

Factors Affecting Purchase Intention of Air Purifier as Green Product among Consumers during the Air Pollution Crisis

Aditya Kapoor¹, Chompu Nuangjamnong²

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Abstract

The purpose of this study is to determine the awareness of people towards air purifiers during the pollution crisis in Bangkok. In addition, it is important for people in Bangkok to breathe good air as recently, the air is getting worse and so this would affect the lungs of young children and old people living at homes and may cause certain diseases. Therefore, the purpose of this research is to spread the awareness of purifier so that PM Level in Bangkok gets better and people can live a healthy lifestyle. The sample (400 respondents) was collected from online questionnaires by using convenience sampling technique and snowball sampling technique. The data were analyzed by using simple linear regression and multiple linear regression to confirm the hypotheses testing. The results revealed perceived consumer effectiveness, environmental consciousness, and environmental attitude have a significant effect on air purifier purchase intention. Meanwhile, on the other framework environmental knowledge and environmental consciousness are both significant for having an environmental attitude. The researchers' study also stated that few people do not know about the air purifier. The findings of this study showed that all variables (perceived consumer effectiveness, environmental consciousness, and environmental attitude) have significant influences on purchase intention of air purifier as a green product. This study helps to increase the awareness of air purifiers among consumers as some of them do not really know the advantages of keeping the air purifier and how the air purifier acts as a green product in protecting the environment.

Keywords : Green Trust, Environmental Knowledge, Environmental Attitude, Perceived Consumer Effectiveness, Purifier Purchase Intention

JEL Classification Code: M30, M31, J11, I12, H31

1. Introduction

Today's world is currently going through a lot of drastic changes in terms of global warming, which is caused by a number of harmful gas and chemicals being released into our atmosphere due to various manmade activities (Canan, 2007). One of the biggest adverse effects on climate change has happened on the quality of the air around us. The

air is polluted with many natural and manmade pollutants, which have adverse effects on human health. The pollutants come from many sources, such as natural (decay of vegetation), agricultural chemicals (insecticide), commercial (chloroflorocarbons) Industrial activities (electric power plants), and transportation (oil burns). Population boom and cutting down of trees have further worsened air quality around the world (Bernard et al., 2001).

During the Covid-19 pandemic, indoor health quality has become even more important and affecting the lives of all family members especially children, young people, and working people who otherwise go to schools, colleges, and offices but are now stuck at home. Therefore, in the current scenario, getting an air purifier is even more crucial.

¹Aditya Kapoor, Student of Graduate School of Business and Advanced Technology Management, Assumption University of Thailand. Email: adityakapoor108@yahoo.com

²Chompu Nuangjamnong, Lecturer of Graduate School of Business and Advanced Technology Management, Assumption University of Thailand, Email: chompunng@au.edu

In Asia, many metropolitan cities that have seen a quick rise in population and a growth in infrastructure have resulted in bad air quality (pm 2.5 or higher). Bangkok city is a major example of big cities that has degrading air quality in recent years (Choomanee et al., 2020). In many other cities worldwide, there has been a rapid increase of urbanization, alongside with the worsening of air quality levels (Vyas et al., 2016). In addition, expanding population every year has led to more growth of vehicles in Bangkok city. These measures had an adverse effect on the health of humans and the environment (Choomanee et al., 2020). There are two types of aerosols that are bad for humans. First are the carbonaceous ones which come into the environment from the burning fossil fuel and forest fires. The second one is bioaerosols. 90% of these are generated indoors and are quite harmful than outdoor air pollution for human health. Bioaerosols are one of the pivotal indicators of indoor pollution. These aerosols badly impact human health. There are bioaerosols, such as bacteria, fungi, and viruses; and the one type is biomolecules i.e. toxic, debris etc. To make air quality better, indoor air purifiers were introduced (Mainka et al., 2020). Air purifier is basically a type of electronic device which has multiple filters to clean the pollutants in the air. Air purifiers are used so that air pollution can be reduced to the minimum level (Vyas et al., 2016). There are various air purifiers in the market such as Honeywell, Panasonic, Philips, Blueair, Samsung, Dyson, etc. One of them is portable air purifiers which can be put anywhere in the homes. This type of air purifiers is a good way of treating air pollution.

The study puts more emphasis on the purchase of air purifiers in Bangkok as air pollution is significantly increasing day by day in several parts of the city. The researcher investigates on how Green Trust, Environmental Knowledge, Environmental Consciousness, Environmental attitude, and Perceived Consumer effectiveness affect the purchase of air purifier as a green product.

The researcher has summarized objectives as 1) to test a relationship between Green Trust and purchase intention of air purifier; 2) to test the relationship between Perceived Consumer Effectiveness and purchase intention of air purifier; 3) to analyze the relationship between environmental consciousness and purchase intention of air purifier; 4) to study the relationship between environmental Knowledge and purchase intention of air purifier; 5) to test the relationship between Environmental Attitude and purchase intention; 6) to analyze the relationship between Environmental consciousness and Environmental attitude; 7) to test a relationship between Environmental Knowledge and Environmental Attitude.

Nevertheless, some people are still unaware of air purifiers due to product advertising and marketing, which was not done properly by companies. The researcher aims

to make people aware of the product (air purifier) by doing this study and distributing the questionnaires. The study aims to identify the awareness among Bangkok population on air pollution and air purifier and the study would help to analyze the factors, which will help to increase the sale of air purifier.

2. Literature Review

2.1. Literature Review and Related Theories

2.1.1 Green Trust

Increasing awareness about the environment issues has led to a change in the way people do their daily activities. There has been a serious change in consumer behavior for a healthy lifestyle. Consumers are pro-actively wanting to reduce their effect on their surroundings. Though this change is not very common yet and the situation is very dynamic. Firms and businesses have noticed this change in consumer consciousness and are willing to get a lead in the market which is very competitive by trying to use green market technology (Cherian & Jacob, 2012).

Lal et al. (2017) defined green trust as “a willingness to depend on a product, service, or brand based on the belief or expectation resulting from its credibility, benevolence, and ability about its environmental performance”. Air purifiers help to reduce city smog in homes. They support to mitigate pollution and also increase the life expectancy rate in various countries of the world in the coming years by removing all the particulate matter (Greenstone et al., 2015). With latest technology people have high confidence on IoT and inside their homes now a day, they have appliances that are internet based with smart technology. These smart appliances such as air purifier can improve indoor environment and so it is important to have air purifiers at homes. The users alter their lifestyle with the combination of latest technology by using IoT based air purifier (Sung & Hsiao, 2020). A certain appreciation of air purifiers or in other words, trust on these factors depend on risk and product knowledge. The consumer should have confidence on firm before buying air purifier and do a little bit of research (Wu et al., 2018). From the context of factors affecting purchase intention of air purifier as green product among consumers during pollution crises, the present analysis has suggested the following hypothesis:

H1a: Green trust has positive affect on air purifier as a green purchase intention.

2.1.2 Environmental Knowledge

Environment knowledge is defined by (Po, 2019) as “the amount of information individuals who have

environment concerning issues have and their ability to understand and evaluate its impact on society and the environment". Knowledge is about how safe a product is for the environment can be gained by proper branding and advertising of green products and this will lead to more usage of air purifiers in today's world (Arshad et al., 2014). Attitude towards the usage of air purifiers has altered in the past years in Bangkok. Due to the rise in air pollution, people pay more focus to greener product, in which one of the green products is air purifier. There are various types of air purifiers used with different technologies e.g. filter and electrostatic adsorption (Yadav & Pathak, 2017). Nowadays new things and appliances are developed with the concept of IOT (Internet of Things). IOT is also part of today's latest air purifiers (Cho et al., 2019). As pollution is increasing yearly in parts of the world so people are becoming more environmentally conscious. Therefore, they are starting to buy more air purifiers (Taufique & Vaithianathan, 2018). Values such as social consciousness have great effect on consumer environment concerns (Suki, 2016). From the context of factors affecting purchase intention of air purifier as green product among consumers during pollution crises, the present analysis has suggested the following hypothesis:

H1d: *Environmental knowledge has positive affect on air purifier as a green purchase intention.*

H2b: *Environmental knowledge has positive affect on air purifier in dimension of environment attitude.*

2.1.3 Environmental Attitude

Environmental Attitudes is defined by Milfont (2007) as "a psychological tendency expressed by evaluative responses to the natural environment with some degree of favor or disfavor. Environmental attitudes are a latent construct; therefore, the researchers are not able to observe directly". There are many ways on which purchase intention of green products are dependent upon and they are behavior, culture and gender. And it is also linked to Man – nature orientation (Sreen et al., 2018). Now a day as more people are becoming educated, therefore attitude towards environment concerns and purchase of green products is increasing. But social, economic, cultural factors prohibit the usage of green products. It is important to study the behavior towards the use of green products in developing economies (Chaudhary & Bisai, 2018). In today's world, the young ones are becoming more prone to use green products such as eco-designed packaging and air purifiers (Prakash & Pathak, 2017). However, there has been research done in the past that attitudes, norms, beliefs affect the behavior towards the purchase of green products. Norms basically co-relate with price that affect the environmental attitude. Both social norms and community affect attitude (Gadennetal, 2011). From the context of factors affecting purchase intention of

air purifier as green product among consumer during pollution crises, the present analysis has suggested the following hypothesis:

H1e: *Environment attitude has positive affect on air purifier as a green purchase intention.*

2.1.4 Environmental Consciousness

Environmental consciousness defined by Bonnett (2017) as "an element of belief system refers to specific psychological factors related to individuals' propensity to engage in pro-environmental behaviors. Abstract environmental knowledge is significant to predict environmental action". A more detailed understanding of consumer behavior process i.e. obtained from various markets in the world grants helpful insights in predicting the real behavior towards green products (Ha & Janda, 2012). The previous studies results showed that consumers who purchase energy efficient products should be careful and think before purchasing it. People are open minded towards green marketing and advertising but marketers should not separate them by using misleading information in the message (Shrum et al., 1995). Swift growth of economy has led to destruction of the environment and prompting environmental concerns. The previous studies suggested that the behavior and perceived consumer effectiveness both have indirect and direct effects on Ecological Conscious Consumer Behavior: ECCB (Taufique & Vaithianathan, 2018). Concerns about environment is increasing in developing/industrialized countries. People are destroying the environment and example of pollution are air and water pollution, inclusive of harmful chemicals, land destruction and vehicle pollution (Yam-Tang & Chan, 1998). Environment trust is related to price and action. Both intrinsic and extrinsic drivers are also related to social norms. On the other hand, the cost would have a negative impact. Environment behavior and energy saving attitude have a combined strong relationship (Gadenne et al., 2011). From the context of factors affecting purchase intention of air purifier as green product among consumers during pollution crises, the present analysis has suggested the following hypotheses:

H1c: *Environmental consciousness has positive affect on air purifier as a green purchase intention.*

H2a: *Environmental consciousness has positive effect on air purifier from the dimension of environmental attitude.*

2.1.5 Perceived Consumer effectiveness

Perceived Consumer Effectiveness defined by Hanss and Doran (2019) as "perceived value is the customer's evaluation of the merits of a product or service, and its

ability to meet their needs and expectations, especially in comparison with its peers”. The value of a product based on how much customers want or need it, rather than on its real price. To get a good view of understanding consumer behaviors and trends of purchase intention a study was done on prediction model and it was based on protective action decision model (PADM) and the health belief model (HBM) (Wang et al., 2021). It focusses on how consumer’s psychological factor affects their environment purchase during polluted cities. The study also provides a proof for the purchasing norms on consumer green consumption behavior by seeing a distinction between two groups of consumers (green and non-green). Results of previous study showed product knowledge and risk knowledge affects consumer buying power (Yang et al., 2020). Green consumption reduces harmful effects on the environment. The green products usage in developing economies is far behind. Therefore, researchers have tried to understand the buying power of green products in those countries. The previous study has used Theory of Planned Behavior (TPB) and Willingness To Pay Premium (WPP) to see consumers attitude towards green products (Yadav & Pathak, 2017). Now days perceptions towards green products such as air purifiers is drastically changing (Jaiswal & Singh, 2018). In the context of factors affecting purchase intention of air purifier as green product among consumers during pollution crises, the present analysis has suggested the following hypothesis:

H1b: *Perceived consumer effectiveness has positively affected air purifier as a green purchase intention.*

2.2. Theoretical Frameworks

In this research study, the researcher has used two theoretical frameworks to adapt and build the research conceptual framework. Firstly, the theoretical framework from the article title “*Factors Affecting Purchase Intention towards Green Products: A Case Study of Young Consumers in Thailand*”, this article was written by Maichum, Parichatnon, and Peng (2017) as shown in Figure 1.

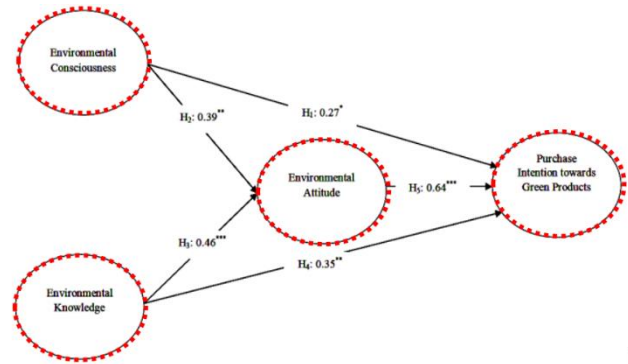


Figure 1. The Theoretical Framework proposed by Maichum, Parichatnon, and Peng (2017)

Secondly, the theoretical framework from the article titled “*How Does Green Product Knowledge Effectively Promote Green Purchase Intention?*” this article was written by Wang, Ma and Bai (2019), as shown in Figure 2.

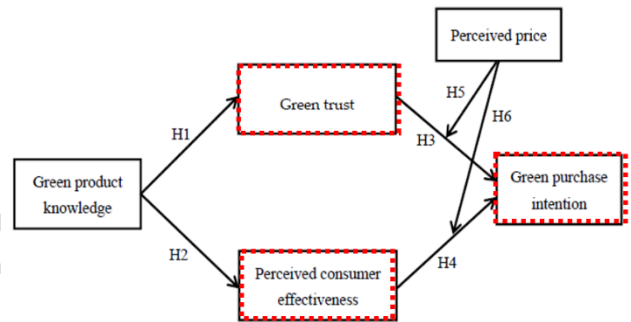


Figure 2. The theoretical framework proposed by Wang, Ma and Bai (2019)

2.3. Research Framework

The conceptual frameworks as illustrated in Figure 3 is adopted from various theoretical frameworks and various research studies as described above. In this framework the researchers get to know the factors (green trust, perceived consumer effectiveness, environmental consciousness, and environmental knowledge) that affect the air purifier as a green purchase intention. The research aims to study the factors as stated earlier that may affect the purchase of air purifier.

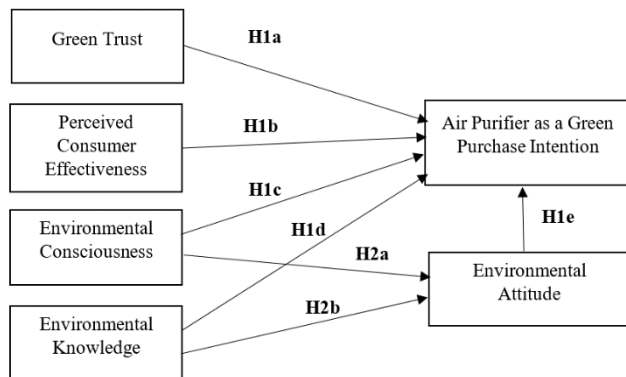


Figure 3. The conceptual framework by the researcher

3. Research Methodology

The research is conducted by using a quantitative approach. The questionnaires were prepared and distributed through online channels via Facebook, WhatsApp, Instagram, and Line application. The target respondents were mainly who stay in polluted area in Bangkok and who use an air purifier. The data were collected from target respondents whose responses will be analyzed to identify the factors affecting purchase intention of an air purifier as a green product among consumers during the air pollution crisis. The questionnaire consists of 24 questions, comprising of three parts. The first part represents the screening questions. The second part refers to consumer opinions on using an air purifier. The survey instruments were developed by using the scales from previous studies that have similar scope and context to this study. The third part represents the demographic profile of the targeted respondents. The factors except attitude and purchase intention used a seven-point Likert scale for measurement, in which 1 represents “strongly disagree” and 5 represents “strongly agree”.

3.1. Population and Sample Size

According to world population Statistics (2021), the current population of Bangkok is approximately 10,722,815. The researcher has taken Bangkok area because their pollution levels are very high. The air quality in Bangkok metropolitan area day by day has become worse. The researcher aimed to target the population in Bangkok area as some people are still not aware of the benefits of air purifiers. The sample size representative of the Bangkokians in this study is 384. It is determined based on Krejcie and Morgan's sample size calculation. Krejcie and Morgan's sample size calculation was based on $p = 0.05$ where the probability of

committing a type I error is less than 5 % or $p < 0.05$. (Krejcie & Morgan, 1970)

3.3 Sampling Technique

The researcher used the non-probability sampling methods, which adopted convenience sampling technique and snowball sampling technique in this study.

Convenience Sampling Technique - The researcher chooses this technique as they are easy to recruit and easy to post the survey thru social media.

Snowball Sampling Technique - The researcher uses this technique because the researcher will ask support from friends, relatives, and colleagues to distribute the survey to the sample size (Atkinson et al., 2001).

The questionnaire was distributed via online through WhatsApp, Line, Facebook Messenger and Instagram. 400 collected respondents were screened to meet the target group. Questionnaires with missing data, insufficient responses were removed from statistical analysis to gain accuracy. After cleaning the data, the researcher has taken 400 respondents.

3.4 Pilot Test

Each Variable in this study was analyzed by using Cronbach's Alpha to ensure the reliability of the test and unidimensional of the measurement scales. A set of 50 responded qualified questionnaires were analyzed by using SPSS program to test the reliability. The results from pilot test have Cronbach's Alpha Coefficient of 0.70 and above. The results of Cronbach's Alpha are shown in Table 1 below.

Table 1. The pilot testing results of Cronbach's Alpha

Variables	Sources of Questionnaire	No. of items	Cronbach's Alpha
Green Trust (GT)	Greenstone et al., (2015)	5	.817
Environmental Knowledge (EK)	Yadhav & Pathak, (2017)	3	.705
Perceived Consumer Effectiveness (PCE)	Yang et al., (2020)	4	.737
Environmental Attitude (EA)	Chaudhary & Bisai, (2018)	4	.768
Environmental Consciousness (EC)	Ha & Janda, (2012)	5	.729
Air Purifier as a Green Purchase Intention (API)	Chen & Barns, (2007); Suh & Han, (2003)	3	.809

4. Results and Discussion

The researcher demonstrated the data analysis and result interpretation gathered from respondents. The assembled data was analyzed by using statistical software. This section consists of four parts. The first part is the result of the reliability testing of all variables. The second part is descriptive analysis of demographic and general information of the respondents including gender, income and occupation and choice of air purifier brand. Next part included the descriptive analysis of the variables focused in the present study. The last part of this section illustrates the inferential analysis and the results of the hypothesis tested by the multiple linear regression (MLR) and simple linear regression (SLR).

4.1 Reliability Test

In this part, the researcher uses Cronbach's Alpha to test the reliability of each variables in the research. Alpha values were described as: $\alpha \geq 0.90$ = excellent, $0.90 > \alpha \geq 0.8$ = Good, $0.8 > \alpha \geq 0.7$ = Acceptable, $0.7 > \alpha \geq 0.6$ = Questionable, $0.6 > \alpha \geq 0.5$ = Poor and $0.5 > \alpha$ = Unacceptable (Taber, 2017).

Table 2. Summary of all Variables in the Reliability Testing

Variables	Cronbach's Alpha	Number of items	Result
Green Trust (GT)	0.865	5	Reliable
Environmental Knowledge (EK)	0.872	5	Reliable
Perceived Consumer Effectiveness (PCE)	0.881	5	Reliable
Environmental Attitude (EA)	0.851	5	Reliable
Environmental Consciousness (EC)	0.865	5	Reliable
Air Purifier as a Green Purchase Intention (API)	0.891	3	Reliable

($n = 400$)

Cronbach's alpha is the most common technique for reliability analysis of a set of scale or test item. From table 3, the reliability of 400 questionnaires from screening question shown Cronbach's Coefficient Alpha of Green Trust (GT) was 0.865; Environmental Knowledge (EK) was 0.872; Perceived Consumer Effectiveness (PCE) was 0.881; Environmental Attitude (EA) was 0.851; Environmental Consciousness (EC) was 0.865; and air purifier as a green purchase intention (API) was 0.891. All of the variables in the model are more than 0.8, which interprets into a very good strength of association and reliability.

4.2 Demographic Data

The researcher distributed the questionnaires to 400 respondents and demographic information including the questions such as, gender, income, occupation of the people and air purifier brands as shown in Table 3.

Frequency distribution and percentage of respondents were described by using the gender of the samples and it showed that most of the respondents were female with a percentage of 24.5% (98) while compared to male, which is 75.5% (302).

In terms of income, the highest number of respondents are in the range of say more than 50,000THB i.e., 201 (50.3%) and least respondents were between 30,001-40,000 THB mentioned by 36 (9%) respondents, below 20000 THB were 70 (17.5%), 20001-30,000 THB are 49 (12.3%) and 40001-50,000 THB are 44 (11%).

For occupation among the 400 respondents 38 were students, followed by 148 (37%) were self-employee, 46 (11.5%) respondents were freelancer, 65 (16.3%) were business owner, 18 (4.5%) were unemployed and lastly 85 were (21.3%) others.

4.3 Descriptive analysis with Mean and Standard Deviation

In this part the researcher summarizes the mean and standard deviation of each group of variables consisting of green trust, environment knowledge, perceived consumer effectiveness, environment consciousness, environment attitude, and air purifier repurchase intention. The mean and standard deviation are the value that find the average of each group of variables are shown in Table 3. In Table 3 the data shows the mean and standard deviation of green trust (GT). The highest mean of 4.25 was "GT1: I believe that air purifiers make air clean" while "GT2: I believe that air purifiers create environment friendly" had the lowest mean at 3.96. The highest standard deviation was "GT2: I believe that air purifiers create environment friendly" which is equal to 0.998 and the lowest standard deviation was "GT1: I believe that air purifiers make air clean" which is equal to 0.961.

The data shown in table 3 shows mean and standard deviation of Environmental Knowledge (EK). The highest mean of 4.26 was "EK2: In case of a heavily polluted environment, I think changing filters in air purifiers would help clean the air." while "EK1: In my opinion, using air purifiers have a lot of benefits potential for health." had the lowest mean at 4.13. The highest standard deviation was "EK2: In case of a heavily polluted environment, you think changing filters in air purifiers would help clean the air." which is equal to 0.801 and the lowest standard deviation

was “EK1: In my opinion, using air purifiers have a lot of benefits potential for health.” which is equal to 0.785.

Afterwards, mean and standard deviation of perceived consumer effectiveness (PCE) is shown in table 5. The highest mean of 4.50 was “PCE4: I would always do research about air purifier before I decide to buy the air purifiers from any company.” while “PCE2: I believe that every company would provide the same quality of air purifiers.” had the lowest mean at 3.09.

The highest standard deviation was “PCE2: I believe that every company would provide the same quality of air purifiers” which is equal to 1.261 and the lowest standard deviation was “PCE4: I would always do research about the air purifier before I decide to buy the air purifiers from any company.” which is equal to 0.755.

The mean and standard deviation of environmental attitude (EA) is shown in table 3. The highest mean of 4.48 was “EA4: I do really care about having a clean environment around my place at all times” while “EA3: I strongly think that air purifiers are good appliances to save the environment around us.” had the lowest mean at 3.53. The highest standard deviation was “EA3: I strongly think that air purifiers are good appliances to save the environment around us.” which is equal to 1.167 and the lowest standard deviation was “EA4: I do really care about having a clean environment around my place at all times.” which is equal to 0.718. Mean and standard deviation of environmental consciousness (EC) is shown in table 3.

Table 3. Mean and Standard Deviation of Each Variable

Green Trust (GT)	Mean	Std. Dev.
GT1: I believe that air purifiers make air clean.	4.25	0.691
GT2: I believe that air purifiers create a friendly environment.	3.69	0.998
GT3: I am confident that air purifiers create a healthy lifestyle at home and workplaces.	4.16	0.798
GT4: I believe that air purifiers work well in various polluted countries particularly in Bangkok.	4.16	0.823
GT5: I believe that air purifiers can remove dust particles at home or office.	4.10	0.872
EK1: In my opinion, using air purifiers have a lot of benefits that are good for health.	4.13	0.785
EK2: In case of a heavily polluted environment, I think changing filters in air purifiers would help clean the air.	4.26	0.801
EK3: In my opinion, air purifiers would protect our home and office from the polluted environment.	4.15	0.796
PCE1: I believe that air purifiers can eliminate polluted environment better than any other appliances.	3.94	0.873
PCE2: I believe that every company would provide the same quality of air purifiers.	3.09	1.261
PCE3: I believe that when I buy an air purifier, I keep in mind the price or quality of preserving the environment.	3.20	1.222
PCE4: I always do research about the air purifier before I decide to buy the air purifiers from any	4.50	0.755

company.		
EA1: I strongly feel that air purifiers can eliminate the polluted environment around my home or office.	3.80	1.098
EA2: I strongly feel that air purifiers can clean the air for a better environment.	3.90	0.965
EA3: I strongly feel that air purifiers are good appliances to save the environment around us.	3.53	1.167
EA4: I do really care about having a clean environment around my place always.	4.48	0.718
EC1: I am willing to buy air purifiers to save the environment.	3.69	1.191
EC2: I strongly feel that air purifiers can clean the air for a better environment.	4.39	0.728
EC3: I am willing to buy air purifiers to have a friendly environment.	3.95	1.045
EC4: I am willing to buy air purifiers to eliminate pollution in the air during the dust crisis.	4.24	0.830
EC5: Air purifiers are a useful appliance to save environmental places.	3.45	1.235
API1: I intend to continue buying air purifiers to clean the air around my place to a better environment in the future.	3.50	1.045
API2: I would strongly recommend others to buy air purifiers to have a friendly environment.	3.62	1.121
API3: I would like to repeat my experience in using air purifiers to clean the air around my place to a better environment.	3.37	1.098

(n = 400)

The highest mean of 4.39 was “EC2: I strongly think that air purifiers can clean the air for a better environment.” while “EC5: Air purifiers are a useful appliance to save environmental places”, had the lowest mean at 3.45. The highest standard deviation was “EC5: Air purifiers are a useful appliance to save environmental places”, which is equal to 1.235 and the lowest standard deviation was “EC2: I strongly think that air purifiers can clean the air for a better environment”, which is equal to 0.728.

Lastly, mean and standard deviation of air purifier as a green purchase intention (API) is shown in table 5. The highest mean of 3.62 was “API2: I would strongly recommend others to buy air purifiers having a friendly environment.” while “API3: I would like to repeat my experience in using air purifiers for cleaning the air around my place to a better environment.” had the lowest mean at 3.37. The highest standard deviation was “API2: I would strongly recommend others to buy air purifiers for having a friendly environment.” which is equal to 1.121 and the lowest standard deviation was “API1: I intend to continue buying air purifiers for cleaning the air around my place to a better environment in the future.” which is equal to 1.045.

4.4 Hypothesis Testing Results

In this study, factors affecting purchase intention of an air purifier as a green product among consumers during the air pollution crisis by using multiple linear regression

(MRL) was applied to test all the hypothesis. The results of the analysis were used to support the hypothesis testing of the independent variables and dependent variables of the predictions. Adjusted R Squared is a goodness-of-fit measure for linear regression models has been described by Frost (2018). This statistic indicates the percentage of the variance in the dependent variable that the independent variable explains collectively. R-Squared measures the strength of the relationship between the model and the dependent variable on a convenient 0 - 100% scale.

Table 4a. Value of R Square, Adjusted R-Square (a) and (b)

Model Summary			
R	R Square	Adjusted R Square	Std. Error of the Estimate
.894 ^a	0.800	0.797	0.28648
a. Predictors: (Constant), Environmental Consciousness (EC), Green Trust (GT), Environmental Attitude (EA), Environmental Knowledge (EK), Perceived Consumer Effectiveness (PCE)			

The adjusted R-square's value is equal to 0.797 or 79.7% of purchase intention of an air purifier as a green product among consumers during the air pollution crisis by environmental consciousness (EC), green trust (GT), environmental attitude (EA), environmental knowledge (EK) and perceived consumer effectiveness (PCE).

Table 4b. Value of R Square, Adjusted R-Square (a) and (b)

Model Summary			
R	R Square	Adjusted R Square	Std. Error of the Estimate
.527 ^b	0.278	0.275	0.51802
b. Predictors: (Constant), Environmental Consciousness (EC), Environmental Knowledge (EK)			

The adjusted R-square's value equal to 0.275 or 27.5% of purchase intention of an air purifier as a green product among consumers during the air pollution crisis by environmental consciousness (EC) and environmental knowledge (EK). The variance inflation factor (VIF) shows a multicollinearity regression analysis. Multicollinearity is when there is a correlation between predictors (i.e., independent variable) in a model; it can adversely affect the regression results. The VIF showed how much variance of a regression coefficient is inflated because of multicollinearity in the model. Variance inflation factors ranges from 1 upwards. The numerical value for VIF explains (in decimal form) what percentage of the variance (i.e., standard error square) is inflated for each coefficient and has been described by Glen (2015).

Table 5. Value of VIF (a) and (b)

Coefficients ^a Air Purifier as a Green Purchase Intention (API)			
Model	Collinearity Statistics		
	B	Tolerance	VIF
(Constant)	-0.091		
Green Trust (GT)	-0.392	0.305	3.276
Environmental Knowledge (EK)	-0.103	0.459	2.177
Perceived Consumer Effectiveness (PCE)	0.665	0.413	2.423
Environmental Attitude (EA)	0.652	0.483	2.072
Environmental Consciousness (EC)	0.189	0.575	1.740

Coefficients ^b Environmental Attitude (EA)			
Model	Collinearity Statistics		
	B	Tolerance	VIF
(Constant)	1.335		
Environmental Knowledge (EK)	0.230	0.723	1.384
Environmental Consciousness (EC)	0.413	0.723	1.384

A rule of thumb for interpreting the variance inflation factor:

- 1 = not correlated.
- Between 1 and 5 = moderately correlated.
- Greater than 5 = highly correlated.

In this study, the variance inflation factors (a) were in the value of in between 1.740 - 3.276 and (b) the value of above 1.300.

4.4.1 Analysis of Hypothesis

H1a – Null Hypothesis: Green trust has no positive affect on air purifier as a green purchase intention.

H1a – Alternative Hypothesis: Green trust has positive affect on air purifier as a green purchase intention.

Based on the Table 6a, the significant value was less than .05 (0.000 <.05) which means that green trust has significant effect on purchase intention of an air purifier as a green product among consumers during the air pollution crisis. Therefore, the null hypothesis (H1a) was rejected. The researcher concluded that green trust has significant influence on purchase intention of an air purifier as a green product among consumers during the air pollution crisis. Additionally, the standardized coefficient (β) was -.392 indicating that if there is a single unit increase in green trust, purchase intention of an air purifier as a green product among consumers during the air pollution crisis will decrease by 39.2%.

Table 6a. Multiple linear regression coefficient of air purifier as a green purchase intention in terms of Green

Trust, Perceived Consumer Effectiveness, Environmental Consciousness, Environmental Knowledge, and Environmental Attitude.

Variables	B	Std. Error	Beta	Sig.	VIF
(H1a) Green trust	-0.392	0.041	-0.392	0.000*	3.276
(H1b) Perceived consumer effectiveness	0.665	0.035	0.673	0.000*	2.423
(H1c) Environmental consciousness	0.189	0.033	0.169	0.000*	1.740
(H1d) Environmental knowledge	-0.103	0.038	-0.091	0.007*	2.177
(H1e) Environmental attitude	0.652	0.034	0.624	0.000*	2.072

Note: R Square= .800 or 80.0%, Adjusted R Square= .797 or 79.7%, * $p < 0.05$; Dependent variable = Air Purifier as a Green Purchase Intention (API)

H1b – Null Hypothesis: Perceived consumer effectiveness has no positive affect on air purifier as a green purchase intention.

H1b – Alternative Hypothesis: Perceived consumer effectiveness has no positive affect on air purifier as a green purchase intention.

Based on the Table 6a, the significant value was less than .05 ($0.000 < .05$) which means perceived consumer effectiveness has significant effect on purchase intention of an air purifier as a green product among consumers during the air pollution crisis. Therefore, the null hypothesis (H1b) was rejected. The researcher concluded that perceived consumer effectiveness has significant influence on purchase intention of an air purifier as a green product among consumers during the air pollution crisis. Additionally, the standardized coefficient (β) was 0.665 indicating that if there is a single unit increase in green trust, purchase intention of an air purifier as a green product among consumers during the air pollution crisis will decrease by 66.5%.

H1c – Null Hypothesis: Environmental consciousness has no positive affect on air purifier as a green purchase intention.

H1c – Alternative Hypothesis: Environmental consciousness has positive affect on air purifier as a green purchase intention.

Based on the Table 6a, the significant value was less than .05 ($0.000 < .05$) which means environmental consciousness has significant effect on purchase intention of an air purifier as a green product among consumers during the air pollution crisis. Therefore, the null hypothesis (H1c) was rejected. The researcher concluded that green trust has significant influence on purchase intention of an air purifier

as a green product among consumers during the air pollution crisis. Additionally, the standardized coefficient (β) was -.392 indicating that if there is a single unit increase in green trust, purchase intention of an air purifier as a green product among consumers during the air pollution crisis will decrease by 39.2%.

H1d – Null Hypothesis: Environmental knowledge has no positive affect on air purifier as a green purchase intention.

H1d – Alternative Hypothesis: Environmental knowledge has positive affect on air purifier as a green purchase intention.

Based on the Table 6a, the significant value was less than .05 ($0.000 < .05$) which means that environmental knowledge has significant effect on purchase intention of an air purifier as a green product among consumers during the air pollution crisis. Therefore, the null hypothesis (H1d) was rejected. The researcher concluded that green trust has significant influence on purchase intention of an air purifier as a green product among consumers during the air pollution crisis. Additionally, the standardized coefficient (β) was -0.103 indicating that if there is a single unit increase in environmental knowledge, purchase intention of an air purifier as a green product among consumers during the air pollution crisis will decrease by 10.3%.

H1e – Null Hypothesis: Environment attitude has no positive affect on air purifier as a green purchase intention.

H1e – Alternative Hypothesis: Environment attitude has positive affect on air purifier as a green purchase intention.

Based on the Table 6a, the significant value was less than .05 ($0.000 < .05$) which means that environmental attitude has significant effect on purchase intention of an air purifier as a green product among consumers during the air pollution crisis. Therefore, the null hypothesis (H1a) was rejected. The researcher concluded that environmental attitude has significant influence on purchase intention of an air purifier as a green product among consumers during the air pollution crisis. Additionally, the standardized coefficient (β) was 0.652 indicating that if there is a single unit increase in green trust, purchase intention of an air purifier as a green product among consumers during the air pollution crisis will decrease by 65.2%.

Table 6b. Multiple Linear Regression Coefficient of Environmental Attitude of Air Purifier as a Green Purchase Intention in Terms of Environmental Consciousness, and Environmental Knowledge

Variables	B	Std. Error	Beta	Sig.	VIF
(H2a) Environmental consciousness	0.230	0.055	0.212	0.000*	1.384

(H2b) Environmental knowledge	0.413	0.054	0.384	0.000*	1.384
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Note: *R Square*= .278 or 27.8%, *Adjusted R Square*= .275 or 27.5%, **p* < 0.05; *Dependent variable* = *Environmental attitude*

H2a – Null Hypothesis: Environmental consciousness has no positive effect on air purifier in dimension of environment attitude.

H2a – Alternative Hypothesis: Environmental consciousness has positive effect on air purifier in dimension of environment attitude.

Based on the Table 6b the significant value was less than .05 (0.000 < .05) which means that environmental consciousness has significant effect on environmental attitude. Therefore, the null hypothesis (H2a) was rejected. The researcher concluded that environmental attitude has significant influence on purchase intention of an air purifier as a green product among consumers during the air pollution crisis. Additionally, the standardized coefficient (β) was 0.230 indicating that if there is a single unit increase in environmental consciousness among consumers during the air pollution crisis environmental attitude will decrease by 23%

H2b – Null Hypothesis: Environmental knowledge has no positive affect on air purifier in dimension of environment attitude.

H2b – Alternative Hypothesis: Environmental knowledge has positive affect on air purifier in dimension of environment attitude.

Based on the Table 6b the significant value was less than .05 (0.000 < .05) which means that environmental knowledge has significant effect on environmental attitude. Therefore, the null hypothesis (H2b) was rejected. The researcher concluded that environmental attitude has significant influence on purchase intention of an air purifier as a green product among consumers during the air pollution crisis. Additionally, the standardized coefficient (β) was 0.413 indicating that if there is a single unit increase in environmental knowledge among consumers during the air pollution crisis environmental attitude will decrease by 41.3%

5. Conclusion and Recommendation

5.1 Summary of Findings

There are two types of information analyzed. First is summary of demographic factors and second is the summary of hypothesis testing.

5.1.1 Summary of Demographics

In this study, the data were collected from people living

in Bangkok and the researcher collected the data by using online questionnaires. According to the results, the major group is female which is 75.7%. The highest percentage of income is more than 50,000 THB that is 50.3%. The highest level of occupation is self-employee and that is 37.0%. The major choice of brand chosen by people living in Bangkok is others and that is 33%.

5.1.2 Summary of Hypothesis Testing

Simple and Multiple linear regression was used to test the relationship among the variables used by the researcher. From the research, the entire hypothesis was rejected, as their p-value is less than 0.05. It showed positive relationship between the factors. Beta is also used to describe the strength among independent and dependent variable. The information can be found in the following table:

Table 7a. Dependent Variable is Air Purifier Purchase Intention

Rank	Independent variables	Beta
1 st	Perceived consumer effectiveness	0.673
2 nd	Environmental Attitude	0.624
3 rd	Environmental Consciousness	0.169
4 th	Environmental Knowledge	-0.091
5 th	Green Trust	-0.324

Table 7b. The second table in which Environmental Attitude is Dependent Variable.

Rank	Independent variables	Beta
1 st	Environmental knowledge	0.384
2 nd	Environmental Consciousness	0.212

5.2 Conclusions

Hypothesis testing showed that all six hypotheses (green trust, perceived consumer effectiveness, environmental attitude, environmental knowledge and environmental consciousness) have significant effect on air purifier purchase intention.

Firstly, the researcher found that perceived consumer effectiveness and environmental attitude are the two variables that have highest values with the air purifier purchase intention. Their significant values were 0.000, which showed that these 2 null hypotheses were rejected and were correct and was less than 0.05. Furthermore, according to the beta values perceived consumer effectiveness and environmental attitude have a dominant influence on air purifier purchase intention that is 0.665 (perceived consumer effectiveness), 0.652 (environmental attitude).

Secondly, the hypothesis result showed that environmental consciousness has effect on air purifier purchase intention but not as significant effect as the above

two variables. Its significant value is 0.000, which is less than 0.05, which showed that the null hypothesis is correct and rejected. In addition, it has little effect on air purifier purchase intention and its beta value is 0.169.

The other two variables were green trust and environmental knowledge are significant but does not have a large effect on air purifier purchase intention due to their beta value is less.

Finally environmental attitude is the dependent variable in the second theoretical framework. According to the results from the study “An Empirical Study of Factors Influencing on Works’ Purchase Intention towards Organic Diet Capsule in Bangkok Thailand” (Cornford & Papat, 2019), revealed that two variables which health consciousness and attitude have a significant influence on purchase intention. This result has been confirmed the same in this study. Therefore, the other two variables environmental consciousness and environmental knowledge have a significant effect on environmental attitude. In addition, their values are 0.000, which is less than 0.05, these two have a dominant effect on environmental attitude as their beta values are a little high that is 0.384 (environmental knowledge) and 0.212 (environmental consciousness).

5.3 Recommendation

Based on the findings and discussion of the research, the following recommendations were presented for the companies of air purifier that will help them to increase the sale of the product and make it more popular and the advertisements can be designed according to the parameters tested in the study.

Firstly, the companies need to increase the advertisements of air purifier so that more people are aware of it, as prior to the study, there were hardly any people aware of the product in Bangkok. The companies should use various marketing techniques to increase the popularity. They should make the air purifier more visible in the market since pollution is increasing in Bangkok day by day. Moreover, the companies should also show their product in social media platforms like Facebook, Instagram, Line etc. and in channel 3 in television area. The companies should also advertise air purifier in BTS and MRT where Thai’s and Foreigners usually travel.

Secondly, the awareness of air purifier should rise as in Bangkok pollution is increasing and people do not know about the product well.

Thirdly, the researcher recommends that air purifier companies should make it more utilitarian that might make air purifier machines multipurpose example may include the function of air cooling or air conditioning together with air purifier properties.

Finally, perceived consumer effectiveness has the highest rank among the beta values of the variables found in my study. Thus, if the customers know about the effectiveness of the air purifier, then more sales would happen in the future. The companies can also increase the filtration level of air purifier so as to make them more effective and thus more desirable to the customers.

5.4 Limitation of the Study

There are various limitations in this study and they are; Firstly, the researcher only examined Bangkok and not the other regions around Bangkok area. If he had examined those areas, then with the study he might have got various problems in those areas. Secondly, the researcher should have taken other variables into account apart from those variables taken by the researcher.

Finally, the researcher should have taken an interview rather than online which would have given much better results for the research.

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