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Determinants of Consumer Switching Behavior Towards Hybrid Electric Vehicles in Jordan: A Customer Perspective

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Abstract

Purpose: This paper investigates the key factors influencing Jordanian consumers' decisions to switch from Internal Combustion Engine Vehicles (ICEVs) to Hybrid Electric Vehicles (HEVs) during the period of 2010-2014. **Design/methodology/approach:** A self-administered survey was distributed to car users across Jordan, yielding 333 valid responses from an initial sample of 400, demonstrating a high response rate of 83.25%. **Findings:** The study found no significant gender-based difference in switching behavior. Fuel consumption efficiency emerged as the primary driver for switching to HEVs, followed by eco-friendliness, lower taxes, and advanced technological features. Conversely, price and market trends were the least influential supporting factors. Major impediments to HEV adoption included concerns about battery life, limited market choices, insufficient information, and apprehension regarding the relatively new technology. **Research limitations/Implications:** Future research should explore additional factors such as perceived image, trust, and subjective norms, along with the evolving importance of environmental awareness and new technologies. Comparative international studies could offer valuable insights for cross-cultural consumer behavior analysis and global marketing strategies. **Practical implications:** The findings provide crucial insights for marketers to address consumer concerns by enhancing information dissemination and building awareness about HEV technology's societal and environmental benefits. **Originality/value:** This study is among the first in Jordan to specifically examine customer switching behavior in the context of vehicle technology. It contributes to consumer behavior literature by elucidating the determinants of switching towards hybrid vehicles and their role in the consumer decision-making process.

Keywords: Consumer Switching Behavior, Hybrid Electric Vehicles (HEVs), Vehicle Adoption, Consumer Decision Making, Jordan, Automotive Market

Introduction

The automobile industry today is one of the most profitable industries. Due to increase in disposable income in both rural and urban sector and availability of easy finance are the main drivers of high volume car segments (Monga et al., 2012; Shende, 2014). Alternative fuel vehicles (AFVs) are a promising means of CO_2 emission reduction as they emit only a fraction of the emissions of a conventionally powered car with an internal combustion engine. In hybrid electric vehicles (HEVs), an electric engine assists the conventional engine and braking energy is stored in a small battery. The Annual Report of the Vehicle Licensing Department, (2012) showed that the number of people that acquired a driving license in Jordan for the years (2010 and 2011) were approximately around (3,624,765) million, contributing to the increase in demand for vehicles in Jordan, where for example the revenues of vehicles import/export in (2014) has increased to reach (JD 256,950,682) with a percentage of (15.73%) (Jordan Customs Annual Report, 2014). The imports of motor vehicles with a capacity of (> 1500 CC and <= 2000 CC) for (HEV's) were (542,926,433 JD) with a (36%)positive difference from the previous year, As for motor vehicles with a capacity of (>3000 CC) for (HEV's) the value also increased to reach (JD 89,207,017) with a (19%) positive change from the former year, however, the motor vehicles with a capacity of (>1000 CC and <=1500 CC) of (HEV's), declined to reach (JD 59,998,600) with a (1%) decrease from the previous year(Jordan Customs Annual Report, 2014).

It is shown in (figure 1) that the number of (ICEV's) in the year (2010) reached (1915) vehicles, yet in the year (2011) there was a noticeable increase in demand for (ICEV's) where it reached (60801) vehicles due to a change in the taxation regulations for (HEV's). In the year (2012), there was a slight decrease in the demand due to the government's decision that it will not license any vehicles older than 5 years. In the year (2013), there was a continuous and clear drop in demand for (ICEV's) to reach (16138) vehicles, since the demand for (HEV's) was increasing due to the change in taxation regulations again, and finally in the year (2014), the demand also decreased to reach (10540) vehicles. (Jordan Customs Annual Report, 2014).

The following figures show the level of demand for (HEV's) and (ICEV's) and the effect of taxes on the demand levels throughout the selected years (2010-2014) as the figures will show below:

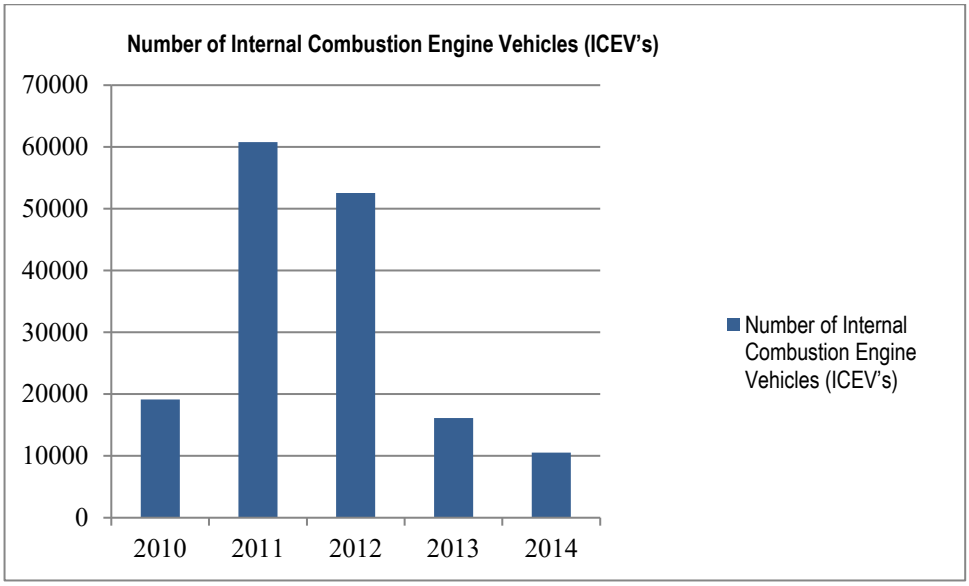

Figure (1): Number of Internal Combustion Engine Vehicles (ICEV's) based on the years (2010-2014) by the (Jordan Customs Annual Report, 2014)

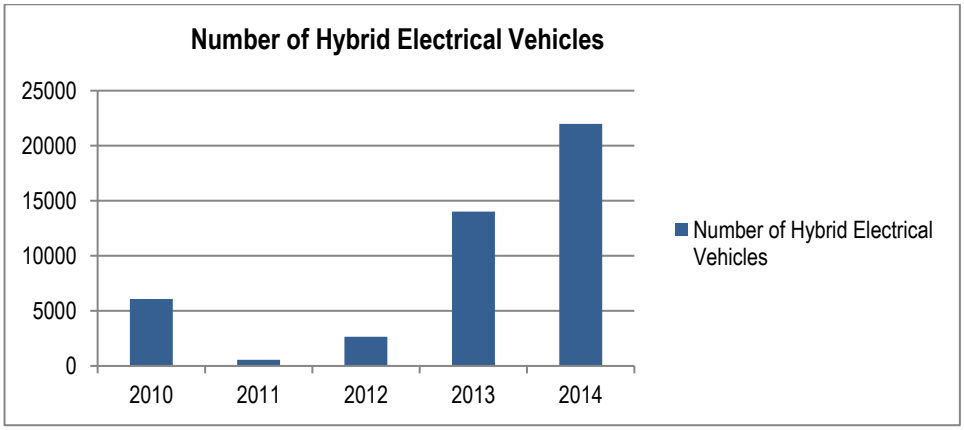

Figure (2): Number of Hybrid Electrical Vehicles (HEV's) based on the years (2010-2014) by the (Jordan Customs Annual Report, 2014)

However, as shown in (figure 2), the number of (HEV's) in the year (2010) was (6082) vehicles, but in the year (2011), the Jordan Customs issued a tax of (55%) on (HEV's) after they were exempted from taxes in previous years which caused a decrease in demand for (HEV's) to (558) vehicles, going through the year (2012), Jordan Customs issued that the taxes will be (12.5%) instead of (55%), in addition to the government's decision about licensing vehicles not less than five years of model age which resulted in a slight increase in demand for (HEV's) to reach (2662) vehicles. In the year (2013),

customers became aware of the new fixed tax regulation which also increased the demand for (HEV's) to reach (14612) vehicles. As for year (2014), the demand continued to increase to reach (21992) vehicles (Jordan Customs Annual Report, 2014). Additionaly, Jordan's once subsidized fuel prices expired in December 2012, and caused fuel prices to increase by 12 % to match the price on the global market. With the indefinite price increases on petrol, household gas, cab fares and more, therefore Jordanians are looking for a long-term solution for their daily transportation needs.

Against this backdrop, the aim of the present study is twofold; first, to identify the reasons behind the change in demand for (HEV's) and the factors affecting the buying behavior when purchasing such a product and, second, to investigate factors that explain and affect customer switching behavior from (ICEV's) to (HEV's) in the Jordanian market for the years (2010-2014). Popularity of hybrid cars grew sharply among Jordanian motorists during that period showing that demand for the fuel-efficient vehicles increased by nearly six-fold in 2013. Sector leaders attributed the increase in popularity to tax incentives and rising fuel prices in the Kingdom (Obiedat, 2014). Therefore, the objectives of the study are: (a) to examin variables that encourage the switching to (HEV's) that are: fuel consumption efficiency, current trend in the market, price, lower taxes, technological features, and eco-friendliness; (b) to examin variables that hinder switching towards (HEV's), that are: lack of information on (HEV's), prevailing trend, agreeing to switch to (HEV's), limited choice of vehicles in (HEV's), fear of technology in (HEV's), and battery life of (HEV's) The rest of the paper is organized as follows; the next sections present the research literature review, model, and research question. Then, we present the paper's methodology, analysis, results discussion, implications, limitations and future research agenda.

Theoretical Framework Development

Hybrid cars have the ability to protect environment in a number of ways. Research supports that HEV's cause significantly less pollution to the environment than ICEV's (Beliveau, 2010). Yet, customers are not motivated enough to choose HEV's due to lack of information about their technology. HEV's have been regarded as environmentally friendly due to their fuel-saving attribute (Hefffner, 2007), but Beliveau (2010) concluded that hybrids have several drawbacks that offset their fuel efficiency. Their higher price both turn consumers away and makes the vehicles a less attractive economic investment. Energy efficient processing techniques need to be developed before the advanced materials in hybrids can help add to their clean image. There are many factors influencing the purchase intention of hybrid cars. Oliver and Lee (2010) found that self-image congruence and propensity to seek information about green products have strong positive relationships with intentions to purchase a hybrid car among consumers from both countries. Perceived social

value associated with the consumption of hybrid cars also has a strong positive relationship with intentions to purchase a hybrid car among Korean and, contrary to expectations, US consumers. In contrast, social value associated with green products, in general, has a negative relationship with US consumer hybrid purchase intentions. Moreover, Ozaki and Sevastyanova (2010) confirmed customers' willingness and social norm adherence's influence on the purchase decision. Literature confirms the relationship between environmental attitudes and product purchase tendency. If we engage customers more with the environment, they will likely to increase their purchase of green products (Schuhwerk and Lefkokk-Hagius, 1995). Tsen et al., (2006) indicated that there is an extreme relationship between customers, attitudes and willingness to purchase environmentally friendly products which was confirmed by (Irland ,1993; Cornelissen,2008; Walsh et al.,2009; Beckford,2010; Jayaraman et al., 2011). Additionally, Social groups are formed by those with the same habits, similar thinking and desires to have the power to cultivate an eco-friendly culture and belief. Individuals always use others' behavior to decide the suitable course of views and actions when the decision is uncertain. Therefore, social environment/ prevailing trend is believed to influence the purchase intention of hybrid cars. Moreover, social influence could impact an individual's choices (Ajzen, 1991). The social impact theory states that, the more important a group to which one belongs, the closer the distance is between the group and oneself. Consequently, one is affected by the group's opinion and is willing to confirm with the group's normative pressures (Latane, 1981). This normative social influence shows in individual's compliance with the expectations of others (Bearden, 1989).

Adding to the above, governmental monetary incentives affect the adoption of (HEV's). As apparent by the work of (Chandra et al., 2008; Gallagher and Muehlegger, 2010; Jenn et al. 2013; Bockarjova et al. 2013) financial incentives/ taxes imposed by the government positively influence (HEV) sales and adoption intention. Consumers tend to purchase an (HEV) due to the presence of monetary benefits when purchasing such a vehicle, as these benefits are not received when buying an (ICEV). Likewise, the adoption of (HEV's) is influenced by the fuel price. Research shows rising gasoline or diesel price leads to an increase in (HEV) purchases, since there are considerable savings on gasoline expenditure (e.g. McManus and Berman 2005; Diamond 2009; Gallagher and Muehlegger, 2010). In the Arab world, there has been limited implementation of financial and non-financial incentives that could enforce certain policies and encourage a shift in behavior. For instance, in 2012 the Jordanian government reduced taxes on small-engine hybrid cars from 55% to 25%. Furthermore, an additional 12.5% tax reduction was given to Jordanians with cars older than ten model years to encourage them to shift to newer and cleaner vehicles. This tax incentive encouraged over 1,400 Jordanians to replace vehicles older than ten model years (Al-Rawashdah, 2013; Kaysi and Chaaban, 2014; Obeidat, 2014).

Khalifa and Shoura (2013) argued that there was no significant effect of green products –of which hybrid cars are included- on Jordanian consumer decision making related to using green products. Nonetheless, there was significant difference due to gender in the decision making related to green products consciousness, searching, evaluating in favor of the males, and on the purchasing in favor of the females. Another study on environmental buying in Jordan showed that Results showed that both green awareness and green trust have direct impact on environmental buying behavior. In addition, statistical differences in environmental buying behavior were found due to the education and income levels (Al-Otoum and Nimri, 2015) . Hong et al.(2013) argued that relative advantage, compatibility, pro-environmental, and perceived behavioral control were positively related to the adoption of hybrid cars in Malaysia. Moreover, the analysis showed that the male gender, higher income, higher education, and age group between 29-39 Malaysian consumers are more likely to adopt hybrid vehicle. Attitudinal factors and perceived behavioral control are important determinants for the adoption of hybrid vehicles. Wilmink, (2015) found that for HEVs, price is the most important factor, followed by range and annual cost savings in the Netherlands. Wen and Noor (2015) indicated that functional value (the value received in terms of price and quality) is the most significant predictor of consumers' intention to purchase hybrid car. While, symbolic value (the meaning associated with the product and the image of the product), emotional value (the ability of a product arouse feeling or affective states) and novelty value (when the product or service arouses curiosity, provide originality) failed to show significant relationship with consumers' intention to purchase hybrid car in Malaysia.While, Barry and Damar-Ladkoo (2016) revealed that hybrid vehicles do not have the expected impacts on Mauritian consumers like they have on the international markets they conclude that there was a relationship between age of the respondents and: a) price of hybrid vehicle, b) environmental friendliness of hybrid vehicle, c) the increase in fuel prices, d) visibility of hybrid vehicles on the market in Mauritius, and e) the brand reputation of hybrid vehicles. Another study in Malaysia revealed that four main factors affect the purchasing intention of hybrid cars– price sensitivity, environmental awareness, green perceived value and green trust. The results show that price sensitivity and green trust have a significant impact on hybrid car purchasing intention while there is no such impact from green perceived value and environmental awareness (Neizari et al., 2017).

The Decision Making Process

Consumers go through a certain process before embarking on making a purchase decision despite the type of the product or the level of involvement. This process starts with problem recognition where customers become aware that they have a need to fulfill, then information search for and evaluation of alternatives, and finally the purchase decision. Customers engage in post purchase evaluation in order to decide whether the purchase was satisfying or not (Marshall and Johnston, 2010, pp.

196-203). High involvement purchases, are considered complex and occurs after extensive information search, where decisions are viewed as difficult and risky (Kotler et al., 2005, pp. 276-277). Furthermore, customers are driven by two kinds of motives when considering making a purchase; the intrinsic motives which are basically the reasons why customers adopt environmental friendly products in order to protect the environment. (Chan, 1996), and extrinsic motives in which customers are encouraged by incentives such as following trends, and enhancing their image, but then again it doesn't mean that customers that are driven by extrinsic motives don't have intrinsic motives in their decision process (Jansson et al., 2009). Intrinsic motives could be the reason why conservation and environmentally minded consumers adopt eco-friendlier products (Chan 1996; Bamberg 2003). For example, intrinsically driven consumers buy hybrid cars to reduce the effects of their driving on the environment (Chua et al., 2010). It can be also said that extrinsic rewards (e.g. popularity, image, status) may be a more salient reason for some consumers to adopt environmentally friendly products (e.g. Stern 2000, Clark et al., 2003; Jansson et al., 2009). This is not to say that these consumers do not possess intrinsic motivations, but that extrinsic reasons appear to play a more powerful role in their decision making process (Chua et al., 2010).

It is apparent that car choice can be regarded as a complex choice task; a consistent finding in literature argues that choice makers use a multistage strategy in order to cope with complex choice tasks (Olshavsky, 1979). A practical formulation of such a multi-stage strategy is the two-step decision model proposed by de Haan et al.(2009). Customer switching behavior was defined by (Zikienė and Bakanauskas, 2006) as the behavior in which customers change their activities and approaches towards shifting their buying behaviors from one brand to another and is affected by more than one factor such as price and quality of competitor's brands. On the other hand, (Bolton and Bronkhurst, 1995) stated that customer switching behavior is basically a decision made by the customer to stop purchasing from a specific organization. Nevertheless, as a typical behavior of customers, they constantly search for the finest quality and tend to stick with the organization that has a good reputation, yet if the organization didn't provide them with the quality level desired, customers tend to switch or leave the organization that they have been dealing with (Colgate and Lang, 2001). Conversely, Oliver (1996) suggested that reduced level of switching means the customer will stay loyal to the organization. Customer switching behavior is triggered by different factors, firstly, price is an important factor that customers take into consideration when buying a product or a service, therefore, an increase or decrease in price might prompt customers to switch from an organization to another (Stewart, 1998), also, the reputation of a specific organization affects customers switching behavior in which it plays a role in shaping the image of the company by satisfying its customers; hence if the reputation or word of mouth (WOM) of a firm is not worthy, then customers tend to consider switching. Muffato and Panizzolo (1995) stated that

advertising reflects the company's image and reputation, it also plays a role in shaping customers behavior, thus, if there was a miscommunication between the advertisement and the customer, it could lead to customer switching. Cengiz et al. (2007) found that an important factor that might affect customer switching is customers changing brands or organizations just because they have no other choice, which is called "involuntarily switching" an example would be, moving neighborhood, changing job or illness. Also, there are other factors that affect customer switching behavior which is when customers consider a relationship with an organization, they face three different elements that impact their switching behavior, firstly, the components which push customers to switch, secondly, the factors that gives them reasons in order to hold on into the relationship which are called pullers and finally the "swayers" that play a role after the switching process in which customers rarely re-consider their previous supplier (Roos, 1999). There is an association between customer switching behavior and customer satisfaction as Bolton (1998) stated, if an organization continues to fail at satisfying its customers, the relationship between the organization and the customer will become weak resulting in customer switching. Moreover, even satisfied customers might search for other alternatives since they always look for their maximum quality (Cohen et al., 2006). Kotler and Keller, (2006 p.144), consequently indicated that, customers respond to their dissatisfied experience by exiting (leaving), voice (trying to solve the problem by talking about it), or loyalty (altering the response). In other words, when customers are dissatisfied they tend to leave and look for other alternatives in order to find an offering that meets their needs (Hirschman, 1970). Customer Loyalty results from customers being satisfied, it consists of "Loyalty Behavior" and "Loyalty Attitudes", the loyalty behavior refers to customer retention which is when the customer repeats the purchase of a specific brand. As for loyalty attitudes, it depends on opinions and feelings of the products, services, brands, or even the business as a whole (Wyse, 2012). It is possible for customers to be loyal without being highly satisfied, especially when there are few choices in the market (Shankar and Amy, 2002) however, there is a great connection between satisfaction and loyalty in which if the presence of many alternatives are available it results in high possibility of switching (Bowen and Chen,2001).

Understanding and Predicting the Adoption of New Technologies

Developers of new technologies generally, face challenges in developing a market and motivating consumers to purchase or use their products (Mohr et al., 2010). Incumbent technologies can be difficult to unseat; they have years of production and design experience, which make their production costs lower than those of emerging technologies and thus more affordable. In addition, vehicle technology is continuously improving; many of these improvements, which are being made to meet tighter fuel economy and greenhouse gas emission standards Traditional consumer-adoption models predict the diffusion of new innovations through society (Parasuraman and

Colby, 2001; Rogers, 2003; Moore 2014). The models are well established and empirically validated across many product categories (Sultan et al. 1990) and can help in understanding the consumer purchase decision and market development process for HEV's. To put that in perspective, it took 13 years for hybrid electric vehicles (HEVs) to exceed 3 % of annual new light-duty vehicle sales in the United States (Cobb, 2013).

The adoption and diffusion of new innovations can be a long-term, complicated process that is especially slow for products that cost tens of thousands of dollars and where consumers have questions about infrastructure availability, resale value, and other variables. A further complication can be the innovation ecosystem, which includes all elements of the total customer solution. For HEVs, the innovation ecosystem includes not only the vehicle but also the necessary permitting and installation, availability of roadside assistance, and other ownership or maintenance concerns. Accordingly, the innovation ecosystem for HEVs has its own transition barriers that must be addressed for maximum market penetration to occur. Adner (2006) suggests that wide-scale deployment of new technologies is a function of three aspects of infrastructure development: (1) product technology—for example, viable, low-cost battery technology; (2) downstream infrastructure—for example, dealers, repair facilities, emergency roadside services, and battery recycling options; and (3) complementary infrastructure—for example, charging stations (whether residential, workplace, or public), knowledgeable electricians, and amenable zoning and permitting at the municipal level. Given the complexity of the innovation ecosystem, mainstream consumers typically are unwilling to undertake what might be perceived as a risky purchase until all elements of the requisite infrastructure are in place (Moore, 2014). Indeed, if all aspects of the innovation ecosystem are not ready when consumers are making purchase decisions, industry adoption rates can be substantially lower than initial expectations.

In the Now-The Current Situation in Jordan

According to statistics from the Jordan Free Zone Investor Commission (JFZIC), the number of hybrid cars in 2017 reached 31,500 compared to 26,400 in the previous year. The statistics also showed that the customs clearance of regular fuel cars increased by 23.4 per cent to reach 44,000 vehicles in 2017 compared 33,700 in 2016. Regarding exports, the number has dropped by 7.4 % in comparison to 2016 reaching 35,000 vehicles instead of 37,700 in 2016. The drop in export has begun with the turmoil in the region, especially due to the closure Iraq borders. Jordan used to export around 100,000 cars annually, of which 80% to Iraq and the rest to Saudi Arabia and Egypt. The hike in customs clearance of hybrid cars s due to the approaching deadline of the government's decision to cancel the exemption of customs fees granted to this sort of vehicles. Hybrid cars pay a reduced special tax of 25 per cent of its price, instead of 55 % for regular fuel cars. The decision came into effect in 2012 and has

been renewed every year henceforth. Buyers are also given the choice to de-registrate old fully gasoline-operated cars (10 years or older), hand them to authorities and receive a partial exemption from the special tax to register a new hybrid car, on which the tax levied is 12.5 %, instead of 40 % for regular cars. In December, the government extended the deadline to the end of January only for cars that entered the Kingdom before the end of 2017. The decision to cancel the exemptions, which takes effect at the end of this month, will raise the prices of hybrid cars between JD 4,000 and JD 8,000, if the government is to extend the cancellation decision, it would positively affect the national economy with direct revenues to the Treasury. If the tax is 55 % again, the demand will decrease by 60 or 70 %, which will slash public revenues by JD40 or JD50 million (Roy'a news, 2017; Bani Mustafa, 2018).

Methodology

Study Variables, Model

Based on the previous literature, and since the research on the adoption of Hybrid technology is lacking in the Jordanian market, This research seeks to explore the reasons behind the shifts in demand for (HEV's) throughout the years (2010-2014), and rank the factors that affect the switching behavior from the customer perception in the Jordanian market for (ICEV's) and (HEV's). The below table include the study variables as follows:

Table (1): Variables that encourage and hinder the switching decision towards (HEV's)

Variables that encourage the switching towards (HEV's)	**Variables that hinder switching towards (HEV's)**
Fuel consumption efficiency	Lack of Information on (HEV's)
Current trend in the market	Overwhelming Trend
Price	Agreeing to switch to (HEV's)
Lower Taxes	Limited choice of vehicles in (HEV's)
Technological Features	Fear of technology in (HEV's)
Eco-Friendliness	Battery life of (HEV's)

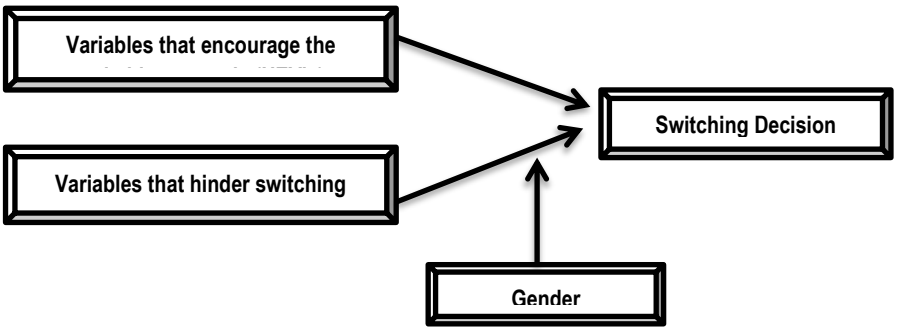

Figure (3): Research Model

Sample and Data Material

A self-administered questionnaire distributed in the city of Amman. The data was sampled conveniently by which customers were selected randomly from the Jordanian population and each respondent had an equal chance of selection; the questionnaire was administered to an equivalent of (400) respondents and the retrieval of the completed number of questionnaires reached a number of (333) that is corresponding to the percentage of (83.25%) which indicates the accuracy of the study. The questionnaire included a cover letter explaining the purpose of the study and two tables stating the factors that affect switching for both (HEV's) and (ICEV's) on a five point likert scale ranging from "Strongly Agree" to "Strongly Disagree".

Data on the study variables were gathered by reviewing previous research; it also included the collection of information from government sites such as: Jordan Customs and Vehicle Licensing Department in order to understand the correlation between the fluctuation in taxes and demand for (HEV's) and (ICEV's). Descriptive analysis was employed to develop an understanding of the concept of switching behavior.

Analysis and Results

The demographic profile of the respondents showed that the percentage of males was almost equal to the percentage of females in which males reached a percentage of (50.2%) of the whole sample and females reached a percentage of (49.8%) of the whole sample as shown in figure (4). However, it showed that there was no correlation between gender and customer switching in the Jordanian market; which contradicts with the findings of (Khalifa and Shoura, 2013; Hong et al.,2013)

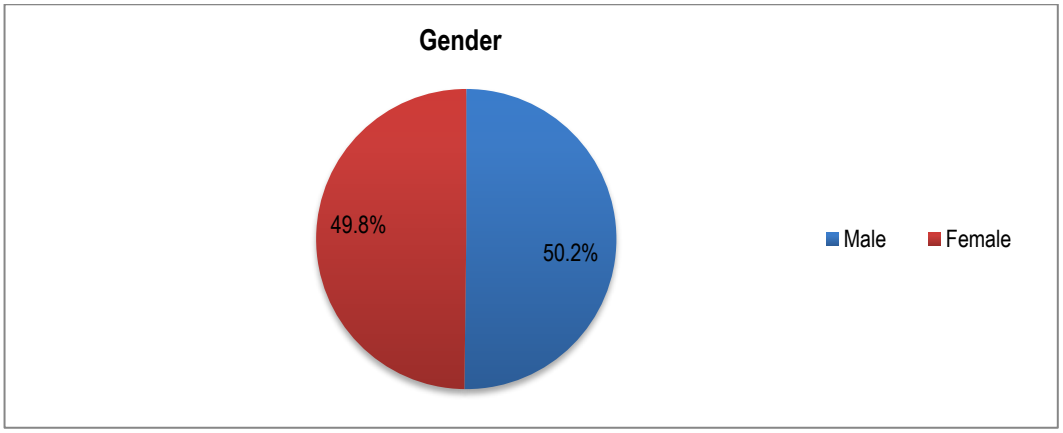

Figure (4): Percentage of Males and Females

Figure (5), shows the ranking of factors that encourage switching towards (HEV's) from a customer's perspective in the Jordanian market. Fuel consumption efficiency was the major driving factor that supports the switching decision, followed by Eco friendliness, lower taxes, and technological features. However, price wasn't a main consideration since the prices follow the taxation regulations. Furthermore, the current trend in the market was the least important. Finally, customers strongly believe that (HEV's) are friendly to the environment and they consume fuel efficiently which also shows that customers are aware of (HEV's) features.

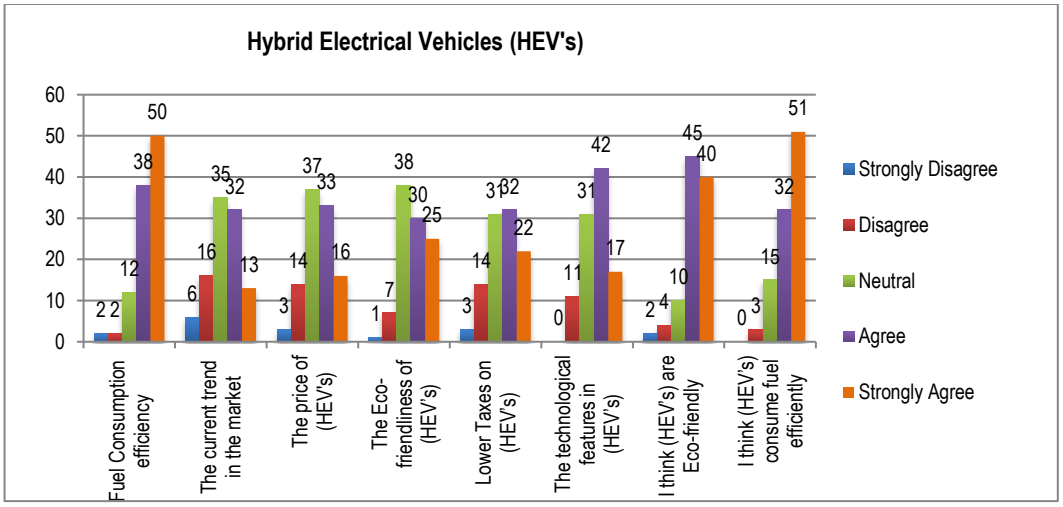

Figure (5): Ranking of Factors that encourage the switching decision to (HEV's)

As for the ranking of factors that hinder the switching decision to (HEV's), it is shown in figure (6) that the aspect of the battery life of is of major importance to buyers, customers tend to fear new technologies because they require new skills and a huge

change in addition to embarking into the unknown. Moreover, the limited choice (variety) of (HEV's) is considered as a drawback unfortunately not all car dealerships in Jordan provide the hybrid option. Lack of information on the relatively new technology among customers was also an important hindering factor, which might result in the fear towards this technology.

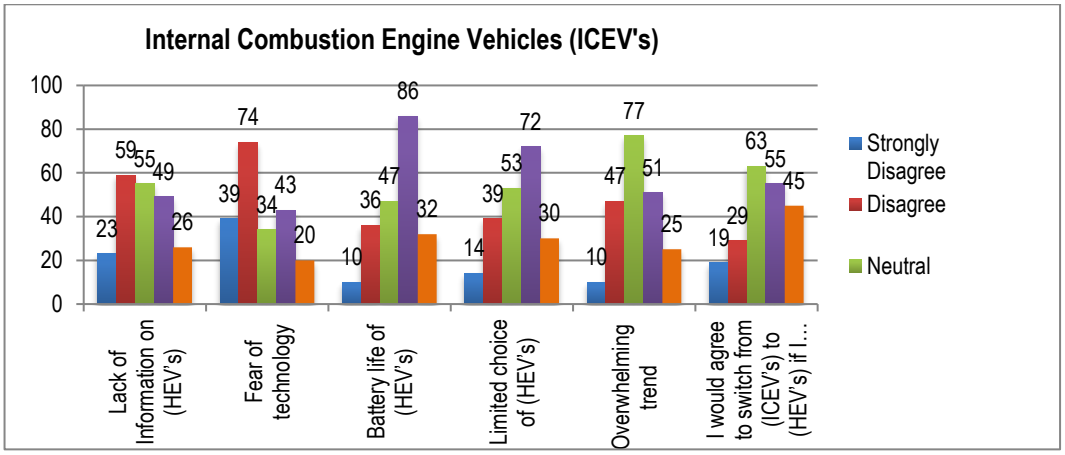

Figure (6): Ranking of Factors that hinder the switching decision to (HEV's)

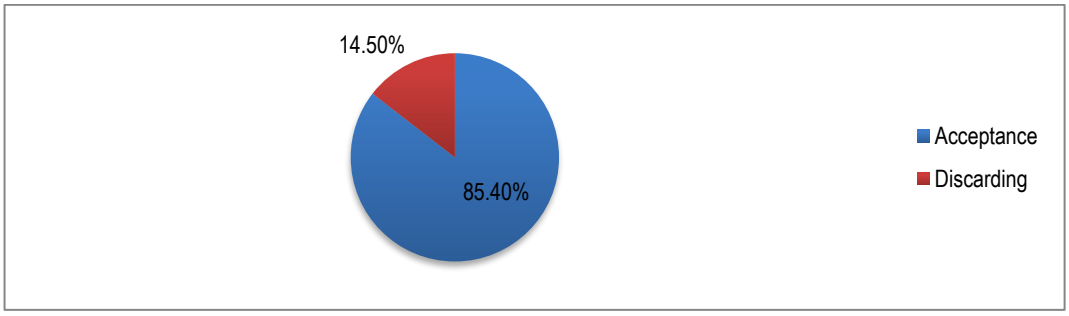

Figure (7): Percentage switching to (HEV's) Acceptance

Figure (7) shows that (85.40%) of the respondents are willing to switch to (HEV) if the prevailing conditions are in favor of that decision, while (14.50%) of the respondents tend to prefer using their conventional (ICEV)

Conclusion

The process of buying a vehicle is a complex, highly involved consumer decision. A vehicle is one of the most expensive purchases made by individuals or households, often equal to many months or even years of income, and will last for many years. As a result, consumers perceive the decision to be a relatively risky one, and will strive to ensure a "safe" decision so that they are not stuck with a poor purchase choice for years to come. In general, consumers want vehicles that are affordable, safe, reliable,

and comfortable for travel and meet many practical needs, such as getting them to work, school, stores, and recreation and vacation areas. Some also want vehicles to meet their psychosocial needs; for example, vehicles can serve as status symbols that represent one's success or self-image. For all these reasons, consumers generally will undertake lengthy research into their options to ensure a good choice that satisfies all their various needs.

Within the Middle East, oil has always been readily available at affordable prices, for obvious reasons. However, Jordan has not benefitted as much as other countries from the bountiful amounts of oil present in the region, as it is not known for producing oil yet at this time, meaning that consumers do not have the luxury of low oil prices. Thus, the Jordanian Government has embraced a proactive and resourceful approach to combat this issue, in 2008, it decided to entirely do away with all custom duties and import taxes on hybrid vehicles entering the country, something no other Middle Eastern country was doing at the time. In 2009, Jordan pledged to have 10 percent of its energy from renewable resources by 2020, as government hoped that people would develop a greener conscience. So the Ministry of Environment launched the complete tax-exemption program for hybrid cars with environmental concerns in mind. Though Jordan's carbon footprint is relatively small, global warming remains a serious concern for the country. Because Jordan is the world's fourth poorest country in water resources, climate change could threaten to reduce water levels even more (Morrar, 2012). The financial consequences of hybrid cars stem from the auto and petroleum market forces already discussed, combined with consumer behavior and the rhythms of the technology adoption cycle.

This study examined factors that influence factors that influence consumers' switching behavior towards hybrid cars in Jordan, we concluded that the demand for (HEV's) is not only affected by the fluctuation of taxes throughout the years but also by the capacity of the engines based on each vehicle, furthermore, throughout the research we discussed the impact of the internal and external factors in which it had a relationship with the switching between the two types of vehicles. Additionally we found out that gender had no correlation with the switching behavior from (ICEV's) to (HEV's) from the customers perspective, and fuel consumption efficiency is considered the most important factor -under the influence of the prevailing economic conditions and the continuous hike in oil prices- that affect buyers to switch to hybrid technology, while concerns of the battery life span is considered major hindering factor among others. Inexperience with the new technology could make the customer feel intimidated about making a decision, or they may not know where to start. These are legitimate apprehensions, but they can be mitigated by see more information, advice and reassurance.

Managerial Implications:

Fuel consumption efficiency and Eco friendliness were strong influencers on the adoption of (HEV's) in Jordan. Besides, hybrid vehicle have significant prospects because of their excellent mileage and low emissions. Therefore, marketers can use the fuel economy and environmental friendly cars as one of their promotional tools in marketing to encourage consumers to adopt hybrid vehicle. For promotion, they need to develop more informative advertising to educate the buyers on the benefits and important features of hybrid vehicles. In terms of product strategy, the manufactures should introduce more hybrid vehicle models to attract the consumers. The hybrid vehicles need to have these features; fuel efficiency, easy operation and high quality in terms of durability and reliability. Government incentives are also one of the factors that influence the adoption of hybrid vehicle in Jordan; therefore the government should continue providing incentives for hybrid car buyers.

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