

# The Factors Affecting the Purchase Intention of Household Electrical Appliances (Home Appliances) That Are Good for Consumers' Health in Chongqing City.

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**Abstract:** The objective of this study is to explore and examine the impact of these factors on the Purchase intention of household electrical appliances through the mediating role of Attitude. Survey data were collected from 329 consumers in Chongqing City. Results from the Partial Least Squares Structural Equation Modeling (SEM) using the Amos 20 program showed that Health concern, Environmental concern, Attitude, Perceived behavioral control, and Trust affect directly to purchasing intention of consumers. Results from the Process Macro using the SPSS 25 program have also identified the mediating role of Consumers' Attitudes in the relationship between Health Concern and Environmental Concern to Consumer's Purchase intention. Finally, several suggested governance implications will assist manufacturers and marketers in developing targeted customer-focused strategies.

**Keywords:** Process macro; health; household electrical appliances equipment; intention.

## 1. Research Introduction

In the current pandemic context, health concerns have dominated consumers in buying products and services. Therefore, the taste in choosing to buy household electrical appliances has also changed. Besides modern design and advanced technology, good health becomes an indispensable criterion when choosing to buy household electrical appliances (Waris, Dad, & Hameed, 2021). Household electrical appliances have become an indispensable part of people, especially products with functions and features aimed at human health are even more interested (Krishnan & Bino, 2021).

In many previous studies, if talking about the field of household electricity, the research has only stopped at research topics such as Zhao, Zhang, and Wang's intention to buy energy-saving equipment (2019); Tan, Ooi, and Goh (2017). Or topics about a small aspect of household appliances such as Thai's customer's intention to buy kitchen utensils (2014). As for health, there are topics referring to the intention to buy green of Abdulsahib, Eneizan, and Alaboodi (2019), Jaiswal and Kant (2018), or Le (2014)'s intention to buy safe food, but there are rarely any research topics that delve into healthy household electrical appliances. Therefore, this study was conducted in Chongqing City (CQC), used to supplement the previous research gaps.

## 2. Theoretical Background and Model

Intention plays an important role in guiding human action, which is the premise of an individual's buying behaviour (Ajzen, 2001; Wang, Pacho, Liu, & Kajungiro, 2018). According to Qader and Zainuddin (2010), the intention to buy as a plan of a person to engage in some action for a specific period of time and the probability that person will perform a behaviour. Rezvani et al. (2012) define purchase intent as the tendency to take personal action based on a brand, or to take purchase-related actions as measured by the ability of consumers to make a purchase (Aristio, Supardi, Hendrawan, & Hidayat, 2019).

Health concerns are considered the extent to which health concerns are considered in the daily life activities of the individual (Yadav & Pathak, 2016).

Attitude is the assessment of whether the behaviour being considered is good or bad, and whether the person wants to perform that behaviour (Paul, Modi, & Patel, 2016). Most consumers use organic or green products because they find that those products are beneficial to themselves (Prakash., 2019). According to Yadav and Pathak (2016), the willingness to lead a healthy lifestyle can affect the attitude and intention of consumers to buy green products. Xu, Wang, and Yu (2019) have found many documents showing that attitudes can be positively influenced by health consciousness.

With consumers interested in green products, there is often a tendency to change their daily lives to a new way to consume green products (Abdulsahib., 2019). Accordingly, high health concerns will urge them to use green products (Abdulsahib & ctg., 2019). Previously, Hsu, Chang, and Lin (2016) also said that health concern has a positive effect on the intention to buy organic products. The results of the study by Abdulsahib and colleagues (2019), have also shown that health factors affect the attitude and intention to buy green products.

H1: Health concerns have a positive impact on consumers' attitudes to buy healthy household electrical appliances

H2: Health concerns have a positive impact on consumers' intention to buy healthy household electrical appliances

Maichum, Parichatnon, and Peng (2016) defines concern for the environment as a strong attitude to protect the environment. According to Prakash and Pathak (2017), environmental concerns Is the extent to which people are aware of environmental issues and their willingness to solve environmental problems.

Hung, Chang, and Shaw (2019) also suggest that concern for the environment is emphasised as one of the important cognitive measures for predicting a person's environmentally friendly behaviour over time in the green research paper.

In previous studies, the authors also identified environmental concerns that positively affect consumers'

attitudes towards green products, which further boosted their intention to buy products (Mostafa, 2009; Jaiswal & Kant, 2018; Yadav & Pathak, 2016).

Maichum and colleagues (2016) have shown that concern for the environment is an important factor that affects the intention to buy green products. Or according to Barber, Kuo, Bishop, and Goodman (2012), proving that consumers who care about environmentally friendly have a desire to consume as many green products. Previously, research by Alam et al. (2014) also showed that concern for the environment has a positive impact on consumers' intention to buy products. In this study, healthy GD products with some characteristics are similar to green products, and those properties are also considered when buying healthy GD products.

H3: Environmental concerns have a positive effect on consumers' attitudes to buy healthy household electrical equipment

H4: Environmental concerns have a positive impact on consumers' intention to buy healthy household electrical appliances According to planned behaviour theory – TPB, attitudes are considered one of the determinants of behavioural intentions. This means that the attitude towards behaviour is understood as a level of favourable or unfavourable assessment of an individual for a particular behaviour (Ajzen, 1991). Or in another study that suggests that attitudes towards behaviour express a person's general assessment of behaviour based on beliefs about whether the behaviour leads to the desired outcome (Tan & ctg., 2017). Ha and Janda (2012) demonstrated that attitudes have a positive impact on behavioural intentions.

H5: The attitude of consumers towards healthy household electrical equipment has a positive impact on their purchase intentions.

The subjective standard refers to the consumption of individuals under the influence of the social environment or public opinion, which is related to the norm consciousness and the integration motivation of individuals. The subjective norm of the individual is often influenced by the values and habits of others, called social influencing factors (Ajzen, 1987). The subjective standard also refers to the personal assessment of others' priorities and support for behaviour (Taufique & Vaithianathan, 2018). It is also the perception of social pressure from important referrals (Huang & Ge, 2019).

According to Park (2000), social pressure comes mainly from the attitudes or views of other people or groups that are important to a person, about whether or not the person should perform a particular behaviour. When considering the relationship between human subjective norms and behavioural intent, most previous studies have confirmed that

subjective norms positively affect behavioural intent (Chen & Tung, 2014; Wee, Lee, Yu, & Wang, 2011). For consumer health-friendly devices, the subjective standard that individuals perceive mainly comes from family, friends and characters with a certain position in society.

H6: The subjective standard has a positive effect on the consumer's intention to buy healthy household electrical appliances.

Behavioural control awareness is an individual's perception of performing a behaviour specifically easy or difficult (Ajzen, 1991). According to Alam et al. (2014), behavioural control awareness is determined by beliefs about both internal and external factors to facilitate the performance of behaviour. Behavioural control awareness has two components: one is internal control and external control (Ham, Pap, & Stanic, 2018). To improve the interpretability of Rational Action Theory - TRA, Ajzen (2001) introduced the behavioural control cognitive variable in TPB. According to the research results of Kim and Han (2010), behavioural control awareness has a positive impact on intentions.

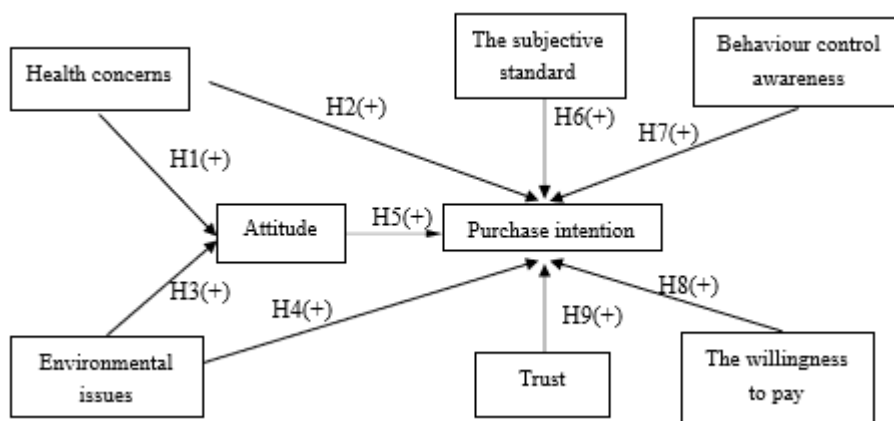
H7: Behavioural control awareness has a positive impact on consumers' intention to buy healthy household electrical appliances Another way to check consumers' behavioural intentions is to assess their willingness to pay.

Willingness to pay is defined as the highest price a buyer is willing to pay (Barber & ctg., 2012). Price is one of the most important factors for the consumer decision-making process (Xu & ctg., 2019; Yadav & Pathak, 2016). Health-care, receptive consumers of green products will be willing to pay more for these products (Jang, Kim, & Bonn, 2011; Kang, Stein, Heo, & Lee, 2012; Manaktola & Jauhari, 2017).

H8: The willingness to pay has a positive impact on the intention to buy healthy household electrical appliances of consumers

Giampietri, Finco, and Giudice (2016) argue that trust is a decisive factor that complements the intention in the TPB model. The trust structure includes expectations of benefits, improved consumer satisfaction, loyalty, and reduced consumer uncertainty about the product (Jiménez & Martín, 2014). Chen and Chang (2012) believe that trust or more specifically, green trust is the willingness to use certain reliable goods and services, or brands that are said to have an impact on the environment, health. Therefore, consumer confidence has contributed to strengthening consumers' buying intentions (Liang, 2016; Lim & Goh, 2019).

H9: Trust in healthy educational equipment has a positive effect on consumers' intention to buy healthy household electrical equipment



### 3. Research Method

The discovery study was conducted in-depth interview methods for the group of experts and the group discussion for the group of respondents. The determination of the interview subject is based on the method of choosing a purposeful sample. The expert group consists of 05 people, has at least 02 years of experience in the field of household electrical equipment and knowledgeable about healthy household electrical equipment. The group of respondents consists of 07 people, who are consumers living and working in Chongqing City, have a stable income, tend to pay a lot of attention to personal and family health.

The scale is built from the original scales of: Tan et al. (2017); Maichum et al. (2016); Jaiswal and Kant (2018); Prakash and Pathak (2017); Jang et al. (2011); Lim and Goh (2019); Chen and Chang (2012); Prakash et al. (2019). From these scales, the author has translated into Chinese, and at the same time proposed a theoretical scale table to suit the

research topic. Based on the proposed theoretical scale; the author builds a survey and forms a preliminary quantitative survey after discussion with a group of experts. After that, the author continued to survey the group of 07 consumers to compare and correct for the last time, and give an official survey to conduct a quantitative survey. Applying the non-probability sampling method, a convenient way to sample by sending questionnaires to consumers with online delivery via email, social networks, and live streaming at some commercial centres, electronics supermarkets in Chongqing City.

### 4. Research Results

The data collected from 329 survey participants, after being analysed by SPSS software, were statistically described by the results of the sample and variable as shown in Table 1 and Table 2.

**Table 1.** Demographic statistics

Measured variable		N = 329	Rate%
Gender	Male	133	40.4%
	Female	196	59.6%
Age	22 - 29	73	22.2%
	30 - 39	151	45.9%
	40 - 50	62	18.8%
	Over 50 years old	43	13.1%
Learning	High school	12	3.6%
	Intermediate	37	11.2%
	Higher	92	28.0%
	Bachelor	130	39.5%
	Master	58	17.6%
Career	Housewife	21	6.4%
	Company employee	110	33.4%
	Management	61	18.5%
	Startup business	47	14.3%
Career	Freedom	31	9.4%
	Other	59	17.9%
Income(rmb)	Under 2000rmb	21	6.4%
	2000-3000rmb	72	21.9%
	3000-6000rmb	138	41.9%
	6000rmb or more	98	29.8%

Conducting a scale test with 08 factors, the results show that the Cronbach's Alpha coefficient of the scales are satisfactory ( $> 0.7$ ), the total variable correlation coefficient is also satisfactory ( $> 0.3$ ), so the scale meets the requirements of tightness and correlation between variables, without any variables being eliminated.

Next, the study uses the "Principal axis factoring" method with Promax rotation in EFA discovery factor analysis. The results show that, from 37 observed variables, after ejecting the TD3 and YDM1 variables because the load coefficient has a value of less than 0.5, the remaining 35 observational

variables have been divided into 08 factors, ensuring convergeng values and differentiated values.

The results of the CFA analysis using AMOS software are based on 35 observational variables drawn from the EFA analysis with ineligible indicators. After running CFA for the 2nd time, the 3-variable type is MT4, SK1, SK5, the CFA model has the following indicators: Chi-square/df = 2.276 ( $< 5$ ); CFI = 0.917 ( $> 0.9$ ); TLI = 0.906 ( $> 0.9$ ); GFI = 0.841 ( $> 0.8$ ); RMSEA = 0.062 ( $< 0.08$ ). Therefore, the indicators are all satisfactory according to the CFA conditions, these values show the compatibility of the model in accordance with

market data and ensure unidirectionality. The CFA results also show that the p-values of the unstandardised regression weights are statistically significant (p-value < 0.05) and the normalised regression weights of the observed variables are greater than 0.5. It should be concluded that the scale of the

research concepts well ensures the converged value. Reliability in CFA analysis is also guaranteed because the observed variables all have Cronbach's Alpha number > 0.7, aggregate confidence (CR) > 0.6 and the sum of the extract variance of each factor (AVE) > 0.5 (Table 3).

**Table 2.** Statistics describing the observed variable

The symbol	Observing variable	Average	Alpha
Attitude		4.23	
TD1	I like to buy healthy household electrical appliances	4.29	0.814
TD2	For me, the healthy factor of household electrical appliances will be the priority factor when making a purchase	4.15	0.756
TD3	Environmental protection is important to me when buying	4.17	0.77
TD4	I think it's a good idea to buy healthy household electrical appliances	4.32	0.747
TD5	I think it's safe to buy healthy household electrical appliances	4.18	0.77
TD6	If I have the opportunity to choose between healthy household electrical appliances and conventional products, I will choose healthy household electrical appliances	4.27	0.75
The subjective standard		4.29	
CCQ1	My family thinks I should buy healthy household electrical appliances	4.24	0.74
CCQ2	My friends think I should buy healthy household electrical appliances	4.34	0.745
CCQ3	The people I respect will like me buy healthy household electrical appliances	4.34	0.772
CCQ4	Information from the media makes me think about buying healthy household electrical appliances	4.25	0.78
Behaviour control awareness		4.10	
KSHV1	I have enough knowledge to use healthy household electrical appliances	4.05	0.829
KSHV2	I think I can create excitement for my family by using healthy household electrical appliances	4.09	0.805
KSHV3	Using healthy household electrical appliances is completely under my control	4.14	0.849
KSHV4	I think I'll buy healthy household electrical appliances even if the price is expensive	4.10	0.796
Environmental issues		4.09	
MT1	I am concerned about the current air pollution in the living area	4.06	0.785
MT2	I am concerned about the current water pollution in the living area	4.12	0.747
MT3	I am very interested in environmental protection issues in China	4.18	0.746
MT4	I care about the materials that make household electrical appliances good or not	4.05	0.739
MT5	When I need to choose between two products at the same price, I buy products that are less harmful to people and the environment	4.06	0.693
Health concerns		4.21	
SK1	I focus on my health and everyone around me	4.29	0.868
SK2	I care about products that make my quality of life better	4.33	0.832
SK3	I choose household electrical appliances carefully to ensure good health	4.15	0.942
SK4	I always consider the health benefits when buying products	4.12	0.877
SK5	I think I'm a health-conscious consumer	4.18	0.863
The willingness to pay		3.90	
SLCT1	I can accept to pay more for healthy household electrical equipment	3.88	0.889
SLCT2	I'm willing to spend more money to buy less harmful household electrical appliances to the environment	3.91	0.858
SLCT3	I am willing to pay more for household electrical appliances that are good for human health and support product development efforts for environmental sustainability.	3.90	0.843
SLCT4	I feel good about having healthy household electrical appliances even though they are more expensive than regular household electrical appliances	3.89	0.902
Trust		3.91	
NT1	I believe that household electrical appliances are good for health	3.89	0.812
NT2	I believe that healthy household electrical appliances are reliable	3.84	0.869
NT3	I feel that healthy household electrical appliances are safe for users	3.88	0.972
NT4	I feel the brand reputation of healthy household electrical appliances is reliable	4.04	0.824
Purchase intention		4.06	
YDM1	The probability that I will buy healthy electrical appliances is very high	4.04	0.764
YDM2	I plan to buy healthy household electrical appliances on my next purchase	3.98	0.74
YDM3	I want to buy healthy household electrical appliances	4.11	0.861
YDM4	When there is a need to buy household electrical appliances, I will prioritise considering healthy household electrical appliances	4.12	0.759
YDM5	I would like to invite my close people to buy healthy household electrical appliances	4.04	0.861

**Table 3.** Synthesise reliability and quoted variance

Factor	CR	AVE
Environmental issues (MT)	0.869	0.627
Health concerns (SK)	0.914	0.781
The willingness to pay (SLCT)	0.905	0.704
Trust (NT)	0.881	0.651
Attitude (TD)	0.854	0.543
Behaviour control awareness (KSHV)	0.817	0.528
The subjective standard(CCQ)	0.837	0.563
Purchase intention (YDM)	0.845	0.578

The research model tested includes 08 factors and 32 observational variables. SEM analysis results show that the model has Chi-square/df = 2.338(< 5); CFI = 0.912 (> 0.9); TLI = 0.901 (> 0.9); GFI = 0.836 (> 0.8); RMSEA = 0.64 (< 0.08). All indicators are appropriate. Therefore, it can be concluded that the model is compatible with market data.

Table 4 shows the results of testing the relationship between the concepts in the model. For relationships where  $p > 0.5$  are relationships that are not statistically significant and do not meet the hypothesis, it is the relationship between Purchase Intention and the subjective Standard, between Purchase Intention and Willingness to Pay

**Table 4.** Results of testing the relationship between concepts in the SEM model

Influence relationships	Estimate	S.E	P-Value	
SK --> TD	0.541	0.657	0.000	Support
MT --> TD	0.204	0.226	0.000	Support
SK --> YDM	0.145	0.178	0.043	Support
TD --> YDM	0.155	0.157	0.042	Support
MT --> YDM	0.154	0.174	0.002	Support
CCQ --> YDM	0.065	0.071	0.274	Reject
KSHV --> YDM	0.202	0.218	0.001	Support
SLCT --> YDM	0.058	0.072	0.207	Reject
NT --> YDM	0.165	0.218	0.000	Support

To test the role of intermediate variables through the Indirect Model, the study used Process Macro with Bootstrap

to test the impact Environmental Concerns and Health Concerns on Purchase Intent through Attitude (Table 5).

**Table 5.**

	Indirect impact	Indirect impact level	BootSE	Boot LLLCI	Boot ULCI	
Ind 1	MT --> TD ---> YDM	0.2419	0.0505	0.1488	0.3459	Support
Ind 2	SK ---> TD ---> YDM	0.1842	0.0484	0.0882	0.2769	Support

The indirect relationships in Table 5 all meet the conditions: The indirect relationship between the 03 factors Environmental Concern, Attitude and Purchase Intent (MT --> TD ---> YDM) with a 95% confidence result for a value below Boot LLLCI = 0.1488 and a value on Boot ULCI = 0.3459. The CI confidence interval = [0.1488, 0.3459] does not include a value of 0, so there is an indirect impact from Environmental Concerns on Buying Intent through Attitudes with an impact of 0.2419. Therefore, Attitudes have an intermediary role in impacting the relationship from Environmental Concerns to Purchase Intent. Indirect relationship between 03 factors Health Concern, Attitude and Purchase Intent (SK ---> TD ---> YDM) with a 95% confidence result for a value below Boot LLLCI = 0.0882 and a value on Boot ULCI = 0.2769. The CI confidence interval = [0.0882, 0.2769] does not include the value of 0, so there is an indirect impact from the Health Concern on the Purchase Intent through Attitude with an impact level of 0.1842.

Therefore, Attitudes have an intermediary role in the impact on the relationship from Health Concerns to Purchase Intent.

## 5. Conclusions and Recommendation

The attitude is rated at an average of 4.23, a fairly high rating, showing that consumers are having a very positive and good attitude for the group of healthy household electrical appliances. The 'I think it's a good idea to buy healthy household electrical appliances' is the highest rating at 4.32, and the 'I like to buy healthy household electrical appliances' is the second highest rating with 4.29 in the Attitude factor group. Therefore, businesses should have activities to promote the positive attitude of consumers towards products. By making consumers have more positive reviews and views on healthy household electrical appliances, the intention to buy will be promoted. It can be marketing activities that cause consumers to evaluate the product or brand in the form of

good or bad, or sympathy or aversion.

Trust is rated at an average of 3.91, which is also a relatively good rating but is one of the two least influential factors ( $\beta = 0.157$ ) of all factors affecting the intention to buy. All statements of Belief are evaluated relatively evenly, only the statement "I feel that the brand reputation of healthy household electrical appliances is reliable" is the most prominent with a rating of 4.04. From there, it can be seen that the brand's reputation contributes a significant part to strengthening consumer trust. Businesses need to build a business image associated with building a product brand reputation to strengthen and increase trust for consumers. Besides building image and product value, answering customer concerns is also something to pay attention to.

The health concerns in this study have an impact on both consumer attitudes and buying intentions. The average rating for the health concern factor is quite positive at 4.21 with the highest rated statement being 'I care about products that bring my quality of life better' with mean = 4.33, and the lowest is the statement 'I always consider health benefits when buying products' with mean = 4.12. Therefore, businesses can carry out activities that evoke consumer health concerns with health seminars associated with the technology that the product is aiming for, and at the same time improve the outstanding quality and function of consumer health-oriented products to raise consumers' concerns about health.

In this study, behavioural control awareness had a positive direct effect on the intention to buy healthy household electrical appliances. At the same time, the average rating of this factor is at 4.1, which is quite high. The statement 'Using healthy household electrical appliances is completely within my control' is rated at the highest level of 4.14 and the statement 'I have enough knowledge of using healthy household electrical appliances' is the lowest with mean = 4.05. Therefore, businesses need to organise many activities to promote consumer self-control behaviour. 'Businesses can create contests to feel and understand products, often propagate product benefits in the media, or concise short slogans such as "Live clean, live healthy with Philips water purifier". In the current context, consumers update social pages such as facebook, or youtube quite a lot. Therefore, businesses can cooperate with special influencers for communication.

Environmental concerns have an impact on the attitudes and buying intentions of consumers. With this factor, the statement "I am very interested in environmental protection issues in China" is rated the highest with 4.18. It can be seen that today, consumers are becoming more interested in

protecting the environment, and these people will tend to consume friendly products such as green products, or as healthy products (Abdulsahib & ctg., 2019). The statement "I care about the materials that make household electrical appliances products good or not" is the lowest in the statements with mean = 4.05 but has a fairly good rating compared to the average. Therefore, enterprises manufacturing and trading healthy household electrical appliances need to raise consumers' concerns about the environment by focussing more on quality and function when the product's operation to the environment. environment. At the same time, it is necessary to consider the materials that make the product, when it is also more and more interested in today's context. Besides, businesses should have activities to raise environmental awareness for consumers.

Finally, later studies can expand on other factors that can affect consumers' intention to buy products such as: brand, knowledge, origin, .... The theoretical model and scale proposed in research in this field and product are quite new and have not been tested by similar studies before in the China market, so the scale content may be lacking. The following studies, should be studied further and can be adjusted to the redesign to be more accurate and appropriate for the time of research.

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