Are You Current With the Current: The Impact of Education on Willingness to Pay for a Clean River

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ABSTRACT

This project examines the effect of a person's level of education on their willingness to pay for a clean river. The individuals surveyed in this project reside in Nepal and would be paying for a cleaner Danda River. Three robust least square regression models were built for this study, with the addition of new variables or controls present in each new model. Our research showed that as one's education level increases, their willingness to pay to improve the Danda River increases by .498. In the long run and based off of findings of this project, further research can be conducted to discover what the most productive ways of increasing education levels are and how they could be most effectively implemented.

LITERATURE REVIEW

While limited literature exists for willingness to pay studies specifically in Nepal, there have been similar studies conducted in other developing countries. Guha et al. looks at willingness to pay for clean water in Calcutta, India, which is heavily influenced by income. This study did control for education and family size when measuring family income, but did not isolate the effect education had on willingness to pay for water specifically. In a similar article by Orgill et al., willingness to pay for clean water in Cambodia was found to be approximately 1.3% of mean monthly household income. The majority of households sampled thought their water was drinkable, when in reality it was heavily polluted. This exemplified a lack of education of environmental and sanitation practices. These studies, and others such as the willingness to pay for clean water in Haiti by Wittington et al., used a survey method to collect data.

HYPOTHESIS

As education increases, one's willingness to pay to improve the Danda river will also increase

MODELS AND METHODS

Method

- Ordinary Least Squares Regression

Models

1. $\ln WTP^*_t = \beta_0 + \beta_1 EducationLevel_t + \mu_t$
2. $\ln WTP^*_t = \beta_0 + \beta_1 EducationLevel_t + \beta_2 Income_t + \mu_t$
3. $\ln WTP^*_t = \beta_0 + \beta_1 EducationLevel_t + \beta_2 Income_t + \beta_3 CompositeKnowledgeIndex_t + \beta_4 Urban_t + \beta_5 Caste_t + \beta_6 Age_t + \mu_t$

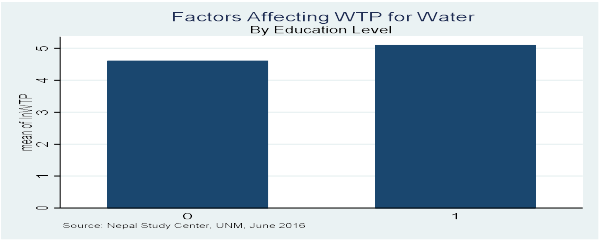
EMPIRICAL RESULTS

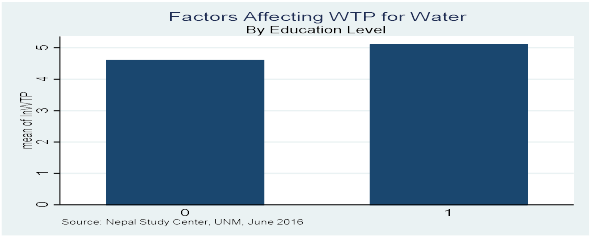
Data and Variables

Variable	*Definition*	*Mean*	*Standard Deviation*
ln(WTPWater)	Natural log of monetary amount respondents are willing to contribute to implement water clean-up program	5.334214	1.030407
Education Level	Categorized into: 10th grade or less completed and higher than 10th grade completed (higher education)	.3206442	.4670663
Composite Knowledge Index	Knowledge index including scientific health knowledge and general health knowledge	5.473708	1.559583
Urban	Respondents in the Siddharthanagar municipality	.7620321	.4261243
Caste	Respondents/ head of house in the Brahman caste	.1457219	.3530633
Income Quintile	Index from 1-5 based on income and assets	2.997326	1.414211
Age	Age of respondents	40.78032	14.99444

VARIABLES	(1) Multivariate Model 1	(2) Multivariate Model 2	(3) Multivariate Model 3
rEducationLevel	0.498***	0.369**	0.244
	(0.161)	(0.165)	(0.172)
IncomeQuintile		0.171***	0.169***
		(0.054)	(0.060)
CompositeKnowledgeIndex1			0.030
			(0.051)
rCaste			-0.031
			(0.217)
Age			-0.012**
			(0.005)
Urban			0.181
			(0.183)
Constant	4.605***	4.121***	4.359***
	(0.091)	(0.179)	(0.356)
Observations	683	683	683
R-squared	0.014	0.028	0.037
R-Squared2	0.0139	0.0280	0.0373
AdjustedR2	0.0124	0.0251	0.0288
F-Stat	9.593	9.791	4.371
n	683	683	683

GRAPHS





CONCLUSIONS

From the results of our study, our hypothesis that an increase in education level leads to an increase in a persons willingness to pay for a cleaner Danda River is supported The coefficient for the education level is significant through out all three models while the coefficient for income is significant in the third model. If enough people are willing to pay for a clean river, enough funds can be gathered to create projects that start to decrease the pollution in the river. The first step to achieve a cleaner river through education would be to take steps to assure children achieve a higher education, such as increasing government funding to schools or supplying more transportation methods for kids living far from any school district. Increasing the number of kids who stay in school and their education level will help lead to a cleaner Danda River in the future.

REFERENCES

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