



Consumers' Sustainable Choice between Gas and Electric Scooter

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Aims: To investigate consumers' sustainable choice behavior between gas and electric scooters, as predicted by consumers' felt responsibility for sustainability anchored on norm activation theory.
Study Design: Quantitative research approach using cross-sectional online survey design.
Place and Duration of Study: The data came from faculty employees of a state university in the Philippines between August to September 2020.
Methodology: 109 responses from faculty employees were analyzed. Hypotheses were tested for regression using Jamovi.
Conclusion: This study added empirical evidence on the applicability of consumers' felt responsibility for sustainability as a predictor of sustainable choice behavior and answered the call for more studies that would promote a better understanding of the concept of sustainable consumption. The findings provided important implications on how marketers and managers can promote pro-environmental products such as electric scooters and boost sustainable consumption among buyers in an identified community.

Keywords: Consumer felt responsibility; norm activation theory; sustainable marketing.

1. INTRODUCTION

The Philippines ranked 111th out of 180 in the Environmental Performance Index (EPI) air quality criteria, meaning only 38.3% of the countries were ranked below it in terms of quality air production [1]. Based on the 2018 Environmental Management Bureau annual report, the majority or 65% of air pollutants in the country were derived from mobile sources such as cars, motorcycles, trucks, and buses [2]. The Philippine electric vehicle industry has been working for the promotion of electric vehicles in the country to create a transportation landscape that is economically environment-friendly and ecologically sustainable [3]. However, there were challenges in terms of increasing the demand for electric vehicles in the Philippines. For example, Aguila pointed out that consumers are hesitant to patronize electric vehicles because of possible inconveniences like lack of infrastructure such as charging stations and unreliability of the product in terms of travel distance capacity [4]. In this study, tenets of marketing that would help increase patronage of electric scooters by private users were examined.

Businesses are said to have contributed a big chunk of liability in the sustainability predicament that the world is facing today [5]. Specifically, calls to rethink the tenets of marketing have been forwarded by several scholars, particularly on the role of marketers in encouraging unsustainable patterns of consumption [6]. Excessive and unsustainable consumption was mainly attributed by consumers to marketing and it was further found that consumers do not view themselves as a factor in environmental degradation [7]. Hence, a vigorous call to revisit the essentials of marketing to reconcile it with sustainability has emerged [8].

Sustainable consumption has been defined in different ways in the literature using different frameworks like “mindful consumption” anchored on transformative mindfulness [9], “environmental-friendly” consumption using the theory of consumption values [10], and “consumer social responsibility” adopting norm activation theory [11]. This paper looked into consumers’ sustainable consumption choices on the premise of consumer social responsibility. Consumers’ social responsibility pertains to consumers’ thoughtful and purposeful choices based on moral values [12].

The output of this study added empirical evidence on the applicability of consumers’ felt

responsibility for sustainability as a predictor of sustainable choice behavior. Managers and marketers can benefit from this study by looking at possible programs aiming to increase consumers’ felt responsibility for sustainability in furthering the goal of creating a truly sustainable society. Also, business schools may consider strengthening instructions on marketing strategies that truly promote sustainable consumption.

This study also aims to help promote sustainability marketing which according to Thomas [13], is concerned with the promotion of quality of life. Marketing sustainability is an opportunity for managers to not only manage relationships with customers and stakeholders but also address a wider perspective involving economic, environmental, and social aspects of the marketplace [14]. To create a sustainable society, marketing should not only be concerned with what is being produced and consumed but should also be concerned with the question of why and how it was produced and consumed [8]. In the Philippines, efforts to address the unsustainable patterns of consumption and production must be fortified since sustainability indicators reveal a considerable gap between policies passed and the environmental state the country is presently experiencing [15].

2. RELATED LITERATURE

The main aim of this study is to understand how one’s pro-social behavior like being socially and environmentally responsible, influences the choice of a more sustainable product despite the perceived trade-off in its performance. Hence, the main model utilized was the Norm Activation Theory (NAT). NAT explains how activators, personal norms, and behavior interact. This theory describes how a person constructs self-expectations regarding pro-social behavior called ‘personal norms’ which in turn, are manifested as feelings of moral obligation [16]. Schwartz’s found that activated personal norms influenced behavior more rather than behavioral intentions [16]. Factors like Awareness of Consequences and Ascription of Responsibility are considered as activators of the personal norm. Awareness of Consequences measures a person’s consciousness of the “negative consequence for others if a person does not act pro-socially” while the Ascription of Responsibility is the “feelings of responsibility for the negative consequences of not acting pro-socially” [17].

Under NAT, personal norms are a “moral obligation to perform or refrain from specific actions” and are used to predict pro-social behavior immediately [16]. Given the foregoing, Luchs and Miller operationalized Consumers’ Felt Responsibility for Sustainability (CFRS) as an activated personal norm and defined it as “consumer’s sense of responsibility or felt obligation to consume in ways that simultaneously promote their self-oriented values, and their pro-social and/or pro-environmental values” (p.256) [11]. In this study, a person’s norm in the context of CFRS is expected to predict consumers’ sustainable choice between gas and electric scooter. Since one’s personal norm is activated by one’s Awareness of Consequences and Ascription of Responsibility, it is expected that both will predict CFRS, meaning, when a person feels and becomes aware of the negative consequences of not driving an electric scooter, CFRS will be developed. Fig. 1 illustrates the framework of this study. The framework examined CFRS together with the identified antecedents of personal norm under NAT.

2.1 Consumers’ Felt Responsibility for Sustainability and Awareness of Consequences

Consumer responsibility characterizes a collection of concepts that expresses distinct classification of the involved population that can be used to cover conflicts that otherwise would hinder the transition to becoming a responsible consumer [18]. Further, consumer social responsibility is found to be influenced by multiple agents such as consumers, corporations, government bodies, consumer associations, and the media [19]. Luchs et al. proposed four dominant perspectives of

consumer responsibility – responsibility as cognition, as emotion, as a moral imperative, and as socio-culturally shaped [20]. Also, consumer social responsibility is manifested as expressed activity, purchasing or non-purchasing behavior, and expressed opinions in market research [12].

Considering previous studies and findings on consumer responsibility and its ability to present a shift from consumer-based sovereignty to a sustainable consumption-based model, it was suggested that consumer responsibility is a unique and different predictor of sustainable behavior [20]. It was also found that although CFRS was correlated with consumers’ attitudes towards consumers’ social responsibility, it is still independent of it [11]. Hence CFRS in this study is in the form of an activated norm that can predict pro-social behavior under the norm activation theory [11]. CFRS is conceived and operationalized as a moral imperative. Meaning, “one’s action can have a significant or unique casual impact on another’s welfare” [20].

Awareness of consequences (AC) was assumed as an antecedent of personal norm under the norm activation theory [21]. AC refers to a person’s tendency to be mindful of the magnitude of one’s behavior for others or other things one values [16]. Studies have established a positive effect of AC on personal norms. It was found that AC positively influenced employees’ norm on electricity saving behavior [22]. A positive effect was also established between AC and personal norm in choice of public pro-environmental public transportation [23]. In this study, Awareness of Consequences refers to the consciousness of the negative effects of driving a gas scooter, and it was hypothesized that: (H1) Awareness of Consequences positively influences Consumers’ Felt Responsibility for Sustainability.

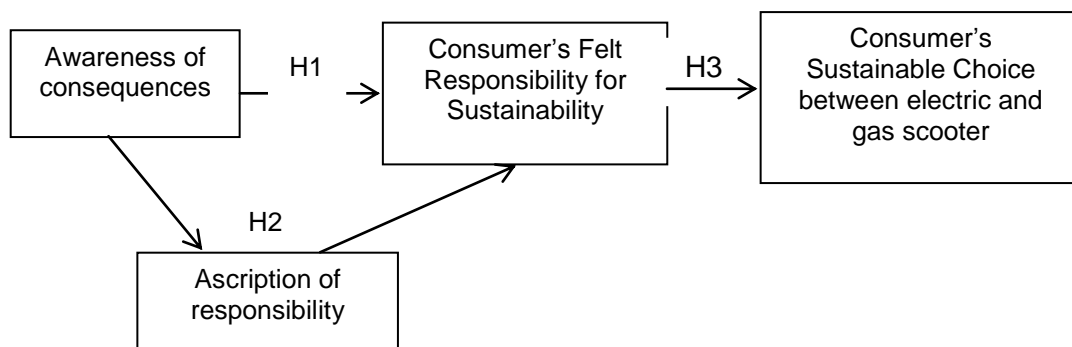


Fig. 1. Sustainable choice behavior between electric and gas scooters as predicted by CFRS

2.2 Mediating Effect of Ascription of Responsibility

Ascription of Responsibility (AR) also termed responsibility denial refers to feelings of responsibility for the negative consequence of not acting by one's expected behavior. This could result in the possible offsetting of feelings of obligation [16] to the negative consequence of using a gas scooter over an electric scooter. Some studies suggested a mediator model of the norm activation theory where the personal norm is assumed to mediate AR and sustainable behavior, and AR is assumed to mediate AC and personal norm [17]. Hence, the mediating effect of AR was also tested as it would promote a better understanding of how CFRS is activated, and in turn promoting sustainable choice behavior. A study found that AC positively influences AR in terms of employee electricity saving [22]. In a study on people's acceptance of energy policy, AC was found to influence AR [17]. In this study, Ascription of Responsibility was operationalized as the respondents' feeling of responsibility for the negative consequences of driving a gas scooter and it was posited that: (H2) Ascription of Responsibility mediates the relationship between Awareness of Consequences and Consumers' Felt Responsibility for Sustainability.

2.3 Sustainable Choice Behavior

Studies on pro-social behavior under norm activation theory used different constructs to measure pro-social behavior. Zhang et al. on measuring electricity saving behavior asked respondents the frequency of observing eight different electricity-saving behaviors of the firm [22]. He and Zhan on the adoption of the electric vehicle measured respondents' pro-environmental behavior through intention [21]. Geng et al. measured sustainable consumption behavior in terms of purchasing, use, and treatment and disposal practices [24]. Luchs et al. on examining product choice and the importance of aesthetic design given the emotion-laden trade-off between sustainability and functional performance measured sustainable choice by presenting respondents with scorecards of two products, one with superior sustainability rating (and average functional performance) and the other with superior functional performance (and average sustainability characteristics) [25].

In this study, Sustainable Choice was operationalized in terms of respondents' preference between electric and gas scooters given the functional performance trade-off of using electric scooters over gas scooters. Since this study aims to determine the likelihood that respondents will choose electric scooters over gas scooters, behavioral measures were adopted [20]. Respondents were presented with a two-product score card depicting electric and gas scooters. Further, respondents were asked to indicate the amount they are willing to pay for each product. Though the picture and color of the scooters presented were the same, the scorecard showed two different ratings on functional performance and sustainability. Gas scooters had higher functional performance but average sustainability rating while electric scooters had a higher sustainability rating but average performance to depict the trade-off if a gas scooter is chosen over an electric scooter and vice versa. Following these behavioral measures, respondents were asked to answer several measures about CFRS to predict consumer behavior. Therefore, it was hypothesized that: (H3) Consumers' Sustainable Choice between electric and gas scooter is associated with Consumers' Felt Responsibility for Sustainability.

2.4 Electric and Gas Scooter

In 2018, Motorcycle Development Program Participants Association, Inc. (MDPPA) reported a 21% (1,580,925 units) increase in motorcycle sales in the Philippines, and among the five market segments of motorcycle, the automatic transmission (AT) gas scooter segment got the highest sales growth of 48% (577,722 units) from 2017 [26]. The increase in sales of AT gas scooters is attributed to being the top choice among new riders and its user-friendly operation [26]. On one hand, the market for electric scooters has been rising in some countries. Electric vehicles have become encouraging sustainable solutions because of the promised efficiency in terms of energy consumption and tailpipe emission reduction [21]. The Philippine electric vehicle industry has been working for the promotion of electric vehicles in the country to create a transportation landscape that is economically environment-friendly and ecologically sustainable [3]. However, the electric scooter has its downside which included limited maximum speed, accelerating, and carrying capacities [27]. In this study, electric scooters as one form of eco-innovations are assumed to be

the choice of consumers with pro-environmental behavior despite it a lower product performance rating.

3. METHODOLOGY

A quantitative research approach using a cross-sectional online survey design was employed in this study since the survey is the most suitable method for getting individual beliefs and perceptions [28]. The population in this study was composed of faculty employees of the University of Eastern Philippines as it was observed that the primary means of private transportation used by the employees is a motorcycle. The selection of a specific place to administer this study was due to the findings that sustainable consumption behavior is positively influenced by place identity [10]. Further, a study conducted showed that utilizing valuable and rare resource-capability can give enterprises in the area a competitive advantage [29], and offering sustainable products, such as the electric scooter, may just be characterized as such. The university has 439 regular faculty members. Out of 250 questionnaires randomly sent to the messenger and/or email account of the target respondents, 109 responses were received. Table 1 shows the demographic profile

of the respondents in terms of sex, motorcycle ownership, age, and income.

The items used in the questionnaire were adapted from previous studies and were modified to fit in the context of this study (see Appendix). The sustainable choice was measured by asking respondents to choose between electric and gas scooters assuming that both have the same design and color but have different sustainability and performance rating following measures on product choice stimuli [25]. To ensure that respondents have a common understanding of a more sustainable product, they were asked to rate on a scale of 1 to 7 where 1 is definitely gas scooter and 7 is definitely electric scooter, which one is a more sustainable choice. A manipulation check was conducted to confirm if respondents rated electric scooters as the more sustainable product. CFRS was measured using the scale proposed by Luchs and Miller [11]. Items for the ascription of responsibility and awareness of consequences were adapted from Zhang et al. [22].

To ensure internal consistency, a scale reliability test was conducted. The results are provided in Table 2. The Cronbach alphas were all above the 0.7 recommended threshold value [30], suggesting internal consistency.

Table 1. Demographic attributes of respondents

Measure	Item	Count (N=109)	Percentage
Gender	Female	59	54.1%
	Male	50	45.9%
Motorcycle owner	Yes	75	68.8%
	No	34	31.2%
Age	M=33	SD=7.42	
Income	M=45,323	SD=21,983	

Table 2. Reliability analysis (N=109)

Latent variable	Cronbach's α	Item	α if item dropped
Consumers' Felt Responsibility to Sustainability (CFRS)	0.78	CFRS1	0.714
		CFRS2	0.705
		CFRS3	0.722
		CFRS4	0.708
		CFRS5	0.841
Awareness of Consequences (AC)	0.885	AC1	0.927
		AC2	0.829
		AC3	0.823
		AC4	0.819
Ascription of Responsibility (AR)	0.944	AR1	0.928
		AR2	0.935
		AR3	0.914
		AR4	0.930

4. RESULTS AND DISCUSSION

CFRS was examined from the data gathered from 109 participants. To check the strength of the relationship between variables, Spearman correlation was derived. After which, hypotheses were tested for regression using Jamovi, a neutral platform that provides free and open developments in statistical methodology [31]. Q-Q plots showed that all points lie on the straight line, suggesting normally distributed data. All models were tested for collinearity and the result revealed that no VIF value was above 4.0, suggesting no problem with multicollinearity [32].

The results presented in Table 3 indicate that age and income, CFRS and AC, CFRS and AR, and AC and AR are positively correlated.

4.1 Hypotheses Testing

To examine the influence of AC on CFRS, hypothesis 1 was tested and the data presented in table 4 (model 1) revealed that AC ($R= 0.425$, $F(107)= 23.5$, $P<.001$) explained 17.3% of the variance. AC also positively influenced CFRS ($\beta= 0.343$, $P<.001$), confirming hypothesis 1.

AR ($\beta= 0.241$, $P<.001$) was also found to have a positive significant influence on CFRS and when it was factored with AC ($\beta= 0.189$, $P=.02$), model 2 ($R= 0.522$, $F(106)= 19.8$, $P<.001$) showed that it is a better fit since it was able to explain 25.9% of the variance. The control variables age, income, sex, and scooter ownership did not have significant impacts. These results affirmed the study of Zhang et al. that AC and AR are positively related to activating employees' moral obligations such as saving electricity in the company [22]. The results suggest that the respondents' awareness of the negative consequences of using gas scooters resulted in the development of a moral obligation or a heightened feeling of responsibility towards

sustainability. In other words, respondents that are not aware of the negative consequences of driving a gas scooter would not likely develop a felt responsibility for sustainability.

To better comprehend the relationship between AC and CFRS, the mediation effect of AR was examined using Preacher and Hayes Bootstrapping method. Table 5 shows that the mediation estimates of indirect effect ($\beta=0.154$, $P<.001$) differs significantly from zero, indicating that there is a partial mediation [33] confirming hypothesis 2. AR partially mediates the influence of AC on CFRS. The result also revealed that AC increases AR and AR, in turn, increases CFRS.

This finding is consistent with the mediator effect model proposed by NAT and supported the findings of De Groot and Steg explaining that a mediator model means that a person will struggle to feel responsible for not acting pro-socially or will have difficulty pursuing sustainable action as an obligation if there is no awareness of the negative outcomes of an action or of not acting [17]. In the same manner, activating Consumers' Felt Responsibility for Sustainability will become challenging if one does not feel personally responsible for the problems or obligated to contribute to giving solutions as a result of not being aware of the negative consequences of choosing gas over an electric scooter.

Hypothesis 3 theorized that CFRS will determine consumers' choice for a more sustainable product. The manipulation check confirmed that, overall, respondents found electric scooters as the more sustainable product with a mean difference of 5, which is significantly higher than the midpoint 4 ($t(108)=23.6$, $P<.001$), where gas scooters having more superior performance rating was anchored at the lower end of the scale (1), and the electric scooter as the more sustainable product was anchored at the higher end of the scale (7).

Table 3. Spearman's correlation matrix (N=109)

	Age	Income	CFRS	AC	AR
Age (log)	-				
Income (log)	0.399	-			
CFRS	0.040	-0.082	-		
AC	0.010	-0.091	0.348	-	
AR	-0.129	-0.087	0.568	0.545	-

Bolded figure means P-value is <.001

Table 4. CFRS as dependent variable

	Model 1	Model 2	Model 3
Constant	3.94*** (0.433)	3.51*** (0.426)	3.58 (1.98)
AC	0.343*** (0.071)	0.189** (0.079)	0.187** (0.081)
AR		0.241*** (0.066)	0.25*** (0.068)
Age (log)			0.438 (0.383)
Income (log)			-0.15 (0.383)
Sex (M-F)			0.028 (0.147)
Ownership (Y-N)			-0.159 (0.16)
R ²	0.18	0.272	0.288
Adjusted R ²	0.173	0.259	0.246
No. of observations	109		

Standard errors were reported in the parenthesis. **, *** indicate significance at 95% and 99% level, respectively.

Table 5. Mediation estimate of AR on AC and CFRS

Effect	Label	B	SE	p	% Mediation	Interpretation
Indirect	AC-AR x AR-CFRS	0.154	0.052	<0.001	44.9	partial
Direct	AC-CFRS	0.189	0.084	<0.011	55.1	
Total	CFRS+Indirect	0.343	0.075	0.024	100	

Table 6. Logistic regression analysis of consumers' sustainable choice behavior between electric and gas scooter

Predictor	Model 1	Odds Ratio e^β	Model 2	Odds Ratio e^β
Intercept	5.4*** (1.62)	-	29.3*** (7.94)	-
CFRS	-1.01*** (0.272)	0.365	-1.26*** (0.32)	0.284
Age (log)			3.11** (1.43)	0.907
Income (log)			-3.16*** (0.826)	0.043
Sex (M-F)			0.232 (0.497)	1.26
Ownership (Y-N)			0.226 (0.559)	1.25
X ²	16.1		37.2	
R ² _{CS}	0.138		0.289	
R ² _N	0.189		0.397	

Estimates represent the log odds of gas vs. electric. **, *** indicate significance at 95% and 99% level, respectively

A two-predictor logistic model was fitted to the data to test the likelihood that respondents would choose an electric scooter over a gas scooter. The logistic regression analysis was carried out

with an electric scooter as a reference level. The results are presented in Table 6. The data set consisted of 70 (64.2%) respondents choosing electric scooters and 39 (35.8%) choosing gas

scooters. The odds of respondents choosing gas scooters in reference to the electric scooter was negatively related to CFRS ($\beta=-1.01$, $P<.001$). For one unit increase in CFRS, a 1.01 decrease in the log of odds of choosing a gas scooter can be expected while holding other variables at constant. In other words, the higher the CFRS mean score, the less likely respondent will choose gas scooter and the more likely it will choose electric scooter. These results confirmed hypothesis 3 and supported the findings that CFRS predicts product choice and that increase in CFRS also increases the likelihood of choosing electric scooters being the more sustainable product [20].

The control variables sex and scooter ownership did not have significant impacts. However, age ($\beta=3.11$, $P=.03$) and income ($\beta=-3.16$, $P<.001$) appear to significantly influence respondents' final choice with older respondents preferring gas and younger respondents going for the electric scooter. On the other hand, lower income increases the odds of respondents selecting gas scooters whereas those with higher income had better flexibility to freely choose between the two.

The prediction accuracy of choice between electric and gas scooters is presented in table 7. The result on prediction accuracy of those that choose electric scooters was high (87.1%) while the prediction accuracy of those that choose gas scooters was relatively lower (64.1%). The result implied that the model is more accurate in predicting choice for the electric scooter.

Table 7. Prediction accuracy of respondents' choice between electric and gas scooter

Observed	Electric	Gas	% Correct
Electric	61	9	87.1
Gas	14	25	64.1

cut-off value is at 0.5

5. CONCLUSION

This study helped promote understanding of Consumers' Felt Responsibility for Sustainability as a predictor of consumers' sustainable choice in terms of their preference between electric and gas scooters. In summary, the results revealed that consumers' sustainable choice is associated with CFRS. Meaning, the more the respondents feel responsible for sustainability, the more likely that an electric scooter will be chosen despite the possible inconvenience associated with the

relatively lower performance rating of the product.

Among the control variables, age was found to be an influencing factor in their decision to choose a more sustainable option. Younger respondents showed more willingness to adopt an electric scooter compared to older respondents. Generational context and history of exposure to other forms of innovation or technology may help to explain the difference in willingness to try something outside of their current norm. In terms of income, the results revealed that consumers with higher income tend to choose electric scooters. This means that the fewer the income restrictions, the more likely the consumer will act on their CFRS to choose electric over a gas scooter.

The study also revealed that personal norms in the context of CFRS can be enhanced by increasing awareness of the negative consequences of not choosing the sustainable option. The positive influence of AC on CFRS was affirmed. Hence, a person's awareness of the negative consequences of driving a gas scooter can result in the development of a moral obligation or felt responsibility to consume sustainably, i.e., choosing an electric scooter. Further, it was found that the effect of AC on CFRS was partially mediated by the Ascription of Responsibility, which aligns with the mediator model of NAT. This implied that respondents' awareness of the negative consequences of driving a gas over an electric scooter resulted in generating feelings of joint responsibility for the negative outcome [21]. Based on these findings, when a consumer has a high awareness of the negative consequences of an option, a higher ascription of responsibility is reinforced, and in turn creates a higher feeling of responsibility for sustainability, which ultimately leads to making a sustainable choice.

This research may serve as a pilot study on how marketers can boost sustainable consumption among buyers. It is recommended that scholars and marketers should focus on how to strongly promote consumers' sense of responsibility to facilitate a more sustainable product choice. The approach of developing consumer responsibility can be an effective means of promoting sustainable consumption as opposed to targeting attitude transformation [11].

Promoting sustainable choices among consumers has vital implications for firms as it

adds value in the form of a good reputation. Sustainability is a mainstream issue globally at present. Most particularly, the business trend in the transportation sector is towards meeting sustainable goals of addressing climate change and capitalizing on low-carbon development. The electric scooter is an innovative product that is therefore worth investing in and promoting. Manufacturers of eco-friendly technology and the government should continue to work closely in investing and in developing technology and infrastructures, e.g., electric charging stations, etc., that will further help ease the adoption of sustainable products on top of creating a culture of high CFRS. In addition, promoting electric scooters as a cheaper option in terms of long-run maintenance costs will make them more attractive to those who are on the lower end of the income spectrum.

To encourage the use of electric scooters, marketers should give attention to generating felt responsibility for sustainability by educating and promoting awareness of the negative consequences of choosing gas over electric scooters, thereby developing joint feelings of responsibility for sustainability. This means informing people that purchasing electric scooters will reduce the pollution experienced by the community and in turn, will lead to preventing health issues such as weaker lungs among community members. Further study on sustainable consumption behavior can look into the effect of other factors (e.g. price, feelings, and attitude) that may influence sustainable choice in purchasing products like an electric scooter. Considering also that personal norm like CFRS differs depending on the strength of collectivism of a place [22], it is recommended that the study be conducted in different regions. A study that would address how marketers, managers, and the government can generate and develop peoples' sense of responsibility will greatly impact the field of sustainability marketing.

One of the limitations of this research is the administration of non-probability sampling since data were from faculty members who voluntarily answered the questionnaire. Future studies should address this bias by employing random probability sampling to ensure that responses come from those with high and low CFRS scores. The study was conducted in an academic community where the motorcycle is a prevalent mode of transportation. Therefore, it is recommended that further study should consider

a different sample considering that respondents in this study were assumed to possess high to average environmental and sustainability awareness and at least minimum knowledge of electric scooters. Another limitation is that respondents are mixed owners and non-owners of gas scooters. Further study may look into the willingness of gas scooter owners to shift to an electric scooter.

Considering that the results reveal a need to understand how marketers can overcome the roadblock for older people to adopt new more eco-friendly technology to fully maximize the adoption of electric scooters, it is recommended that a study on this area be looked into. Finally, since the focus of this study is on the awareness of negative consequences of not consuming sustainably, a study that will look into the reverse – the effects of building awareness of the positive benefits versus the negative consequences brought about to consumer's awareness can give new insight for marketers in terms of promoting sustainable products and will test the limits of norm activation theory.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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APPENDIX

Survey Instrument

Code	Questions	Source																								
Sustainable Choice	<p>Imagine that you are in the process of choosing between the two scooters below. Assume that both have the same color and external design. Please pay carefully to the information given about each scooter. Kindly select by checking the scooter you would be most likely to purchase.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <table border="1" style="margin: 0 auto;"> <thead> <tr> <th colspan="2">Electric Scooter</th> </tr> <tr> <th colspan="2">Sustainability Rating</th> </tr> </thead> <tbody> <tr> <td>Environmental</td> <td>7</td> </tr> <tr> <td>Social</td> <td>7</td> </tr> <tr> <td>Economic</td> <td>7</td> </tr> <tr> <td>Product Performance Rating</td> <td>5</td> </tr> </tbody> </table> </div> <div style="text-align: center;">  <table border="1" style="margin: 0 auto;"> <thead> <tr> <th colspan="2">Gas Scooter</th> </tr> <tr> <th colspan="2">Sustainability Rating</th> </tr> </thead> <tbody> <tr> <td>Environmental</td> <td>5</td> </tr> <tr> <td>Social</td> <td>5</td> </tr> <tr> <td>Economic</td> <td>5</td> </tr> <tr> <td>Product Performance Rating</td> <td>7</td> </tr> </tbody> </table> </div> </div>	Electric Scooter		Sustainability Rating		Environmental	7	Social	7	Economic	7	Product Performance Rating	5	Gas Scooter		Sustainability Rating		Environmental	5	Social	5	Economic	5	Product Performance Rating	7	Luchs et al. (2012) [25]
Electric Scooter																										
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Environmental	5																									
Social	5																									
Economic	5																									
Product Performance Rating	7																									
Consumer Felt Responsibility to Sustainability	<ol style="list-style-type: none"> 1. I feel obligated to try to implement sustainable practices where appropriate. 2. It's up to me to bring about improvements in sustainability. 3. I feel obligated to challenge or change the way sustainability-related practices have been conducted. 4. I feel a personal sense of responsibility to be more sustainable in my product choices. 5. Correcting sustainability-related problems is not really a responsibility. 	Luchs & Miller (2015) [11]																								
Awareness of Consequences	<ol style="list-style-type: none"> 1. Driving a gas scooter causes exhaustion of energy. 2. Driving a gas scooter contributes to environmental damage. 3. Driving a gas scooter has an effect on global warming. 4. Overall, driving a gas scooter can cause negative consequences. 	Zhang et al. (2013) [22]																								
Ascription of Responsibility	<ol style="list-style-type: none"> 1. I feel jointly responsible for the exhaustion of fossil fuels. 2. I feel joint responsibility for the contribution of gas scooters to global warming. 3. I feel joint responsibility for the contribution of gas scooters to local ecological damage. 4. I feel joint responsibility for the negative consequences of driving gas scooters. 	Zhang et al. (2013) [22]																								

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