The moderating effect of psychological factors on consumer of electric and hybrid vehicles' response purchase decisions

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CHRONICLE	ABSTRACT
	This research provides an analysis and evaluation of consumer purchasing behavior using green electronic marketing of vehicles diversification into new markets, focusing on Electrical Vehicles (Ev) and Hybrid Vehicles (Hv). The world has been making remarkable efforts to make everything green and cleaner by the help of the advanced technology, including transportation. The technology especially the E marketing, social media, etc. focuses on orienting people to believe that hybrid and electrical vehicles generate less pollution, will save money and reduce dependence on natural sources of fuel. This research aims to inspect the relationship between Stimuli Factors, Electrical Vehicles' (Ev) and Hybrid Vehicles' (Hv) Consumers and Response Purchase Decisions (S-O-R), in addition to inspect the moderation effects of Psychological Inputs on S-O-R relationship in Vehicle industry of Jordan. The current research used quantitative method to gather accessible data from the sample of the study. Variables used in this study include HVs & EVs consumers, Stimuli factors (marketing inputs, external environment) and positive psychological inputs and response purchase decisions. Partial Least Squares (PLS) approach as a statistical method was used to analyze the data. Results indicate that all the relations had a positive significant, except the interactional relationship between Stimuli factors which includes marketing inputs, external environment, and positive psychological inputs, affect response purchase decisions. In other words, the mediation (HVs & EVs consumers) shows valuable change for the prediction of response purchase decisions while, moderated effect of psychological inputs did not make change.

1. Introduction

Consumer purchasing behavior is an important concept in marketing and it is important to understand this concept because it plays a vital role in making an impact on different products such as commodities or services, while vehicle sector is not exceptional for that concept, consequently, vehicles industry creates new vehicle forms (Green Vehicles) and adds a new concept of consumption to depend on alternative energy sources (Monga et al., 2012). More recently, green Vehicles have been able to enter new markets intensively and how business leaders are implementing new strategies to increase the use and need of EVs and HVs. The use of digital marketing has become an essential tool to create and expand the required customer based before entering new markets. The strategy that uses e-marketing has led consumers to focus more on many environmental problems and try to solve them, changing customers' efforts to save energy to become the main role of many countries around the world, and transportation markets are looking for alternative energy sources or so-called green energy since there

is an increase on globalization and environmental awareness, which has called on companies and the market to increase their awareness in delivering customer-based services. For this reason, countries, institutions and companies adopt hybrid and electric vehicles (Iodni & Maria, 2017). Hence there is a change in purchasing behavior among customers who promote hybrid and electric vehicles as an alternative to produce alternative energy vehicles with less emissions and a significant contribution to making consumer life easier. Corporate managers are seeking to raise awareness and confidence in hybrid and electric vehicles. It is about building different strategies based on the key factors affecting purchasing behavior such as environmental awareness, technological innovation, and emissions production (Senecal et al., 2005). Jordan is one of the most energy-scarce countries in the world, and it is imperative that it looks for alternative sources of energy or ways to reduce its consumption. One of these sources is to import Electrical Vehicles' (Ev) and Hybrid Vehicles' (Hv) and encourage citizens to acquire them. The Jordanian market of importation is full of hybrid vehicles but less Electrical Vehicles' (Ev). Citizens tend to buy them more than fully petroleum vehicles, especially after subsidizing the government and reducing tariffs on them. Jordan was the first Arab country to begin importing hybrid vehicles, and sought to facilitate the import and impose very low taxes on them.

This paper examines the recent literature for Electronic Marketing Response Purchase Decisions, Stimuli Factors, Electrical Vehicles' (Ev) and Hybrid Vehicles' (Hv) Consumers, S-O-R, Psychological inputs concepts in order to review current understanding and to assess a suitable framework.

2. The research aim and objective

The aim of this study is to assess the application possibilities of purchasing behavior model (S-O-R) in Hybrid & Electric Vehicles (Hvs & Evs) market of Jordan. The main objective of this paper is

- To understand the role of green electronic marketing in purchasing consumer behavior,
- To examine the S-O-R dimensions, relationships according to consumer intention to buy hybrid and electrical vehicles,
- To investigate the relationship of stimuli factors (marketing inputs, external environment) and HVs &EVs consumers,
- To investigate the relationship of HVs &EVs consumers and response purchase decisions,
- To investigate the relationship of stimuli factors (marketing inputs, external environment) and response purchase decisions,
- To investigate the relationship of positive psychological inputs and HVs & EVs consumers,
- To investigate the relationship of interactional relationship between Stimuli factors (marketing inputs, external environment) and positive psychological inputs, affect response purchase decisions.

2.1 Research Hypotheses

Main hypothesis

The study tries to determine the moderating effect of psychological factors on consumer of electric and hybrid vehicles' response purchase decisions.

Sub hypotheses

H_{01}: Stimuli factors (marketing inputs, external environment) affect HVs & EVs consumers.
H_{02}: HVs & EVs consumers affect response purchase decisions.
H_{03}: Stimuli factors (marketing inputs, external environment) affect response purchase decisions.
H_{04}: Positive psychological inputs affect HVs &EVs consumers at significant 5%.
H_{05}: Interactional relationship between Stimuli factors (marketing inputs, external environment) and positive psychological inputs, affect response purchase decisions.

3. Literature review

This section shows the literature review of green e-marketing and consumer purchasing behavior model, as a strategy for green e-marketing from different points of view. The role of the researchers is to clarify the model's components and to reflect them on hybrid and electrical technology vehicles market in Jordan. The components are: stimuli factors (marketing mix, external factors), organism (consumer), psychological input and consumer purchasing behavior and decision.

3.1 Definition of Green E marketing

Green marketing is composed of all activities conjured up to produce and assist the commercialization of products or services to convince human desires and needs, yet causing a minimum impact in the environment (Qader, 2011; Polonsky, 1994). Green marketing has other synonyms such as: *eco*-marketing, environmental marketing, sustainable marketing (Simao & Lisboa, 1994). Green marketing services and products use digital channels for smooth accessibility to consumers; hence, digital media and digital marketing has expanded beyond online marketing to include: channels that do not require Internet use, mobile phone marketing (SMS and MMS), image advertising, search engine marketing, social media marketing, and any

other form of digital media (Collin et al., 2015). OpenSooq is a famous site and most successful classified sites in many countries, especially Jordan, in addition to its easy-to-use design for different age groups. This site includes a lot of ads classified into the main and sub-sections, such as: cars, jobs, real estate, electronics, etc., which aims to link the seller to the purchaser and vice versa, saves time and effort on both sides in decision making, and its application on smart phones is popular. In addition, e-marketing includes various tools such as websites and search engine optimization content, Internet banner ads, blogs, online video content, pay-per-click (PPC) advertising, email marketing, social media marketing, mobile marketing, other effective marketing, free giveaways, guest blogging, coupon code submission, email list email, it is cost effective and directly targeted markets (Iodhi & Maria . 2017).

Advantages of green e-marketing

Consumers view e-marketing and social media as a reliable source of information about products and services compared to corporate-sponsored communications sent through traditional elements (Pütter, 2017). E-marketing using social media allows customers to get to know the company more about the product or service they want so that people feel closer to the company and more "intimate" by making customers feel more enthusiastic and loyalty to company, by getting an existing or potential customer talking about the products. This is a great way to hybridize marketing using e-marketing to create an intimate relationship between business and customer in the long run. This allows the customer to start talking to others about the company, which brings together the second element in the hybrid: traditional marketing Icia aspects of marketing (Odhiambo, 2012).

Application of Green e-marketing: Hybrid & Electric Vehicles: An Alternative

With such a high rate of population and high dependency on transportation, a remarkable switch to hybrids instead of gasoline and diesel vehicles become an important need. In fact, according to Pickett et al. (2008), we need 50-80% of the car buyers worldwide adopt these new "low carbon" technology automobiles to make a material difference. The consumer behavior began to change towards the new interest in protecting the environment, so the car companies sought to create many hybrid and electric Vehicles and the government is developing incentive programs to support this view. Due to the increasing number of air and heavy reliance on transportation, a big shift in hybrid Vehicles from vehicles must be achieved (Khan & Kar, 2009).

3.2 Hybrid vehicles

One of the most important types of vehicles using green energy is the combining the propulsion sources of the electric motor and the IC drive. The power source of the electric motor comes from batteries. The engine cooperates with an electric motor leading to the optimal use of the driving engine in city traffic, the engine consumes additional fuel without producing useful work, which contributes to increased fuel consumption, less efficiency and unnecessary emissions from the exhaust. When the fuel tank becomes empty while the engine is running, the vehicle can be driven by electric power within the specified time (Vinamy & Isaac, 2017). Hybrid Vehicles run on an internal combustion engine and are equipped with an electric propulsion system. These Vehicles also use renewable brakes to charge the battery, by converting kinetic energy into electrical energy (Un-Noor et al., 2017). A hybrid vehicle is a vehicle with multiple distinctive power sources that can be operated simultaneously or separately to drive the vehicle. Many hybridization configurations such as fuel cell, gas turbine, hydraulic, pneumatic, solar, ethanol, electricity and many more have been proposed over the years (Vinamy & Isaac, 2017).

3.3 Electrical vehicles

The alleged positive environmental effects of light vehicle fleet electrification, the number of electric vehicles (EVs) used is not significant. Electric vehicles (EVs) are currently being introduced as a solution to the problem of fossil fuel dependence, increased CO_2 in the air, and other environmental issues (Bonges & lusk, 2016). EVs can be classified as battery electric vehicles (BEV) and hybrid electric vehicles (HEV). Pure EVs have a battery only as their power source. A car with two or more power sources and power adapters is called the hybrid car (HV). High Voltage with Hybrid EV Power Train The energy sources used in high-density vehicles can be a combination of many resources such as battery, gasoline, biofuels, and fuel cells, battery-powered EVs typically contain larger storage batteries than HEVs. Travel is one of the most important differences between BEVs and HEVs (Vinamy & Isaac, 2017).

3.4 Stimuli –Organism-Response (S-O-R) Model

Considering the (S-O-R) model of contemporary models a much greater dedication attention is devoted to clarify the internal factors of either stimulus and inputs or factors of production and response (Bettman, 1979).

3.4.1 Stimuli Factors (S)

1. Marketing Inputs: Product, Price, Promotion, Place

The marketing mix consists of the product, price, location and promotion that blend the company to produce the desired response in the target market (Armstrong et al., 2013). The researchers explain that marketing mix elements should be treated as a set of interconnected entities that must be assigned to each other and in the context of the strategic window provided. Hence, a summary of the basic marketing mix components can be provided (Proctor, 2000). First, the product refers to the

range of goods and services the company provides to the target market (Armstrong et al., 2013). The second is Place which includes company activities that make the product available to target consumers (Armstrong et al., 2013). Choice of the right location can be expensive, but larger companies prefer to employ specialists to find them the best location (Doyle & Stern, 2013). The third is promotion strategy of a company which includes advertising, sales promotion, personal selling and direct mail. The fourth is Price which is the amount of money clients pay in order to obtain the product (Armstrong et al., 2013).

2. External Environment

Political & Legal Factors

Many governments have initiated policies for reducing CO_2 emissions by stimulating the production, introduction and adoption of EVs & HVs (Carlucci et al. 2018), environmental consideration has become an important factor for consumers in buying behavior. Governments began to believe that everyone had a duty to care for the environment (Un-Noor et al., 2017).

Economic Factors

The hybrid vehicle engine has the potential to reduce fuel consumption, pollution and allows renewable energy sources for transportation, such as improved fuel economy, increased power, or additional power for electronic devices and power tools (Un-Noor et al., 2017). Vehicle Vehicles are low costs and save operating costs by using electrical, environmental and lithium resources. Moreover, hybrid vehicles are more expensive than conventional vehicles, which energy savings can hardly make up for the price difference. Consequently, according to the rational buying behavior in the consumer world, the consumer should not buy a hybrid car and economic theory should predict little interest in this market. On the contrary, hybrid demand is very high compared to conventional demand, justifying the assumption that in the near future, the market share of hybrid plants is further growing, as more models are introduced and production costs are expected to decrease (Carlucci et al., 2018). The price of fuel is the main driver of cost variables, as it is maintained as one of the most fundamental variables when developing future marketing strategies. The strong market share and upgrades for hybrid plants deserve final attention when it comes to high fuel prices (Senecal et al., 2005). Higher cost of primary hybrids increases the cost and is attributed to lower demand and higher cost of additional electrical components, in particular (Khan & Kar, 2009).

Technological Factors

Moreover, technological innovation plays a key role in the development of green marketing, which contributes to accelerate the production of hybrid and electrical products of different sizes and models suitable for all different categories of people (Khan & Kar, 2009). All researchers pointed out that the electric car is powered by a rechargeable battery. This means that a full electric vehicle can be described as a fully electric vehicle and can be powered by a battery that can be recharged from the power source. However, the electric car model has an attractive smart appearance, it comes in different sizes and can now reach 250 km in range (Moyo, 2018). New technological innovations and innovative business models are increasingly emerging to choose to buy green vehicles. But the presence of technological externalities can also cause a breakdown in the development and deployment of green Vehicles. Moreover, consumers are reluctant to switch to new vehicles if the fuel-charging infrastructure is not widely available, and this will lead to consumers choosing traditional technologies rather than the refueling stations are plentiful (Carlucci et al., 2018).

Environmental factors

According to Un-Noor et al. (2017) "Environmental concern is also defined as the level at which people are informed and are aware of environmental problems and are committed to solving them or are willing to overcome them". From a pro-environmental point of view, people consider full electric & hybrid vehicles to be more sustainable than fuel vehicles, given that the latter still create some air-polluting emissions while driving (Carlucci et al., 2018). Although some environmental intentions may not directly affect environmental purchasing behavior, they may affect consumers to obtain information and knowledge about the environment related to their purchasing decisions. The introduction of hybrid technology is related to the usefulness of hybrids in the race to save the environment, as many sources say that hybrid Vehicles cause significantly less damage to the environment than the current standard combustion engine (Carlucci et al., 2018). On the other hand, reducing pollution is very important factor to protect the environment when the car is turned on, it will produce emissions in a round atmosphere. On the other hand, hybrids are manufactured in such a way that they do not generate as much emission as conventional vehicles, hybrids and electric vehicles are environmentally friendly units that produce less emissions, which would increase the purchase rate of hybrid and electrical intentions (Moyo, 2018).

3.4.2 Electrical Vehicles' and Hybrid Vehicles' Consumers (O)

Customers recently want new products, so innovation should be the goal of all organizations that must survive (lodhi & Maria, 2017). Due to globalization, technological innovation, and many other factors, the need to change business strategies within organizations, e-marketing has become of great importance over time, so each company should examine the expectations of the customer. In addition, the demand time, expectations and behavior of the clients may change, so it is important to examine the market and consumer buying behavior (Mongo et al., 2012). One of the reasons that motivates consumers to buy hybrid vehicles, is the high mileage of the current consumer car, the consumer will save money due to low gasoline consumption,

consumers will get more updated vehicles, to keep pace with technological innovation and modern technology, equipped with the latest features, to keep up with environmentally friendly (Clarlcucci et al., 2018). Every organization tries to reach and exceed customer expectations by meeting demand. People can choose their daily needs from the portal where they can find all products and information about goods or services. It is therefore very important to meet their needs through e-marketing by giving the information they need on websites. Online marketing increases customer communication; in this way, e-marketing encourages customers to classify products and services (lodhi & Maria, 2017). With such a high rate of population and high dependency on transportation, a remarkable switch to hybrids instead of gasoline and diesel vehicles become an important need. In fact, we need "50-80% of the car buyers worldwide adopt these new "low carbon" technology automobiles to make a material difference" (Pickett et al., 2008). Referring to all researches Hybrid and electrical vehicles are becoming an overall improvement over conventional vehicles and in near future will be a great need, hybrid and electrical vehicles are now available in numerous models of all different sizes, filling the requirements for all consumers including single individuals or families, protecting environments from air population and emissions.

3.4.3 Response purchase decision (R)

Green purchasing behavior can be translated to the act of consuming products that are conservable, beneficial for the environment, and responding to environmental concern (Lee, 2009). Other researchers argued, a buying decision is a set of actions people make and choices they make to consume certain products and services or live in certain ways rather than others all have direct and indirect impacts on the environment (Van Hia & Mai, 2012). Other researcher developed framework to show the impact of green marketing on the consumer purchase decision (social and demographic variables, price, environmental and environmental advertising) and showed a positive association with green purchase decision (Ansar, 2013). Oslaj et al. (2010) explained positive purchase intention to buy an environmentally friendly product in spite of a higher price. Other researchers discussed there were relationships between elements of the mix, namely (product, package, price, place and promotion) and how each of those variables correlates to the purchase decision (Wanninayake & Randiwela, 2008).

3.4.4 Psychological factors

The heart of marketing management is to understand consumer psychology. The internal influences that affect consumer behavior consist of an individual's perception, memory, learning, motivation, personality, emotions and attitudes (Peppard, 1998; Del Hawkin & Mothersbaughn, 2010). Furthermore, the interpretation of the meaning of motivation varies according to different people and is influenced by unique biases, experiences and needs (Solomon et al., 2010). In general, for the marketer to effectively communicate his or her brand message or products to the consumer, it is important for them to understand the nature of perception. Information processing is a process by which catalysts are visualized, converted into useful information and then stored. Motivations affect people's feelings, feelings and behavior, which is why millions of dollars are consumed to buy many different goods and services (Solomon & Panda, 2013). Moreover, Noel (2009) shows that purchasing decision-making depends on the relationship between behavior and decision-making behavior in consumers on all psychological factors such as motivation, cognition and learning as a result of creating or changing consumer attitudes that enable them to commit to buying or not buying, looking for other alternatives.

4. Research framework

The importance of the research rise on marketing function is to transform the changing consumer desires into profitable opportunities. During the green marketing, this study raises the importance of the need for commercial organizations in Jordan to pay attention to the protection of the environment, and to spread the culture of green marketing among organizations and exploit them to improve marketing performance. The automotive (vehicles) sector has been selected, because of its high contribution to the Jordanian foreign trade movement and its integration with other sub-economic activities. Recommendations from governmental studies have risen up through the last decade to make attention to that sector in Jordan such as the study of Amman chamber 2009 http://www.ammanchamber.org.jo. All previous factors encourage the researchers to choose (S-O-R) model which clarify the relation amongst the stimulus (S) the customer receive, what emotions organism (O) be aware of, and their responses or attitudes (R).

5. Methodology

The methodology used in this research is to review previous literature relating to digital marketing to consumers, competitors, and other factors. We use these research tools to investigate the effects of customer behavior towards the HVs and EV markets, and to know the preference of the client's personal characteristics of the primary decision-maker, such as income, age, education, family size, family composition, personality type (identical or innovative), personal attitudes towards environmental problems. However, for secondary research, it focuses primarily on the analysis of variables that affect consumer choices. These studies include many variables that take into account the technical aspects of the vehicle's power system, financial aspects such as vehicle costs, savings in operating costs, etc., and the availability of the vehicle recharge infrastructure. In this light, the literature was used to verify the importance of using digital marketing, how to enter markets, any regulations, costs, or resources required to enter new markets and some useful examples of how to enter new markets. To be accurate in assessing the possibility of S-O-R model application in the case of Jordan, the researchers choose customer relationship management (CRM) departments' staff in the companies having franchise contract with the original vehicles company. The population of

the study, comprises 120 employee across 14 companies (Toyota, Nissan, Ford, Mercedes-Benz, BMW, Peugeot, Hyundai, Honda, KIA, Fiat, Suzuki, Porsche, TESLA, Volkswagen) thus, the sample was 108 according to (Sekaran & Bougie, 2016).
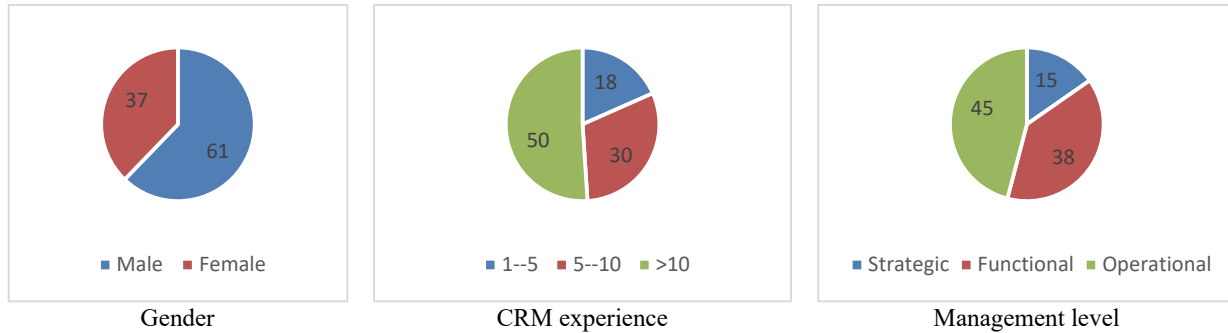

Fig. 1. Personal characteristics of the participants

Then, 108 questionnaires were distributed randomly, a total of 98 completed and returned and analyzed. The study sample was 98 respondents, with a total percentage of 70% and 168 female responders with a total percentage of 30%. Additionally, the biggest set of respondents (231 or 41%) ranged between 30 and less than 40. The smallest group (50 or 10.2%) of respondents was less than 30 years old. Furthermore, the largest group of respondents (405 or 72%) qualified BA, while the minimum group related to PhD employee (7 or 1%). The largest group of respondents (188) indicated that their years of experience was more than 15 years and the smallest group of respondents (55 or 10%) indicated that their year of experience was less than 5 years. Finally, the largest group of respondents (357 or 63.5%) indicated that their job vacancy was ordinary employee and the smallest group of respondents (49 or 9%) indicated that their job vacancy was manager; this demographic data is detailed in Fig. 1. The researchers used the (SEM-PLS) program as an analysis mean to examine and analyze the data related to each hypothesis. Consequently, the researchers displayed data analysis and tested by applying two phases (Anderson & Garbing, 1988). At first phase, the path loadings for all factors have to exceed the value of (0.55), and therefore, all factors associated to the research model were corrected and accept to analysis (Falk & Miller, 2992). Fig. 2 represents the result of path loadings for all variables related to the proposed model in this paper. All the items less than 0.55 were not accepted and deleted. Standardized path loadings for all indicators were above 0.55 thus they are all significant (Falk & Miller ., 1992). All path loadings are portrayed (factors analysis result) in Fig. 3. To make sure that the analysis was correctly planned in any study, the results depend on its reliability and validity. They are the accurate criteria for assessing the quality of the study. To diminish the opportunity of receiving incorrect responses, two specific issues in the study design should be taken into consideration: reliability and validity.
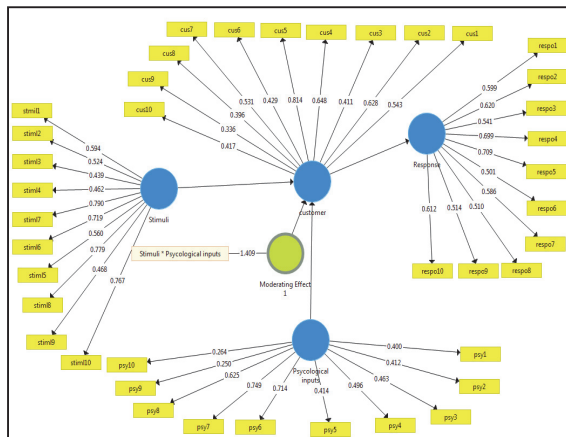

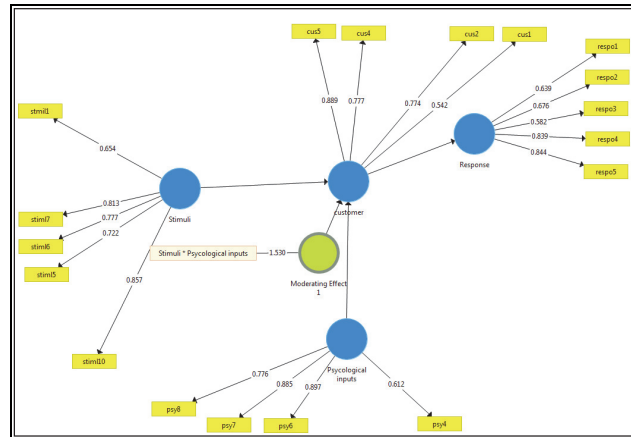**Fig. 2.** The results of the implementation of SEM

Fig. 3. The results of the modified SEM

To accomplish the validity of the study tool; the researchers motivated on the following aspects of the process: Asking different experts about their questionnaire to identify imprecision and difficult questions to complete the questionnaire and decide whether it is reasonable and to test its level of comprehension regarding the phrasing of questions. Based on their recommendations, a few items were deleted and modified in the initial questionnaire. To attain the reliability and validity for the items, Table 1 describes Cronbach Alpha (CA), Composite Reliability (CR), and Average Variance Extracted (AVE) results for all model variable. Internal consistency reliability: Using Cronbach's alpha as the lower bound of the internal consistency reliability, all CA and CR results exceeded the recommended value of 0.65 (Lennox & Dennis, 1994), Rho_A

indicates that all variables possessed acceptable reliability. A commonly applied criterion of convergent validity is the AVE (Fornell & Larcker., 1981). AVE values of 0.50 or more specify that a construct explains more than half of the variance of its indicators and, thus, show enough convergent validity. All AVEs, presented in Table 1 ranged from value of 0.52 to value of 0.64, therefore, all constructs fulfill the convergent validity.

Table 1
The results of reliability and validity analysis

Constructs	Cronbach Alpha (CA)	Rho_A	Composite Reliability (CR)	Average Variance Extracted (AVE)
Moderating Effect	1.00	1.00	1.00	1.00
Psychological inputs	0.80	0.81	0.88	0.64
Response	0.78	0.83	0.84	0.52
Stimuli	0.82	0.83	0.88	0.59
Customer	0.74	0.78	0.84	0.57
Standard	More than 0.65	More than	More than 0.65	More than 0.50
Reference	(Nunnally & Bernstein, 1994)	(Nunnally	(Nunnally & Bernstein, 1994)	(Fornell & Larcker, 1981)

Latent Variable Relationships are calculated to measure the discriminate validity indicates that a construct should share more variance with its measures than it shares with other constructs in a given model (Fornell & Larcker, 1981). Table 2 shows the results of Latent Variable Correlations (discriminate validity). All constructs exhibited more variance with their indicators than with other constructs.

Table 2
Discriminate validity

	Moderating effect	Psychological inputs	Response	Stimuli	Customer
Moderating effect	1.00				
Psychological inputs	-0.58	0.80			
Response	-0.51	0.58	0.72		
Stimuli	-0.57	0.73	0.68	0.77	
Customer	-0.61	0.48	0.58	0.50	0.76

The results imply acceptable discriminate validity, which every correlation coefficient must not exceed the value of 0.8 to ensure the not include multicollinearity between each factors. Correlation coefficient above 0.80 would suggest a problem of multicollinearity (Hair et al., 2006). After testing the measurement model with all the parameters mentioned above, the model can be confirmed reliable and valid. The researchers apply the logical analysis to test proposed model in order to provide a full explanation of the results related to hypotheses by applying the Bootstrapping analysis in smart PLS software. Firstly, the test finds the rate of (T value) for all Influence of stimuli relationships' factors on consumer response for purchase decision. The (beta and sig value) for this relation was represented in Fig. 4. Based on Fig. 4, the authors presented the rate of (beta and sig value) to test the hypothesis related for the five. Table 3 displays the value of these results.
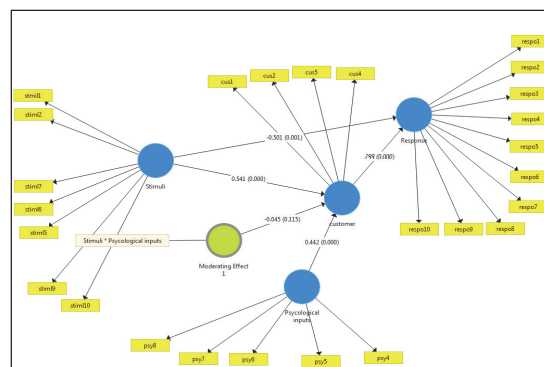

Fig. 4. Bootstrapping (beta and sig value) for Stimuli factors (marketing inputs, external environment), response purchase decisions for HVs & EVs consumers, positive psychological inputs

Test results of (T value, beta and sig value) for Stimuli factors (marketing inputs, external environment), response purchase decisions for HVs & EVs consumers and positive psychological inputs are articulated in Table 3. In Table 3, the hypothesis analysis results are seen to be clarified for H0.1: The statistics T value was found to be (8.594) whilst the (Beta) Value ratio was (0.541), which provides a specification as to the alteration of stimuli factors as reasoning a change equal to (54.1%) in HVs &EVs consumers. Accordingly, it may be stated that stimuli factors have positive effects on HVs &EVs consumers in Jordan. Thus, the result indicates that stimuli factors (marketing inputs, external environment) affect HVs &EVs consumers. Also, the hypothesis analysis results are seen to be clarified for H0.2: the statistics T value was found to be (10.080) whilst the (Beta) value ratio was (0.299), which provides a specification as to the alteration of HVs &EVs consumers as reasoning a change equal to (29.9%) in response to purchase decisions. Accordingly, it may be stated that HVs &EVs consumers in Jordan

has a positive influence on response purchase decisions. So, the result will be: HVs &EVs consumers in Jordan affect response purchase decisions. Also, the hypothesis analysis results are seen to be clarified for H0.3: the statistics T value was found to be (3.423) whilst the (Beta) value ratio was (-0.501), which provides a specification as to the alteration of stimuli factors (marketing inputs, external environment) as reasoning a change equal to (50.1%) in response purchase decisions. Accordingly, it may be stated that stimuli factors (marketing inputs, external environment) has a negative influence on response purchase decisions. The result indicates that stimuli factors (marketing inputs, external environment) affect response purchase decisions. Also, the hypothesis analysis results are seen to be clarified for H0.4: the statistics T value was found to be (8.567) whilst the (Beta) value ratio was (0.442), which provides a specification as to the alteration of psychological inputs as reasoning a change equal to (44.2%) in HVs &EVs consumers in Jordan. Accordingly, it may be stated that psychological inputs had a positive influence on HVs &EVs consumers in Jordan. And the results indicate that positive psychological inputs affect HVs &EVs consumers. Finally, the hypothesis analysis results are seen to be clarified for H0.5: the statistics T value was found to be (1.580) whilst the (Beta) Value ratio was (-0.045). Accordingly, the result indicates that interactional relationship between Stimuli factors (marketing inputs, external environment) and positive psychological inputs, would not affect response purchase decisions.

Table 3
The results of testing the hypotheses of the survey

Hypothesis	Relation	T value	Beta value	p-value	Direct effect, Indirect effect, Moderating, mediating
H0.1	Stimuli factors (marketing inputs, external environment) affect HVs &EVs consumers.	8.594	0.541	0.000	Direct effect
H0.2	HVs &EVs consumers affect response purchase decisions.	10.080	0.299	0.000	Direct effect
H0.3	Stimuli factors (marketing inputs, external environment) affect response purchase decisions.	3.423	-0.501	0.001	In Direct effect (partial mediating since HO.1, HO.2 are significant)
H0.4	Positive psychological inputs affect HVs &EVs consumers.	8.567	0.442	0.000	Moderating effect
H0.5	Interactional relationship between Stimuli factors (marketing inputs, external environment) and positive psychological inputs, affect response purchase decisions.	1.580	-0.045	0.115	moderating interaction

6. Results

According to the literature review, the role of green electronic marketing in consumer purchasing behavior has been clarified. In addition, the S-O-R dimensions, relationships according to consumer intention to buy hybrid and electrical vehicles have highlighted the success of adoption, and have reflected in the case of Jordan. As for statistical investigation, the results of the analysis have shown that it was significant in all hypotheses except the last hypothesis as follows:

- The stimuli factors (marketing inputs, external environment) affect HVs & EVs consumers and the results are compatible with study of Cui and Lai (2013) which showed that e-loyalty to an online auction website is significantly influenced by the stimuli factors.

- The HVs & EVs consumers affect response purchase decisions, the results are also compatible with study of Cui and Lai (2013), which showed that e-loyalty to an online auction website significantly affects the response purchase decisions.

   3. The Cumulative of previous two results represent the mediation role in the current research, partial mediation occurred, the mediation amend in the R (square) value has been witnessed notably.

   4. Stimuli factors (marketing inputs, external environment) affect response purchase decisions, the result is compatible with study of Martínez-Ruiz and Gómez-Cantó (2016) which implied that the scanning stimuli factors was effective for consumer decisions.

5. The positive psychological inputs affect HVs &EVs consumers and the results are consistent with study of Durmaz (2014) which ensured that personality inputs in happiness, age, marital state and gender make difference in consumer satisfaction or cognition from sellers.

6. There is no effect from interactional relationship between Stimuli factors (marketing inputs, external environment) and positive psychological inputs on response purchase decisions. The cumulative of the results number (1,5,6) represent the moderation role in the current research. No moderation affect occurred and that result is compatible with the study of Teh et al. (2014) which applied on specialist coffeehouse store and did not find significant moderating influence from psychological inputs toward SOR model. However, the results are not agreeable with the study of Vainikka (2015) which implied that it is motivating for a consumer to have a perceptive of the ways marketing and individual differences can manipulate information processing and decision making. Moreover, the result is not well-matched with study of Cui and Lai (2013), which implied individual analyzing and differences could undoubtedly increase understanding of consumers' decisions.

7. Conclusion and future research

Integrated Stimuli factors scanning for the current study market resulted HVs &EVs consumers satisfaction, which in turn, facilitated best response for purchase decisions, but the interactional relationship between Stimuli factors (marketing inputs, external environment) and psychological inputs did not make any difference in purchasing decisions due to two reasons:

1. Niche market legislation: in early periods the Jordanian government allowed the replacement of old vehicles, regardless of engine capacity, with hybrid engines, with a maximum capacity of 2,500 cc. A special tax of 40% was imposed on modern hybrid cars after their cancellation and replacement, which had been in place before June 2012. The government also granted an exemption for vehicles in the event of depreciation, and imposed a special tax on them by 12.5%, instead of 40%. In other words, consumers will response positively to make purchasing decision whatever Psychological inputs were different.

2. Environmental awareness: the fact that the society has been psychologically accepting the presence of hybrid and electric vehicles, due to the policies of stimulation from several sides in addition to the internal stimulation of individuals since hybrid and electric vehicles came to solve a number of personal and environmental problems.

3. In conclusion, it would be advisable to stick with the current market growth plan that replaces conventional covers with hybrid and other electrical ones. Environmental awareness should be considered based on knowledge about the benefits of green products. This will fill the market gap for consumers looking to buy new vehicles and help them move forward. There is also a call for further research with emphasis placed on establishing other components that could undertake S-O-R model in other sectors in Jordan such as banking or medical services.

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