DETERMINANTS OF CONSUMERS' PURCHASE INTENTIONS OF ELECTRONIC VEHICLES

Nombulelo DILOTSOTLHE[1]

[1]Department of Marketing and Retail Management, University of South Africa

Corresponding author: Nombulelo Dilotsotlhe

Email: Dilotn@unisa.ac.za

Abstract:

Problems with sustainability are being addressed with a global focus. These difficulties include environmental problems, such as the rising pollution levels. Green technology, which can lower carbon emissions and reliance on fossil fuels, has been introduced as a viable, creative solution aimed at eradicating the negative environmental effects. Electric vehicles are being introduced as a sustainable, innovative solution aimed at eliminating the adverse environmental effects by having the ability to reduce carbon emissions, air pollution and fossil fuel dependency. Management, marketers and government need to find innovative ways to promote and increase the adoption rate of these vehicles. This paper uses the consumption values theory to predict the purchase intention for plug-in hybrid electric vehicles (PHEVs) in Gauteng, South Africa. Data was collected from 286 respondents using the structured questionnaire and convenience sampling. Used online data collection due to the Coronavirus pandemic restrictions, which limited the researchers' abilities to explain items in the questionnaire. A partial least squares structural equation modeling was performed to test the proposed hypotheses. Results indicate that functional, social, emotional and conditional values positively relate to customers' purchase intention of PHEVs, while the epistemic value is not positively related. This study will provide helpful information to electric vehicle manufacturers, car dealerships, marketing managers and the government in developing strategies to encourage PHEV adoption.

Keywords: Functional Values, Emotional Values, Social Values, Conditional Values, Epistemic Values, Theory of Consumption Values.

INTRODUCTION

A global emphasis is placed on addressing sustainability challenges (Malik, Prakash & Kapoor, 2018, p. 163). These challenges are inclusive of environmental issues, such as the rising levels of pollution (Elmustapha, Hoppe & Bressers, 2018, p. 347; Kapoor & Dwivedi, 2020: 1), the heavy reliance on fossil fuels as a depleting source of energy, and the growing implications of climate change which the world faces today (Elmustapha et al., 2018, p. 347; Hamilton & Terblanche-Smit, 2018, p. 1). The presence of these challenges has led to a more significant cause for concern capturing global attention, thus driving efforts towards negating harmful environmental practices (Kapoor & Dwivedi, 2020, p. 1). Green technology has been introduced as a sustainable, innovative solution aimed at eliminating the adverse environmental effects by having the ability to reduce carbon emissions and fossil fuel dependency (Rezvani, Jansson & Bodin, 2015, p. 122; Elmustapha et al., 2018, p. 347).

The rising global concern is illustrated through the 2015 Paris Agreement consisting of 195 countries expressing their support to reduce carbon emissions and energy usage levels

(Elmustapha et al., 2018, p. 347, GreenCape, 2019, p. 3). The transport industry worldwide experiences high levels of criticism; considering that 15% of global carbon emissions are attributed to road transport (Rezvani et al., 2015, p. 122; GreenCape, 2019, p. 3). Subsequently, traffic contributes 25% of particulate matter that reduces air quality, thus impacting individual health (Hung, Chang & Shaw, 2019: 566). Furthermore, Demeulenaere (2019, p. 1) identifies transport as having the highest potential for energy-efficient improvements considering that one of the main contributors of CO2 emissions has been determined to be light-duty vehicles, of which the majority are privately owned (Rezvani et al., 2015, p. 122). Using electric cars is a good way to achieve the Paris Agreement's goals (Rezvani et al., 2015, p. 122). US, UK, and China have introduced policies to encourage electric vehicle production, market entry, and adoption (Rezvani et al., 2015, p. 122). Elmustapha et al. (2018) argue that policy interventions are irrelevant unless consumers adopt green technology. Electronic vehicle mass adoption is highly dependent on consumer perception, so it's important to understand factors that increase purchase intent (Rezvani et al., 2015, p. 122). Sarkar, Sarkar, and Yadav (2019) and Kapoor and Dwivedi (2019) highlight the importance of studying behavioral intent to purchase (2020). Multiple countries agreeing to lower emissions and energy use have solidified the global hybrid and electric vehicle industry (MarketLine, 2019, p. 7; GreenCape, 2019: 3).Currently, the market share, as reported by Market Line (2019:12) consists of Asia (56.9%), Europe (22.7%), the US (18.9%), the Middle East (0.4%) and all remaining countries (1.0%). It demonstrates why existing studies are mainly situated in the US, the UK, China and the Middle East.

Limited studies are conducted in Africa because only two major countries have adopted electric vehicles, South Africa and Nigeria (MarketLine, 2019, p. 7). These studies have mainly focused on affordability, with Ayetor, Quansah and Adje (2020:1) conducting a study in Ghana investigating the cost-saving benefit of electric vehicles, and Pillay, Brent and Musango (2019:1) determining affordability to be a critical barrier towards electric vehicle adoption in South Africa. The electric vehicle market in South Africa is in its infancy compared to other international markets, and the growth in sales has also been slow (Moeletsi, 2019). Hence, researchers have called for further research on determinants of pro-environmental buying behavior, which may influence consumers to purchase electric vehicles (Sefora, 2017; Peiro-Signes & Segarra-Ona, 2018; Moeletsi, 2019; Gohoungodji, N'Dri, Latulippe & Matos, 2020). Thus, identifying factors that may influence consumers positively toward purchasing electric vehicles that are considered to be environmentally friendly is yet to be investigated.

The study aims to investigate factors influencing purchase intention to contribute to the existing knowledge gap, with findings assisting marketing strategies to influence the adoption of plug-in hybrid electric vehicles (PHEVs). Applying the Theory of consumption values (TCV) by Sheth, Newman and Gross (1991) would be beneficial to this study as the Theory is known to help identify and understand the essential attributes of consumption. The TCV offers a collection of consumption values that can influence decision-making (Sheth et al., 1991). This study will investigate these values, including functional, social, emotional, conditional and epistemic values, to find out how each element influences the customers' purchase intention towards PHEVs in the South African context.

The empirical objectives are:

1. To understand the role that functional and social values play in consumers' behavioral intention towards the purchase of PHEVs
2. To determine how conditional and emotional values have an impact on consumers' behavioral intention to adopt PHEVs
3. To ascertain how epistemic values influence consumers' behavioral intentions to purchase

PHEVs

Theoretical Background. Created by Sheth et al. in 1991, the Theory of consumption values (TCV) has been used in some studies to explain why individuals choose to purchase or not and why they choose certain products or brands over others. The TCV is built upon three fundamental propositions, suggesting that consumption values are considered independent consumption values that contribute to any choice decision individual's choice results from many consumption values (Sheth et al., 1991, p. 160). Using the five consumption values, namely, functional, social, emotional, conditional and epistemic, the TCV was deemed the most appropriate for meeting the research objectives of determining what motivates South African public choices in terms of their intentions to purchase PHEVs (Sheth et al., 1991).

This Theory has been previously used to examine the antecedents and predictors of green purchasing behavior (Awuni & Du, 2016; Gonçalves et al., 2016). Other studies employed TCV to determine environmental concerns about green product purchases (Rahnama & Rajabpour, 2017; Suki, 2016). Additionally, the Theory has been applied to consumers' choice behavior in green products and has examined the impact of the five consumption values on drivers' willingness to acquire biofuels (Khan & Mohsin, 2017; Zailani et al., 2019). Each of the values will now be discussed in turn.

Functional value. Market choice has traditionally been regarded as being influenced primarily by functional value. According to Sheth et al. (1991a, 1991b), functional value is derived from the perceived utility of the object in the choice situation. Generally, it relates to performance, price, durability and reliability. A study in China found that functional values were a vital determinant of consumers' buying behavior in seeking maximum benefits at the lowest cost (Awuni & Du, 2016, p. 124). The literature describes functional values in terms of quality, price and dependability (Khan & Mohsin, 2017). Wang et al. (2019) concur, noting that functional values regarding quality and price were used to predict green buying behavior. Studies in Australia (Singh & Pandey, 2018), Malaysia (Zailani et al., 2019) and India (Biswas & Roy, 2015) found that functional values influenced sustainable consumption behavior. Furthermore, Han et al. (2017) report that when consumers adopted environmentally friendly cars, the rewards included performance, convenience, and monetary value. Regarding behavioral intention, functional values derived from using PHEVs have perceived functional benefits, price and quality.

Social value. Many market choices are also influenced by social value, which attaches to a product from its association with social groups. Market choices such as product type, brand choices and purchase decisions are influenced by social value. Consumers perceive that various product classes are either congruent or incongruent with the norms of the reference groups to which they belong or aspire (Sheth et al., 1991a). A study conducted in Portugal found that social value is concerned with improving self-image and gaining societal approval, both of which influence sustainable consumption behavior (Gonçalves et al., 2016). In Pakistan, Khan and Mohsin (2017) pointed out that social values positively and significantly affect an individual's behavior. Studies in China (Clark et al., 2019) and New Zealand (Johnstone & Hooper, 2016) found that social values affected consumers' behavioral intentions to consume green products. Han et al. (2017) posit that consumers are inclined to adopt environmentally friendly vehicles as such action fulfills their social obligation to help decrease CO_2 emissions. Regarding behavioral intention, social values include social perceptions of utility acquired from using PHEVs.

Conditional value. According to Sheth (1991), the conditional value is the perceived utility acquired due to the specific situation or the context faced by the choice maker. Thus, conditional value often influences the decision-maker to deviate from their typical or planned pattern of behavior. The literature suggests that changes in conditional values (e.g., time, context, place,

personal situation) can alter consumer behavior (Kushwah et al., 2019). A study in Malaysia supported this finding, with consumption behavior significantly influenced by conditional values (Zailani et al., 2019).

Similarly, some researchers found that green consumer behavior was indeed influenced by conditional values, as changes in specific conditions affected green product purchases (Khan & Mohsin, 2017). Studies in India (Biswas & Roy, 2015) and Malaysia (Wen & Noor, 2015) found that conditional values influenced consumers' behavioral intentions toward adopting environmentally friendly products. As Awuni & Du (2016) posit, information about global warming or environmental concerns can sway consumer behavior toward adopting sustainable products. Regarding behavioral intention, conditional values encompass the perceived situational utility obtained from using PHEVs.

Emotional value. Many products are associated with or facilitate the arousal of specific emotions or feelings. Emotional value relates to the individuals' affective response to the product (Sheth et al., 1991a, 1991b). Studies in Malaysia (Abdulrazak & Quoquab, 2018) and Hong Kong (Lee, 2017) found that emotional values influenced consumers' intentions to live conscious and sustainable lifestyles. Han et al. (2017) explainthat comfort, ease of driving and pleasure are among the psychological needs fulfilled when purchasing EVs. Han et al. (2017) also found that environmentally conscious consumers demonstrated a notable willingness to decrease their CO2 footprint and derived emotional value from adopting EVs. Regarding behavioral intention, emotional values represent the perceived emotional benefits obtained from using PHEVs.

Epistemic value. Epistemic value is a need to obtain a product to satisfy curiosity, novelty or knowledge seeking (Sheth et al., 1991). The literature suggests that novelty-seeking improves consumers' problem-solving skills, essential for stimulating their willingness to test new products (Awuni & Du, 2016; Zailani et al., 2019). A study in Portugal found that green product purchases are influenced by an individual's epistemic values (Gonçalves et al., 2016), while in China, Wang et al. (2019), in Iran, Rahnama and Rajabpour (2017) and Malaysia, Suki (2016) found that epistemic values affected green consumption behavior. As Kushwah et al. (2019: 4) explain, consumers seek information related to credibility, production methods, and the environmental impact of a product and service prior to deciding on whether or not to make a purchase. Regarding behavioral intention, epistemic values encompass perceived utility relating to the knowledge and novelty obtained from using PHEVs.

Considering that the five consumption values of the TCV have been proven to predict behavioral intention toward green products, the following hypotheses are formulated:

H1: Functional values will have a significant and positive impact on consumers' behavioral intentions in relation to the adoption of PHEVs.

H2: Social values will have a significant and positive impact on consumers' behavioral intentions in relation to the adoption of PHEVs.

H3: Conditional values will have a significant and positive impact on consumers' behavioral intentions in relation to the adoption of PHEVs.

H4: Emotional values will have a significant and positive impact on consumers' behavioral intentions in relation to the adoption of PHEVs.

H5: Epistemic values will have a significant and positive impact on consumers' behavioral intentions in relation to the adoption of PHEVs.

Based on the description above, the authors chose the study's title, "Determinants of Consumers' Purchase Intentions of Electronic Vehicles".

METHOD

Considering that hypotheses had to be tested, quantitative data were collected using online survey questionnaires. The study's target population consisted of consumers, 18 to 65 years old, at various levels of education and earning varied income levels. The study was conducted in the Gauteng province of South Africa. The guidelines given by Hair et al. (2019) have been followed to determine the sample size. Of the 350 questionnaires disseminated, only 286 responses were valid and completed in full. This research used a non-probability sampling design. The sampling technique followed was convenience and snowball sampling. The questionnaire was distributed to the respondents who were convenient to be reached, given the limited access to respondents owing to restrictions imposed in light of the COVID-19 pandemic. Some respondents who participated in the study were asked to invite others to participate.

Data collection. Self-administered online questionnaires were used to gather data from a sample within the target population. The questionnaires were presented on Google Forms and used a five-point Likert scale. Items and statements relating to the construct were introduced, and respondents were required to select, from the scale, whether they strongly disagree, disagree, neutral, agree and strongly agree with each item (Wiid & Diggines, 2017). Scales from previous studies were adapted to measure the constructs in this study. The following sources were used: functional value (Biswas & Roy, 2015); social value (Lorek & Fuchs, 2013); emotional value (Suki & Suki, 2015); conditional value (Lin & Huang, 2012); epistemic value (Sheth et al., 1991) and behavioral intention (Wu & Chen, 2014).

Statistical methods. The partial least square (PLS) structural equation modeling technique with the SmartPLS version 3.2.7 software was used to test the proposed study model (Hair, Risher, Sarstedt & Ringle, 2019). Further, bootstrapping function (5000 resample) was applied to assess the significance level of the path and has been adopted by previous studies (Agu, Kalu, Esi-Ubani & Agu, 2021). For convergent validity, the average variance extracted (AVE) method was adopted, while the Fornell and Larcker (1981) method and the heterotrait-monotrait ratio of correlations (HTMT) (Hair et al., 2019; Henseler, Ringle & Sarstedt, 2015) were used to assess discriminant validity. The Cronbach's alpha and the composite reliability were adopted as measures of reliability based on the set minimum threshold of ≥0.60 (Cronbach's alpha) and ≥0.70 (Bagozzi & Yi, 1988) for composite reliability. Multicollinearity was assessed using the variance inflation factor (VIF), and values should be below 5 (Hair et al., 2019).

RESULTS AND DISCUSSION

Profile of respondents. The demographic profile for this study included the gender, education level and income level of the respondents. The sample comprised 286 respondents and had a higher number of females (52.8%) than male respondents (47.2%). Concerning education levels, 40.1% of the respondents had a bachelor's degree, followed by those who completed Grade 12 (21.0%), those who had a post-matric certificate or diploma (19.6%), those who had a postgraduate degree (18.3%), and those who did not progress to Grade 12 (1.0%). Additionally, 15.1% of the respondents indicated that they had no form of monthly income, 27.2% earned less than R10 000, 19.1% between R10 001 and R20 000, 20.5% between R20 001 and R35 000, 10.5% made R50 001 or more, and 7.6% made R35 001 to R50 000. Income levels were based on the South African rand (ZAR).

Measurement model. The validity of the constructs was examined using factor loadings and average variance extracted (AVE) for convergent validity. While the reliability of the constructs was examined using Cronbach's alpha and composite reliability. In table 1, apart from four items (FV1, FV2 and FV3) that had weak factor loadings, others loaded strongly with values ranging from 0.704 to 0.893. SEM VIF from 1.231 to 2.057 was within the acceptance threshold. Also,
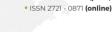
Cronbach's alpha values ranged from 0.721 to 0.830, and composite reliability from 0.812 to 0.888. All values were within the acceptable ranges for both internal consistency reliability methods and established reliability for each latent variable. AVE values ranged from 0.543 to 0.666. The results support the convergent validity since all values exceeded the 0.50 threshold (Hair et al., 2019).

Table 1. Test of reliability and convergent validity

Construct	Item	Factor loading	VIF	Cronbach's alpha	Composite reliability	Average variance extracted
Functional value			1.231	0.764	0.812	0.591
	FV4	0.785				
	FV5	0.717				
	FV6	0.802				
Social value			1.386	0.721	0.826	0.543
	SV1	0.762				
	SV2	0.704				
	SV3	0.745				
	SV4	0.736				
Conditional value			2.057	0.759	0.846	0.580
	CV1	0.743				
	CV3	0.822				
	CV4	0.736				
	CV5	0.741				
Emotional value			1.957	0.817	0.880	0.647
	EMV1	0.748				
	EMV2	0.779				
	EMV3	0.853				
	EMV4	0.834				
Epistemic value			1.681	0.775	0.856	0.598
	EV1	0.782				
	EV2	0.802				
	EV3	0.781				
	EV4	0.725				
Behavioral intention			-	0.830	0.888	0.666
	BI1	0.756				
	BI2	0.893				
	BI3	0.752				
	BI4	0.853				

Source: Data Processed by Author

Tables 2 and 3 show the checked discriminant validity results, following the Fornell and Larcker (1981) method. In light of this, the squared inter-construct correlation (as a measure of shared variance) of each construct and all other reflectively measured constructs in the structural model was compared to each construct's AVE (Hair et al., 2019).To be accepted, the square root of each construct's AVE should have a more excellent value than the correlations with other latent constructs (Hair, Black, Babin & Anderson, 2014), and the shared variance for all model constructs should not be larger than their AVEs. As indicated in table 2, discriminant validity is obtained as

the results are consistent with expectations. To further validate the results, the HTMT was applied in table 3, being a superior alternative (Hair et al., 2019; Henseler et al., 2015). In line with Gold, Malhotra and Segars (2001) recommendation that the HTMT values must be around 0.90 to establish discriminant validity using this criterion, the HTMT test indicates a maximum value of 0.816, which is well below 0.90. Therefore, these values suggest that adequate discriminant validity has been established.

Table 2. Fornell and Larcker criterion for discriminant validity

		1	2	3	4	5	6
1	Behavioral intention	**0.816**					
2	Conditional value	0.616	**0.761**				
3	Emotional value	0.603	0.628	**0.804**			
4	Epistemic value	0.417	0.595	0.542	**0.773**		
5	Social value	0.537	0.393	0.453	0.239	**0.737**	
6	Functional value	0.421	0.348	0.303	0.231	0.371	**0.769**

Source: Data Processed by Author

Table 3. HTMT criterion for discriminant validity

		1	2	3	4	5	6
1	Behavioral intention						
2	Conditional value	0.765					
3	Emotional value	0.729	0.791				
4	Epistemic value	0.514	0.771	0.685			
5	Social value	0.691	0.509	0.573	0.320		
6	Functional value	0.547	0.450	0.392	0.384	0.554	

Source: Data Processed by Author

Assessment of the structural model. Figure 1 presents the R^2 value for the structural model. The model explains a 53.6% variance in sustainable consumption intention among the students ($R^2 = 0.536$). For consumer behavior studies, values of 0.20 are considered high. Henseler et al. (2015) indicate that values of 0.67, 0.33 and 0.19 are considered substantial, moderate and weak values. Table 4 summarises the structural model path coefficients, t-values, p-values and the hypotheses proposed in this study.
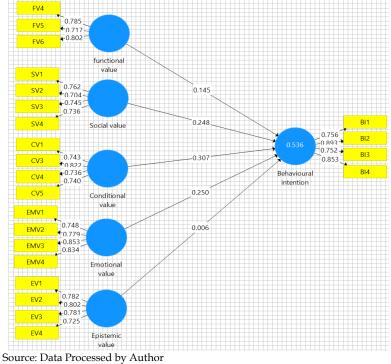
Source: Data Processed by Author

Figure 1. Structural model with path coefficients and R^2 value

Table 4. Summary of structural model analysis

		Path coefficient	T-statistics	P-values	Results
H1	Functional value -> Behavioural intention	0.145	4.585	0.000	Supported
H2	Social value -> Behavioural intention	0.248	5.992	0.000	Supported
H3	Conditional value -> Behavioural intention	0.307	6.291	0.000	Supported
H4	Emotional value -> Behavioural intention	0.250	5.231	0.000	Supported
H5	Epistemic value -> Behavioural intention	0.006	0.141	0.888	Not supported

Source: Data Processed by Author

The results presented in table 4 suggest that four of the five structural relationships showed significance and were supported. The results indicate that functional ($\beta=0.145$; p-value<0.05), social values ($\beta=0.248$; p-value<0.05), conditional values ($\beta=0.307$; p-value<0.05) and emotional values ($\beta=0.250$; p-value<0.05) were all significant in consumers' intentions towards purchasing electric vehicles. However, epistemic values ($\beta=-0.006$; p-value>0.05) were found to be non-significant in consumers' intentions toward purchasing electric vehicles in South Africa.

A positive-value and a significant p-value are necessary to accept or support the study's hypotheses to test them. Thus, the hypotheses were supported due to their positive and significant relationships with behavioral intention, functional value, social value, conditional value and emotional value. However, the epistemic value was not supported because of the non-significant relationships with behavioral intentions.

The main aim of this study was to identify the critical determinants of purchase intentions of electric vehicles from the South African consumer's perspective. This study contributes to the existing literature by examining pro-environmental behavioral intention using the TCV. After applying the partial least square (PLS) structural equation modeling analysis, the results revealed that the functional, social, conditional and emotional values were positively related to PHEV

behavioral (purchase) intention. In contrast, the epistemic values were found to be negatively related to it. These results are discussed below, alongside implications for South African consumers. Also, strategies are proposed for managers of outlets selling electric or environmentally friendly vehicles to target this market based on the findings.

The results showed a significant influence of functional value on consumers' behavioral intentions to purchase electric vehicles within a South African context. Therefore, H1 was supported. It is congruent with studies conducted in Malaysia (Zailani et al., 2019), Australia (Singh & Pandey, 2018) and India (Biswas & Roy, 2015), which found that sustainable consumption behavior was driven by functional values, which suggests that functional values (price, quality, durability and reliability of the PHEVs) did not significantly influence consumers' behavioral intentions to adopt these cars. Marketers need to consider this when they come up with pricing strategies, as consumers consider this value an essential inducement.

For social value, the results confirmed that this value significantly influenced consumers' behavioral intentions to purchase electric vehicles, therefore supporting H2. This result is congruent with a study conducted in Taiwan, which identified social values and image effects on behavioral intention (Horng et al., 2018). It implies that social values (e.g., improved self-image, societal approval, social obligation/pressure to reduce CO_2 emissions) influenced South African consumers towards adopting PHEVs. Furthermore, the marketing managers of electric vehicles will need to invest more in strategies utilizing social values as it was found to have a strongest relationship with behavioral intention. It can be done by implementing a social media campaign whereby images and videos contain messages about societal obligations and pressures to reduce CO_2 emissions by purchasing PHEVs.

The results also showed the positive effect of conditional value on consumers' behavioral intentions toward purchasing electric vehicles, therefore supporting H3. Conditional value (β = 0.307) contributed most significantly to behavioral intention formation. This result supports the findings of studies conducted in India (Biswas & Roy, 2015), Malaysia (Wen & Noor, 2015) and Pakistan (Khan & Mohsin, 2017), which found a significant relationship between conditional values and consumers' behavioral intentions towards adopting environmentally friendly products. Marketers can note that South African consumers are influenced by conditional values such as global warming, as well as subsidies or discounts on PHEVs. Additionally, the South African government can offer subsidies or tax exclusions on electric vehicles, more especially PHEVs, to make them more affordable to consumers and entice them to purchase electric vehicles. According to The Korea Herald (2020), countries such as South Korea and China have implemented a subsidy scheme and tax concessions for environmentally friendly vehicles, which has increased the purchase of such vehicles in their countries. Therefore, implementing these subsidies and tax deductions may have the same impact in South Africa.

The results further confirmed that emotional value significantly influenced behavioral intentions to purchase electric vehicles, thereby supporting H4. It aligns with the findings of Wang et al. (2019), who found that consumers were willing to purchase higher-priced items if their friends owned the same, giving them an emotional sense of belonging. For marketers, this indicates that consumers would be influenced to purchase PHEVs if their emotional values were stimulated (e.g., psychological needs, morals and the sense of being a better person based on their green consumption). Marketers can highlight visual advertisements at exhibitions and events and utilize educational campaigns to evoke emotional responses or feelings from consumers. Participating in these events and exhibitions may also arouse positive feelings of contributing toward sustainable efforts among consumers.

For epistemic value, the results had a negative effect on behavioral intentions to purchase

electric vehicles. Therefore, H5 was not supported. Awuni and Du (2016) found that epistemic value was not significant in influencing intentions to purchase green products in China, which supports the results obtained in this study. Epistemic values such as curiosity and a yearning for knowledge about PHEVs did not significantly influence consumers' behavioral intentions to adopt these cars within a South African context.

Overall, this study contributes to the Theory by consolidating the use of the Theory of consumption values to explain the factors influencing the intention to purchase electric vehicles. Understanding consumers' functional, social, conditional, emotional and epistemic values regarding the intention to purchase PHEVs provided valuable insights that contributed to the existing literature on consumer behavior and green marketing. With this knowledge, marketing managers are better able to define and improve customer acquisition strategies (e.g., to segment consumers based on the combinations of consumption values and to develop a communication strategy emphasizing, for example, contribution to a green environment and less air pollution) and to develop product offerings that best meet the consumer's needs.

CONCLUSIONS

This study applied the TCV factors in understanding the determinants of PHEV purchase (behavior) intention in Gauteng, South Africa. The proposed model found that the sum of the factors explained 53.6% of the variation in behavioral intention to buy PHEVs. Although the findings of this study present essential insights for electric vehicle dealerships and marketing managers, it certainly has limitations. As a result of the COVID-19 pandemic, convenience sampling was used, with the researcher mailing questionnaires to respondents online. It restricted the possibility of doing physical convenience sampling in public areas in Gauteng.

It is recommended that future researchers utilize quota sampling to represent the population accurately. Since this study was conducted in Gauteng, it would be beneficial for future studies to consider gathering responses from individuals throughout South Africa to reflect the overall behavioral intentions of consumers more accurately. Additionally, most of the responses were completed using mobile devices, which meant that the researcher could not fully explain the questionnaire to respondents, causing some to need clarification on specific questions or what was required of them. An environment that allows the researcher to engage with the respondents, and provide clarification where required, is recommended for future studies.

In conclusion, the research empirically linked and highlighted functional, social, conditional, emotional and epistemic values' effects on the respondents' behavioral intentions to purchase electric vehicles. The empirical findings positively supported the hypotheses that functional, social, conditional and emotional values significantly influenced their behavioral intentions in this regard, while the hypotheses stating the influence of epistemic values on behavioral intention proved not to be significant. Practical implications were identified, and strategies for management were proposed to support the adoption of electric vehicles.

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