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Managing Environmental Ethics in the Context of Pro-Environmental Behaviour

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Abstract. The aim of this survey study is to find out the model of environmental ethics on the basis of pro-environmental behaviour. Data were collected from 349 students at Universitas Negeri Jakarta in East Jakarta in the province of DKI Jakarta. Data were analysed by implementing the structural equation model (SEM). Findings indicated a positive relationship between pro-environmental behaviour and environmental ethics was confirmed. Recycling, eco-products, and green travel support pro-environmental behaviour. Further, respect for nature, cosmic solidarity, caring for nature, no harms, in harmony with, fairness with nature, democracy with nature, and moral integrity to nature predicted environmental ethics. It can be concluded that environmental ethics can be managed through enhancement of pro-environmental behaviour leading to environmental protection.

INTRODUCTION

There are many factors influencing pro-environmental behavior. Individuals' cultural backgrounds affect their pro-environmental behavioral intention [1]. This condition influences their particular consumption contexts. Further, environmental knowledge has also an effect on pro-environmental behavior. However, there is still limited empirical proof about the exact magnitude of this effect. Environmental ethics predict green innovation [2–4]. In order that organizations improve sustainable environmental management practices, they should apply environmental ethics. Environmental ethics affect environmental performance through being proactive to form and maintain synergy among profit gained, community, and the environment. In spite of several studies have examined about environmental ethics, still less have investigates the impact of environmental behavior on environmental ethics with indicators and sub-indicators predicting those variables. The summary of relationships hypothesized is described in a model shown in Fig. 1.
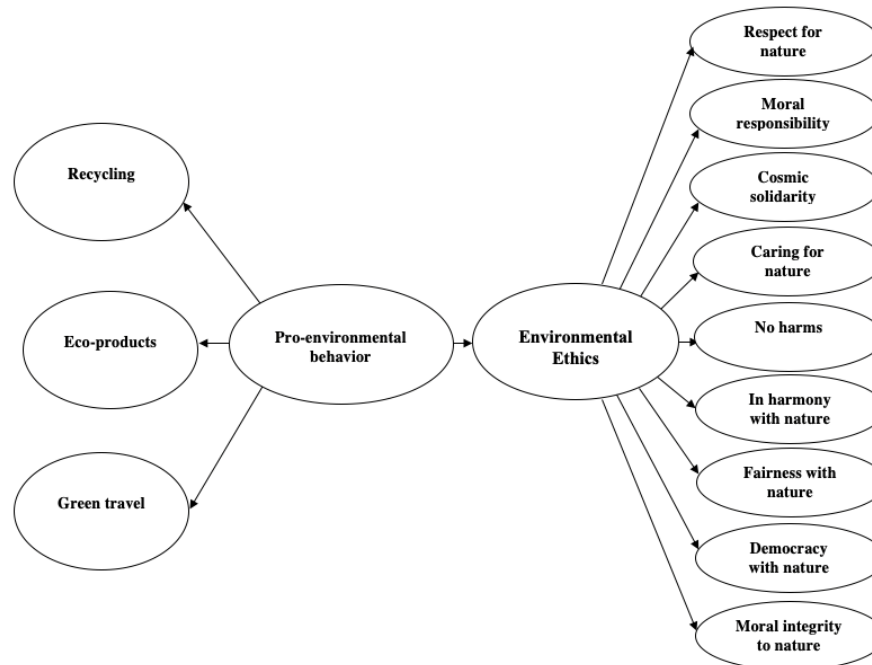
FIGURE 1. Theoretical framework of the study

METHODS

This research conducted the survey method to 349 students at Universitas Negeri Jakarta in East Jakarta in the province of DKI Jakarta in Indonesia. Data collected in this study were associated with pro-environmental behavior and environmental ethics. Analysis of content was utilized to the literature of environmental ethics consisting of respect for nature, moral responsibility, cosmic solidarity, caring for nature, no harms, in harmony with nature, fairness with nature, democracy with nature, and moral integrity to nature whereas pro-environmental behavior involving recycling, eco-products, and green travel [1-3]. These dimensions were derived into the questionnaire distributed to 349 students at Universitas Negeri Jakarta in East Jakarta in the province of DKI Jakarta in Indonesia.

The three aspects of respect for nature include not littering, using environmentally friendly products, and not using chemicals in plants. The three dimensions predicting moral responsibility are maintaining plants sustainably, water use savings, and maintain energy conservation. The indicators of cosmic solidarity consist of Separating organic and non-organic waste, planting in deforested forests, and recycle trash. The three dimensions affecting caring for nature are conducting a demonstration about environmental preservation, always maintaining cleanliness, and saving energy. The three aspects of no harms involve not damaging nature, reducing the use of vehicles causing air pollution, and reducing the use of plastics. The three dimensions influencing in harmony with nature are not throwing waste into the river to prevent water pollution, cleaning the sewers to prevent flooding, and reforestation to prevent flooding. The three sub-indicators supporting fairness with nature are using environmentally friendly transportation vehicles, not doing illegal logging, and adopting an environmentally friendly lifestyle. The three aspects of democracy with nature are using nature and its contents wisely, developing nature for humanity welfare in a sustainable way, and paying attention to nature sustainability and usefulness. The three dimensions predicting moral integrity to nature are carrying out environmental awareness activities, consistently preserving the environment, and consistently maintaining natural resources for the survival of all of us.

The three aspects of recycling include converting items into reusable material, using items again, and reducing the cause of waste. The three dimensions of eco-products are buying eco-friendly products, using products not harming the environments, and choosing products contributing to green living. The three indicators of green travel consist of respecting local cultures, traveling with environmentally conscious impact, and responsible travel practices paying attention to environmental sustainability.

In this study, data were analyzed using Structural Equation Modeling (SEM) with IBM SPSS Statistics 24 and SPSS AMOS 24 with 2017 Edition [6-25]. SEM was applied to predict the association of pro-environmental behavior and environmental ethics. Data were collected from 349 students at Universitas Negeri Jakarta in East Jakarta in the province of DKI Jakarta inputted in excel using responses with "strongly agree" scored 5, "agree" scored 4, "neutral" scored 3, "disagree" scored 2, "strongly disagree" scored 1 for positive questions, and "strongly agree" scored 1, "agree" scored 2, "neutral" scored 3, "disagree" scored 4, "strongly disagree" scored 5 for negative questions.

RESULTS AND DISCUSSION

The goodness of fit statistical analysis results shows that Normed Fit Index (NFI) value attained 0.753 pointing out that the model proposed is good fit. Root Mean Square Error of Approximation (RMSEA) value reached 0.064 meaning that the model offered is good fit. The value of Comparative Fit Index (CFI) reached 0.716 showing that the model suggested is good fit. Incremental Fit Index (IFI) value reached 0.724 indicating that the model is good fit. Normed Fit Index (NFI) value gained 0.607 showing that the model is good fit. Based on SEM measurement, the model proposed in this study is a fit model.

Table 1 and 2 showing measurement model test of observed variables describe that relationship between pro-environmental behavior and environmental ethics was not supported in this study. Recycling, eco-products, and green travel have significant relationship with pro-environmental behavior of 0.968, 1.026, and 0.672, respectively. Moral responsibility, cosmic solidarity, caring for nature, no harms, in harmony with nature, fairness with nature, democracy with nature, and moral integrity to nature are significantly positively related to environmental ethics of 0.635, 1.122, 0.869, 0.946, 0.754, 0.669, 0.619, and 0.269, respectively. However, association between respect for nature and environmental ethics was not supported in this study. Not littering is significantly positively associated with respect for nature of 0.584. However, relationship between using environmentally friendly products and not using chemicals in plants with respect for nature were not supported in this research. Maintaining plants sustainably, water use savings, and maintain energy conservation are significantly positively correlated with moral responsibility of 0.730, 0.699, 0.669, respectively. Separating organic and non-organic waste, planting in deforested forests, and recycle trash have significantly positive association with cosmic solidarity of 0.227, 0.480, and 0.244, respectively. Conducting a demonstration about environmental preservation, always maintaining cleanliness, and saving energy, are significantly positively related to caring for nature of 0.535, 0.640, and 0.699, respectively. Not damaging nature, reducing the use of vehicles causing air pollution, and reducing the use of plastics are significantly positively correlated with no harms of 0.651, 0.524, and 0.430, respectively. Not throwing waste into the river to prevent water pollution, cleaning the sewers to prevent flooding, and reforestation to prevent flooding are correlated with in harmony with nature of 0.507, 0.406, and 0.536, respectively. Using environmentally friendly transportation vehicles, not doing illegal logging, and adopting an environmentally friendly lifestyle are significantly positively related to fairness with nature of 0.550, 0.821, and 0.537, respectively. Using nature and its contents wisely and paying attention to nature sustainability and usefulness are significantly positively correlated with democracy with nature of 0.510 and 0.507. However, association between developing nature for humanity welfare in a sustainable way and democracy with nature was not supported in this study. Carrying out environmental awareness activities, consistently preserving the environment, and consistently maintaining natural resources for the survival of all of us are significantly positively associated with moral integrity to nature of 0.674, 0.632, and 0.534, respectively. Converting items into reusable material, using items again, and reducing the cause of waste are significantly positively related to recycling of 0.834, 0.652, and 0.284, respectively. Buying eco-friendly products, using products not harming the environments, and choosing products contributing to green living are significantly positively associated with eco-products of 0.541, 0.477, and 0.812, respectively. Respecting local cultures, traveling with environmentally conscious impact, and responsible travel practices paying attention to environmental sustainability are significantly positively correlated with green travel of 0.498, 0.561, and 0.394, respectively. These findings were also supported by the study indicating that indicators explaining pro-environmental behavior and environmental ethics [1-3]. The structural model is shown in Fig. 2.

TABLE 1. Measurement model test (Regression weights: Group number 1 – Default model)

			Estimate	S.E.	C.R.	P	Label
EVTC	<---	PEVB	-,019	,038	-,511	,609	
RCL	<---	PEVB	2,600	,430	6,040	***	
EPD	<---	PEVB	1,662	,311	5,349	***	
GTV	<---	PEVB	1,000				
RFN	<---	EVTC	,055	,281	,196	,845	
MRB	<---	EVTC	2,616	,777	3,369	***	
CSY	<---	EVTC	1,365	,491	2,780	,005	
CFN	<---	EVTC	2,711	,808	3,354	***	
NHM	<---	EVTC	3,500	1,009	3,468	***	
IHN	<---	EVTC	2,351	,730	3,219	,001	
FWN	<---	EVTC	2,039	,625	3,260	,001	
DWN	<---	EVTC	3,048	,898	3,393	***	
MIN	<---	EVTC	1,000				
EE1	<---	RFN	1,000				
EE2	<---	RFN	1,657	6,573	,252	,801	
EE3	<---	RFN	,022	,110	,203	,839	
EE4	<---	MRB	1,000				
EE5	<---	MRB	,921	,091	10,087	***	
EE6	<---	MRB	,892	,090	9,863	***	
EE7	<---	CSY	1,000				
EE8	<---	CSY	1,957	,490	3,995	***	
EE9	<---	CSY	1,122	,352	3,186	,001	
EE10	<---	CFN	1,000				
EE11	<---	CFN	1,094	,138	7,913	***	
EE12	<---	CFN	1,213	,147	8,236	***	
EE13	<---	NHM	1,000				
EE14	<---	NHM	,765	,097	7,890	***	
EE15	<---	NHM	,616	,092	6,667	***	
EE16	<---	IHN	1,000				
EE17	<---	IHN	,768	,155	4,948	***	
EE18	<---	IHN	1,011	,176	5,748	***	
EE19	<---	FWN	1,000				
EE20	<---	FWN	1,545	,190	8,133	***	
EE21	<---	FWN	,951	,131	7,266	***	
EE22	<---	DWN	1,000				
EE23	<---	DWN	-,073	,066	-1,100	,271	
EE24	<---	DWN	,249	,117	2,129	,033	
EE25	<---	MIN	1,000				
EE26	<---	MIN	,885	,139	6,381	***	
EE27	<---	MIN	,799	,127	6,318	***	
PE3	<---	RCL	1,000				
PE2	<---	RCL	,846	,071	11,978	***	
PE1	<---	RCL	,329	,066	4,946	***	
PE6	<---	EPD	1,000				
PE5	<---	EPD	1,004	,142	7,088	***	
PE4	<---	EPD	1,606	,165	9,717	***	
PE9	<---	GTV	1,000				
PE8	<---	GTV	1,348	,246	5,476	***	
PE7	<---	GTV	,815	,175	4,650	***	

Source: AMOS Results 2019

TABLE 2. Measurement model test (Standardized regression weights: Group number 1 – Default model)

			Estimate
EVTC	<---	PEVB	-,033
RCL	<---	PEVB	,968
EPD	<---	PEVB	1,026
GTV	<---	PEVB	,672
RFN	<---	EVTC	,018
MRB	<---	EVTC	,635
CSY	<---	EVTC	1,122
CFN	<---	EVTC	,869
NHM	<---	EVTC	,946
IHN	<---	EVTC	,754
FWN	<---	EVTC	,669
DWN	<---	EVTC	,619
MIN	<---	EVTC	,269
EE1	<---	RFN	,584
EE2	<---	RFN	,886
EE3	<---	RFN	,012
EE4	<---	MRB	,730
EE5	<---	MRB	,699
EE6	<---	MRB	,669
EE7	<---	CSY	,227
EE8	<---	CSY	,480
EE9	<---	CSY	,244
EE10	<---	CFN	,535
EE11	<---	CFN	,640
EE12	<---	CFN	,699
EE13	<---	NHM	,651
EE14	<---	NHM	,524
EE15	<---	NHM	,430
EE16	<---	IHN	,507
EE17	<---	IHN	,406
EE18	<---	IHN	,536
EE19	<---	FWN	,550
EE20	<---	FWN	,821
EE21	<---	FWN	,537
EE22	<---	DWN	,510
EE23	<---	DWN	,827
EE24	<---	DWN	,507
EE25	<---	MIN	,674
EE26	<---	MIN	,632
EE27	<---	MIN	,534
PE3	<---	RCL	,834
PE2	<---	RCL	,652
PE1	<---	RCL	,284
PE6	<---	EPD	,541
PE5	<---	EPD	,477
PE4	<---	EPD	,812
PE9	<---	GTV	,498
PE8	<---	GTV	,561
PE7	<---	GTV	,394

Source: AMOS Results 2019

Notes:
PEVB   =   Pro-environmental behavior
EVTC   =   Environmental ethics

RCL = Recycling
EPD = Eco-products
GTV = Green travel
RFN = Respect for nature
MRB = Moral responsibility
CSY = Cosmic solidarity
CFN = Caring for nature
NHM = No harms
IHN = In harmony with nature
FWN = Fairness with nature
DWN = Democracy with nature
MIN = Moral integrity to nature
EE1 = Not littering
EE2 = Using environmentally friendly products
EE3 = Not using chemicals in plants
EE4 = Maintaining plants sustainably
EE5 = Water use savings
EE6 = Maintain energy conservation
EE7 = Separating organic and non-organic waste
EE8 = Planting in deforested forests
EE9 = Recycle trash
EE10 = Conducting a demonstration about environmental preservation
EE11 = Always maintaining cleanliness
EE12 = Saving energy
EE13 = Not damaging nature
EE14 = Reducing the use of vehicles causing air pollution
EE15 = Reducing the use of plastics
EE16 = Not throwing waste into the river to prevent water pollution
EE17 = Cleaning the sewers to prevent flooding
EE18 = Reforestation to prevent flooding
EE19 = Using environmentally friendly transportation vehicles
EE20 = Not doing illegal logging
EE21 = Adopting an environmentally friendly lifestyle
EE22 = Using nature and its contents wisely
EE23 = Developing nature for humanity welfare in a sustainable way
EE24 = Paying attention to nature sustainability and usefulness
EE25 = Carrying out environmental awareness activities
EE26 = Consistently preserving the environment
EE27 = Consistently maintaining natural resources for the survival of all of us
PE1 = Converting items into reusable material
PE2 = Using items again
PE3 = Reducing the cause of waste
PE4 = Buying eco-friendly products
PE5 = Using products not harming the environments
PE6 = Choosing products contributing to green living
PE7 = Respecting local cultures
PE8 = Traveling with environmentally conscious impact
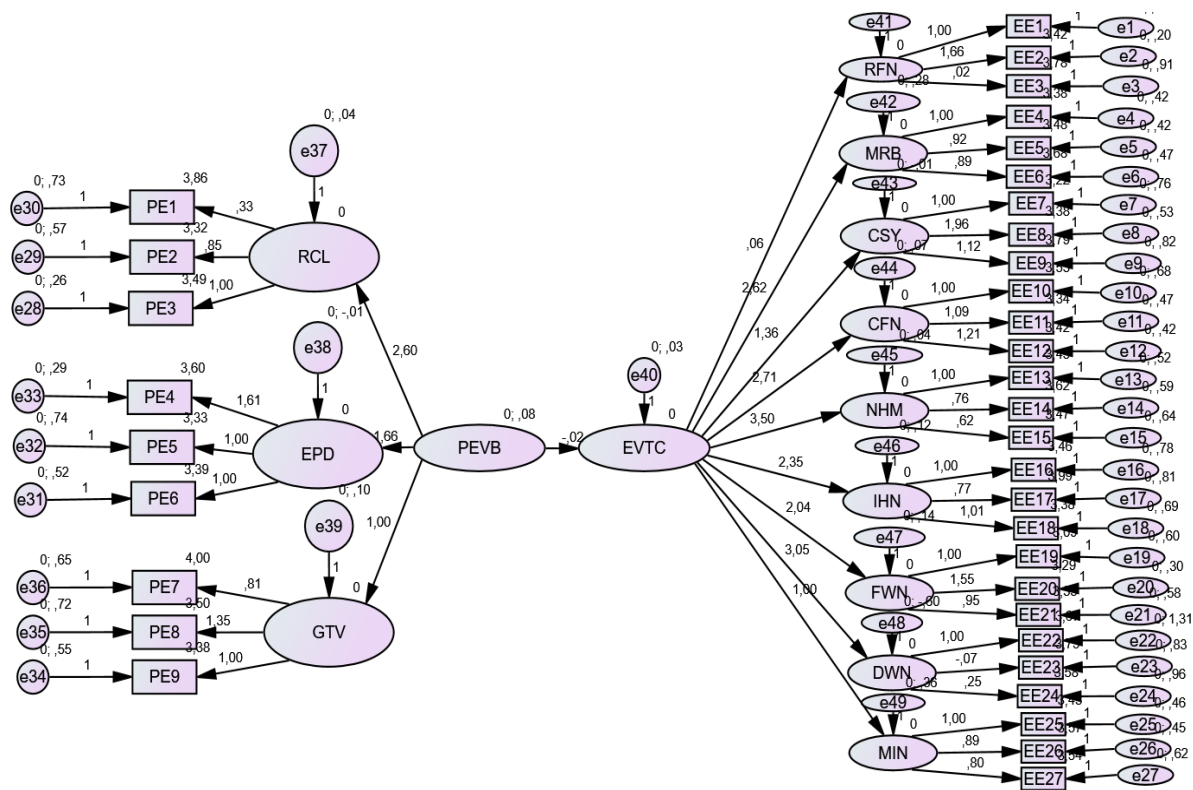PE9 = Responsible travel practices paying attention to environmental sustainability

FIGURE 2. The structural model

CONCLUSION

Model of environmental ethics in the context of pro-environmental behavior is proposed by this study. Recycling, eco-products, and green travel predict pro-environmental behavior. Respect for nature, moral responsibility, cosmic solidarity, caring for nature, no harms, in harmony with nature, fairness with nature, democracy with nature, and moral integrity to nature influence environmental ethics. The limitation of this study is that this study only covers the students at Universitas Negeri Jakarta. It is recommended that further research can cover all college students located in Jakarta in order to find out the more appropriate model.

ACKNOWLEDGEMENTS

REFERENCES

1. L. He and V. Filimonau, Tourism Management Perspectives **35**, 100716 (2020).
2. Y. Guo, L. Wang, and Q. Yang, Journal of Cleaner Production **266**, 122054 (2020).
3. S. K. Singh, J. Chen, M. D. Giudice, and A. N. El-Kassar, Technological Forecasting and Social Change **146**, 203 (2021).
4. D. Safitri, I. Lestari, A. Maksum, N. Ibrahim, and A. Marini, International Journal of Interactive Mobile Technologies **15**, 66 (n.d.).
5. D. Safitri, S. Nuraini, T. Rihatno, S. Kaban, A. Marini, and A. Wahyudi, International Journal of Advanced Science and Technology **29**, 190 (2020).

6.   D. Safitri, U. Umasih, H. Yunaz, A. Marini, and A. Wahyudi, International Journal of Control and Automation **12**, 49 (2019).
7.   D. Safitri, H. Yunaz, Umasih, A. Marini, and A. Wahyudi, International Journal of Control and Automation **12**, 37 (2019).
8.   D. Safitri, Umasih, N. Ibrahim, Sujarwo, A. Marini, and A. Wahyudi, Opcion **35**, 2899 (2019).
9.   U. B. Wibowo, A. Marini, D. Safitri, and A. Wahyudi, International Journal of Advanced Science and Technology **29**, 1161 (2020).
10.   S. Hartati, D. Safitri, S. Nuraini, T. Rihatno, A. Marini, and A. Wahyudi, International Journal of Advanced Science and Technology **29**, 1129 (2020).
11.   W. Hadi, Yufiarti, S. M. Sumantri, A. Marini, and A. Wahyudi, International Journal of Advanced Science and Technology **29**, 110 (2020).
12.   N. Ibrahim, D. Safitri, S. Nuraini, T. Rihatno, Edwita, A. Marini, and A. Wahyudi, International Journal of Advanced Science and Technology **29**, 88 (2020).
13.   S. Nuraini, D. Safitri, T. Rihatno, A. Marini, E. F. F. P. Z, and A. Wahyudi, International Journal of Advanced Science and Technology **29**, 97 (2020).
14.   A. Maksum, D. Safitri, N. Ibrahim, A. Marini, and A. Wahyudi, International Journal of Innovation, Creativity and Change **12**, 284 (2020).
15.   A. Marini, A. Maksum, Edwita, O. Satibi, and S. Kaban, Journal of Physics: Conference Series **1402**, 1 (2019).
16.   A. Marini, M. S. Zulela, A. Maksum, O. Satibi, G. Yarmi, and A. Wahyudi, International Journal of Control and Automation 1 (2019).
17.   S. Kaban, J. Sakmal, Y. Auliaty, A. Marini, and W. A., International Journal of Control and Automation **12**, 70 (2019).
18.   U. B. Wibowo, A. Marini, D. Safitri, N. C. M. Utami, and A. Wahyudi, Opcion **35**, 2899 (2019).
19.   Fahrurrozi, D. Safitri, A. Marini, and A. Wahyudi, Opcion2 **35**, 1402 (2019).
20.   A. Maksum, D. Safitri, N. Ibrahim, A. Marini, and Wahyudi, Opcion **35**, 2899 (2019).
21.   Edwita, D. Safitri, A. Maksum, H. Yunaz, A. Marini, and I. Muda, International Journal of Education and Practice **7**, 469 (2019).
22.   A. Marini, A. Maksum, O. Satibi, Edwita, G. Yarmi, and I. Muda, Universal Journal of Educational Research **7**, 2089 (2019).
23.   A. Marini, D. Safitri, and I. Muda, Journal of Social Studies Education Research **9**, 274 (2018).
24.   A. Maksum, I. W. Widiana, and A. Marini, International Journal of Instruction **14**, 613 (2021).
25.   A. Marini, D. Safitri, Sujarwo, M. Zahari, I. Lestari, T. Rihatno, S. Nuraini, R. Iskandar, and N. Ibrahim, Journal of Physical Education and Sport **21**, 2389 (n.d.).