

# ANTECEDENTS OF THE GREEN PURCHASE INTENTION TOWARDS ELECTRIC CARS: THE SRI LANKAN CUSTOMERS' PERSPECTIVE

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## ABSTRACT

*Even though fast development in the global economy and technology has accelerated human civilization, it has also caused enormous damage to the global natural environment. Among the several environmental issues, air pollution is a major pollution problem around the world. The vast increase in private car usages is one of the major reasons for air pollution. In order to prevent such threats one solution is moving to cleaner energy vehicles. However, the rate of adoption of cleaner energy vehicles, such as electric cars, is still low. It is therefore vital, to investigate the factors that influence consumer green purchase intention towards electric vehicles. On the other hand, although green marketing and green consumer behavior have been major interest in today's research field, a careful study of the literature reveals that the green purchase towards the electrical vehicle has not been thoroughly investigated. Therefore, the purpose of this study is to determine a clear understanding of factors that influence consumer green purchase intention towards electrical vehicle. The research philosophy of the current study is a positivist research paradigm and follows a deductive approach. A quantitative study was conducted using the questionnaire as the primary data collection method and the data was obtained from 215 respondents. The findings of the present study reveal that consumer attitudes towards the electric car, social influence, environmental knowledge and price have a significant impact on green purchasing intentions. Furthermore, social influence has been identified as the salient factor of green purchase intention of the electric car.*

**Keywords:** Green Purchase Intention; Electric car; Green Marketing

## 1. Introduction

Even though fast development in the global economy and technology has accelerated human civilization, it has also caused enormous damage to the global natural environment (Tu & Yang, 2019). It can also be seen that most of the disastrous environmental impacts have been caused by human irresponsible behavior in both production and consumption (Chen, 2011; Marfo and Devaraj, 2017). Kotler (2011) lists six major environmental challenges currently facing the world; a change in the climate and as a result change in the atmosphere; increased depletion of the ozone layer; soil degradation and increased desertification; reduced availability of fresh water and the depletion of natural resources; increased water and air pollution.

Among the environmental issues mentioned above, air pollution is a major pollution problem around the world that even causes people to die. According to the World Health Organization (2018), it is considered a silent killer and 4.2 million deaths occur worldwide as a result of this deadly air pollution. The vast increase in private car usages is one of the major reasons for air pollution and, according to the International Energy Agency (IEA), private vehicles presently consume an average of about 36 million barrels of oil per day, while emitting 14 million tons of carbon dioxide (Sang & Bekhet, 2015). Similarly, in Sri Lanka, the transport sector's share of total national CO<sub>2</sub> emissions has increased and the transport sector continues to be one of the largest emitters in the country, accounting for 47.7% in 2014 (Timilsina & Shrestha, 2009).

In order to prevent such threats and promote a more sustainable economy, one solution is to shift from gasoline to cleaner energy vehicles (Tanwir & Hamzah, 2020). Because there is growing agreement that electrification and the potential to 'decarbonise' this sector seems to be important, as it tends to reduce high dependence on fossil fuels and reduce carbon emissions (Sang & Bekhet, 2015).

However, the rate of adoption of cleaner energy vehicles, such as electric cars, is still low compared to gasoline vehicles worldwide (Tanwir & Hamzah, 2020) and even within Sri Lanka (Asian Development Bank, 2019). It is therefore vital, on the basis of the above research background and motivation, to investigate the factors that influence consumer green purchase intention towards electric vehicles.

On the other hand, although green marketing and green consumer behavior have been major interest in today's research field (Hassan, 2014), most of the studies carried out

on particular green products only such as organic food, organic clothing. To the best of author's knowledge there has been little discussion on green purchase intention with regard to vehicle purchases of consumers. Further, the studies that focused on vehicles are almost related to hybrid vehicles and a careful study of the literature reveals that the green purchase towards the electrical vehicle has not been thoroughly investigated. Therefore, a clear understanding of factors that influence consumer green purchase intention towards electrical vehicle is very essential at present. Moreover, previous scholars like Hartmann and Ibanez, (2006); Devi Juwaheer, Pudaruth and Noyaux, (2012); Konuk and Faruk, (2015); Yadav and Pathak, (2016), stated that several attempts had been made to analyze the green buying behavior in western countries where there had been minimal research attempts in developing countries. This created a need for further studies about green buyer behavior to be conducted in those developing countries such Sri Lanka.

## **2. Literature Review**

### *2.1. Green marketing, green Products and Electric Car as green product*

The global attention towards environmental issues has increased significantly over the past few decades. As a result, people now tend to switch to more sustainable consumption patterns than in the past which created a growing market for environmentally friendly products or green products (Singh & Pandey,2012), Shamdasani, Chon-Lin and Richmond (1993), defined green products as “the products that do not pollute the earth or deplete natural resources and that can be recycled or conserved” (p.490). Oliver and Lee (2010), posited that green products are interesting market for firms as environmental issues and social responsibility has become an important area for consumers now.

Moreover, according to Suki (2016) companies now have identified the competitive advantage for green marketing practices in the marketplace. As a result, the companies not only focus on profits, but they have paid more focus on exploring new methods, new ideas and new strategies related to environmental friendly business practices. Further, in today's business world, there are companies who are genuinely trying to minimize the damage caused to environment from their business operations. As cited by, Suki (2016), in automobile industry, some well reputed companies have embraced sustainable approach in their business practices by applying green technologies and introducing hybrid vehicles and electric cars. Electric car is “a car that is powered by

an electric motor instead of a gasoline engine”. Electric car is known as electrical vehicles or EV. It uses energy from the rechargeable batteries which can be recharged by normal household electricity stations (Berman, 2014).

## 2.2. *Green purchase intention*

According to Bagozzi (1981), Purchase intentions can be defined as “the individual tendency to purchase a particular good or service in the future”. Purchase intention can be further defined as the likelihood of an individual’s readiness to purchase a particular product in the coming future (Wu, Yeh & Hsiao, 2011). Moreover, Wen and Li (2013), stated that when there is a higher level of purchase intention, the probability of occurring the purchase action will also be increased. On the basis of purchase intention definitions, Green purchase intention can be defined as "the probability and willingness of an individual to give preference to a green product over conventional products in their purchase behaviour" (Rashid and Ramli, 2009, p. 134). Hassan (2014) further defined green purchase intention as the possibility of a consumer to purchase environmentally friendly products over non eco-products in their purchase consideration.

## 2.3. *The theory of planned behavior (TPB)*

TPB is an extension of the Theory of Reasoned Action that influences a person's behavioral intention on the basis of internal and external factors (Tanwir & Hamzah, 2020). "As per TPB, certain individual behaviors are dictated by their behavioral intention, which is also affected by individuals' "subjective norm" and "attitude" (Tu & Yang, 2019). Previous studies have indicated and validated that environmental-friendly behavior could be measured through the fundamentals of TPB (Tu & Yang, 2019). From the other hand, the TPB appears to be a model that has been widely used to anticipate behavioral intention in the field of transport research (Sang & Bekhet, 2015). In this existing research, the extension of the TPB is being used as the underlying model, proposing a conceptual framework to examine the factors affecting the green purchase intentions of Electrical Vehicles in Sri Lanka.

In addition, previous researchers argued that the application of a single theory alone is inadequate to explain people's behavior (Tanwir & Hamzah, 2020). Additional variables therefore play an important role in strengthening the explanation of behavior. At the same time, the TPB also allows for the inclusion of additional variables, provided that certain variables make a noteworthy contribution to the

explanation of the behavior provided by the model (Ajzen, 1991). Furthermore, in order to better understand purchase intentions, it is important to understand all the external and internal forces surrounding it (Sang & Bekhet, 2015). Therefore, apart from the two fundamentals of TPB; attitude and subjective norm, this study adds several other variables; to investigate the green purchase intentions of electrical vehicles.

#### *2.4. Factors affecting green purchase intention*

Hassan, (2014) stated that numerous studies were conducted on the area, “green consumer behavior” since 1970’s and to date, research has highlighted some important factors that affect green purchasing intention. Most of the studies in green purchase intention have found that consumers’ attitude towards green products or in other words environmental attitudes have a significant impact on consumers’ green purchase intention. (Hassan, 2014; Huang, Yang and Wang, 2014; Ahmad and Thyagaraj, 2015; Mohd Suki and Mohd Suki, 2015; Joshi and Rahman, 2016; Marfo and Devaraj, 2017; Varshneya, Pandey and Das, 2017).

Another set of empirical studies have pointed out that environmental concern is an important determinant of green purchase intention. Joshi and Rahman, (2015), have conducted a study on factors affecting green purchase behavior where he found environmental concern is an important element that determines green purchase intention. The above finding is similar to the findings by Lee, (2012) ; Ahmad and Thyagaraj, (2015).

Lin and Huang, (2012), posited that emotional values and conditional values are also found to be considered as important factor in developing green purchase intention. Varshneya, Pandey and Das, (2017), have discovered that green consumption values play a significant role in influencing consumers’ green purchase intention. Hassan, (2014), cited that empirical findings suggest that determinants such as “values, knowledge, needs and motivations, attitudes and demographics, influence green products”.

According to Chan, (2001), environmental awareness, social influence, man nature orientation, ecological knowledge have been identified as significant determinants of green purchase intention. In the study by Joshi and Rahman, (2015), collectivism,

social influence, subjective norm, knowledge, environmental concern, personal norm, personal values, environmental value, environmental attitude, eco labeling, green perceived risk, price are some of the factors affecting green purchasing behavior.

Ahmad and Thyagaraj, (2015), showed that self-expressive benefits and environmental concern have a significant impact on green purchase intention. Further, green brand knowledge and green brand positioning are found to be determining factor of green purchase intention (Mohd Suki, 2016).

Minbashrazgah, Fatemeh and Torabi, (2016), in their study have discovered that trust in labelling, beliefs and perceived environmental responsibility are significant determining factors of green purchase intention and price are found to be as a moderator between green purchase intention and green consumer behavior. Laroche, Bergeron and G.Barbaro-Forleo, (2001), stated that though consumers are willing to pay high prices for green products, it may not be true in real. According to Sriwaranun, Gan, Lee, Cohen and David, (2015), high price of green products hinder the customers from purchasing green products and moreover customers perceive a substantial gap between prices of green products and non-green products. According those findings showed that price has a significant impact on green purchase intention.

It appears from the aforementioned investigations that numerous studies have identified consumers' attitude towards green products, social influence, price, environmental knowledge and environmental concern as significant determinants of green purchase intention. However, that limited studies are available green consumption values that create a gap in the existing literature and need for future researches. Thus, the current study attempts to identify the impact of consumers' green attitude, environmental knowledge, environmental concern, social influence, green consumption values and price on green purchase intention of electric cars in Sri Lanka.

### *2.5. Attitude*

Cherian and Jacob (2012) stated that attitude has always been considered as an important factor in predicting one's behavior by consumer behaviorists. Attitudes are defined as enduring positive and negative feeling about some person, object, or issue (Petty, 2018). Hassan, (2014), emphasized the fact that attitude has been conducted as an important determinant of behavior and purchase intention in green purchase behavior and he has further stated that pro-environmental behavior related attitudes

are the consumers' responses to the environment. "Environmental attitude is identified as the judgment an individual has towards the protection and promotion of the environment" Cherian and Jacob (2012), p.120. In addition, when an attitude is formed towards an object such as environment, it is known as environmental attitude and usually it is considered as point of view of people for particular environment issues as cited by Singh and Gupta (2013). According to Theory of Planned Behavior and Theory of Reasoned Action, attitude has a significant impact on developing purchase intention. Besides, numerous studies have confirmed that customer consumers' green attitudes have an effect on green purchase intention (Hartmann & Ibanez, 2011; Ahmad & Thyagaraj, 2015; Punyatoya, 2015; Yadav and Pathak, 2016; Marfo & Devaraj, 2017). Accordingly, it can hypothesize that,

*H1: Consumer attitude towards green products has a positive impact on green purchase intention of electric car.*

## *2.6. Environmental knowledge*

According to Fayxell and Lo, (2003) environmental knowledge can be defined as "a general knowledge of facts, concepts and relationships concerning the natural environment and its ecosystems". Chan and Lau (2000), indicated that environmental knowledge is considered as an important predictor of green purchase intention and people with higher environmental knowledge showcase higher willingness to buy green products. The research study by Hassan (2014) also indicated that environmental knowledge is considered as a key driving factor in green consumer behavior and further the author added that with the greater exposure to the "green" information sources affect consumers' green purchase intention.

Although a few studies have shown a non-significant relationship between environmental knowledge and purchase intention (Bang, Ellinger, Hadjimarcou & Traichal, 2000), most of the previous empirical evidence shows that environmental knowledge has a significant impact on green purchasing intentions. Accordingly, the following hypothesis is developed,

*H2: Environmental knowledge has a significant impact on green purchase intention of electric car.*

## *2.7. Environmental concern*

Environmental concern is defined as the level of consciousness of people possess about the environmental issues and the degree to which they are willing to contribute

to solve these issues (Dunlap & Jones, 2002). Maloney, Ward and Braucht (1975), defined environmental concern as the “readiness to change behavior backed by degree of emotionality and environmental knowledge”. Further, author has posited that environmental concern occurs when an individual possess “ecological knowledge, ecological affect, ecological intention and ecological commitment” to environmental issues in the world. A study conducted by Kim and Choi (2005), discovered that the consumers who are highly concerned for the environment are more willing to purchase green products. This positive effect of environmental issues on green buying intentions has also been discovered by many other scholars. (Roberts & Bacon, 1997; Aman, Harun & Hussein, 2012). Conversely, as there is a great increase in environmental concerns all over the society, researchers strongly indicate that this significant relationship should be further investigated (Sang & Bekhet, 2015). Hence it is hypothesized that,

*H3: Environmental concern has a significant impact on green purchase intention of electric car.*

#### *2.8. Green consumption values*

According to Haws, Winterich and Naylor (2014), green consumption values can be defined as the, “the tendency to explore the value of environmental protection through one’s purchases and consumption behaviors” (p. 337). Varshneya, Pandey and Das (2017), postulated that green consumption value refers to showcasing environmental protection through one’s behavior as he has values in himself to protect the environment.

Further, Varshneya, Pandey and Das (2017), argued that green consumption values make people aware of their negative impact on the environment and aid them in selecting more environmentally friendly products in their purchase consideration. There are only a few studies in literature dealing with the value of green consumption and, in the studies that have been performed on this subject, the majority of studies have shown that the value of green consumption is a significant determinant of green purchasing intention and consumption behaviour (Zhou, Thøgersen, Yajing & Huang, 2013; Haws et al., 2014; Wu & Chen, 2014). Thus, it is hypothesized that,

*H4: Green consumption values have a significant impact on green purchase intention of electric car.*

## 2.9. Social influence

According to Deutsch and Gerrard, (1955), social influence can be defined as “a state where someone complies with the expectations of another or considers the information acquired from another as a sign of reality” (p. 629). Turner (1991), pointed out that social influence occurs when people alter their thoughts, beliefs, behaviors in accordance to their society and surroundings and Chen-Yu and Seock (2002), stated that people manipulate their thoughts and actions to comply with the other groups or society. According to Maram and Kongsompong (2000), the individuals get social influence from “friends, family, educators, employers, professional colleagues, experts, media, associates, salespeople and even strangers”..

According to Thogersen and Zhou (2012), social influence is a key factor in behavioral studies because people ask for social verification before trying a new product category and Lascu & Zinkhan (1999) and Lee (2008) found that peer impact was the most significant factor in green purchasing activity. Moreover, the 'neighbour effect' has been proven to affect consumers on the purchase of hybrid EVs (Mau et al., 2008). Besides, Since Sri Lanka is a collectivist culture in which social norms are respected and individual acts are influenced by a community to which one associates himself or herself, or which is important to him or her, social influence will play a significant role in the purchase (Sang & Bekhet, 2015). Thus for the considered study, it can be hypothesized that,

*H5: Social influence has a significant impact on green purchase intention of electric car.*

## 2.10. Price

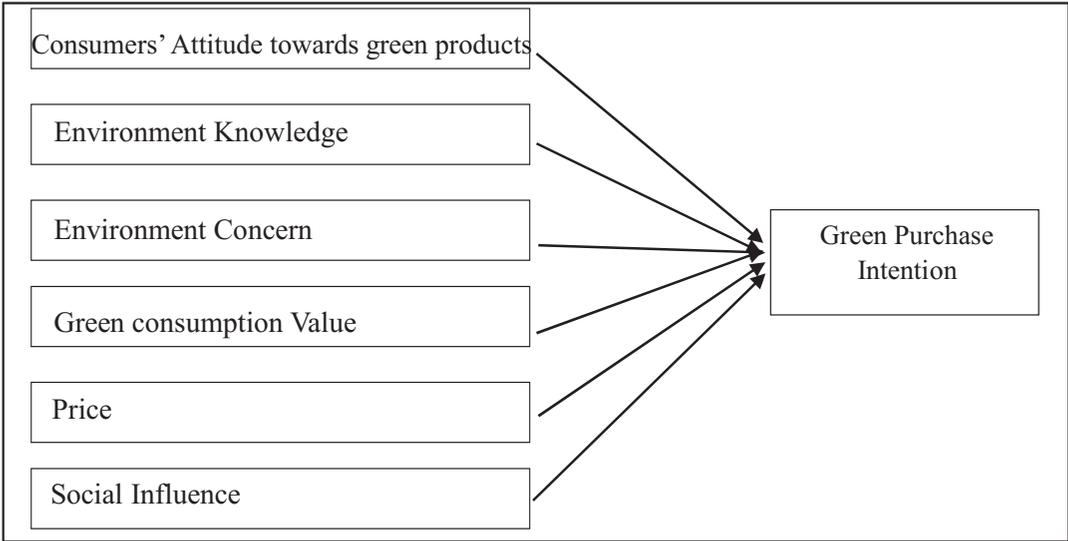
Many studies have found out that price is the most important factor that affects customer buying decisions when purchasing any product or service. (Nekmahmud & Fekete-Farkas, 2020). Similarly, In green marketing, price is a significant factor that impacts consumers' green purchase intention. According to Mandese (1991), consumers become price sensitive when it comes to purchase green products. Consumer Choice Theory explains that consumers' choices depend on their budget constraints also (HeCai, Deng & Li, 2016). Further, the scholar argued that higher prices of green products are a hurdle for green purchasing (Joshi & Rahman, 2015). However, low consumer price sensitivity has been shown to have a positive impact on

green purchasing behavior conversely, high price sensitivity has negatively affected green consumer purchasing behavior (Sang & Bekhet, 2015). Since all these factor directs that price has a significant impact on green purchase intention it can be hypothesized that,

*H6: Price has a significant impact on consumers' green purchase intention of electric car.*

### 3. Conceptual Framework

Based on the hypothesis developed above and the review on past literature, the conceptual framework for this study has been developed which is depicted in Figure 1



**Figure 1: Conceptual Framework**

### 4. Methodology

The research philosophy of the current study is a positivist research paradigm and follows a deductive approach. The research strategy chosen for the current study was survey research and, as a descriptive study was ideal for carrying out the present research, the researcher tried to test the hypothesis formulated to measure the impact of attitude, environmental knowledge, environmental concerns, green consumption values, price and social impact on the green purchase intention of an electric car. Self-

administered survey questionnaire used as the primary data collection method and study conducted in a natural environment with a minimal interference of the researcher. Further, the current study applied a single cross sectional design to conduct the study.

The questionnaire consisted a series of questions that were filled by the respondents based on their level of knowledge. Responses to the variables of green purchase intention, attitude, environmental knowledge, environment concern, social influence, green consumption values and price were evaluate during five-point Likert Scale ranging from 1 to 5 where the 1 means Strongly Disagree and 5 means Strongly Agree. This permits the respondents to indicate their level of agreements and disagreements with the statements. The reasons for applying self-administered approach will be the cost effectiveness, convenience and speed. The data collection was conducted in both ways, traditional pen and paper method as well as the online survey. All the questions were close-ended questions as it provides convenience to the respondents. As respondents would participate in the data collection without a compensation, the questionnaire was developed in a way that would motivate the respondents to involve and cooperate in completing the questionnaire willingly. Further, the questionnaire was developed in a way that minimize response error. After the questionnaire was developed, a pilot study was carried out to pretest the questionnaire to identify and eliminate potential problems.

Data were obtained from 215 respondents who were selected using the convenience sampling method used by many other researchers (Mostafa, 2007; Punyatoya, 2015; Varshneya, Pandey and Das, 2017) who conducted similar studies.. The unit of analysis of this study was the individual. The factor analysis was employed to reduce the number of research variables to fewer factors and determine the share of effect of the factors and the goodness of the measures used in the study assessed by testing the instruments' reliability and validity'. The Table 1 presents the final structure of Rotated Component Matrix. None of the indicators were reported to be weak and does not correlate with other factor. All the independent variables have been loaded to the respective columns. Thus, the indicators mentioned in the Table 1 were used for further analysis. The reliability was tested using Cronbach's alpha value and according to the Table 02, the Cronbach's alpha of all the variables are greater than 0.7 which indicates that the reliability has been established in the study. Validity consists three types of validity; content validity, criterion-related validity, and construct

validity. Content validity has been tested using past literature, and as the greater the content validity established, the more the scale items represent the domain or universe of the concept being studied. As Table 02 indicates, all the considered variables report a KMO values greater than 0.5, AVE values also greater than 0.5 with CR values greater than 0.7. The significance values of all the variables are less than 0.05. Accordingly, it can be concluded that the Convergent Validity of the study is established. As shown in table all shared variances among constructs were lower than the AVE on the individual constructs satisfying discriminant validity. Hence it can be stated that Discriminant Validity also established in the considered study.

**Table 1: Rotated Component Matrix**

	Component					
	1	2	3	4	5	6
ATT1 Purchasing electric car is good.	.712					
ATT2 Purchasing electric car is desirable.	.760					
ATT3 Purchasing electric car is enjoyable.	.695					
ATT4 Purchasing electric car is wise.	.760					
ATT5 Purchasing electric car is favorable.	.806					
ATT6 Purchasing electric car is pleasant.	.782					
EK1 I know that the products I buy are environmentally friendly.				.477		
EK2 I know more about recycling than an average person.				.830		
EK3 I know how to select product that reduces waste.				.815		
EK4 I understand environmental phrases on product package.				.742		
EK5 I am very knowledgeable about environmental issues.				.685		
EC1 I consider Sri Lanka's environment as a major concern.						.637
EC2 I am emotionally involved in environment protection issues in SL						.611

Ec3 I am worried about worsening the quality of environment of SL					.754
EC4 I think about how environmental quality can be improved in Sri Lanka.					.776
SI1 I learn environmental issues from my friends.			.551		
SI2 My friends often recommend electric car to me.			.792		
SI3 My friends share their experiences and info about electric car with me.			.778		
SI4 Due to the social impact of social pressure, I choose the electric car.			.689		
SI5 Most people who are important to me would like me to buy electric car.			.747		
GCV1 It is important that the vehicle I use does not harm the environment.	.593				
GCV2 I consider the potential environmental impact of my actions.	.733				
GCV3 My purchase habits are affected by my concern for the environment.	.717				
GCV4 I am concerned about wasting the resources of our planet.	.754				
GCV5 I would describe myself as environmentally friendly.	.772				
GCV6 I am willing be to be inconvenienced in order to be environment responsible.	.804				
P3 If the price of the electric would be same as others, I would buy it.					.605
P4 I will visit for electric cars in more than one store to take advantage of low prices.					.816
P5 I will shop more than one store to find low prices for electric cars.					.803
P6 I will take extra effort to find lower prices for electric cars.					.829

*Extraction Method: Principal Component Analysis.*

*Rotation Method: Varimax with Kaiser Normalization.*

**Table 2 : Validity and Reliability**

Standard	Validity Test				Reliability Test	
	KMO	BTS	CR	AVE	Cronbach's Alpha value	No of items
	0.5<	0.05>	0.7<	0.5<	0.7<	
Attitude	0.898	0.000	0.937	0.678	0.904	6
Environmental Knowledge	0.867	0.00	0.927	0.683	0.881	5
Environmental Concern	0.820	0.000	0.915	0.702	0.856	4
Social Influence	0.800	0.000	0.904	0.641	0.856	4
Green Consumption Values	0.894	0.000	0.898	0.668	0.900	6
Price	0.807	0.000	0.923	0.724	0.869	4
Green Purchase Intention	0.782	0.000	0.913	0.790	0.909	4

## 5. Data Presentation, Analysis and Findings

### 5.1. Data preparation

Added paying insufficient attention to data preparation can seriously undermine the results leading to bias findings and misinterpretation (Saunders, Lewis, & Thornhill, 2009; Malhotra & Dash, 2010; Hair, Black, Babin, & Anderson, 2014). Therefore, the data preparation process which includes checking, editing, coding, transformation, data cleaning, systematic data adjustment and finally the selection of a data analysis strategy (Malhotra & Dash, 2010) was adopted by the researcher for the present study. Further, it is important that the data meet the basic assumptions underlying the statistical techniques to be used before proceeding with the data analysis (Hair et al., 2014). Hence, the most fundamental assumption in multivariate analysis, normality was tested. As a result, the values of Skewness and Kurtosis for all components are within a range of approximately  $\pm 2 \pm 2$ , it was concluded that the data is normally distributed and qualified for further research studies.

Table 3 summarizes the Pearson Correlation values between the independent variables and dependent variables which are being used for the study as hypothesis. These Pearson Correlation values may satisfy the linearity assumption that needs to be there between the variables considered for the hypotheses in order to run regression analysis in the further analysis. According to the Table 03, there is a strong positive correlation between attitude and green purchase intention, environmental knowledge and green purchase intention, and green purchase intention and social influence. However, the correlation between green purchase intention environmental concern, green purchase intention and green consumption values, and green purchase intention and price indicates approximately moderate positive correlation.

**Table 3 : Correlation Analysis**

IV	DV	Pearson Correlation Coefficient	P Value
Attitude	Green Purchase Intention	0.550	0.000
Environmental Knowledge	Green Purchase Intention	0.512	0.000
Environmental Concern	Green Purchase Intention	0.453	0.000
Social Influence	Green Purchase Intention	0.606	0.000
Green Consumption Values	Green Purchase Intention	0.417	0.000
Price	Green Purchase Intention	0.495	0.000

### 5.2 Data analysis and findings

Regression analysis, which has two types, namely a simple linear regression and a multiple linear regression model, can be used to solve the research problem by testing a specific hypothesis. For multiple linear regression to be performed two key conditions; the number of independent variables considered for regression should be smaller than the number of observations and should not have a perfect correlation between the variables perfect correlation between the variables should be satisfied. As the conditions are met in this current research study, multiple linear regressions are carried out to examine the impact of the six independent variables; attitude, environmental knowledge, environmental concerns, social impact, green consumption values and price on the dependent variable; green purchase intention.

**Table 4: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.709	.503	.489	.68654	1.902

Table 4, Model summary computed through regression analysis indicates that the R square value is 0.503 which means approximately 50% of the variation in the green purchase intention of electric car is explained by the antecedents of the green purchase intention. As the R square value is approximately equal to 50%, there can be other factors rather than considered variables in the current study that would explain the green purchase intention of electric car.

**Table 5: ANOVA for Antecedents of Green Purchase Intention of Electric Car**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	99.300	6	16.550	35.112	.000b
Residual	98.039	208	.471		
Total	197.338	214			

The regression model is evaluated to identify the impact of independent variables on green purchasing behavior. According to the Table5, it explains that the mode lissignificantat 0.05 level of significance ( $0.000 < 0.05$ ) at an F statistic of 35.112. It indicates that the overall regression model that's been generated is statistically significant and is a good predictor of the dependent variable. In other words, the regression model is well fitted and predicts the dependent variable; green purchase intention. Therefore, the researcher can build a significant model to identify the influence from the antecedents of green purchase intention on the green purchase intention of an electric car.

**Table 6: Coefficients Table**

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
(Constant)	-.480	.293		-1.635	.104
Attitude	.222	.081	.180	2.739	.007
Environment Knowledge	.243	.086	.203	2.814	.005
Environment Concern	.119	.093	.093	1.282	.201
Influence	.382	.076	.330	5.052	.000
Green values	-.096	.090	-.074	-1.072	.285
Price	.207	.074	.181	2.793	.006

It appears from Table 4 that Consumer Attitude towards Green Products, Environmental Knowledge, Social Influence and Price are significant factors that affect green purchase intention of electric car (Sig. Value < 0.050). However Environmental Concern and Green Consumption Values are reported as insignificant factors (Sig. Value > 0.050) of electric car (Sig. Value < 0.050).

The coefficient value of social influence is 0.382 which indicates that per one unit change in social influence results a 0.382 change in green purchase intention of electric car. Accordingly, social influence is the most influencing antecedent of green purchase intention of electric car in Sri Lanka is Social Influence The next highest coefficient value reports from environmental knowledge which indicates 0.243 change in green purchase intention of electric car. Accordingly, environmental knowledge is next most important antecedent of green purchase intention of electric car. Attitude with a coefficient value 0.222 is the third important factor and price as fourth with a coefficient value 0.207.

## 6. Discussion, Implications and Conclusion

### 6.1. Discussion on the findings

The finding from this study suggests that the consumer's attitude toward green products has a significant impact on green purchase intention of electric car in Sri Lanka. This finding is consistent with the findings of the past studies by (Mostafa, 2007; Hassan, 2014; Huang, Yang and Wang, 2014; Joshi and Rahman, 2016). As

reported in the correlation analysis, attitude is positively correlated with green purchase intention of electric car (Pearson Correlation Coefficient = 0.550, P Value =0.00). This indicates that when Sri Lankan consumers have more favorable attitude towards green products, the more likely they form an intention to buy electric car. According to Leonidou, Leonidou and Kvasova, (2010), the extent to which a consumer forms an environmental attitude when making a personal purchasing decision always get influenced from certain cultural, political and ethical factors. Author further highlighted that these factors tend to influence consumers' decision making in matters related to society as whole also. This is a good insight for the marketers because if a particular marketing strategy is able to elaborate the ethical responsibility and cultural value of a green purchase intention of electric car, then the consumer is more likely to form favorable attitude towards it. This will in turn formulate a purchase intention towards electric car.

The finding suggests that environmental knowledge has a significant impact on green purchase intention of electric car. Yadav and Pathak, (2016), have founded that environmental knowledge has a significant impact on green purchase intention which is in good agreement with the results of the present study. Mostafa, (2007), stated that the more a consumer knowledgeable about environmental issue the tendency of that particular customer purchasing green products is high. When consumers become more and more knowledgeable about the bad impact of traditional vehicle consumption on our environment and the green benefits of electric car, they would tend to switch to electric car consumption as per the relationship suggested in the current study. It can therefore be concluded that, as consumers become increasingly aware of the negative impact of traditional vehicle consumption on our environment and the green benefits of electric cars, they would tend to switch to electric car consumption as per the relationship suggested in the current study.

The finding from this quantitative research study proves that environmental concern has an insignificant impact on green purchase intention of an electric car. These results were contradicted with the studies conducted by Lee, (2012); Ahmad and Thyagaraj, (2015). According to Ahmad and Thyagaraj, (2015). Similarly, the present findings present an evidence that green consumption values have an insignificant impact on green purchase intention of an electric car. This relationship is contradicting with the findings of Homer and Kahle, (1988); Roy and Goswami, (2007); Varshneya, Pandey and Das, (2017).

Consistent with the findings by Chan, (2001); Costa, Zepeda and Sirieix, (2014); Joshi and Rahman, (2015), the considered research study found that there is a significant

impact of social influence on green purchase intention of an electric car. The relationship referred to above is highly applicable to Sri Lanka. Thus, according to Karunarathna, Naotunna and Sachitra (2017), there is a significant social impact on the purchase intention of green products. The authors further elaborated that young people tend to discuss environmental issues with each other and to obtain an opinion on green products. Marketers should therefore focus on specific strategies that create a social impact on consumers.

As per the findings of the present study, price is a significant antecedent of green purchase intention of electric car. This relationship is consistent with the findings of scholars like Laroche, Bergeron and Barbaro-Forleo, (2001); Sriwaranun et al., (2015). The Pearson Correlation coefficient of price is 0.495 which indicates a weak positive correlation between price and green purchase intention of an electric car (P value = 0.00). In contrast, the study by Rodríguez, Lacaze and Lupín (2007) indicated that in western countries some consumers are even willing to pay higher for green products. Mandese (1991) argued that consumers are becoming price sensitive when it comes to green products. As suggested in the present study, even though the sri lankan consumer is very concerned about the environment, if the price of the EV is much higher than expected, he will not buy the vehicle. Marketers should therefore devise pricing strategies that can benefit the customer as well, or marketers can cooperate with banks and other leasing companies to set up a special installment scheme for customers willing to purchase electric cars.

## *6.2. Theoretical and managerial implication*

The study has gone some way towards enhancing our understanding of green purchase intention and contributes to the existing literature on factors influence on green purchase intention of electrical vehicles with special reference to Sri Lankan context. Theoretically, this study indicates that in Sri Lanka attitude, environmental knowledge, social influence and price have a significant impact on green purchase intention of electric car. Further, environmental concern and green consumption values have no impact on purchase intention of electric car. Sri Lankan consumers have collectivist cultural traits in the purchase of vehicle, because social influence identified as the most influencing factor of purchase intention of electric car.

The findings of this research provide various valuable managerial implications; First, as per the finding, Sri Lankan consumers are very concerned about the environment issues in the country. If a marketer can develop marketing plans to take a benefit of Sri

Lankan peoples' aggressiveness towards environmental issues and promote ethical consumption of vehicles, it can result favorable attitude towards green purchase intention of electric car. Second, the government organizations can implement programs to develop favorable attitude towards green products that may have an influence electric car purchases in the country. The government can organize national campaigns to create awareness about the CO<sub>2</sub> emission problem in the country and how transportation system makes it worse. Further the people can be educated on the features and benefits of using an electric car. This may lead to a favorable attitude formation towards green purchase intention of an electric car. Third, according to the results if consumers become increasingly aware of the negative impact of traditional vehicle consumption on our environment and the green benefits of electric cars, they would tend to switch to electric car consumption., It is therefore proposed that EV manufacturers increase the opportunities for customers to experience electric vehicles in person, increase customer understanding of electric vehicles by emphasizing the advantages of a vehicle such as green technology utilization, optimized driving efficiency of electric vehicles compared to conventional vehicles and a positive effect on the environment. Fourth, consequently, social impact is a key factor in the green purchasing intention of EV, advertisements can be designed using customer testimonials that can have an impact on other customers. Moreover, word of mouth is an effective way to promote products in Sri Lanka. Marketers can use word of mouth in a creative way to raise awareness of the benefits of electric cars and thus encourage people to buy them.

### *6.3 Future research directions*

The topics in this report are restricted to electric vehicles. It is proposed that future researchers compare whether various energy vehicles with different principles have various influences on customer demands. As the R<sup>2</sup> value of the multiple regression in the study is approximately 0.5, it indicates that only 50% of the variation of purchase is explained from the antecedents identified in the study. There can be many other factors that affect purchase intention of electric car. Future research studies can be carried out testing the impact of such factors which were not covered in the study. It is proposed that future scholars use different methodologies in this study to analyze electric vehicles and compare variations in order to encourage the growing popularity of electric vehicles. Further, the data for this study collected from 215 respondents within Western Province only. Thus, the generalizability of the findings can be enhanced by extending the sample size and getting an island wide represented sample.

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