

## ENVIRONMENTALLY SIGNIFICANT BEHAVIOR: A STUDY OF HOUSEHOLD WASTE MANAGEMENT PRACTICES IN CHIANG RAI, THAILAND

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Understanding human behavior toward environment is important because human values determine the extent to which individuals as members of the society comply with good environmental practices envisaged in the environmental policy. This means that values as expressed in the way of life form part of the major socio-cultural factors that influence environmental policy. This study sought to analyze the way semi-urban households in Chiang Rai, Thailand manage waste. Data was collected based on systematic observation and cultural schema analysis. The findings show that environmentally significant behavior is a major factor that can influence policy failure in the region. None of the participants mentioned trash sorting or recycling as approaches to better environmental behavior. **Key words:** environment, household waste management, Chiang Rai.

**Ponašanje značajno za okoliš: studija o praksama zbrinjavanja kućnog otpada u Chiang Raiju, Tajland.** Razumijevanje ljudskog ponašanja prema okolišu važno je zato što ljudske vrednote određuju u kom će opsegu individue kao članovi društva postupati s okolišem u skladu s procedurama predviđenima ekološkom politikom. To znači da su vrednote koje se iskazuju u načinu života sastavni dio glavnih socio-kulturnih čimbenika koji utječu na ekološku politiku. Ova studija želi analizirati način na koji poluurbanu kućanstva u Chiang Raiju u Tajlandu zbrinjavaju otpad. Podaci su prikupljeni posredstvom sustavnog promatranja te analiziranja sheme kulture. Nalazi pokazuju da je ekološki signifikantno ponašanje glavni faktor koji može utjecati na promašaje politike u regiji. Nijedan od sudionika ne spominje razvrstavanje ili recikliranje smeća kao put prema boljem ponašanju u odnosu na okoliš.

**Ključne riječi:** okoliš, zbrinjavanje kućnog otpada, Chiang Rai.

### INTRODUCTION

Studies in policy implementation show that the context affects policy success or failure [1]. This means that the socio-economic or cultural conditions of the people can to a large extent determine the outcome of public policy. One of the major socio-cultural conditions that can possibly influence environmental policy implementation failure or success is environmentally significant behavior.

Environmentally significant behaviour is a set of behaviours voluntarily practiced by individuals as members of the society, which in the long run enhances good quality environment. Environmental behavior may include the way individuals use environmental resources in an efficient manner, as well as the way they manage their surroundings [2]. These two studies, can demonstrate the importance of exami-

ning environmental behavior and its implications on environmental policy, particularly policy implementation at local level. This is because it takes compliance from the society in order to realize successful policy implementation.

This study is located in the context of the relationship between Environmental policy and human behavior. In rational decision making model for instance, knowledge of the public's value preferences is important in policy making, because it provides the policy makers with information on what policy alternative to choose. This is because the policy alternative that is chosen is that which the decision makers believe has maximum social gain [3]. This means that for policy makers and implementers, the knowledge of people's values can provide insights into how well can a policy be implemented in order to achieve the desired results. Policy makers aware of people's values can be able to determine the cost of the policy from a more informed understanding, than when they did not have such knowledge. Knowledge on environmental behavior can also serve to inform the agenda setting or problem identification in the policy process.

Values also guide actors in policy when determining what is important or desirable. Therefore, values are seen as the desired end of public policy, for instance the desired end of a public policy may be to achieve social equality, individual freedom, or crime control. It is also important to note

## METHODOLOGY

A sample of 150 semi-urban households in Chiang Rai was randomly selected by the help of local leaders. The researcher then used systematic observations and cultural domain analysis to collect data from the participants. Photos of household data management sites were taken then

that policy must be legitimized. Policy legitimacy concerns refer to the moral justification of public policy and the provision of publicly acceptable reasons for compliance. Policy legitimacy is determined based on whether the policy is in line with the public's value systems and beliefs. If the policy is contrary to the values of the public, or if it is believed to be too weak, then that policy is likely to be illegitimate. Policy legitimacy is also determined on the basis of value priorities people assign to their decisions and behaviours [4].

In order to ensure that environmental policy is effective and sustainable, there is need to determine whether the values of the society are in conflict or harmony with the values of the values of the policy. This will help policy communities, policy makers, and implementers to determine whether the public has values that can serve as a source of policy support or compliance, what policy action to take, and what to improve on. Such studies can also help provide insights into problem definition, as well as determining policy goals. However, there are limited empirical studies that can help shed light on these issues, especially at household level, where environmental behavior is least analyzed systematically for policy or learning purposes. Therefore, this study sought to answer the questions: How do semi-Urban households in Chiang Rai manage household waste? What policy strategies should be put in place to improve household waste management?

analyzed based on the observation framework formulated by the researcher. Participants were also interviewed on how they managed household waste. In order to obtain information on this question, participants were asked: Please tell me, what do you do with household waste? The

question was probed further through conversations in order to ensure that more

detailed information was provided.

## DATA ON SYSTEMATIC OBSERVATION

Based on literature review on field work observations [5] and environmental / community disorder indicators [6], the researcher designed a framework for collecting and analyzing household data management sites. The following items were taken into account when collecting and analyzing data: Land use (household waste

kept is a specific place), clean physical conditions, empty bottles, plastic bags, scattered or dumped in the waste management sites, garbage or litter on the sidewalk / or on the ground, stagnant water, broken / sewerage sites, and evidences of waste burning. Table 1 shows the findings on household waste management practices.

**Table 1.** Household Waste Management Practices

**Tablica 1.** Prakse zbrinjavanja kućnog otpada

Items	Category: Yes	Category: No	Total
Evidence of waste burning	120	30	150
Broken sewerage sites	84	66	150
Stagnant water	98	52	150
Garbage or litter on the ground/sidewalk	146	4	150
clean physical conditions	2	148	150
Land use (household waste kept is a specific place)	150	0	150
empty bottles, plastic bags, scattered or dumped in the waste management sites	150	0	150

Data in table 1 indicates a high level of environmental disorder. This shows that semi-urban households studied are highly exposed to environmental health risks, because of the household waste management approaches used. Burning waste is a common practice in this community. The practice has existed for ages and has been passed on from one generation to another. Burning trash is not just a practice, but a ritual-like norm which individuals have been socialized to practice. In most cases, burning

trash is conducted unconscious of the risks one is exposed to for instance fire and gases emitted when burning different types of trash. Therefore, burning trash represents one of the health risks local communities take for granted, because it is seen as a way of life, rather than a potential environmental threat.

Actors in environment management and policy should identify such health risks as a focus in environmental health education, campaigns, and policy making process.

Local governments can play a more effective role in promoting environmental health, if public policy functions focus on households as policy units. Although Chiang Rai is one of the fastest growing cities in Thailand, there is no established waste management system, policy, and education programs to encourage households to dispose trash safely in specifically designated areas.

Broken sewerages and stagnant water also represent another set of neglected health risks. Most broken sewerages in this area occur as a result of lack of urban planning and implementation of urban policy, particularly regarding housing. The rate at which people purchase land and build residential estates is relatively higher than the implementation of the urban planning policy. Local government operations seem to follow economic development rather than facilitating economic development. Under these circumstances, many buildings are set up without consulting local government authorities. Sewerages are set up by unprofessional individuals and are not linked to main sewerage systems, because local government is not involved. This problem is also a common problem in developing countries representing the unprecedented risks that might occur because of establishing human habitats without following the set policy requirements.

Garbage or litter on the ground / sidewalk, as well as lack of clean physical conditions, is more of a community social characteristic. Poor people tend to be more exposed to a dirty environment, and tend to care less about littering, especially in developing nations. Most households examined had litter scattered all over the compound. The conditions indicated that individuals in these homes rarely see cleaning the environment as a matter of

priority. This shows that the ethic of life among low class populations tend to ignore sanitation, or tend to consider sanitation secondary to other socio-economic priorities. Therefore, building a sustainable environment means taking into account a collective and participatory action, in which policy implementers and environmental development actors work together with the poor. It requires an ethic of care, not just for the environment, but also for the way the poor see the environment and the significance they attach to the world around them. Such an ethic of care should be guided by collective concern.

Land use (household waste kept in a specific place) and the management of waste sites represent the final problem realized in this study. Although each household examined had a specific place set aside for waste management, not all waste was taken to this place. Waste was also scattered all over. This behavior represents petty environmental mistakes households do, because it is not easy to account for the consequences they bring to the environment in the long run. Empty bottles, metal, and plastic bags, were also scattered or dumped in the waste management sites. This indicates that all types of waste including metal, plastic, broken glasses, and organic trash were dumped in one place. This practice indicates lack of information on how to manage waste and the benefits of sorting trash, before disposing it at household level, especially where there are no local government mechanisms to manage waste. Waste management responsibility can be shared to a large extent between the household and the local government through policies that encourage environmentally significant behavior.

## DATA ON CULTURAL SCHEMA ANALYSIS

Cultural Schema Analysis is based on the idea that people use cognitive simplifications to help them make sense of the complex information to which they are constantly exposed. In this case household waste management is a process which households are constantly exposed to, and which individuals in these households can easily explain. Schema analysis is based on psychology view that to understand and to explain, one needs to know the context- that is, what is going on in a particular place, and how it exactly happens. Participants in cultural schema research are individuals with rich understanding and experience of the issue examined. This means that they can remember, and explain a given phenomena comprehensively, because they know the content, process, and meaning of that particular phenomena. Schema research can help explain procedures for instance, what happens when one is arrested? They can also be used to explain what constitutes something, for instance, what constitutes a successful marriage? They can also explain folk theories, for instance how people contract HIV/AIDs? [7].

The main question in this study was: How do semi-Urban households in Chiang Rai manage household waste? Cultural Schema Analysis here was used to help the researcher go beyond systematic observations and engage the households on this question, so that more information would be obtained regarding the strategies households use in waste management and the assumptions that underlie the strategies. Therefore, 150 participants were interviewed on how they managed household waste. In order to obtain information on this question, participants were asked: Please tell me, what do you do with household waste? The question was probed further through

conversations in order to ensure that more detailed information was provided.

Waste management refers to specific techniques, strategies or mechanisms used to collect, transport, dispose, and process waste. The motivation for waste management includes the desire for beauty, environmental concerns or obligations, and the intention to prevent health risks or maintain safety. Different types of waste have different specifications for waste management. Some of the specifications are labeled on the material, while in other cases; general knowledge can apply [8]. Most of the manufactured goods end up at household level. While households may not have a comprehensive waste management system, they have basic strategies they apply when dealing with waste. Households also have a moral obligation to ensure that waste under their control does not end up causing human or environmental harm.

The common strategies used in west management are: waste examination; trash/waste sorting; safe waste disposal; waste reduction, waste reuse, and waste refuse. Waste examination is looking at the waste, reading and examining it carefully before deciding what to do with it. Waste/trash sorting refers to separating different forms of trash for instance plastic and metal or glass and paper, before disposing each accordingly. Safe waste disposal means disposing waste based on environmental safety considerations, for instance putting plastic bags in a recycling garbage can. Waste reduction means reducing the consumption of waste related material, for instance buying less plastic bags. Waste reuse means using something more than once instead of disposing it when it still has value, then buying another only to dispose it in the immediate future. Waste refuse means deciding not to use particular

goods for the sake of environmental concerns. It is important to note that the common waste materials that dominated the interviews were plastics, metal, glass, paper,

and other organic trash. This is because these are the common waste property witnessed at household level.

**Table 2.** Waste Management Strategies

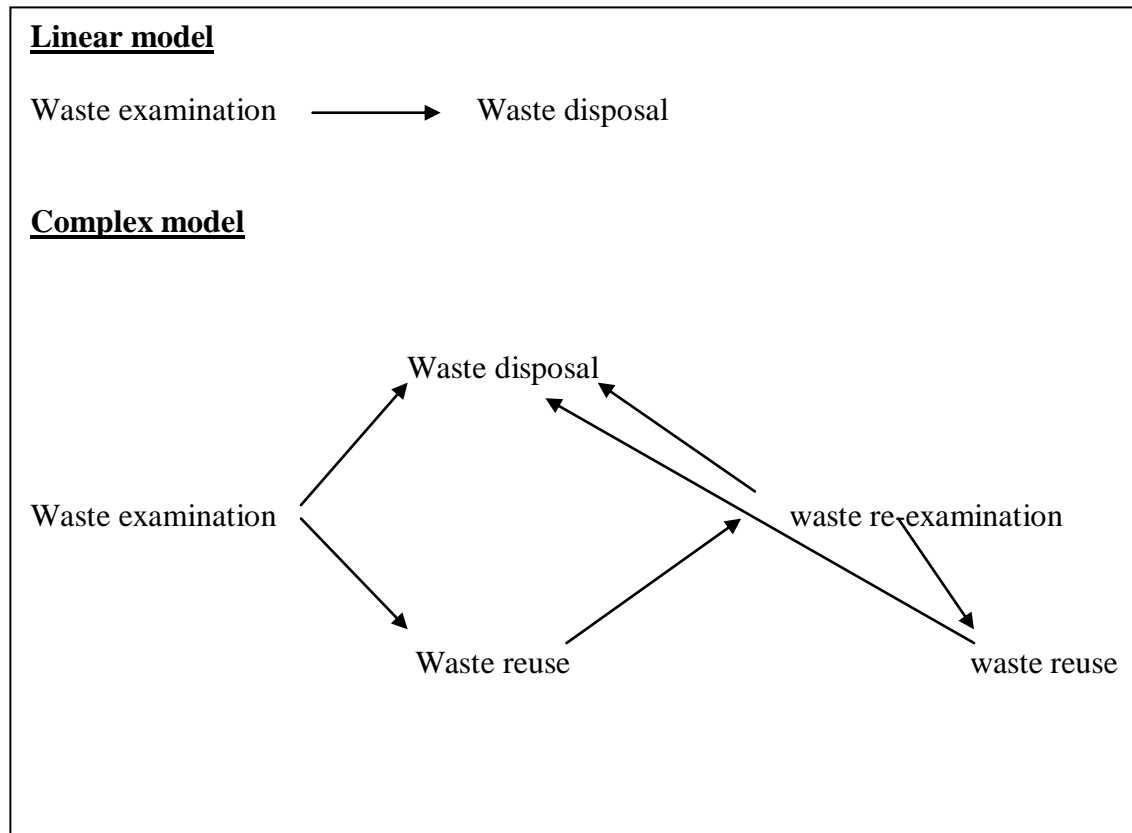
**Tablica 2.** Strategije zbrinjavanja otpada

<b>Waste Management Strategy</b>	<b>Frequency</b>	<b>Total</b>
Waste examination	120	150
Waste/trash sorting	0	150
Safe waste disposal	64	150
Waste reduction	27	150
Waste reuse	86	150
Waste refuse	7	150
Waste reduction	6	150

As indicated in table 2, waste examination, safe waste disposal, and waste reuse strategies were largely used in household waste management. On the other hand, waste reduction, waste refuse, and waste/trash sorting strategies were less or not used. Waste / trash sorting was never mentioned in the interviews. The underlying assumption is that waste is still seen as something with less or no value, to an extent that it should be done away with without value considerations. Participants in the study did not relate the value of waste management to the wider environmental concerns. They largely related the value of waste to the value of the product itself before and after use. This indicates daily reasoning and decision making trends practiced by individuals in household waste management. Waste reduction and waste refuse were also less practiced strategies by the participants. This indicates that environmental concerns or being conscious of one's moral obligation to conserve the environment is not yet a

major factor in the consumption behavior patterns of the households examined.

Although in developed countries household waste management has already become a policy issue, developing countries still lack behind on household waste management policy. Limited resources pushed developed countries to take action on the way households manage waste given the socio-economic and environmental consequences that come with these practices [9]. However, developing countries have not focused more on these aspects of sustainable development. Sustainable development from the perspective of household waste management should begin with raising awareness on the consequences of poor household waste management. It must take into account helping households to think of environmental concerns when making decisions about consumption, waste disposal, waste refuse, waste reuse, and waste sorting. This socio-economic and environmental concept should be integrated in the daily thinking of the people.



**Figure 1.** Waste Management Folk Models

**Slika 1.** Modeli zbrinjavanja otpada od strane građana

Waste management folk models are basically trends derived from the way participants explained how they manage household waste. The folk models were inductively constructed from the trends merging from the data. Two basic models were generated. The first model was a linear

model. The linear model had the following features: waste examination and waste disposal. The second model was the complex model. The complex model had the following features, waste examination, waste disposal, waste reuse, waste examination, and waste disposal.

## CONCLUSION AND RECOMMENDATIONS

Knowledge of environmentally significant behavior is important for environmental policy making, as well as environmental action. This is because the people's value systems largely determine whether they will support or comply with environmental policy or programs. In this

regard, this was study of household waste management practices in Chiang Rai, Thailand. The study sought to answer the questions: How do semi-Urban households in Chiang Rai manage household waste? What policy strategies should be put in place to improve household waste management?

Systematic observations and cultural schema analysis were used in data collection and analysis. The study shows that semi-urban households studied are highly exposed to environmental health risks, because of the household waste management approaches used. Waste refuse, waste sorting, and waste reduction are less or not used in household waste management compared to safe waste disposal, reuse, and waste examination.

Some of these challenges emerge from policy gaps in the environmental policy. In this regard, strategies in both policy and environment development action should focus on encouraging and facilitative environmentally significant behavior. More education should be provided in order to sensitize households to take into account environmental consideration in household waste management decision making.

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