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MEDIATOR ROLE OF ENVIRONMENTAL CONCERN AND GREEN TRUST IN THE EFFECT OF ADVERTISEMENTS RELATED RENEWABLE ENERGY TECHNOLOGIES ON CUSTOMER SATISFACTION [1]

YENİLENEBİLİR ENERJİ TEKNOLOJİLERİ İLE İLGİLİ REKLAMLARIN MÜŞTERİ MEMNUNİYETİNE ETKİSİNDE ÇEVRESEL ENDİŞE VE YEŞİL GÜVENİN ARACI ROLÜ

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ABSTRACT

Energy consumption is raising with industrialization and the rapid increase of the world population. Therefore, energy resources are running out and lots of environmental problems such as climate change and global warming arise. For this reason, the importance of renewable energy technologies (RET) and environmental concerns of customers are increasing. Also, companies pay attention to the environmental concerns of customers in their products with their advertisements to provide satisfaction and trust. In this context, the purpose of this research is to examine the impact of RET advertisements on customer satisfaction and the mediating role of green trust and environmental concern on the relationship between the RET advertisement and customer satisfaction. According to research findings, proposed models which are tested for advertisement, environmental concern, green trust and customer satisfaction through IBM SPSS 23.0 and IBM AMOS 23.0 for Structural Equation Modeling (SEM). Results are found good fit and acceptable.

Keywords: *Renewable Energy Technologies (RET), Advertisements, Environmental Concern, Green Trust, Customer Satisfaction, Structural Equation Modeling (SEM)*

Jel Codes: *M31, M37, Q20.*

ÖZ

Dünya genelinde sanayileşme ve nüfusun artmasıyla enerji tüketimi hızla artmaktadır. Bu durum iklim değişikliği ve küresel ısınma gibi ciddi çevresel problemlere sebep olmaktadır. Bu nedenle müşteriler yenilenebilir enerji teknolojilerine (YET) daha fazla önem vermekte ve çevreye karşı daha fazla endişe duymaktadır. Buna bağlı olarak işletmeler de özellikle reklamlarında çevresel problemlere dikkat çekmekte ve müşteri güvenini sağlamayı amaçlamaktadır. Bu bağlamda bu çalışmanın amacı YET ile ilgili reklamların müşterilerin memnuniyeti üzerindeki etkisini araştırmaktır. Ayrıca bu etkide müşterilerin çevresel endişelerinin ve yeşil güven algılarının aracı rolünü araştırmaktır. Çalışmanın bulgularına göre reklam, çevresel endişe, yeşil güven ve müşteri memnuniyeti ile ilgili ilişkilerin hepsi IBM SPSS 23.0 ve IBM AMOS 23.0 Yapısal Eşitlik Modellemesi (YEM) ile test edilmiş olup uyum değerleri kabul edilir bulunmuştur.

Anahtar Kelimeler: *Yenilenebilir Enerji Teknolojileri (YET), Reklamlar, Çevresel Endişe, Yeşil Güven, Müşteri Memnuniyeti, Yapısal Eşitlik Modellemesi (YEM)*

Jel Kodları: *M31, M37, Q20.*

[1] This study derived from a full text statement presented in 4th International Social Sciences Congress on 24-25 April 2021 in Kyrenia.

1. INTRODUCTION

In today's world, lots of environmental problems occur and this causes higher temperatures with climate change, known as global warming (Economou, 2010: 1496-1497). The most important reason for this is the rapid increase in the world population. Because the impact of the world population and the rapid increase in industrialization have risen energy consumption by 45% worldwide (Ritchie and Roser, 2014). For this issue, the fundamental precaution is the usage of renewable energy technologies (RET). So, RET products are becoming more substantial day by day (Economou, 2010: 1496-1497). Since the energy, which is produced by RET products, never gives out, otherwise, it is constantly renewed (Sin, 2018). Also, RET products do not pollute the air and cause zero greenhouse gas and carbon dioxide emissions (Panwar et al., 2011: 1514).

Customers worry about the planet due to very serious environmental problems such as waste disposal, water pollution, air pollution, ozone layer depletion, urban sprawl, global warming, acid rain, and climate change (Zimmermann, 2016). In this perspective, environmental concerns of customers are defined as the degree to which people's awareness of the environmental problems and worrying about their efforts to solve them (Dunlap and Jones, 2002: 485; Minton and Rose, 1997: 38; Liu et al., 2014: 78). In this context, green trust is important, which means that customers rely on it in terms of benevolence, reliability, and harmlessness to the environment. Because of the rising environmental concern, companies should ensure green trust in customer perception with the images created with their products and advertisements (Chuah et al., 2020: 5).

There is generally a good relationship between environmental concerns and RET products. Customers who are more delicate to the environment, intend to avoid polluting the environment, boycott the products and companies that are considered to put up environmental problems, and demonstrate more appropriate attitudes (Lin and Huang, 2012: 13). For this reason, companies try to pay attention to the environmental concerns of customers in their products, especially in their advertisements to ensure customer satisfaction and aim to provide their trust (Kim and Choi, 2005: 592). Because the main purpose of the advertisements is to affect and stimulate customers (Liu et al., 2014: 79).

In this context, the objective of the research is to investigate how advertisements of RET affect customer satisfaction. Also, this research focused on investigating the effect of green trust and environmental concern on customer satisfaction and mediating role of green trust and environmental concern on the relationship between advertisement and customer satisfaction.

2. LITERATURE REVIEW

2.1. Renewable Energy Technologies (RET)

Nowadays, the environmental problems have increased with the rising carbon dioxide emission which is affected by world population growth. These environmental problems cause higher temperatures with climate change, known as global warming. The fundamental prevention that has been taken is the usage of RET in the world (Economou, 2010: 1496-1497). RET is considered the cleanest source of reaching energy, and the use of these technologies minimizes environmental damage, beneficial for the future community, economy, and sustainability (Panwar et al., 2011: 1513). Also, the energy that is produced by RET is never run out and is continuously replaced (Sin, 2018). However, the usage of RET depends on many factors such as the sunlight, wind, climate of the country, finding land where the RET product is established, allowance, perception, attitudes, and capital for investment (Economou, 2010: 1497).

Although converting our energy system from fossil fuel to renewable resources is extremely costly, huge financial investments are made in this area worldwide. Especially China is the most important investor in RET. In this context, due to population growth and technological developments, average global energy consumption has increased by 45 percent (Ritchie and Roser, 2014). On the other hand, approximately 26% of the energy consumed worldwide is obtained from renewable sources. Despite the high dependence on fossil fuels, the use of RET has been increasing over the years (Ren21, 2019: 17).

Worldwide, most of the consumed energy is obtained from fossil fuels. Renewable energy sources play the most essential role in decreasing dependency on fossil fuels such as coal, oil, and natural gas (Chen and Lin, 2020: 1). From this perspective, using renewable energy sources in the world is shown in the table.

Table 1: Renewable Energy Sources

Type of Energy	Definition	Sources
Solar Energy	Generated with the roof panels for houses, factories and farms through suns' heat and light. (Sin, 2018).	Solar
Wind Power	The constructed tall turbines turn with wind power and energy is produced (Panwar et al., 2011: 1517).	Wind
Geothermal Energy	Land is deeply drilled and very hot water is brought to the surface. Then hydrothermal waters are pumped to generate energy (Fridleifsson, 2001: 301).	Groundwater
Hydroelectric Power	Depends on the construction of dams and large water basins. In general, most of the hydroelectric energy comes from rapid movement of water (Cazzaniga et al., 2019: 3).	Rivers and streams
Biomass Energy	Biomass energy is derived from animal and plant waste. When these wastes are burned, electricity is produced with the chemical energy that emerges (Fridleifsson, 2001: 309).	Biological wastes
Ocean Energy	Obtained by converting tidal and wave power into electricity (Sin, 2018).	Oceans and Seas

All these renewable energy sources do not pollute the air and cause zero greenhouse gas and carbon dioxide emissions (Panwar et al., 2011: 1514). In addition, they have many advantages to generate energy after incurring basic costs. For instance, RET increases the standard of living, resolves energy and water supply problems, improves the economic condition and energy reliability, provides easy access to rural areas where energy transportation is difficult and increases employment by opening new business areas (Zakhidov, 2008: 220).

Due to all these advantages in recent years, Turkey has made a significant and successful investment in the field of RET. As a result of these investments, %35 of the total electricity consumption is satisfied by renewable sources. Compared with the many other countries, Turkey has the opportunity to benefit from all renewable energy sources because of geopolitical structure and its geographical locations (Karagol and Kavas, 2017: 7). In this context, some companies such as Siemens, General Electric, Akfen, and Zorlu produce RET and advertise them to the present public.

2.2. Advertisement

Companies use advertisements as the primary tool for promoting products and services to customers. It is one of the most vital things for all companies because they create their brand image with advertisements as well as product quality. Advertising allows customers to recognize and receive information about products and brands. In this respect, companies increase customers' alertness and reach lots of potential customers through advertisements (Bakar et al., 2015: 309-310). In addition, advertisements have an important role in attracting attention and convincing customers to purchase goods or services. But, according to some research, many customers perceive advertisements as enjoyable and informative, while others perceive them as boring and time-consuming. These types of customers have a negative attitude towards advertisements and do not even watch them (Aziz and Ariffin, 2010: 55). In this context, companies should provide appropriate value to customers that are relative to their needs and desires in advertisements. Also, the content of advertisements must be compatible with the products, services, and target customers (Denghani et al., 2016: 167).

When companies advert products, they must plan the steps correctly and set a path for the customer to be successful. For this reason, advertisements must attract attention, increase interest, strengthen desire, and activate the customer. These are the four steps of customer service which are attention, interest, desire, and action shortened as AIDA (Kotler et al., 2017: 92). Since the 1990s, the AIDA model has been extensively used to attract more customers and to measure and increase the effectiveness of advertisements (Xu and Schrier, 2019: 2). The Model is divided into different levels. Attracting customers' attention is on the cognitive level, interest and desire are on the affective level, and the action takes place at the level of behavior. Additionally, this model has been used by companies for years in both online and traditional channels in marketing activities. (Hassan et al., 2015: 265).

Table 2: AIDA Model

Attention	➡	Interest	➡	Desire	➡	Action

Note: Kotler et al., 2017

Companies' first motivation should be to attract the attention of customers while making advertising. This step of AIDA is the initial and the most crucial one in the purchasing process because if advertisements cannot get the attention of customers, they do not notice the brand and watch other advertisements which attract attention. This leads customers to purchase competitors' brands and products, which means aloss of money and advantages (Bakar et al., 2015: 309-311). Companies capture customers' attention with many tactics. The most used and successful ones are using strong words, shocking and exciting elements, interesting pictures and videos, personalization, and intriguing content in advertisements (Matelski, 2019).

2.3. Interest

After attracting attention, the customer way that companies follow in their advertising processes does not over. Customers still need more information about product features, benefits, values, and brands (Michaelson and Stacks, 2011: 6). In the interest step, companies provide customers with more knowledge about many things that keep their interest for a long time. Companies achieve this with different strategies depending on the industry, product type, and target customer. Some of them select to use interesting images, exciting videos, humor, and personalization which can be used in the attention stage. Other companies focus on clear and understandable messages, concise and accurate information,

and social responsibility content. For online platforms, the design easy to use websites holds customers' interest. The most essential thing is to maintain to move customers to the following stage in the AIDA model (Matelski, 2019).

2.4. Desire

If the company has successfully caught the customer's attention and has been interested in them long enough to convey information, it is time to nurture the desire of customers. This stage helps customers to conduct detailed research that will create a desire to buy the product. They want to make the final decision to purchase by searching on the internet, going to the store, or asking about the social environment. (Matelski, 2019). In addition, customers comprehend the core message transmitted by advertisement, so they are persuaded and stimulated as intended by companies to buy the products and services (Wijaya, 2012: 76).

2.5. Action

The final step of the AIDA model is taking action to purchase the products or services and obtaining the benefits of created values (Platon et al., 2014: 1572). Finally, after learning as much as possible about the brand and product through advertising, the trust level of customers has increased and they are now ready to act (Xu and Schrier, 2019: 2). However, companies should ensure that ideas are in the customers' perception to act. Customers make sure that the decision to buy will benefit them, and companies should not offer exaggerated, unrealistic things in advertisements. Otherwise, the customer will be disappointed after the action (Matelski, 2019). In this context, both advertisements and purchased products should make a positive impression on customers' minds (Sugget, 2019).

2.6. Environmental Concern

Environmental concern is defined as the degree to which people's awareness of environmental problems and worrying about their efforts to solve them (Dunlap and Jones, 2002: 485; Minton and Rose, 1997: 38; Liu et al., 2014: 78). The world now faces and struggles with many serious environmental problems. Some of them are waste disposal, water pollution, air pollution, ozone layer depletion, urban sprawl, global warming, acid rain, and climate change which negatively affect everyone on the planet (Zimmermann, 2016).

Together with all these environmental problems, nowadays, environmental concerns have started to come up. Especially in the last 30 years, people's interest, awareness, and sensitivity toward environmental issues have increased. According to studies, 49% of people do not buy harmful products and stay away from some companies to protect the environment in the U.S.A (Kim and Choi, 2005: 592) and %30 of people points out concern about environmental and ecological issues (Lin and Huang, 2012: 11). Environmental concern has a wide scope and differs according to people's characteristics such as age, education, gender, religion, residential location, and occupation (Liu et al., 2014: 79). For instance, education has the strongest interaction with environmental concern, and environmental concern increases with increasing educational attainment. On the other hand, for both genders, young people have greater awareness and environmental concerns than the elder ones (Parizanganeh et al., 2011: 2840).

Generally, there is a positive correlation between environmental concern and purchasing environmentally friendly products. In addition, customers who are more sensitive to the environment intended to avoid polluting the environment, boycott the products and companies that are considered to contribute to environmental problems and demonstrate more appropriate attitudes (Lin and Huang, 2012: 13). Companies that know the increased environmental concern of customers have become more environmentally conscious at

stages such as production, packaging, supply chain, and advertising with the green marketing and recycling goods (Kim and Choi, 2005: 592).

Especially for advertisements regarding environmental concerns are crucial and highly preferred by companies because they are considered to impact customers more and increase environmental awareness. Because the main aim of the advertisements is to affect and stimulate people (Liu et al., 2014: 79). In this context, companies that are offering RET products mostly emphasize advertising to create a positive impression and environmental concern, reach potential customers and ensure brand loyalty as well as improve company performance. If customers' environmental awareness and concerns increase with advertisements, they purchase more RET products due to the usage of RET, environmental concern and awareness interact with each other, which is very beneficial and profitable for both the environment and companies. In other words, effective advertisements increase purchasing rate, and thus, companies reach higher market share and obtain customers' trust (Sharifi et al., 2019: 155).

2.7. Green Trust

Trust is one of the most important factors in the relations between the seller and the customer in marketing studies. It is expectation and attitude, defined as the willingness of one party to rely on another (Mezger et al., 2020: 2). The trusting party believes that the others will fulfill their obligations and responsibilities. The reliable side must keep its promise and stand by its word (Brown et al., 2019: 156). Many companies and researchers work out on this topic because a long-term relationship is needed to achieve sustainability and competitive advantages, which are possible with trust. Customers prefer only vendors with a high level of trust due to many subjects such as payment, product quality, deception risk, or environmental concerns (Mezger et al., 2020: 2). In addition, ensuring trust in customers increases their repurchase intention and loyalty (Brown et al., 2019: 156).

The environmental concern of people about pollution, climate change, etc. has increased and they have noticed more issues today. Accordingly, more companies have made environmental concerns and green products a part of their business as a social responsibility project (Chen and Chang, 2012: 502). In this context, green trust is very significant, which means that customers believe in terms of benevolence, reliability, and harmlessness to the environment. Because of the increasing environmental concern, companies should ensure green trust in customer perception with the images created with their products and advertisements (Chuah et al., 2020: 5). Green marketing is now a key element of the competition. It means to manufacture and offer products that satisfy the environmental demands and needs of customers. Companies who want to gain competitive advantages should develop strategies and invest in green marketing activities with building green trust in customers. This reduces perceived risk and increases perceived quality (Chen and Chang, 2013: 64). Eventually, customers are now more sensitive and responsible for the environment. Thus, they tend to purchase much more product which has a lower detrimental effect on the environment (Chen, 2010: 308).

In this context, some companies especially produce and offer renewable energy products and try to build green trust in customers through advertisements. Some companies also revise themselves in the face of changing environmental trends and attitudes to catch the customers (Roe et al., 2001: 917). Because, according to the research, many companies should change their business model and strategies to struggle with customers' environmentalism (Chen and Chang, 2012: 505).

2.8. Customer Satisfaction

Customer satisfaction is the most important and critical strategy for companies (Kim et al., 2020: 3). It is defined as the pleasure or disappointment that occurs depending on the expectation and the resulting performance of companies' products or services. Based on this description, a comparison of the expectations and real benefits obtained from products create satisfaction or disappointment for customers. Satisfaction is also the process of evaluating customer needs, wishes, purchasing decisions, perceived value, and expectations in the context of product performance (Supriadi et al., 2017: 36).

Customer satisfaction is essential for companies to survive in a competitive environment and sustainability. According to many studies, it is easier to satisfy and retain existing customers than to acquire new customers. Attracting new customers is also costlier and time-consuming for companies. Customer satisfaction or dissatisfaction occurs in the following ways (Pizam et al., 2016: 5).

- Expectation value of the customer is much lower than the perceived value, the customer is very satisfied,

- Expectation value of the customer is equal to the perceived value, the customer is satisfied,

- Expectation value of the customer is much higher than the perceived value, and the customer is dissatisfied.

Accordingly, companies should comprehend customers correctly and produce quality products in line with their expectations and desires for satisfaction (Kotler et al., 2017: 94). Otherwise, if customer expectations are misunderstood and are not analyzed correctly, they will be dissatisfied and this means a serious loss in terms of both money and reputation for companies (Supriadi et al., 2017: 36).

For decades, companies have measured customer satisfaction with many factors such as profits, sales, and customer retention (Kim et al., 2020: 3). In addition, many factors affect customer satisfaction such as employees, service quality, product quality, good values, delivery time, responsiveness and quick service, etc. (Angelova and Zekiri, 2011: 234). Satisfied customers prefer companies that fulfill these factors among lots of competitors. Satisfaction positively affects customer loyalty and intention to repurchase which is the main purpose of companies (Asgharian et al., 2012: 501).

When considering the green satisfaction of RET products, it is defined as fulfilling the environmental concerns, demands, and desires of the customer without damaging environmental issues. Companies should reduce risk and increase trust perceived by customers to be separated from their competitors. In particular, companies accurately convey the importance of environmental issues which they attach. Especially through the advertisements, they transmit reliable information about the environmental concerns of their products (Chen and Chang, 2013: 64).

In literature, there is much research on the relationship between renewable energy sources, environmental concern, green trust, advertisements, and customer satisfaction. For instance, Chen and Chang examined the relationships among green perceived quality, green perceived risk, green satisfaction, and green trust in their study. According to results, green perceived quality positively affects green trust and green satisfaction. But green perceived risk negatively affects green trust and green satisfaction. Therefore, increasing perceived green quality and decreasing perceived green risk are important for customer confidence. (Chen and Chang, 2013).

Sharifi et al. investigated the impact of advertising on the adoption of RET in their research. For advertisements, the AIDA framework was used and according to the results, attention was found to be the most important predictor of action, followed by interest and desire to adapt RET (Sharifi et al., 2019).

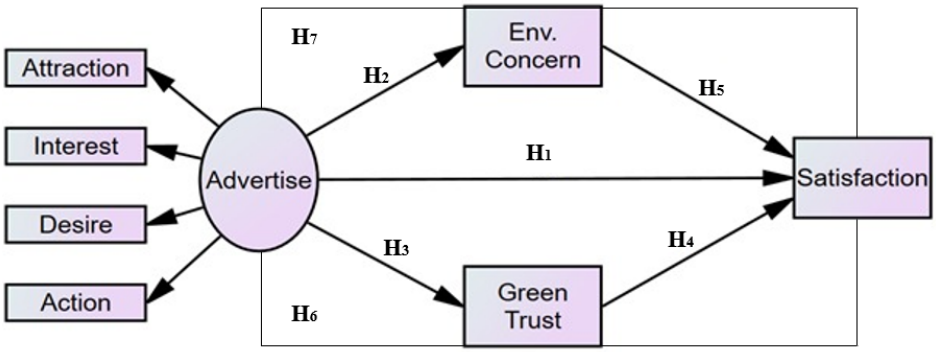
Chuah et al. examined the relationship between corporate social responsibility-brand compliance and sustainable customer loyalty behavior within the framework of environmental concerns and green trust. According to the results of the experimental study conducted on airline companies, it is verified that the relationship between perceived corporate social responsibility-brand compliance and sustainable customer loyalty behavior is managed by environmental concern and green trust (Chuah et al., 2020).

Chen examined the relationship between green brand image, green satisfaction, green trust and green brand value of information, and electronics products in Taiwan in the research. Research results show that green brand image, green satisfaction, and green trust positively affect green brand value. In addition, the positive relationship between green brand image and green brand value partially mediates the relationship between green trust and green satisfaction. For this reason, businesses need to invest in increasing their green brand image, green satisfaction, green brand value, and green trust (Chen, 2010).

Lam et al. examined the relationship between green trust, green perceived value, green satisfaction and repurchase intention of green products. According to the results of the research, green trust, and green satisfaction mediate the relationship between green perceived value and repurchase intention. Also, the intention of customers to repurchase green products is represented by green trust, green perceived value, and satisfaction (Lam et al., 2016).

Rahmi et al. examined the effects of green brand image, green awareness, green advertisements, and ecological knowledge on the green purchase intention and green purchase behavior. The research results show that ecological knowledge significantly affects the green purchase intention but, green brand image, green awareness, and green advertising have no effect on green purchasing intention. Also, green purchase intention would improve customer green purchase behavior (Rahmi et al., 2017).

Figure 1: Research Model and Hypothesis



In the research, it was aimed to investigate how advertisements for renewable energy technology products affect customer satisfaction. Also, it is aimed to investigate the effect of green trust and environmental concern on customer satisfaction. Finally, the mediating role of green trust and environmental concern on the relationship between the advertisement and customer satisfaction was investigated. In this context, 7 hypotheses have been tested.

H1: Advertisement positively effects customer satisfaction.

H2: Advertisement positively effects environmental concern.

H3: Advertisement positively effects green trust.

H4: Green trust positively effects customer satisfaction.

H5: Environmental concern positively effects customer satisfaction.

H6: Green trust mediates relationship between advertisement and customer satisfaction.

H7: Environmental concern mediates relationship between advertisement and customer satisfaction.

3. DATA, VARIABLES, METHOD AND MEASUREMENT

For the data set of the study, a standard questionnaire with a 5-point Likert scale was prepared and the research was carried out on those living in the Aegean region in Turkey. The most important reason for this is that the Aegean region is rich in RET and people who are living there use these products more. Research data were collected through an online survey. Respondents participated in an online survey in May-June 2020, and they were determined by the convenience sampling method. 388 of the collected questionnaires were found suitable for evaluation and data were analyzed through IBM SPSS 23.0 and IBM AMOS 23.0 for Structural Equation Modeling (SEM).

The research instruments adapted from various studies. Advertisement (AIDA) variables adapted from Sharifi et al., (2019), environmental concern is adapted from Lin and Huang (2012), green trust and customer satisfaction are adapted from Chen and Chang (2013).

Table 3: Research Instruments

	Indicators	Source
Attention	Advertisements about renewable energy technologies attract my attention Advertisements for renewable energy technologies are understandable The content of the advertisements about renewable energy technologies will remain in my mind Advertisements about renewable energy technologies inform me about energy savings	Adapted from Sharifi et al., 2019
Interest	Advertisements related to renewable energy technologies are visually acceptable Advertisements on renewable energy technologies make me sensitive to using renewable energy at home Advertisements about renewable energy technologies create the feeling that renewable energy is beneficial for my country Advertisements on renewable energy technologies make us sensitive about the disadvantages of fossil fuels	Adapted from Sharifi et al., 2019
Desire	Advertisements about renewable energy technologies convince me to think about the use of RET instead of fossil fuels. Advertisements about renewable energy technologies create positive feelings about the importance of RET for the future of our country Advertisements on renewable energy technologies lead positive feelings about the prevalence of RET in the future Advertisements about renewable energy technologies make me desire to use appliances based on renewable energy at home	Adapted from Sharifi et al., 2019
Action	Advertisements about renewable energy technologies allow me to advise my friends to use these products. Advertisements on renewable energy technologies allow me to use RET products instead of traditional energy Advertisements about renewable energy technologies allow me to research for buying RET products Advertisements about renewable energy technologies allow me to plan for using RET products	Adapted from Sharifi et al., 2019

E. Concern	I make a special effort to purchase items that are made from recycled materials For ecological reasons, I can change the products that I use When I choose between two equal products, I buy the one that is less harmful to people and the environment I avoid purchasing a product because it is harmful to the environment I have read newsletters, reports and magazines written by environmental groups I have signed petition campaigns to protect the environment (e.g., change.org) I have donated to environmental groups (Greenpeace, WWF, Tema) I have written a letter to the relevant authority (municipality / governorship) for environmental protection I avoid buying products from a company that I think is harmful to the environment (boycott)	Adapted from Lin and Huang, 2012
Green Trust	The environmental image of renewable energy technology products is reliable The environmental functionality of renewable energy technology products is reliable In general, the environmental claims of renewable energy technologies products are reliable The environmental performance of renewable energy technology products satisfies my expectations Renewable energy technology products promise environmental improvement	Adapted from Chen and Chang, 2013
C. Satisfaction	I am glad when I buy renewable energy technology products due to its environmentally friendly image It is the right decision to purchase renewable energy technology products due to their environmental functionality In general, I am happy when I purchase renewable energy technology products because they are environmentally friendly Overall, I am satisfied with renewable energy technology products due to its environmental performance	Adapted from Chen and Chang, 2013

Table 4: Demographic Characteristics of Survey Respondents (N=388)

Demographic Profile		Fr.	%	Demographic Profile		Fr.	%
Gender	Female	185	47,7	Marital Status	Married	147	37,9
	Male	203	52,3		Single	241	62,1
Age	0-24	144	37,1	Education	Primary	16	4,1
	25-34	156	40,2		High School	37	9,5
	35-44	57	14,7		Assoc. Degree	29	7,5
	45-54	23	5,9		University	206	53,1
	55-64	7	1,8		Graduate	65	16,8
	64+	1	0,3		PhD	35	9
Occupation	Public Sector	115	29,6	Income	0-2000TL	145	37,4
	Private Sector	67	17,3		2001-4000TL	75	19,3
	Student	165	42,5		4001-6000Tl	74	19,1
	Retired	4	1		6001-8000TL	51	13,1
	Unemployed	37	9,5		8001-10000TL	30	7,7
					10000TL+	13	3,4

Considering the demographic characteristic, according to gender 52.3% of the participants are men and 47.7% are women. According to their marital status %37,9 of the participants are married and %62,1 are single. According to the age, %37,1 of the participants are 0-25, %40,2 are 25-34, %14,7 are 35-44, %5,9 are 45-54, %1,8 are 55-64 and %0,3 is more than 65 years old. According to the education, %4,1 of the participants graduated from primary school, %9,5 graduated from high school, %7,5 have an associate degree, % 53,1 graduated from university, %16,8 have a graduate degree and %9 have a Ph.D. degree. According to the occupation, %29,6 participants were from the public sector, %17,3 from the private sector, %42,5 are students, %1 are retired and %9,5 are unemployed. According to the income, %37,4 of the participants earn income 0-2000 TL, %19,3 2001-4000 TL, %19,1 4001-6000 TL, %13,1 6001-8000 TL, %7,7 8001-10.000 TL and %3,4 generates more than 10.001 TL per month.

4. ANALAYSIS AND FINDINGS

The main reason for the research is structured to explain the relationship between advertisements about renewable energy technology products, environmental concern, greet trust and customer satisfaction. Confirmatory factor analyses (CFA) were conducted for each measurement to validate the factors since they identify and test the underlying structure of the scales. Chi-square test statistics are generally quite sensitive to sample size (Hair et. al. 2006), thus in this research; Goodness of Fit Index (GFI), Comparative Fit Index (CFI), Normed Fit Index (NFI), Tucker Lewis Index (TLI) and Root Mean Square Error Approximation (RMSEA) were considered. Also, Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett test of sphericity tests were applied to test the relevance of data for carrying out factor analyses (Sharma, 1996).

Following the confirmatory factor analysis, reliability analysis performed for the whole questions which constitute the dimensions of research. For each dimension Cronbach's Alpha value was determined to be more than 0,7. Advertisement dimension's Cronbach's Alpha value is 0,946; environmental concern dimension's Cronbach's Alpha value is 0,854; green trust dimension's Cronbach's Alpha value is 0,930 and customer satisfaction dimension's Cronbach's Alpha value is 0,883. The fact that Cronbach's alpha value is greater than 0.7 indicates that the internal consistency of the scale used is at a sufficient level (Tavakol and Dennick, 2011).

The structural equation model method initially tests the fits of the research model with the collected data. CMIN/DF, CFI, AGFI, GFI and RMSEA are fit indices accepted in the literature. Goodness of fit values are stated as 0<CMIN/DF<3; 0,9<CFI<1; 0,9<AGFI<1; 0,9<GFI<1 and 0<RMSEA<0,05. (Ullman and Bentler, 2003). In this context, good fit models are shown below.

4.1. Advertisement Confirmatory Factor Analysis

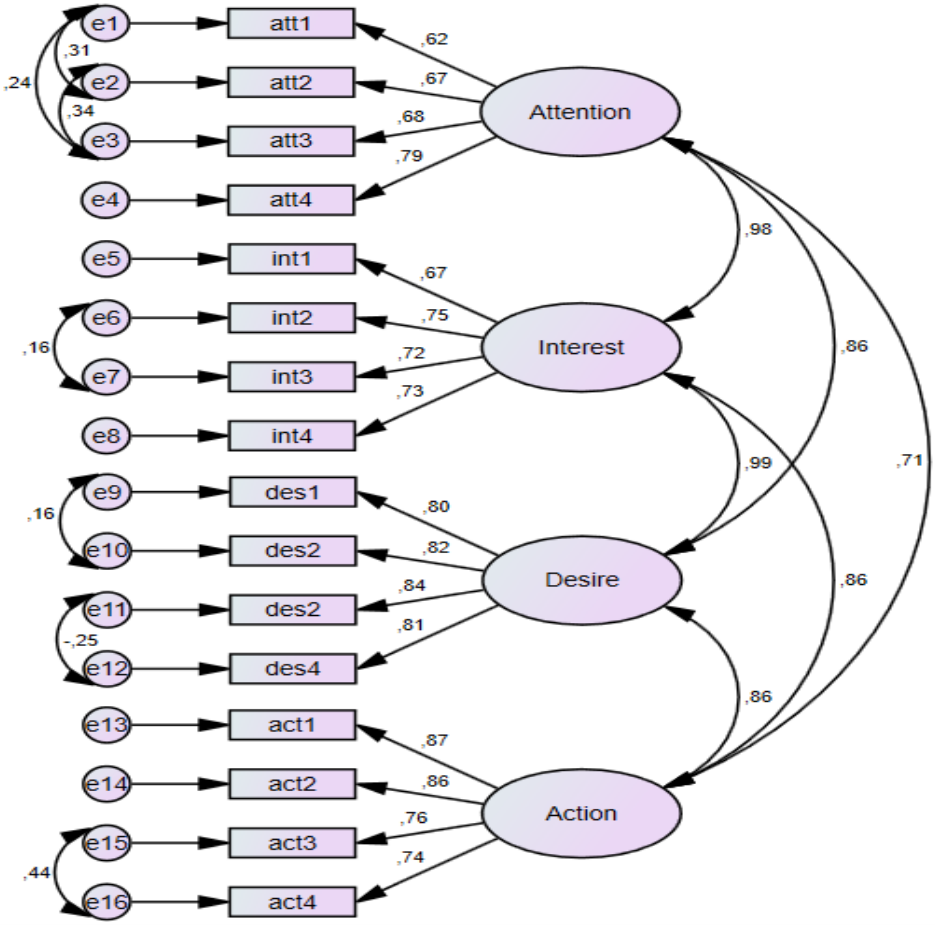
Based on the KMO and Barlett test results, the analysis of data continued. For the advertisement KMO and Barlett test result is shown below. KMO is equal to 0,950 and Bartlett test is equal to 4322.648. Also, the results are significant since the p value is <0.05. In addition, according to the CR and AVE values, acceptable values have been reached for validity. CR is equal to 0.956 and AVE is equal to 0.514. These values must be CR> 0.70 AVE> 0.50 and the results are significant since the p value is <0.05. (Fornell and Larcker, 1981).

Figure 2: Advertisement Model

KMO:0.950, Bartlett:4322.648, p=0.000, VE:70.117

CR:0.956, AVE: 0.514, Cronbach's Reliability=0,946, F=31,004, p=0.000

(VE= Variance Exp.; CR= Construct Reliability; AVE=Average Var. Extracted)



x2/df=3,433; p= 0.000; NFI=0.929, CFI=0.948, TLI=0.932, RMSEA=0.079

Considering the factor loadings, the model is fit and satisfactory for advertisement. Varimax rotation was used in factor analysis and factors with an eigenvalue over 1 were used, items with a factor loading of less than 0.5 and items with high cross loadings were excluded. According to the modification indicates the covariance of 1-2, 2-3, 1-3, 6-7, 9-10, 11-12 and 15-16 are combined Based on the modification indicates data covariances are consolidated to achieve accepted fit indices. As a result of confirmatory factor analysis, x2/df=3,433, p= 0.000; NFI=0.929, CFI=0.948, TLI=0.932, RMSEA=0.079 for the advertisement fit model. According to these values, the model is good fit and acceptable because GFI value ranges from 0 to 1 and values above 0.90 are an acceptable model indicator (Lattin et al., 2003). Also, acceptable RMSEA values range from 0,05 to 0,08 which indicates the model is good fit and acceptable (Byrne, 2010; Lattin et al., 2003).

Additionally, acceptable CFI values range from 0 to 1 and values above 0,90 are an acceptable model indicator (Ullman and Bentler, 2003).

4.2. Environmental Concern Confirmatory Factor Analysis

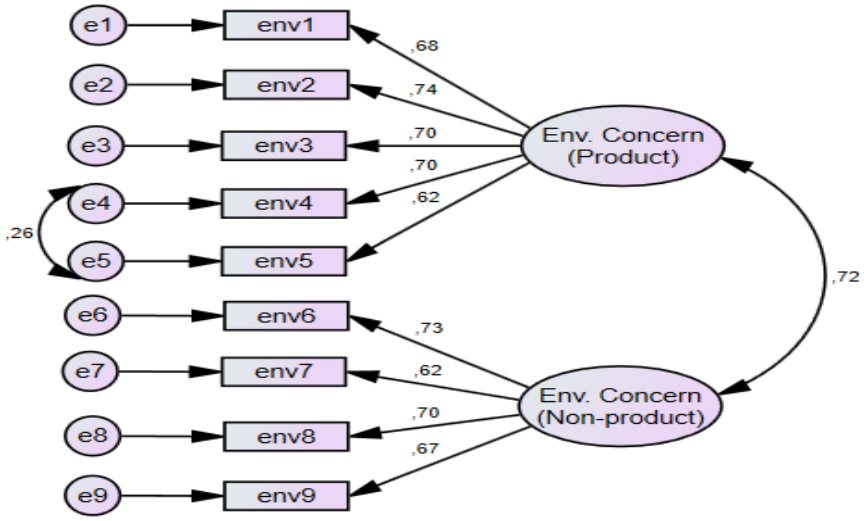
Based on the KMO and Barlett test results, the analysis of data continued. For the environmental concern, KMO and Barlett test result is shown below. KMO is equal to 0.880 and Bartlett test is equal to 1251,438. Also, the results are significant since the p value is <0.05. In addition, according to the CR and AVE values, acceptable values have been reached for validity. CR is equal to 0.889 and AVE is equal to 0.471. The results are significant since the p value is <0.05.

Figure 3: Environmental Concern Model

KMO=0.880, Bartlett test=1251,438, p=0.000, VE=60,583

CR=0.889, AVE=0.471, Cronbach's Reliability=0,854, F=96,553, p=0.000

(VE= Variance Exp.; CR= Construct Reliability; AVE=Average Var. Extracted)



x2/df=3,107; p= 0.000; NFI=0.939, CFI=0.957, TLI=0.978, RMSEA=0.074

Considering the factor loadings, the model is fit for environmental concern. According to the modification indicates the covariance of 4-5 is combined. As a result of confirmatory factor analysis, x2/df=3,107, p= 0.000; NFI=0.939, CFI=0.957, TLI=0.978, RMSEA=0.074 for the model. According to these values, the environmental concern model is good fit and acceptable.

4.3. Green Trust Confirmatory Factor Analysis

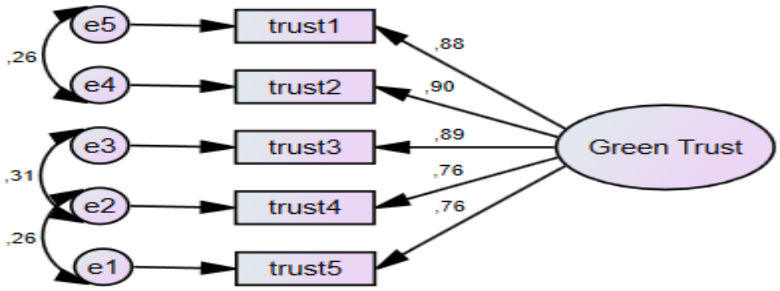
Based on the KMO and Barlett test results, the analysis of data continued. For the green trust KMO and Barlett test result is shown below. KMO is equal to 0.869 and Bartlett test is equal to 1603,218. Also, the results are significant since the p value is <0.05. In addition, according to the CR and AVE values, acceptable values have been reached for validity. CR is equal to 0.922 and AVE is equal to 0.704. The results are significant since the p value is <0.05.

Figure 4: Green Trust Model

KMO=0.869, Bartlett test=1603,218, p=0.000, VE= 78,143

CR=0.922, AVE= 0.704, Cronbach's Reliability=0,930, F=23,651, p=0.000

(VE= Variance Exp.; CR= Construct Reliability; AVE=Average Var. Extracted)



x2/df=2,358; p= 0.000; NFI=0.997, CFI=0.998, TLI=0.992, RMSEA=0.059

Considering the factor loadings, the model is fit for green trust. According to the modification indicates the covariance of 4-5, 2-3 and 1-2 are combined. As a result of confirmatory factor analysis, x2/df=2,358, p= 0.000; NFI=0.997, CFI=0.998, TLI=0.992, RMSEA=0.059 for the model. According to these values, the green trust model is a good fit and acceptable.

4.4. Customer Satisfaction Confirmatory Factor Analysis

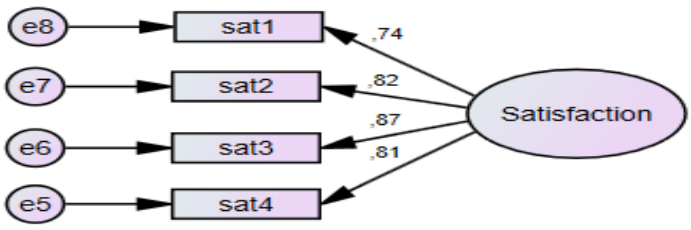
Based on the KMO and Barlett test results, the analysis of data continued. For the customer satisfaction KMO and Barlett test result is shown below. KMO is equal to 0.831 and Bartlett test is equal to 853,388. Also, the results are significant since the p value is <0.05. In addition, according to the CR and AVE values, acceptable values have been reached for validity. CR is equal to 0.884 and AVE is equal to 0.657. The results are significant since the p value is <0.05.

Figure 5: Customer Satisfaction Model

KMO=0.831, Bartlett test=853,388, p=0.000, VE= 74,169

CR=0.884, AVE= 0.657, Cronbach's Reliability=0,883, F=20,449, p=0.000

(VE= Variance Exp.; CR= Construct Reliability; AVE=Average Var. Extracted)

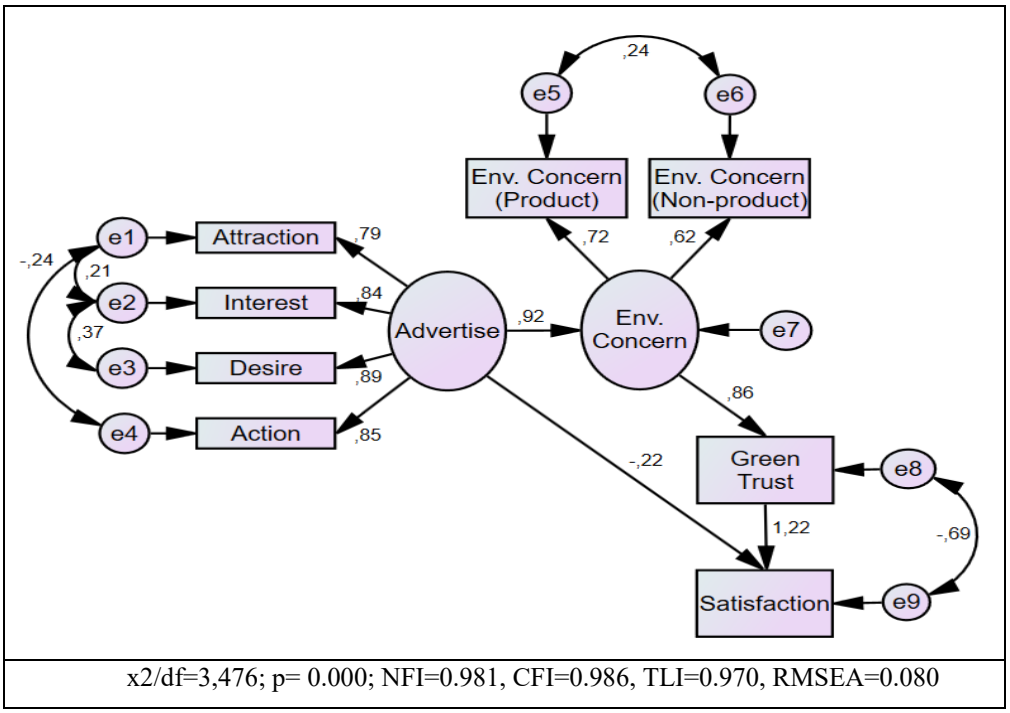


x2/df=2,159; p= 0.000; NFI=0.995, CFI=0.997, TLI=0.992, RMSEA=0.055

Considering the factor loadings, the model is fit for customer satisfaction. As a result of confirmatory factor analysis, x2/df=2,159, p= 0.000; NFI=0.995, CFI=0.997, TLI=0.992, RMSEA=0.055 for the model. According to these values, the customer satisfaction model is good fit and acceptable.

4.5. Path Analysis

Figure 6: Revised Model



x2/df=3,476; p= 0.000; NFI=0.981, CFI=0.986, TLI=0.970, RMSEA=0.080

A structural model was tested as the aim of the study was to investigate the impact of RET-related advertising on environmental concern, green trust and customer satisfaction. In this context, the consequence of the path analysis showed a good fit of the model x2/df=3,476, p= 0.000; NFI=0.981, CFI=0.986, TLI=0.970, RMSEA=0.080. As a result of the path analysis in the revised model, the environmental concerns of the consumers are divided into product and non-product. Also, because of the correlation between customer satisfaction and green trust covariances of 8 and 9 are combined in the path analysis. Path analysis suggested to combine customer satisfaction and green trust as a single variable.

5. DISCUSSION AND CONCLUSION

Nowadays, with the increase of the world population, environmental problems such as climate change and global warming have started to occur more. Also, with the rapid spread of industrialization, world energy consumption has risen by %45. Therefore, the fundamental measure is the usage of renewable energy technologies and because of that, RET products are becoming more significant worldwide. Because the energy that is produced by RET products never ends up, otherwise it is constantly renewed. Besides that, Customers worry about the planet due to hazardous environmental problems such as waste disposal, water pollution, air pollution, ozone layer depletion, urban sprawl, global warming, acid rain, and climate change. In this context, companies try to attach importance

to the environmental concerns of customers in their products, peculiarly in their advertisements to guarantee customer satisfaction and aim to provide their trust. Because the general purpose of the advertisements is to affect and stimulate customers**.**

In this context, the purpose of the research is to consider how advertisements of RET products affect customer satisfaction. Also, this research focused on the mediating role of green trust and environmental concern on the relationship between the advertisement and customer satisfaction. Therefore, 7 hypotheses have been tested. A standard questionnaire with a 5-point Likert scale was prepared and the research was carried out on those who are living in the Aegean region in Turkey. The most important inducement for this is that the Aegean region is intense in RET technologies and people who are living there use these products more. Research data were collected through an online survey. Respondents participated in an online survey in May-June 2020, and they were determined by the convenience sampling method. 388 of the collected questionnaires were found suitable for evaluation and data were analyzed with SPSS 23.0 and AMOS 23.0.

According to the findings obtained as a result of the analysis, when we examine the confirmatory factor analysis for advertisement, x2/df= 3,433, p= 0.000; NFI=0.929, CFI=0.948, TLI=0.932, RMSEA=0.079 are determined for good fit model. According to these values, the model is good fit and acceptable because GFI value ranges from 0 to 1 and values above 0.90 are an acceptable model indicator. Also, acceptable RMSEA values range from 0,05 to 0,08 which indicates the model is good fit and acceptable. Additionally, acceptable CFI values range from 0 to 1 and values above 0,90 are an acceptable model indicator. When we examine the confirmatory factor analysis for environmental concern, x2/df=2,358, p= 0.000; NFI=0.939, CFI=0.957, TLI=0.978, RMSEA=0.074 for the model. According to these values, the environmental concern model is good fit and acceptable. When we examine the confirmatory factor analysis for green trust, x2/df=2,159, p= 0.000; NFI=0.997, CFI=0.998, TLI=0.992, RMSEA=0.059 for the model. According to these values, the green trust model is a good fit and acceptable. In addition, when we consider the confirmatory factor analysis for customer satisfaction, x2/df=2,159, p= 0.000; NFI=0.995, CFI=0.997, TLI=0.992, RMSEA=0.055 for the model. According to these values, the customer satisfaction model is good fit and acceptable. According to the findings, Whole of the models are good fit and acceptable in research. Finally, a SEM was tested as the purpose of the study was to examine the impact of RET-related advertising on customer satisfaction (with the mediating role of green trust and environmental concern on the relationship between the advertisement and customer satisfaction). In this perspective, the result of the path analysis indicated a good fit of the model x2/df=3,476, p= 0.000; NFI=0.981, CFI=0.986, TLI=0.970, RMSEA=0.080.

Table 5: Regression Models of Hypotheses

	Relationship	**Std. Beta**	**Std. Error**	**t Value**	**p value**	**Decision**	**R^2**
H1	Adv-CS	0,692	0,036	18,836	,000	Supported	0,479
H2	Adv-EC	0,211	0,043	4,95	,000	Supported	0,610
H3	Adv-GT	0,477	0,050	8,29	,000	Supported	0,610
H4	GT-CS	0,783	0,035	24,747	,000	Supported	0,612
H5	EC-CS	0,616	0,04	15,347	,000	Supported	0,377
H6	Adv-GT-CS	0,242	0,045	5,242	,000	Supported	0,639
H7	Adv-EC-CS	0,504	0,044	11,294	,000	Supported	0,534
H8 (Revised)	Adv-EC-GT-CS	0,192	0,047	4,039	,000	Supported	0,651

According to the regression analysis result, H1: Advertisement positively effects customer satisfaction; H2: Advertisement positively effects environmental concern; H3: Advertisement positively effects green trust; H4: Green trust positively effects customer satisfaction and H5: Environmental concern positively effects customer satisfaction are supported. H6 and H7: Hypotheses are supported. Also, H8 hypothesis in the revised model is supported. Mediator variables have a partial mediating effect. Since, standardized beta values decreased with the entry of mediator variables into the model, and it is concluded that mediator variables had a partial mediating role.

In this context, the findings of the study contain similar results to certain studies in the literature. In their studies, Kumar (2017) concluded that RET-related advertisements affect customers' environmental concern; Sariputri et al. (2019) concluded that these ads affect customers' perception of green trust; Suhaily and Darmoyo (2019) concluded that these ads affect customer satisfaction.

Due to the budget and time constraints research data were collected. Also, the research was just carried out on those who are living in the Aegean region in Turkey. All these constraints directly affect the analysis and findings of the research. Therefore, future research can be applied in different time, region and with more participants to cover the whole country. It is expected to contribute to the literature.

Ethical Declaration

In the writing process of the study titled “The Effect of Advertisements Related Renewable Energy Technologies on Customer Satisfaction, there were followed the scientific, ethical and the citation rules; was not made any falsification on the collected data and this study was not sent to any other academic media for evaluation. Since the data set is used in this article, ethics committee approval is not required.

The study is ethically appropriate in accordance with the decision of the Şırnak University Ethics Committee dated 15.09.2020 and numbered 2020/07.

Note

In the study the authors contributed equally.

REFERENCES

1. Asgharian, R., Salehi, M., Saleki, Z. S., Hojabri, R., & Nikkheslat, M. (2012). Green product quality, green customer satisfaction, and green customer loyalty. *International Journal of Research in Management & Technology*, *2*(5): 499-503.

2. Aziz, N., & Mohd. Ariffin, A. A. (2010). Exploring customers attitude towards web advertising and its influence on web ad usage in Malaysia. *Jurnal Pengurusan*, *31*, 55-63.

3. Bakar, M. H. A., Desa, M. A. M., & Mustafa, M. (2015). Attributes for image content that attract customers’ attention to advertisements. *Procedia - Social and Behavioral Sciences*, *195*, 309-314.

4. Brown, J. R., Crosno, J. L., & Tong, P. Y. (2019). Is the theory of trust and commitment in marketing relationships incomplete? *Industrial Marketing Management*, *77*(March 2018), 155–169.

5. Byrne, B. M. (2010). *Structural equation modeling with AMOS.* New York: Routledge. Taylor & Francis Group.

6. Cazzaniga, R., Rosa-clot, M., Rosa-clot, P., & Marco, G. (2019). Integration of PV floating with hydroelectric power plants. *Heliyon*, *5*(June), e01918.

7. Chen, Y. S. (2010). The drivers of green brand equity: Green brand image, green satisfaction, and green trust. *Journal of Business Ethics*, *93*(2): 307–319.

8. Chen, Y. S., & Chang, C. H. (2012). Enhance green purchase intentions: The roles of green perceived value, green perceived risk, and green trust. *Management Decision*, *50*(3): 502–520.

9. Chen, Y. S., & Chang, C. H. (2013). Towards green trust: The influences of green perceived quality, green perceived risk, and green satisfaction. *Management Decision*, *51*(1): 63-82.

10. Chen, Y., & Lin, B. (2020). Slow diffusion of renewable energy technologies in China: An empirical analysis from the perspective of innovation system. *Journal of Cleaner Production*, *261*, 121186.

11. Chuah, S. H., El-manstrly, D., Tseng, M., & Ramayah, T. (2020). Sustaining customer engagement behavior through corporate social responsibility: The roles of environmental concern and green trust. *Journal of Cleaner Production*, *262*, 121348.

12. Dehghani, M., Niaki, M. K., Ramezani, I., & Sali, R. (2016). Evaluating the influence of YouTube advertising for attraction of young customers. *Computers in Human Behavior*, *59*, 165–172.

13. Dunlap, R.E., Jones, R., 2002. Environmental concern: conceptual and measurement issues. In: Dunlap, R.E., Michelson, W. (Eds.), Handbook of Environmental Sociology. London, Greenwood Press, 482-542.

14. Economou, A. (2010). Renewable energy resources and sustainable development in Mykonos (Greece). *Renewable and Sustainable Energy Reviews*, *14*(5): 1496–1501.

15. Fridleifsson, I. B. (2001). Geothermal energy for the benefit of the people. *Renewable and Sustainable Energy Reviews*, *5*: 299-312.

16. Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. 382-388.

17. Hair Jr. F. J., Black C. W., Babin J. B., Anderson E. R., & Tatham L. R. (2006). *Multivariate data analysis*. Upper Saddle River, NJ: Prentice Hall Inc.

18. Hassan, S., Nadzim, S. Z. A., & Shiratuddin, N. (2015). Strategic use of social media for small business based on the AIDA model. *Procedia - Social and Behavioral Sciences*, *172:* 262-269.

19. Karagöl, E. T., & Kavaz, I. (2017). Dünyada ve Türkiye'de yenilenebilir enerji. *Seta Siyaset, Ekonomi Ve Toplum Araştırmaları Vakfi*, *197*(197), 1–32. Retrieved from https://setav.org/assets/uploads/2017/04/YenilenebilirEnerji.pdf, (Jun 01, 2020)

20. Kim, Y. and Choi, M. S. (2005) 'Antecedents of green purchase behavior: An examination of collectivism, environmental concern, and PCE', *Association For Customer Research*, 32(1): 592-599.

21. Kim, W., Kim, H., & Hwang, J. (2020). Sustainable growth for the self-employed in the retail industry based on customer equity, customer satisfaction, and loyalty. *Journal of Retailing and Customer Services*, *53*(August 2019), 101963.

22. Kotler, P., Kartajaya, H., and Setiawan, I. (2017). *Marketing 4.0: Moving from*

traditional to digital. New Jersey: Jhon Wiley&Son.

23. Kumar, P. (2017). Intents of green advertisements. Asia Pacific Journal of Marketing and Logistics. 29(1): 70-79

24. Lam, A. Y. C., Lau, M. M., & Cheung, R. (2016). Modelling the relationship among green perceived value, green trust, satisfaction, and repurchase intention of green products. *Contemporary Management Research*, *12*(1): 47–60.

25. Lattin, J.M., Carroll, J.D. & Green P.E. (2003). *Analyzing multivariate data, duxbury applied series*, Thomson Brooks/Cole.

26. Lin, P. C., & Huang, Y. H. (2012). The influence factors on choice behavior regarding green products based on the theory of consumption values. *Journal of Cleaner Production*, *22*(1): 11–18.

27. Liu, X., Vedlitz, A., & Shi, L. (2014). Examining the determinants of public environmental concern: Evidence from national public surveys. *Environmental Science and Policy*, *39*: 77–94.

28. Matelski, K. (2019). The AIDA (Attention, interest, desire, action) formula. Retriewed from https://www.vizion.com/blog/the-aida-attention-interest-desire-action-formula/, (Jun 1, 2020).

29. Mezger, A., Cabanelas, P., Cabiddu, F., & Rüdiger, K. (2020). What does it matter for trust of green customers? An application to German electricity market. *Journal of Cleaner Production*, *242*, 118484.

30. Michaelson, D., & Stacks, D. W. (2011). Standardization in public relations measurement and evaluation. *Public Relations Journal*, *5*(2): 1–22.

31. Minton, A. P., & Rose, R. L. (1997). The effects of environmental concern on environmentally friendly customer behavior: an exploratory study. *Journal of Business Research.* 40(1): 37-48.

32. Panwar, N. L., Kaushik, S. C., & Kothari, S. (2011). Role of renewable energy sources in environmental protection: A review. *Renewable and Sustainable Energy Reviews*, *15*(3): 1513-1524.

33. Parizanganeh, A., Lakhan, V. C., Yazdani, M., & Ahmad, S. R. (2011). Modelling categorical data to identify factors in fl uencing concern for the natural environment in Iran. *Journal of Environmental Management*, *92*(10): 2836-2843.

34. Pizam, A., Shapoval, V., & Ellis, T. (2016). Customer satisfaction and its measurement in hospitality enterprises: a revisit and update. *International Journal of Contemporary Hospitality Management*, *28*(1): 2-35.

35. Platon, O.-E., Iosub, I., & Ditoiu, M.-C. (2014). An analysis of the AIDAT model based on facebook promotional contests. *Procedia Economics and Finance*, *15*(14), 1570–1577.

36. Rahmi, D. Y., Rozalia, Y., Chan, D. N., Anira, Q., & Lita, R. P. (2017). Green brand image relation model, green awareness, green advertisement, and ecological knowledge as competitive advantage in improving green purchase intention and green purchase behavior on creative industry products. *Journal of Economics, Business & Accountancy Ventura*, *20*(2).

37. Ritchie, H. and Roser, M. (2014). Energy. *Published online at OurWorldInData.org.* Retrieved from https://ourworldindata.org/energy, (May 31, 2020)

38. Ren21. (2019). Renewables 2019 global status report. Retriewed from https://www.ren21.net/wp-content/uploads/2019/05/gsr_2019_full_report_en.pdf, (May 31, 2020)

39. Roe, B., Teisl, M. F., Levy, A., & Russell, M. (2001). US customers' willingness to pay for green electricity. *Energy Policy*, *29*(11): 917-925.

40. Sariputri, I. D. A., Lapian, J. S., & Tielung, M. V. (2019). The influence of green advertising and green claim toward green trust with misleading environmental claim as intervening variable of aqua product on faculty of economics and business unsrat student. Jurnal EMBA: Jurnal Riset Ekonomi, Manajemen, Bisnis dan Akuntansi, 7(3).

41. Sharifi, M., Khazaei Pool, J., Jalilvand, M. R., Tabaeeian, R. A., & Ghanbarpour Jooybari, M. (2019). Forecasting of advertising effectiveness for renewable energy technologies: A neural network analysis. *Technological Forecasting and Social Change*, *143*(April), 154–161.

42. Sharma, S., 1996. Applied multivariate techniques. John Wiley and Sons, Inc., New York.

43. Sin, L. (2018). Renewable energy: The clean fact. Retriewed from https://www.nrdc.org/stories/renewable-energy-clean-facts, (May 31,2020)

44. Sugget, P. (2019). The AIDA model and how to use it. Retriewed from https://www.thebalancecareers.com/get-to-know-and-use-aida-39273, (Jun 1, 2020)

45. Suhaily, L., & Darmoyo, S. (2019). Effect of green product and green advertising to satisfaction and loyalty which mediated by purchase decision. International Journal of Contemporary Applied Researches, 6(1).

46. Supriadi, B., Astuti, W., & Firdiansyah, A. (2017). Green product and its impact on customer satisfaction. *IOSR Journal of Business and Management (IOSR-JBM)*, *19*(8): 1 9.

47. Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International journal of medical education*, *2* (53).

48. Ullman, J. B., & Bentler, P. M. (2003). Structural equation modeling. *Handbook of psychology*, 607-634.

49. Wijaya, B. S. (2012). The development of hierarchy of effects model in advertising. *International Business Journal of Business Studies. 5*(1): 73–85.

50. Xu, X., & Schrier, T. (2019). Hierarchical effects of website aesthetics on customers ' intention to book on hospitality sharing economy platforms. *Electronic Commerce Research and Applications*, *35*(November 2018), 100856.

51. Zakhidov, R. A. (2008). Central Asian countries energy system and role of renewable energy sources. *Renewable Energy Sources 44*(3), 218–223.

52. Zimmermann, N. (2016). Five of the world's biggest environmental problems. Retriewed from https://www.dw.com/en/five-of-the-worlds-biggest-environmental-problems/a-35915705, (Jun 2, 2020)