

**Pro Environmental Behavior: Is the Travelers Apply It in The City of Denpasar?**

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**ABSTRACT**

This study aims to investigate whether energy conservation, mobility and transportation, waste avoidance, recycling, consumerism, and vicarious behaviors toward conservation play a role in the formation of pro-environmental behavior among tourists visiting sites in the city of Denpasar. The results showed that the six of behaviors that forming pro environmental behavior, two of them were not had an influence on the formation of pro environmental behavior among the tourists visiting the historical sites in the city Denpasar. Such behavior is Energy conservation, and Mobility and transportation.

*Keywords: pro environmental behavior, energy conservation, mobility, behavior, tourism*

**Introduction**

The relationship of the environment and development are a fundamental problem. The lives of more than half the population are economically active in particular in the developing countries heavily dependent on the environment. Such activities such as farming, livestock, fishery, forestry and food gathering. Todaro and Smith (2011) stated that economists are increasingly aware of how important the impact of various environmental issues against the success of development efforts. The more obvious things again, that environmental destruction patterns more quickly would threaten the ability of the current generation and the future to meet their needs. Therefore, is needed behavior the pro environmental behavior to overcome these various problems complex in economic development.

The tourism sector is one sector of the economy supporting both national and regional. Especially if we speak of Bali, tourism sector is already no doubt. A great variety of tourist attraction is ranging from the culture, nature, and history of an earlier civilization. Denpasar is the capital of the province of Bali that offers tours of the city. One of the featured attractions is the historical heritage sites scattered across several points within the city of Denpasar. These sites include Puri Satria, Pemecutan Puri Agung Puri Denpasar, Jero Kuta, Puri Kesiman, Pura Agung Petilan Kesiman, Temple Jagadnatha, Maospait Temple, Pura Sakenan, Catur Muka statue, Culture Park Art Center, Museum, Le Mayeur Museum, Badung Traditional Market, and Inscription Blanjong Sanur.

The historical heritage site preserved and maintained the mandatory along with the development of tourism, whether by government or local communities. Significantly, the parties visited to that place are tourists, especially foreign tourists. The behavior of the tourists will be more influential to the existence of the site. The closest thing is about the cleanliness of the environment. This is a challenge for all of us and especially tourists who came for a visit. The behavior of the pro-environment is indispensable to the creation of sustainable tourism in the city of Denpasar.

This research aims to find out whether the tourists that come to visit historical sites in the city of Denpasar implemented pro environmental behavior. It is important to preserve the historical heritage which is part of the cultural and community life of trail in the city of Denpasar.

### **Pro Environmental Behavior**

Pro environmental behavior is committed by individuals so as to reduce the negative impacts of human activity towards humans and to improve the quality of the environment (Jensen, 2002). The concept of pro environmental behavior demonstrates some problematic aspects, including marginalization of indirect action on the environment, the limitation of actions and behavior against individuals and the assumption that a very complex environmental problems while this can be handled through the obvious way.

Pro environmental behavior has been defined as an Act, either individuals or groups who are directed to fix problems of the environment (Sivek and Hungerford, 1990). Correspondingly, Axelrod and Lehman (1993) also described pro environmental behavior as the action that supports the preservation of the environment or conservation. Pro environmental behavior also minimizes the negative impact to the nature made by individuals (Kollmuss and Agyeman, 2002).

Today, economists are increasingly aware of how important the impact of various environmental issues against the success of development efforts. Todaro and Smith (2002), state that the environment and development are a fundamental problem. The lives of more than half the population who are economically active in developing countries rely heavily on the environment through agricultural activities in the broad sense. Environmental quality affects and is affected by economic development.

Coelho *et al.* (2017) state that pro environmental behavior is an important part of the community towards better change in a sustainable future. Understanding how a person's tendency to adopt behavior pro-environment is complex which is still not fully understood. In fact, the adoption of behaviors the pro-environment tends to prosecute individuals, requiring them to spend time and effort greater cognitive in contemplating the economic resources.

The environmental impact of individual on the natural environment has led to problems of ecological, economic and social change. Psychologists have been studying actively factors that are related to the behavior of conservation, environmental activities, such as consumerism or conservation of energy. Kaiser and Wilson (2004) defines the ecological behavior as the behavior of pro social, ecological waste disposal, energy and water conservation, consumer behavior ecologically conscious, tackling litter, participate voluntarily in nature protection activities and the use of environmentally friendly fuelled car.

Pro-environment behavior is a special type of pro-social behavior, such as behavior directed and carried out with the intention of promoting the welfare of individuals, groups or organizations. Gifford (2014) stated that many environmental problems are rooted in human behavior and can be overcome by understanding the behavior of the pro-environment. Some of the things that affect the behavior of the pro-environment include childhood experiences, knowledge and education, personality, behavior, values, attitudes, norms, habits, goals, feelings, and demographic factors as well as various types of general view related to the environment. These factors very likely combined to determine behavior.

### **Sampling Method and Hypothesis**

This quantitative research was conducted through survey design. The population of this research is all travellers who come to historic sites in the city of Denpasar. Sample in this research was incidental (N = 40). Questionnaire refers to environmental attitude instrument for adolescent that is exclusively based on behavioral self-reports (Kaiser et al, 2007). Normality tests are carried out first to ensure that all items are normally distributed, then the test validity and reliability testing done to ensure valid and reliable data. After going through the stage of pre-test next performed Multiple Linear regression test. Measurement of each indicator on those

variables in this research was conducted by using Likert scale of five levels, namely 1 = strongly disagree; 2 = disagree; 3 = undecided; 4 = agree; and 5 = strongly agree.

*Energy conservation* consists of four indicators that include: 1) After one day of use, my wool sweaters or trousers go into the laundry; 2) As the last person to leave a room, I switch off the lights; 3) I leave electrically powered appliances (TV, stereo, a printer) on standby; and 4) In hotels, I have the towels changed daily. *Mobility and transportation* consist of three indicators that include: 1) I ride a bicycle, take public transportation or walk to school; 2) I am driven around by car; and 3) For short distances (within 15 minutes), I walk or ride a bike. *Waste avoidance* of eight indicators include: 1) I buy beverages in cans; 2) I buy beverages in returnable bottles; 3) If I am offered a plastic bag in a store, I take it; 4) On excursions, I take along beverages in single-use packages; 5) I buy products in refillable packages; 6) At my parties, we use plastic silverware and paper cups; 7) I reuse my shopping bags; and 8) I refrain from battery-operated appliances. *Recycling* consists of six indicators that include: 1) I collect and recycle used paper; 2) I bring empty glass bottles to a recycling bin; 3) I separate waste; 4) I keep gift wrapping paper for reuse; 5) For making notes, I take paper that is already used on one side; and 6) I put empty batteries in the garbage. *Consumerism* is composed of eight indicators, includes: 1) I buy certified organic foods; 2) I eat seasonal produce; 3) When shopping, I prefer products with eco-labels; 4) I kill insects with a chemical insecticide; 5) I eat in fast-food restaurants; 6) I use writing pads from recycled paper; 7) I prefer markers to crayons for drawing; and 8) I order take-out pizza. *Vicarious behaviors toward conservation* consists of nine indicators, includes: 1) I try to persuade my parents to buy an energy-efficient car; 2) I have pointed out un-ecological behavior to someone; 3) I contribute financially to the environmental organizations; 4) I ask my parents to buy seasonal produce; 5) I read books, publications, and other materials about environmental problems; 6) I learn about environmental issues in the media (newspapers, magazines, and TV); 7) I insist on holidays close to home; 8) I am a member of an environmental organization; 9) After a picnic, I leave the place as clean as it was before. The hypothesis in this study as follows:

- 1) *Energy conservation* has a positive and significant effect on the pro environmental behavior of tourists visiting city sites in Denpasar,
- 2) *Mobility and transportation* has a positive and significant effect on the pro environmental behavior of tourists visiting city sites in Denpasar,
- 3) *Waste avoidance* has a positive and significant effect on the pro environmental behavior of tourists visiting city sites in Denpasar,
- 4) *Recycling* has a positive and significant effect on the pro environmental behavior of tourists visiting city sites in Denpasar,
- 5) *Consumerism* has a positive and significant effect on the pro environmental behavior of tourists visiting city sites in Denpasar,
- 6) *Vicarious behaviors toward conservation* has a positive and significant effect on the pro environmental behavior of tourists visiting city sites in Denpasar,
- 7) *Energy conservation, Mobility and transportation, Waste avoidance, Recycling, Consumerism, Vicarious behaviors toward conservation* has a positive and significant effect on the pro environmental behavior of tourists visiting city sites in Denpasar.

## Result and Discussion

Based on the output in table 1, note that the value of significance *Asymp.Sig (2-tailed)* for 0,975 is greater than 0,05. Then it can be concluded that the data is normally distributed. Next value *Cronbach's Alpha* of 0,947, this value is greater than 0,600. This shows that the instrument or items used in the study is reliability, as intended are presented in Table 2. Output results in Table 3 show that the numbers count for the entire r items except EC2 is greater than 0,300. This means the entire item except EC2 (*As the last person to leave a room, I switch off*

the lights) are valid. While the items count of  $r$  have EC2 0,245 where less than 0,300. This means items EC2 invalid.

Multiple linear regression calculation results in table 4 show that the value of the constants of 0,210 means that if *Energy conservation, Mobility and transportation, Waste avoidance, Recycling, Consumerism, and Vicarious behaviors toward conservation* is constant or change equal to zero, then the Pro Environmental Behavior is 0,210. Energy conservation has no effect against partially Pro Environmental Behavior. This is because  $t_{test}$  (0,374) with a level of significance of 0,711. The value of the coefficient  $\beta_1$  of 0,149 have a sense that when Energy conservation increased by 1 unit, then Pro Environmental Behavior will be increased by 0,149 assuming other variables considered to be constant.

*Mobility and transportation* have no effect against partially Pro Environmental Behavior, because  $t_{test}$  (2,007) with a level of significance of 0,053. The value of the coefficient  $\beta_1$  of 1,089 have a sense that when Mobility and transportation increased by 1 unit, then Pro Environmental Behavior will be increased by 1,089 other variable assumptions are considered constant. Waste avoidance influenced a positive and significant partially against Pro Environmental Behavior, this is shown by the  $t_{test}$  (10,876) significance level of 0,000. The value of the coefficient  $\beta_1$  of 1,644 means that if *Waste avoidance* increased by 1 unit, then Pro Environmental Behavior will be increased by 1,644 with other variable assumptions are considered constant.

Positive and significant Recycling impact partially against Pro-Environmental Behavior, because  $t_{test}$  (9,138) significance level of 0,000. The value of the coefficient  $\beta_1$  of 2,163 have a sense that when Recycling increased by 1 unit, then Pro Environmental Behavior will be increased by 2,163 assuming other variables considered to be constant. *Consumerism* impact positive and significant partially against Pro Environmental Behavior, because  $t_{test}$  (2,622) with a level of significance of 0,013. The value of the coefficient  $\beta_1$  of 1,513 means that the *Consumerism* when increased by 1 unit, then *Pro Environmental Behavior* will be increased by 1,513 with other variable assumptions are considered constant.

*Vicarious behaviors toward conservation* impact positive and significant partially against significant Pro Environmental Behavior, indicated by the  $t_{test}$  (6,660) significance level of 0,000. The value of the coefficient  $\beta_1$  of 2,009 have the sense that if a type *behavior toward conservation* increased by 1 unit, then Pro Environmental Behavior will be increased by 2,009 assuming other variables considered to be constant. Lastly, because of the  $F_{test}$  (554,758) as well as the significance level of 0,000 suggests that *Energy conservation, Mobility and transportation, Waste avoidance, Recycling, Consumerism and Vicarious behaviors toward conservation* simultaneously influential significantly to Pro Environmental Behavior. The value of  $R^2 = 0,990$  means that of 99,0 percent varians Pro Environmental Behavior influenced by *Energy Conservation, Mobility and transportation, Waste avoidance, Recycling, Consumerism, and Vicarious behaviors toward conservation* of 1,0 percent while the rest is affected by other variables that are not incorporated into the model.

The behavior of travellers depends on the management of the tourist destination itself. This is also in line with the demands of the business world that are closely related to innovation and service quality. Historical heritage sites have their own challenges in facing the digital industry era, therefore historical heritage sites in Denpasar City must pay attention to environmental aspects first before talking a lot about their competitive advantages.

### Conclusion and Limitations of Research

The results showed that the six of behaviors that forming pro environmental behavior, two of them were not had an influence on the formation of pro environmental behavior among the tourists visiting the historical sites in the city Denpasar. Such behavior is *Energy conservation*, and *Mobility and transportation*. *Energy conservation* variables have no effect on



pro environmental behavior, because they feel they have paid for all service costs incurred at their place of stay. *Mobility and transportation* variables did not affect the pro environmental behavior of tourists, possibly because they were not comfortable with the traffic conditions in Denpasar City. This research is limited to the scope of historic sites in the city of Denpasar. For further research it can be developed more broadly by covering the entire area in Bali.

## References

- Axelrod, Lawrence J. and Darrin R. Lehman. 1993. *Responding to Environmental Concern: What Factors Guide Individual Action?* Journal of Environmental Psychology. Academic Press Ltd.
- Coelho, F., Pereira, M.C., Cruz, Luí., and Simões, P., Barata, E. 2017. *Affect and The Adoption of Pro-environmental Behavior: A Structural Model*. Journal of Environmental Psychology (doi: 10.1016/j.jenvp.2017.10.008.).
- Gifford, Robert. 2014. *Environmental Psychology Matters*. The Annual Review of Psychology. doi: 10.1146/annurev-psych-010213-115048.
- Jensen, Bjarne Bruun. 2002. *Knowledge, Action and Pro-Environmental Behavior*. Environmental Education Research (325-334).
- Kaiser, Florian G. and Mark Wilson. 2004. *Goal-directed Conservation Behavior: The Specific Composition of a General Performance*. Personality and Individual Differences 36 (1531–1544).
- Kaiser, F. G., Oerke, B., and Bogner, F. X. 2007. Behavior-based environmental attitude: Development of an instrument for adolescents. *Journal of Environmental Psychology*, 27(3), 242–251. <https://doi.org/10.1016/j.jenvp.2007.06.004>.
- Sivek, Daniel J. and Harold Hungerford. 1990. *Predictors of Responsible Behavior in Members of Three Wisconsin Conservation Organizations*. The Journal of Environmental Education (35-40). Doi: 10.1080/00958964.1990.9941929.
- Kollmuss, Anja and Julian Agyeman. 2002. *Mind the Gap: Why Do People Act Environmentally and What Are the Barriers to Pro-Environmental Behavior?* Environmental Education Research (239-260). Doi: 10.1080/13504620220145401.
- Todaro, Michael P. and Stephen C. Smith. 2009. *Pembangunan Ekonomi*. Penerbit Erlangga: Jakarta.

## Appendix

**Table 1. Normality Test  
One-Sample Kolmogorov-Smirnov Test**

	Unstandardized Residual
N	40

Normal Parameters <sup>a,b</sup>	Mean	0E-7
	Std. Deviation	1.85970759
Most Extreme Differences	Absolute	.076
	Positive	.061
	Negative	-.076
Kolmogorov-Smirnov Z		.480
Asymp. Sig. (2-tailed)		.975

a. Test distribution is Normal.

b. Calculated from data.

**Table 2. Reliability Test  
Reliability Statistics**

Cronbach's Alpha	N of Items
.947	38

**Table 3. Validity Test**

Correlations

	Y		Y
EC1 Pearson Correlation	.595**	C1 Pearson Correlation	.765**
Sig. (2-tailed)	.000	Sig. (2-tailed)	.000
N	40	N	40
EC2 Pearson Correlation	.245	C2 Pearson Correlation	.660**
Sig. (2-tailed)	.128	Sig. (2-tailed)	.000
N	40	N	40
EC3 Pearson Correlation	.558**	C3 Pearson Correlation	.342*
Sig. (2-tailed)	.000	Sig. (2-tailed)	.031
N	40	N	40
EC4 Pearson Correlation	.596**	C4 Pearson Correlation	.598**
Sig. (2-tailed)	.000	Sig. (2-tailed)	.000
N	40	N	40
MT1 Pearson Correlation	.559**	C5 Pearson Correlation	.558**
Sig. (2-tailed)	.000	Sig. (2-tailed)	.000
N	40	N	40
MT2 Pearson Correlation	.616**	C6 Pearson Correlation	.596**
Sig. (2-tailed)	.000	Sig. (2-tailed)	.000
N	40	N	40
MT3 Pearson Correlation	.439**	C7 Pearson Correlation	.559**
Sig. (2-tailed)	.005	Sig. (2-tailed)	.000
N	40	N	40

WA1	Pearson Correlation	.591**	C8	Pearson Correlation	.616**
	Sig. (2-tailed)	.000		Sig. (2-tailed)	.000
	N	40		N	40
WA2	Pearson Correlation	.574**	VB1	Pearson Correlation	.439**
	Sig. (2-tailed)	.000		Sig. (2-tailed)	.005
	N	40		N	40
WA3	Pearson Correlation	.492**	VB2	Pearson Correlation	.797**
	Sig. (2-tailed)	.001		Sig. (2-tailed)	.000
	N	40		N	40
WA4	Pearson Correlation	.319*	VB3	Pearson Correlation	.593**
	Sig. (2-tailed)	.045		Sig. (2-tailed)	.000
	N	40		N	40
WA5	Pearson Correlation	.407**	VB4	Pearson Correlation	.631**
	Sig. (2-tailed)	.009		Sig. (2-tailed)	.000
	N	40		N	40
WA6	Pearson Correlation	.543**	VB5	Pearson Correlation	.735**
	Sig. (2-tailed)	.000		Sig. (2-tailed)	.000
	N	40		N	40
WA7	Pearson Correlation	.745**	VB6	Pearson Correlation	.765**
	Sig. (2-tailed)	.000		Sig. (2-tailed)	.000
	N	40		N	40
WA8	Pearson Correlation	.796**	VB7	Pearson Correlation	.660**
	Sig. (2-tailed)	.000		Sig. (2-tailed)	.000
	N	40		N	40
R1	Pearson Correlation	.767**	VB8	Pearson Correlation	.342*
	Sig. (2-tailed)	.000		Sig. (2-tailed)	.031
	N	40		N	40
R2	Pearson Correlation	.683**	VB9	Pearson Correlation	.439**
	Sig. (2-tailed)	.000		Sig. (2-tailed)	.005
	N	40		N	40
R3	Pearson Correlation	.797**	Y	Pearson Correlation	1
	Sig. (2-tailed)	.000		Sig. (2-tailed)	
	N	40		N	40
R4	Pearson Correlation	.593**			
	Sig. (2-tailed)	.000			
	N	40			

R5	Pearson Correlation	.631**
	Sig. (2-tailed)	.000
	N	40
R6	Pearson Correlation	.735**
	Sig. (2-tailed)	.000
	N	40

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

**Table 4. Multiple Linear Regression Test  
Variables Entered/Removed<sup>a</sup>**

Model	Variables Entered	Variables Removed	Method
1	Vicarious Behaviors, Waste Aviodance, Energy Conservation, Recycling, Consumerism, Mobility and Transportation <sup>b</sup>		. Enter

a. Dependent Variable: Pro Environmental Behavior

b. All requested variables entered.

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.995 <sup>a</sup>	.990	.988	2.022

a. Predictors: (Constant), Vicarious Behaviors, Waste Aviodance, Energy Conservation, Recycling, Consumerism, Mobility and Transportation

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13604.893	6	2267.482	554.758	.000 <sup>b</sup>
	Residual	134.882	33	4.087		
	Total	13739.775	39			

a. Dependent Variable: Pro Environmental Behavior

b. Predictors: (Constant), Vicarious Behaviors, Waste Aviodance, Energy Conservation, Recycling, Consumerism, Mobility and Transportation



**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.210	2.708		.078	.939
Energy Conservation	.149	.399	.018	.374	.711
Mobility and Transportation	1.089	.543	.199	2.007	.053
Waste Avoidance	1.644	.151	.281	10.876	.000
Recycling	2.163	.237	.316	9.138	.000
Consumerism	1.513	.577	.180	2.622	.013
Vicarious Behaviors	2.009	.302	.241	6.660	.000

a. Dependent Variable: Pro Environmental Behavior