CHAPTER 5
DISCUSSION AND CONCLUSION

5.1   Introduction

This chapter contains the discussion and conclusions stating from key findings of the study, discussion on mediating variables, discussion on the relationship between variables including explaining the relationship between environmental attitudes as independent variable with consumption values (value for money, conditional value, social value, and epistemic value) as mediating variables, discussion on the relationship between mediating variables and green products consumption as the dependent variable, as well as the direct and indirect relationship between environmental attitude and sustainable green product consumption. Next will be explained about the implication of the study and also explained about limitations and recommendations for further research, these limitations are used so that the research conducted does not blend from the desired context. Will end with the conclusion of the thesis which is the result of research objectives, including; to examine the structural effects of environmental attitudes on consumption values, to examine the structural effects of consumption values on sustainable green product consumption, and to examine the structural indirect effects of environmental attitudes on sustainable green product consumption.

5.2   Key Findings of the Study

Key findings of the study will explain the results was obtained about the relationship between a dependent variable with mediating variables, mediating variables with an independent variable, as well as direct and indirect relationships between a dependent variable and independent variable. Along with this explanation, a result will be found which can be used as a reference for further studies. The result was obtained from bootsrapping using SmartPLS 3.2.8 are shown in Table 5.1.

Table 5.1 Conclusion of Hypotheses Testing

	Hypotheses	Decision
Environmental Attitude and Consumption values		
H1	Value for money positively affects by environmental attitude	Supported
H2	Social value positively affects by environmental attitude	Supported
H3	Conditional value positively affects by environmental attitude	Supported
H4	Epistemic value positively affects by environmental attitude	Supported
Consumption values and Sustainable Green Product Consumption		
H5	Value for money positively affects green product consumption	Supported
H6	Social value positively affects green product consumption	Not Supported
H7	Conditional value positively affects green product consumption	Supported
H8	Epistemic value positively affects green product consumption	Supported
Environmental Attitude and Sustainable Green Product Consumption		
H9	Environmental attitude has a direct impact on green product consumption	Supported
H10	Value for money mediate the effect of environmental attitude on green product consumption	Supported
H11	Social value mediate the effect of environmental attitude on green product consumption	Not Supported
H12	Conditional value mediate the effect of environmental attitude on green product consumption	Supported
H13	Epistemic value mediate the effect of environmental attitude on green product consumption	Supported

5.2.1 Discussion on Mediating Variables

Figure 5.1 shows an independent variable X influencing the dependent variable Y through the mediating variable M. Three tests approved by X. Zhao, Lynch, and Chen (2010): A variable used as a list of mediators complies with the requirements of (a) differences in independent variable rates significantly compensate for the alleged mediator's differences (Path a), (b) variations of the mediator are significant differences in the dependent variable (Path b), and (c) the compilation of Path a and b is verified, the previously relevant relationship between the independent variable and the dependent no longer relevant, with the best media example of the compilation Path c being zero.
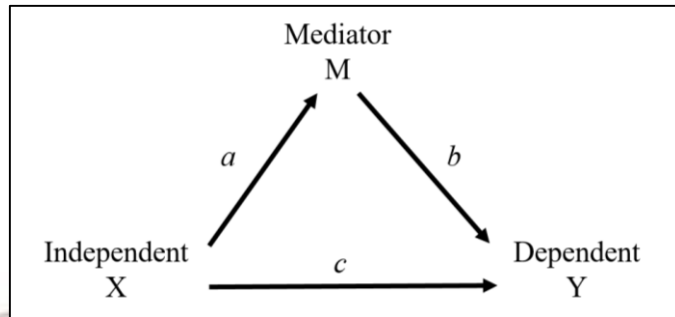
Figure 5.1 A Nonrecursive Three-Variable Causal Model

Source: X. Zhao et al. (2010)

In a causal model of three variables that is non-recursive, X. Zhao et al. (2010) classify three mediation-compatible model and two non-mediation models:

1. *Complementary mediation*: Mediated effect (a x b) and direct effect (c) the two exist which points in the same direction.

2. *Competitive mediation*: Mediated effect (a x b) and direct effect (c) the two exist and point in opposite directions.

3. *Indirect-only mediation*: There is mediated effect (a x b) exists, but there is no direct effect.

4. *Direct-only non-mediation*: There is direct effect (c) exists, but there is no indirect effect.

5. *No-effect non-mediation*: There is no direct or indirect effect.

5.2.1.1 Type of Mediating Variables: Value for Money

As a first step in determining the type of mediating variable can be seen in the results of bootsrapping as shown by Table 4.6. The following is the value of each relationship (direct and indirect) between value for money and sustainable green product consumption as shown in Table 5.2.

Table 5.2 Standard Beta Value from Variable Value for Money

No.	Path	Std. Beta
1	Environmental Attitude → Value for Money	0.504
2	Value for Money → Green Product Consumption	0.184
3	Environmental Attitude → Green Product Consumption	0.123
4	Environmental Attitude → Value for Money → Green Product Consumption	0.093

From the standard beta value as shown in Table 5.2, an illustration can be made describing the relationship between value for money and sustainable green product consumption as shown in Figure 5.1.
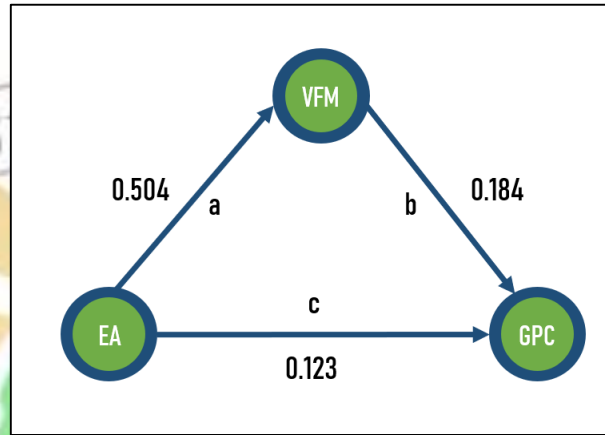

Figure 5.2 Illustration Value of Standard Beta on relationship between Value for Money and Sustainable Green Product Consumption

The formulation used to determine the type of mediating variables is as follows:

$$\text{Indirect Effect} = \text{Path a} \times \text{Path b}$$
$$= 0.504 \times 0.184$$
$$= 0.093$$
$$\text{Total Effect} = \text{Direct Effect} + \text{Indirect Effect}$$
$$= 0.123 + 0.093$$
$$= (+) \ 0.216$$

Based on the decision tree for establishing and understanding the types of mediation and non-intermediation that can be seen in Appendix B, it can be seen that the total positive effect is 0.216 with a significant direct relationship between value for money and sustainable green product consumption, it can be concluded that the type of mediation for value for money is complementary mediation. This means the mediated effect (a x b) and direct effect (c) the two exist which points in the same direction.

5.2.1.2 Type of Mediating Variables: Social Value

The following is the value of each relationship (direct and indirect) between social value and sustainable green product consumption as shown in Table 5.3.

Table 5.3 Standard Beta Value from Variable Social Value

No.	Path	Std. Beta
1	Environmental Attitude → Social Value	0.485
2	Social Value → Green Product Consumption	0.011
3	Environmental Attitude → Green Product Consumption	0.123
4	Environmental Attitude → Social Value → Green Product Consumption	0.005

From the standard beta value as shown in Table 5.3, an illustration can be made describing the relationship between social value and sustainable green product consumption as shown in Figure 5.2.
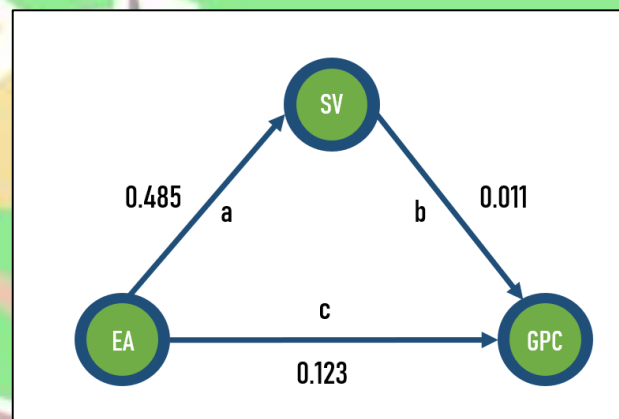

Figure 5.3 Illustration Value of Standard Beta on relationship between Social Value and Sustainable Green Product Consumption

The formulation used to determine the type of mediating variables is as follows:

Indirect Effect = Path a x Path b

$$= 0.485 \times 0.011$$

$$= 0.005$$

Total Effect = Direct Effect + Indirect Effect

$$= 0.123 + 0.005$$

$$= (+)\ 0.128$$

Based on the decision tree for establishing and understanding the types of mediation and non-intermediation that can be seen in Appendix B, it can be seen that the total positive effect is 0.128, but there is no significant relationship between social value and green product consumption either in a direct relationship or as a mediating variable. So it can be concluded that the type of mediation for value for money is complementary mediation. This means that there is direct effect (c) exists, but there is no indirect effect.

5.2.1.3 Type of Mediating Variables: Conditional Value

The following is the value of each relationship (direct and indirect) between conditional value and sustainable green product consumption as shown in Table 5.4.

Table 5.4 Standard Beta Value from Variable Value for Money

No.	Path	Std. Beta
1	Environmental Attitude → Conditional Value	0.477
2	Conditional Value → Green Product Consumption	0.167
3	Environmental Attitude → Green Product Consumption	0.123
4	Environmental Attitude → Conditional Value → Green Product Consumption	0.079

From the standard beta value as shown in Table 5.4, an illustration can be made describing the relationship between conditional value and sustainable green product consumption as shown in Figure 5.3.
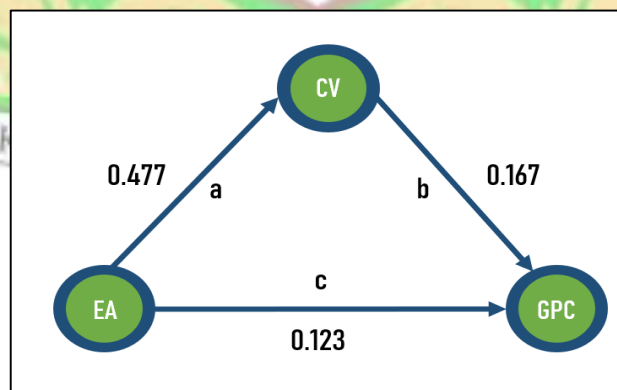

Figure 5.4 Illustration Value of Standard Beta on relationship between Conditional Value and Sustainable Green Product Consumption

The formulation used to determine the type of mediating variables is as follows:

Indirect Effect = Path a x Path b

$\qquad$ = 0.477 x 0.167

$\qquad$ = 0.079

Total Effect $\quad$ = Direct Effect + Indirect Effect

$\qquad$ = 0.123 + 0.079

$\qquad$ = (+) 0.202

Based on the decision tree for establishing and understanding the types of mediation and non-intermediation that can be seen in Appendix B, it can be seen that the total positive effect is 0.202 with a significant direct relationship between conditional value and sustainable green product consumption, it can be concluded that the type of mediation for value for money is complementary mediation. This means the mediated effect (a x b) and direct effect (c) the two exist which points in the same direction.

5.2.1.4 Type of Mediating Variables: Epistemic Value

The following is the value of each relationship (direct and indirect) between epistemic value and sustainable green product consumption as shown in Table 5.5.

Table 5.5 Standard Beta Value from Variable Value for Money

No.	Path	Std. Beta
1	Environmental Attitude → Epistemic Value	0.446
2	Epistemic Value → Green Product Consumption	0.369
3	Environmental Attitude → Green Product Consumption	0.123
4	Environmental Attitude → Epistemic Value → Green Product Consumption	0.164

From the standard beta value as shown in Table 5.5, an illustration can be made describing the relationship between social value and sustainable green product consumption as shown in Figure 5.4.
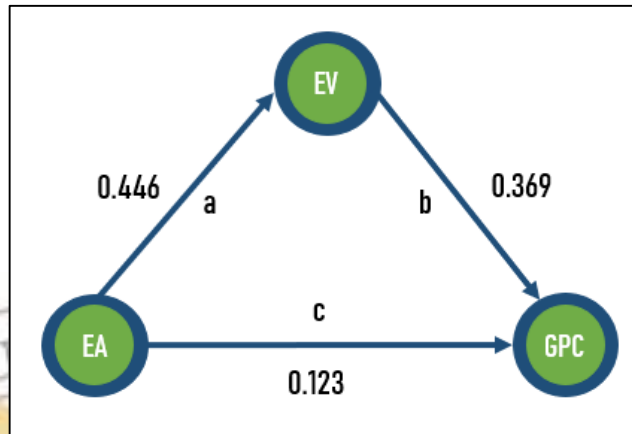
Figure 5.5 Illustration Value of Standard Beta on relationship between Epistemic Value and Sustainable Green Product Consumption

The formulation used to determine the type of mediating variables is as follows:

Indirect Effect = Path a x Path b

$\quad\quad\quad\quad\quad$ = 0.446 x 0.369

$\quad\quad\quad\quad\quad$ = 0.164

Total Effect $\quad$ = Direct Effect + Indirect Effect

$\quad\quad\quad\quad\quad$ = 0.123 + 0.164

$\quad\quad\quad\quad\quad$ = (+) 0.287

Based on the decision tree for establishing and understanding the types of mediation and non-intermediation that can be seen in Appendix B, it can be seen that the total positive effect is 0.287 with a significant direct relationship between value for money and sustainable green product consumption, it can be concluded that the type of mediation for value for money is complementary mediation. This means the mediated effect (a x b) and direct effect (c) the two exist which points in the same direction.

5.2.2 Discussion on Relationship between Environmental Attitude with Consumption values

Consumption values used in this study include value for money, social value, conditional value, and epistemic value that have been explained in the previous section. In this study, it was found that consumption values are influenced

overwhelmingly by the environmental attitude in the context of Peninsular Malaysian citizens. The results of data analysis using SmartPLS 3.2.8 show that four hypotheses regarding the relationship between environmental attitude and consumption values are accepted. This shows that the environmental attitude of Peninsular Malaysian citizens will affect the level of consumption values of Peninsular Malaysian citizens themselves. Biswas and Roy have obtained similar results in one study in 2015 where the research was conducted on 130 post-graduate students in management studies, 96 professors, and 57 academic students, at two central universities in India. The results obtained by Roy and Biswas show the same conclusion that consumption values (value for money, conditional value, social value, and epistemic value) are also influenced by environmental attitude.

The different findings between previous research and current research are seen in research conducted by Norazah and Norbayah Moh Suki in 2015 where they conducted research on consumer environmental concerns and green product purchases in Peninsular Malaysia Norazah and Norbayah (2015) found that functional value which is the price of the product is considered as less important infill costumer needs in connection with their concern for the environment. In the consumption of green products, they are less concerned with prices. Furthermore, they also found that conditional interest will inspire consumers to care more when buying green products. However, environmental problems may not represent the main motivation for the purchase (Norazah & Norbayah, 2015). However, the results of the current study indicate that the value that stands out in the relationship between consumption values (including value for money, conditional value, social value, and epistemic value) with environmental attitude. This finding indicates that consumers consider the environment when making a purchase. This means that the greater the consumer's awareness of the environment, then the value of value for money, social value, conditional value, and epistemic value will be higher. In other words, the environmental attitude would affect the level of consumption values.

5.2.3 Discussion on Relationship between Consumption values with Sustainable Green Product Consumption

In this study, it was found that some consumption values positively influenced sustainable green product consumption. The results shown by SmartPLS 3.2.8 show that three of the four hypotheses made to explain the relationship between consumption values and sustainable green product consumption in the context of Peninsular Malaysian citizens are accepted. Some of these consumption values include value for money, conditional value, and epistemic value. While sustainable green product consumption is not affected directly by social value. Many similar studies also found that sustainable green product consumption was not influenced by social value including the research conducted by Qasim et al. (2019), Biswas and Roy (2015), (Lin & Huang, 2012).

According to Biswas and Roy (2015), social recognition or social influence has no significant impact on the consumption of green products. This can be proven by the stronger impact of the search for newness and the tendency of consumers to find new information and it is not word-of-mouth. Furthermore, Qasim et al. (2019) clarified that social value has an effect on the consumption of organic food by green products. This indicates that when eating organic foods, consumers do not feel social recognition or increase their social image. Similar results also obtained Table 4.6 of this study shows that social value has no significant effect on the consumption of green products (0.193). A large t-value from the epistemic value (6,661) shows that consumers are more likely to use the media (printed or through the internet) to find new information, and not word-of-mouth. Apart from that, by consuming green products, consumers do not feel an increase in the social image within each consumer.

The difference from the results of the current research with previous research is in value for money and conditional value. Biswas and Roy (2015) find the conditional value was not significant sustainable green product consumption. They explained that trust in price (value for money) and environmental knowledge devalued the importance of situational variables on behavioral intentions. Different findings in this research, where the conditional value is positive in the sustainability of green product consumption. This is evidenced by the high value of conditional value (2,917) which can be seen in Table 4.6. This indicates that consumers in Peninsular Malaysia are very interested in green products being given discounts or subsidies, the availability of green products that are easy and close. So this factor becomes very important in the sustainability of green product consumption in Peninsular Malaysia. Furthermore, there are differences results findings of Qasim et al. (2019) with current research in the value for money. Consumers in Pakistan were worried about the quality of organic foods, such as healthy and nutritious ingredients, due to the economic benefits of lower prices. This is because the recent use of chemical fertilizers and pesticides in agriculture has had negative public health consequences. They are willing to pay premium prices for organic products to prevent costs that need to be removed in poor health cases due to low-price consumption of non-organic food (Qasim et al., 2019). The different results with this research, where value for money shows a positive impact on the sustainability of green product consumption. This indicates that consumers in Peninsular Malaysia consider the price of buying green products. This statement is proven by the value of the value for money obtained (2,487).

5.2.4 Discussion on Relationship between Environmental Attitude with Sustainable Green Product Consumption

In this study in the context of Peninsular Malaysian citizens, it was found that directly sustainable green product consumption was influenced by environmental attitude, this was based on the results shown by SmartPLS 3.2.8 who accepted the hypothesis of a direct relationship between environmental attitude and sustainable green product consumption. For the indirect relationship between environmental attitude and sustainable green product consumption in the sense that

there is an effect of mediating variables (consumption values), in this study using SmartPLS 3.2.8 it was found that three of the four hypotheses were accepted. In this study, It's been found that value for money, conditional value, and epistemic value mediate the relationship between environmental attitude and sustainable green product consumption. Whereas social value does not mediate between environmental attitude and increased use of green products

The current research is backed up by research conducted by Zhao et al. (2013) and Biswas and Roy (2014) who show positive effects from the direct relationship between environmental attitude and sustainable green product consumption. According to Biswas and Roy (2014), the value of knowledge and the environment are important for determinants for sustainable consumption because consumers not only understand the problem with the environment but also can increase environmental awareness in individuals as a sense of responsibility towards the environment. The findings in this research, indicate that the higher the knowledge consumers have about green products, the greater the sustainability of green product consumption.

This research is fairly new in terms of determining the indirect relationship between environmental attitude and sustainable green product consumption. The effect of consumption values as a mediator in this study was examined and it was found that the sustainability of the green product consumption was not only directly influenced by consumers' knowledge of the green product itself, but also indirectly affected by the price of the product (value for money, consumers' desire to find information regarding green products (epistemic value), and the effect of promotions and subsidies on green products (conditional value), but this study did not find that social value has a positive influence in mediating the relationship between environmental attitude and sustainable green product consumption, which means that the higher consumer's knowledge of the environment even though consumers do not have direct concern for the image and social recognition of the use of this green product, the higher the sustainability of the green product consumption.

5.3   Implication of Study

When consumers express their concerns about the performance of green products and prices, it is time for manufacturers and marketers to highlight this functional value in selling and producing green products of quality at affordable prices where the product has maximum economic and ecological benefits. In addition, manufacturers and sellers of green products must pay attention to that customer can choose green products because of other Functional Values such as operating price benefits, purchase price benefits, and environmental-friendly promotions, green product features, and related environmental awareness (Norazah & Norbayah, 2015).

Increased knowledge and awareness between green product companies and organizations is one form of this finding's contribution. In reality, this result also allows consumers to support the benefits of using green products, allowing customers to choose green products as part of their daily lifestyle. It can develop natural resource extraction and promote the values of environmental-friendly living. Of addition, companies and organizations must take on the responsibility of helping to generate positive public awareness of the need to purchase environmentally friendly goods. In addition, the steps that can be taken by green product manufacturers or retailers are actively marketed and discounted in order to encourage environmental-friendly purchases at the same time, corporations or organizations must demonstrate their social responsibility to customers by adopting all aspects of green operations, including the creation, marketing, and packaging of products.

Theoretically, the results and findings in this research contribute to the recent literature, in other words, this study's conceptual model will help interested parties to identify and determine what factors determine the sustainability of the green product consumption in context Peninsular Malaysian citizens, and can also identify factors that encourage consumers to buy green products. Empirical results generated from this study confirm that value for money, social value, conditional

value, and epistemic value together and significantly impact the sustainability of green product consumption in Peninsular Malaysia.

5.4 Limitation and Suggestion for Future Research

Based on the title of this thesis, the *Determinants for Leveraging Sustainable Green Product Consumption*, the main objective of this study is to establish the factors involved in efforts to increase the consumption of green products. Although the main objectives have been obtained and explained in the previous section, this study still has some limitations including the following:

First, most respondents in this study were between the ages of 18 and 24, so respondents who had aged over 18 to 24 years could be disadvantaged. Apart from age, some respondents were also dominated by degrees as current enrollment programs, so that A-Level, Diploma, Master, and Ph.D. or from other communities in Peninsular Malaysia also felt disadvantaged by this, because they could not vote in terms of sustainable green product consumption. Thus, based on this limitation, the recommendation that can be given for future research is that the research should be conducted evenly or fairly for all groups, not only dominated by certain circles.

Second, the secondary data used are provided by a cross-sectional method and is limited to only a one-time point. Therefore, the exact nature of possible hypothesis studies can not be guarded. In addition, the study was also conducted in a limited time as required in the completion of the thesis, which is more or less for 6 months of research time. Then, based on this limitation, the suggestions for future research is that future research should consider conducting a longitudinal research design in order to get a more convincing result. Third, this research used subjective measures (i.e., perception from the respondent). So, it is expected to future research can combine subjective measures and objective measures (secondary data).

5.5   Conclusion

The conclusion in this study is that consumers have considered the environment when making a purchase. This means that the greater the consumer's awareness of the environment, the higher the value of value for money, social value, conditional value, and epistemic value. In other words, environmental attitude will have a direct impact on the level of consumption values. Furthermore, the sustainability of green product consumption is directly affected by the price of the product (value for money), the desire of consumers to find information about green products (epistemic value), and the effect of promotions and subsidies of green products (conditional value). Whereas social value does not have a significant effect on the sustainability of green product consumption. This shows that consumers are more likely to use the media (printed or through the internet) to find new information and not word of mouth. Apart from that, by consuming green products, consumers do not feel an increase in the social image within each consumer.

Then, in terms of the direct relationship between environmental attitude and the sustainability of green product consumption, it is found that the values of knowledge and the environment are important determinants of sustainable consumption because consumers not only understand the problem of the environment to buy products but also can increase environmental awareness in individuals as a sense of responsibility towards environment. The findings in this study also indicate that the higher the knowledge consumers have about green products, the greater the sustainability of green product consumption. In the indirect relationship between environmental attitude and sustainable green product consumption, this study did not find that social value has a positive influence in mediating the relationship between environmental attitude and sustainable green product consumption. This means that the higher the consumer's knowledge of his environment even though the consumer does not have direct concern for the image and social recognition of the use of this green product, the higher the sustainability of the green product consumption.