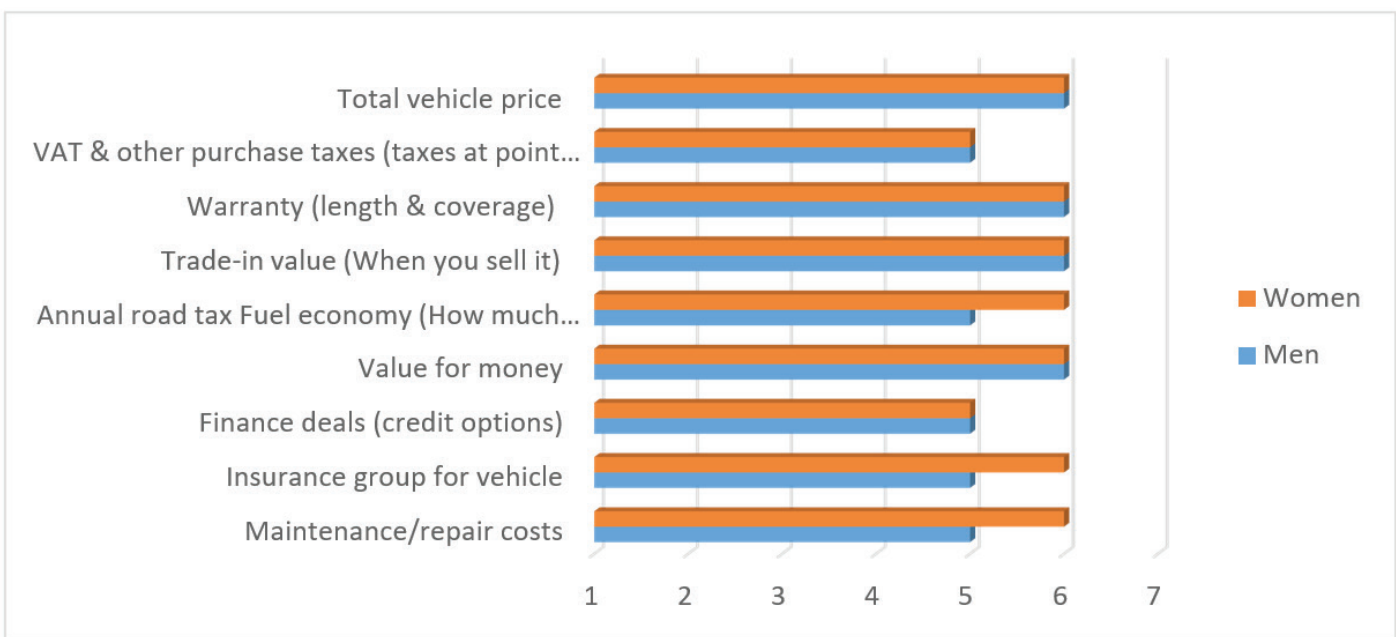

Figure 2: Important Financial Considerations

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Figure 3 displays the results obtained for different environmental considerations between gender groups. The results from Figure 3 indicate that there is no difference between Women and Men in Emissions of CO2 and other greenhouse gases. However, it could be noted that Emissions of other air pollutants and Vehicle noise are more important for women.
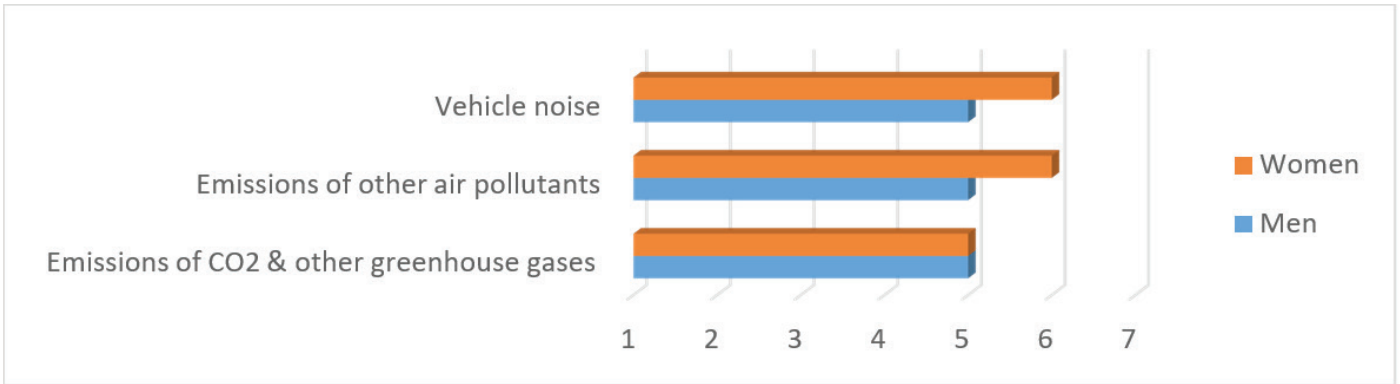

Figure 3: Important Environmental Considerations

Figure 4 displays the results obtained for important reasons of future decision to buy a lower emission car between different gender groups. The results from Figure 4 indicate that the factor "Buying a lower emission car would make me feel good" is more important for women, while, the factor "Because of my own principles & beliefs, I feel no obligation to buy a lower emission car in the future, most other people would approve of me buying a lower-emission car, I am not interested in buying a lower emission car, and I feel no personal responsibility to help reduce the emissions of car related greenhouse gas emissions" are more important for men.
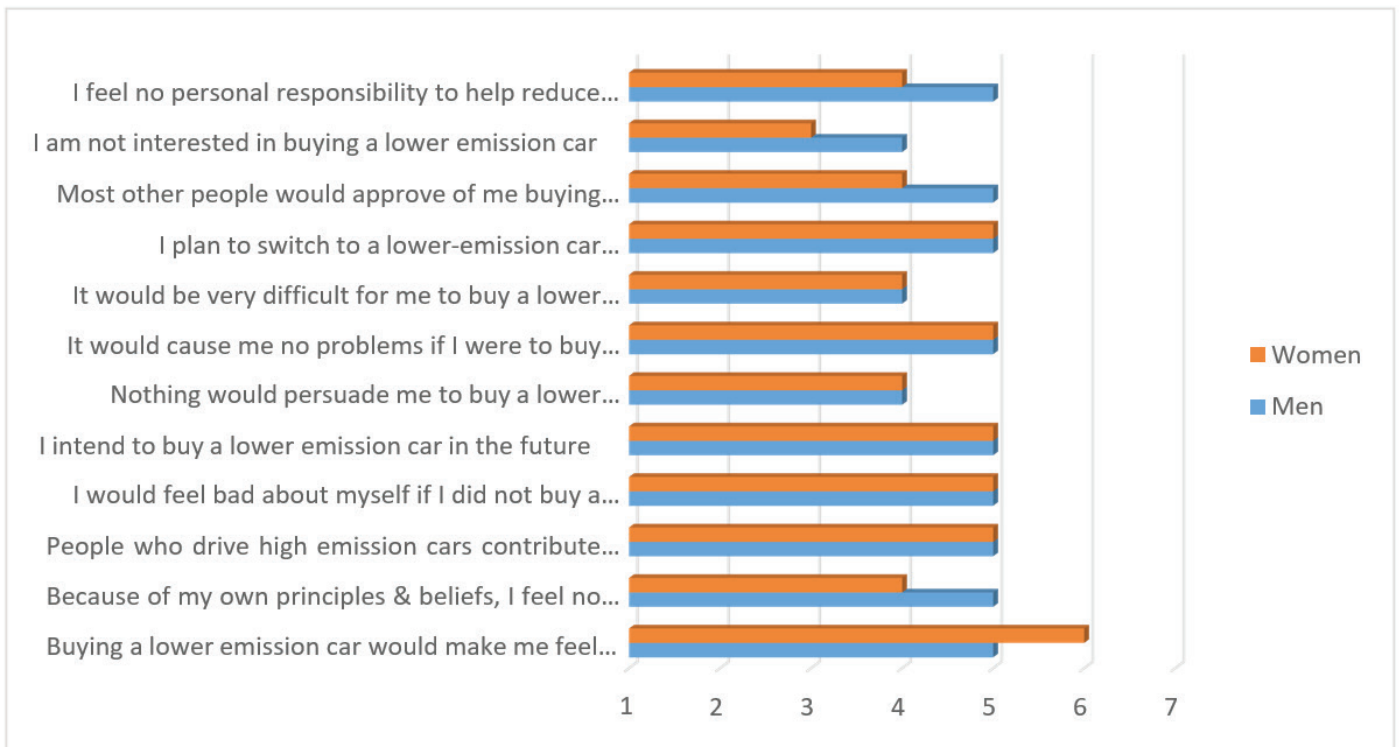

Figure 4: Important Reasons of Future Decision to buy a Lower Emission Car

Figure 5 displays the results obtained for important reasons of future decision to buy a lower emission car between different gender groups. Figure 5 shows that there are certain differences between men and women, as it can be seen that VAT is calculated based on CO_2 emissions, therefore buyers of higher emission automobiles pay more VAT. A road user charge model in which drivers of higher-emission cars pay a higher flat fee depending on CO_2 emissions, Rebates for vehicles below a CO_2 emissions threshold (Drivers of low-emission automobiles, for example, pay less.), The cost of registering a vehicle is determined by the vehicle's CO_2 emissions, therefore buyers of higher-emission

vehicles devote more. The annual road tax is calculated using a predetermined monetary amount (€) per gram of CO_2, which means that drivers of greater emission vehicles devote more, and a 'low-emission vehicle lane,' same as bus lanes, where low-emission vehicles would have their own lane are more important for women, while, the first-year rate of road tax is determined by a fixed monetary total (€) per gram of CO_2, implying that drivers of low- emission vehicles devote less, as well as a road user accusing scheme with payment based on CO_2 emissions (per km/hour), i.e. drivers of greater emission vehicles devote more are more important for men.
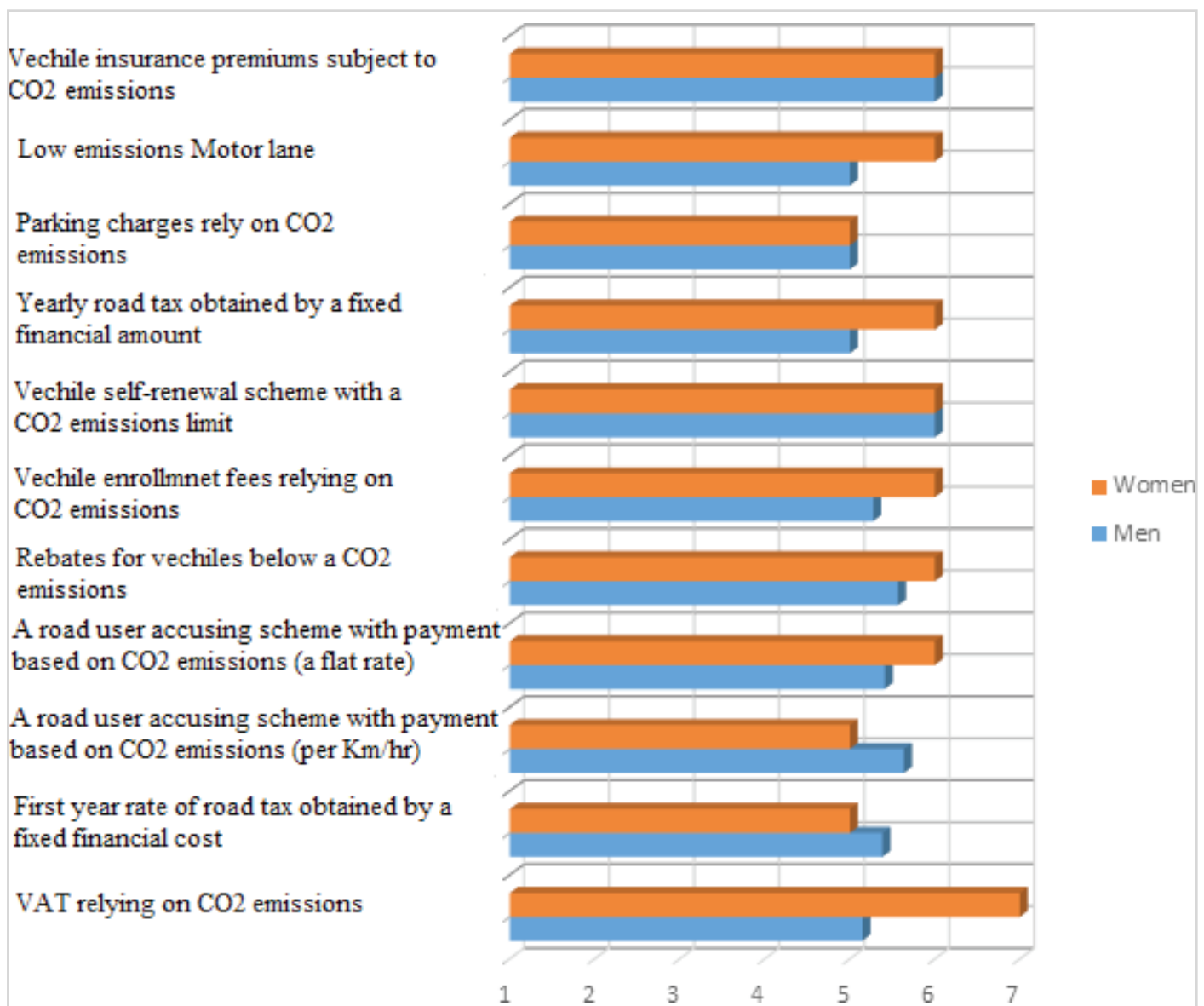

Figure 5: Important of Future Decision to buy a Low Emission Car

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Figure 6 displays the results obtained for male-female ratio in various consumer sectors. Figure 6 shows that only 52% of all females are in the "Maybe" group, followed by both "Go-With-The- Flow-Greens" and "Go-Greens" as they got 16%, and finally is "No Green" group as it got 15%. For Male respondents, the highest group is the "Maybe", as it got 47% followed by "Go-With-The- Flow-Greens" group with a percentage of 22%, is the third place is "No Green" group with 18%, finally, "No Green" group with only 13%.
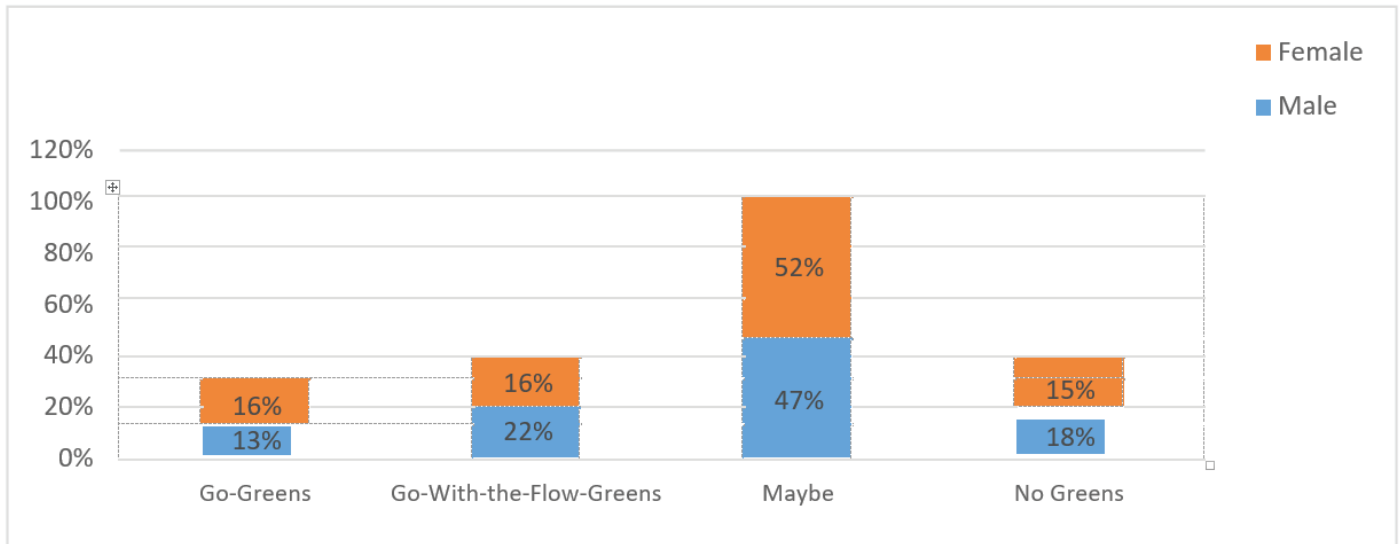

Figure 6: Rate between males and females in various segments of customers

Figure 7 displays the results obtained for ratio between different age groups in different segments of consumers. Figure 7 shows that most chosen group is "Maybe" group, in every age group. Also, it could be noted that "Go Green" is decreasing with age.
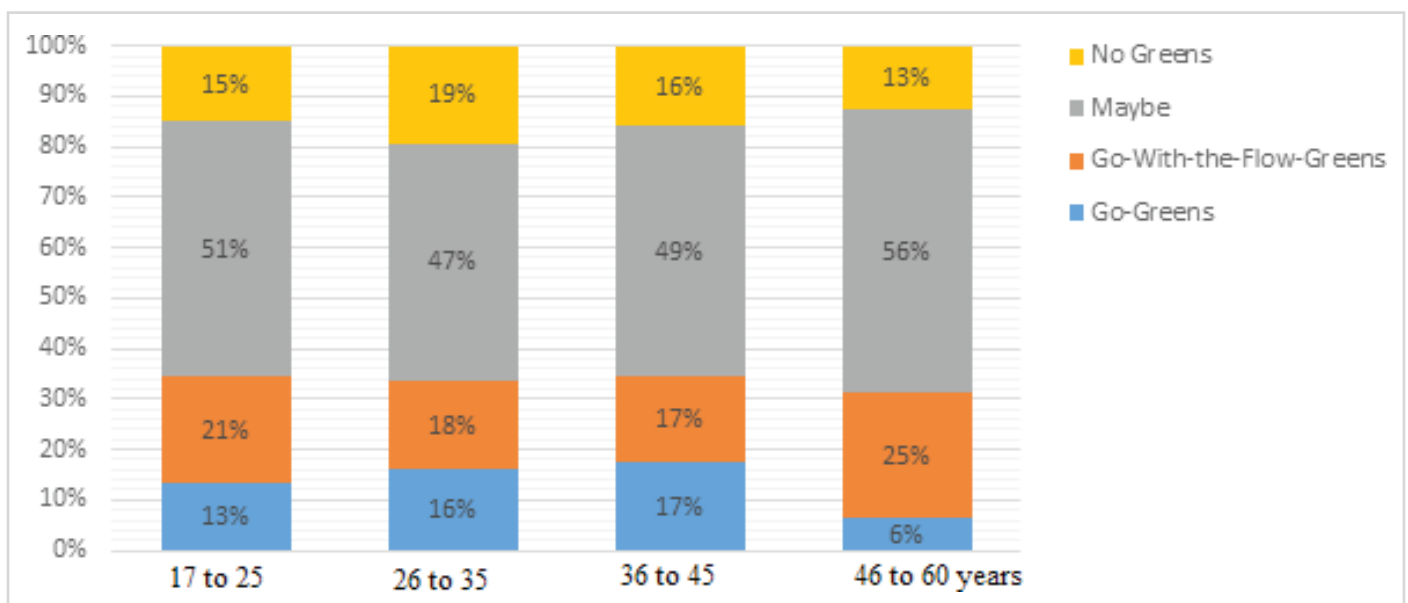

Figure 7: Age distribution between different segments of consumers

Table 2. The differences between push and pull factors on car users in Egypt

	Average	No-Green	Go-With-The-Flow-Green	Go-Green	Maybe	Difference between regular maximum and regular minimum
Buyers of higher emission automobiles would pay more VAT if the VAT was based on CO2 emissions.	6.14	5.24	5.74	7.32	6.25	2.08
The first-year rate of road tax is determined by a set of monetary cost (€) per gram of CO2, implying that drivers of low-emission vehicles devote less.	5.32	5.29	5.21	5.54	5.31	0.34
A payment (per km/hour) system based on CO2 emissions, in which drivers of higher-emission vehicles pays extra.	5.49	5.53	5.32	5.71	5.48	0.39
A road user charging scheme with payment (a flat rate) relying on CO2 emissions (in which drivers of higher emission vehicles devote more)	5.57	5.38	5.48	5.82	5.59	0.44
Rebates for vehicles below a CO2 emissions threshold (i.e. drivers of lower emission vehicles pay less)	5.59	5.50	5.63	5.75	5.56	0.24
The cost of registering a vehicle is determined by the vehicle's CO2 emissions, therefore buyers of higher-emission vehicles pay more.	5.45	5.45	5.30	5.57	5.47	0.27
Vehicle scrappage scheme with CO2 emissions limit on alternative vehicle (i.e. If you buy a low-emission new car, the government will pay you to get rid of (scrap) your old one.)	5.56	5.34	5.57	5.78	5.58	0.44
A predetermined monetary sum (€) per gram of CO2 is used annually to calculate road tax. (i.e. car users of higher-emission vehicles pay a higher tax.)	5.52	5.42	5.42	5.81	5.49	0.39
Parking fees could be based in part on CO2 emissions, so low-emission vehicles may pay less to park. Fees for vehicles above a CO2 emissions threshold (i.e. drivers of high emission cars pay more)	5.40	5.36	5.34	5.57	5.38	0.24
'Low emission car separate lane' (same as bus-lanes, where low emission cars would have their own lanes)	5.61	5.55	5.47	5.78	5.63	0.31
CO2 emissions are factored into some auto insurance premiums. (i.e. drivers of higher emission vehicles pay more)	5.71	5.64	5.68	5.78	5.73	0.14

Moreover Table 2 Borthwick and Carreno (2012) illustrate the differences between push and pull factors on car users in Egypt and shows that users who will be rewarded for buying LEV more motivated than people who will not buying LEV in addition table shows that the most influential factor in our survey were (VAT based on CO2 emissions) where it is a pull factor. amongst others contains:

- Premiums for automobile insurance are based in part on CO2 emissions (i.e., drivers of higher-emission vehicles pay more);
- Rebates for vehicles below a CO2 emissions threshold (i.e. car user of lower emission vehicles devote less);
- A road user accusing scheme in which payment (a flat rate) is relying on CO2 emissions. (i.e. drivers of higher emission cars devote more).

4. CONCLUSION

This study started by highlighting the overview of the research, then presenting the research's problems of the study upon which the research approach and strategies are selected. Using a deductive research approach integrated with mixed research methodologies based on making a theoretical as well as a practical contribution to understanding the elements to control future decisions that influence buying LEV of different groups of people in Egypt. This research used various data collection tools (primary and secondary data gathering). questionnaire is used to gather all reliable data to increase the strength of the findings of the study and fill in the gaps missed in the literature. In addition, this study faces some limitations, despite the well-prepared research process, and these have been explained.

the study has been conducted on both gender males and females with different age. Research showed that there is a slight difference between Women and Men requirements. It could be noted that luggage/storage space, maintenance/repair costs, vehicle insurance, and annual road tax, fuel economy Emissions of other air pollutants and Vehicle noise are more important for women. While body shape, mileage, acceleration time, Fuel type, and model of vehicle are more important for men. Moreover, men have no interest and feel no personal responsibility in buying a lower emission car comparing to females who have more responsibility towards environment and ready to buy LEV. In additions, Women believe that buyers of higher-emission car will have to devote more VAT. However, the first-year road tax rate is determined by a set financial amount (€) per gram of CO_2 are more important for men.

The research determined three groups of people with different point of views on LEVs analysis. The most numerous group – the "Maybe" (52% of females and 47% of males)– still not have the full awareness of LEV as it's a new concept in Egypt, however, they have a positive perspective about LEVs, even if they are unsure about purchasing one in the near future. ''Go-With-The-Flow- Greens'' or ''Go-Greens'' The second biggest group (16% of females and 22% of males) they have a very optimistic attitude on purchasing an LEV and aim to do so in the near future. Concerning the third

group that known as the "No-Greens," the percentage was (15% females and 13% males)

Study has divided our participants into four groups (no green, go with flow green, maybe, go Green) the most dominated response choose maybe with 49 % this explain that despite the urgent environmental still the great percentages still not ready to buy LEV followed with go with flow green by about 19 % and go green only 10 % of the total sample who is ready to buy LEV, Thus the greatest group still considering buying low emission cars in future.

Our study find that LEV demand is strongly (and positively) depends on personal characteristics, such as income, as well as having multiple cars in the household and usage of car sharing are positively related to the demand of LEV

The findings of this study also show that there is no single measure that would significantly raise demand for LEVs. The solution is to integrate various measures or methods, such as top-down and bottom-up, in which both the government and the automobile sector should participate. So Egyptian government should take serious steps firstly towards public awareness for environmental issues, secondly help car manufacturer to produce different motors with less emissions and finally facilitate more governmental motivations for car users to substitute fuel cars to electronic cars.

The car industry should also create awareness of this new concept as most people don't understand what "gram of CO_2 per 100 km" means, our suggestion to the car industry that wants to sell LEVs is that they should tell customers the amount of money that they can save by buying one. Moreover, focus groups suggested new factors that can be add in future research which can influence people decisions in Egypt such as electric stations availability for electronic cars, after sales services and car buying cost considering that Egypt still not have variety in electronic cars with different buying cost in addition anonymous cost for electronic charge per kilometers.

To sum up, the contribution of this study investigates the characteristics of various consumer groups willing (and unwilling) to purchase LEVs, and what persuades

them to strongly start thinking to buy it. The exploratory study's results establish elements that help future researches in Egypt through theoretical and practical practices

This study extends from previous studies conducted in Slovenia that suggested applying the study in different geographical areas to motivate future studies. The reality of the research topic has also revealed the possibility of expanding this research to other developing countries in order to define potential differences among potential purchasers. The broadening and appeal of this research topic strongly suggest that this could be a very interesting global research area.

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