



Environmental Attitudes of Kindergarten Children from a Public and a Private School in Laguna, Philippines

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Abstract: Positive attitudes toward the environment cannot be developed overnight. It is a lifestyle developed over the years. Hence, children should be taught positive environmental attitudes at the early childhood stage since it is during these years that their "basic values, attitudes, skills, behaviors, and habits" are developed. At the same time, they become very curious about their environment and begin to understand its effect on their daily activities. This study investigated the baseline environmental attitudes of 59 kindergarten children from two classes (public and private) in Calauan, Laguna, an agro-industrial municipality south of Manila experiencing some ecological problems. This study would help formulate environmental topics and messages needed by and appropriate for the kindergarten children of Calauan, Laguna. A modified version of 'The Children's Attitudes toward the Environment Scale-Preschool Version' was the main instrument used in eliciting children's environmental attitudes. The students reported a positive environmental attitude towards consumption patterns, recycling-reusing, and environmental protection through interviews. However, though the children mostly reported positive environmental attitudes, most have given anthropocentric reasons in some categories such as reusing, segregation, and recycling. On the other hand, a negative environmental attitude was reported concerning their living habits, specifically their playground and residential preferences.

Keywords: kindergarten children, environmental attitudes

I. Introduction

Situated within the Typhoon Belt and the Pacific Ring of Fire, the Philippines frequently encounters calamities resulting from natural occurrences. As a consequence, it becomes imperative for all Filipinos not only to acclimate to such situations but also to be adequately prepared in safeguarding the environment and mitigating these natural perils to avert human catastrophes.

However, it should be noted that educating the citizenry about the environment and environmental issues should start in the early years. It has been proven that education and exposure to the natural environment enable young children to "understand the world around them and encounter and solve real-life problems" (Staempfli, 2009 as cited by Ridgers, Knowles & Sayers, 2012). Simply, investing in children is investing in the future. Harvard University's Center on the Developing Child released a book entitled *Science of Early Childhood Development* (2007). It was written, "Invest wisely in children and families, and the next generation will pay that back through a lifetime of productivity and responsible citizenship." Herewith, gaining experience and knowledge of the environment at a young age could give the Filipino child a provocation to protect and act as a steward of the local natural resources and allow future generations to reap ecosystem benefits that individuals in the past and present have been profiting from.

The Philippines boasts a substantial youth population, comprising approximately 40% of the total populace according to the 2015 census conducted by the National Statistics Office (NSO). These young individuals are confronted with a multitude of natural hazards that are projected to intensify over time. Instead of waiting for another disaster to expose the unpreparedness of Filipino children in handling these calamities, proactive measures should be taken.

In due course, it is imperative for researchers specializing in environmental science, early childhood development, and education to delve deeply into the relationship between Filipino children and nature, their level of environmental awareness, and their capacity to respond effectively to sustainability challenges. By gaining a profound understanding of these aspects, we can better equip and empower the younger generation to be resilient and responsible stewards of their environment, ensuring a safer and sustainable future for all.

Specifically, this study investigates the kindergarten pupils' attitudes towards the environment regarding a) consumption patterns, b) environmental protection, c) recycling-reusing, and d) living habits. Determining their environmental attitudes would help propose and develop messages and topics to be included in the kindergarten environmental education curriculum, specifically in Calauan, Laguna.

II. Methodology

Two kindergarten classes (public and private) from Calauan, Laguna Philippines were chosen to participate. The municipality has been reported to experience several environmental problems such as contamination of well waters due to pesticides (Medina, Calumpang & Medina, 1991), contamination of ground and surface water by leachate because of a former/closed landfill (Belen, 2012), relocation of environmental refugees in a subdivision called the *Bayan ni Juan* (Moya, 2013) and solid waste management.

There are 35 kindergarten pupil (19 boys and 16 girls) respondents from the participating public school. Meanwhile, for the private school, there are 24 (14 girls and ten boys) students. The sampling method utilized is a non-probability, purposive sampling, specifically, the "Comparative studies sampling." This method involves choosing "two or more population groups with distinct characteristics" (Hardon, Hodgkin & Fresle, 2004). For this type of sampling method, informants should be "homogenous in terms of the study's important dimensions" (Hardon, Hodgkin & Fresle, 2004). In this study, homogeneity referred to is the children's education level and age group—kindergarten, ages five to six. However, the different groups selected have contrasting cases; in the study's case, these are (1) publicly-managed (owned by the state), and (2) privately-managed schools. One school per category (public and private) with kindergarten classes with the highest populations was chosen. The highest population classes were purposely chosen to yield "rich information" (Patton, 2002). These classes are both from the *poblacion* or town proper of Calauan.

Before the data collection activities, the permits to conduct the research were acquired from the following public school officers of the Department of Education (DepEd): Division School's Superintendent of Laguna, District School's Superintendent of Calauan, principals of each school, and the parents of students who were asked to participate in the study. Formal permissions were also obtained to spend one week attending classes and interacting with the preschool children/study respondents before the data collection proper.

A pretesting of the questionnaire was administered to ensure the comprehensibility of the interview questions and drawings. Ten (Male=5 and Female=5) students from one of the public schools in Calauan were asked to be included in the pilot study. Interviews of the pilot study were recorded, reviewed, and analyzed to make the interview protocol's necessary changes. Then, the final form of the questionnaire was produced.

The tool used to observe and understand the kindergarten pupil's environmental attitudes is 'The Children's Attitudes toward the Environment Scale-Preschool Version' by Musser and Diamond (1999). However, the modified version of the scale designed by Kahrman-Ozturk et al. (2012) was the primary basis of the data collection process. The tool was also modified to suit the Filipino culture and environment.

The young children's environmental attitudes were categorized by Kahrman-Ozturk et al. (2012) into four, which also have sub-dimensions (Table 1). Each question, which was translated into *Tagalog* (Filipino language), was accompanied by colored visuals, as suggested by Kahrman-Ozturk et al. (2012) and Musser and Diamond (1999).

Table 1. Kindergarten Pupil's Environmental Attitudes Interview Schedule

Dimensions	Sub-dimensions	Questions
Consumption Patterns	<i>Water Consumption</i>	<ul style="list-style-type: none"> Some children leave the water running while they brush their teeth, but other children always turn the water off. Choose which of the two groups of children do you think does the right thing?
	<i>Paper Consumption</i>	<ul style="list-style-type: none"> Some children use both sides of paper when they draw or write, but other children use only one side of the paper when they draw or write. Choose which of the two groups of children do you think does the right thing?
	<i>Electricity Consumption</i>	<ul style="list-style-type: none"> Some children leave the lights on when they leave the room, but other children turn the lights off when they leave a room. Choose which of the two groups of children do you think does the right thing?
Environmental Protection	<i>Plants, insects, and animals</i>	<ul style="list-style-type: none"> Some children like to look at plants and insects outside but never bring them home, but other children like to bring home plants and insects they find outside. Choose which of the two groups of children do you think does the right thing? Some children like to feed birds, but other children do not like feeding birds. Choose which of the two groups of children do you think does the right thing? Some children never disturb or catch animals they find outside, but some children like to disturb or catch animals. Choose which of the two groups of children do you think does the right thing? Some children think that animals should be protected, but others think that animals can be killed. Choose which of the two groups of children do you think does the right thing?
	<i>Environmental Pollution</i>	<ul style="list-style-type: none"> Some children pick up garbage they see on the ground and put it in a garbage bin, but other children do not do this, and they just throw the garbage on the ground. Choose which of the two groups of children do you think does the right thing?
Recycling-Reusing	<i>Recycling/Segregation</i>	<ul style="list-style-type: none"> Some children put and classify their garbage into separate bins that may be biodegradable, non-biodegradable, and recyclable materials. But some children throw their garbage together in one bin. Choose which of the two groups of children do you think does the right thing?

Reusing

- Some children give their old toys to other children or reuse them in different ways when they do not play them anymore, but others throw them away. Choose which of the two groups of children do you think does the right thing?

Living Habits

Playground preferences

- Some children like playing outside, but other children do not like playing outside. Choose which of the two groups of children you like the most?

Residence preferences

- Some children like living in crowded places such as cities and towns, but other children like/would like to live in places where there are more plants, trees, and animals. Choose which of the two groups of children you like the most?

An artist was asked to draw the visuals, which served as the questionnaire. Each visual has two versions: one of a girl and one of a boy (Figure 1). The pictures that were drawn by the artist were critiqued and reviewed by an early childhood education expert and an environmental scientist. After the experts' views were obtained, necessary modifications were made under an environmental education expert's supervision. The pupils' responses were coded as positive (+) or negative (+), depending on their chosen picture. Frequency counts and percentages were also computed. The reasons behind their answers were also grouped into two environmental worldviews: (1) anthropocentric (value of the natural environment mainly considering its usefulness to human beings) and (2) ecocentric (value of the natural environment regardless of their usefulness to human beings). The goal of environmental education is for students to shift towards a more ecocentric rather than an anthropocentric worldview. Therefore, knowing the children's environmental worldviews will help teachers and environmental educators think of ways to shift their frame of thinking needed to solve environmental problems and support a sustainable lifestyle (Petegem & Blicek, 2006).

POSITIVE

"Children should always turn the water off while brushing their teeth."

NEGATIVE

"Children should leave water running while they brush their teeth."

Figure 1. Example interview visual

III. Results and Discussion

According to Miller and Levine (1996), as cited by Kahrman-Ozturk et al. (2012), environmental attitude is the "evaluative tendency regarding some feature of the environment and can typically be phrased in terms of like and dislike or favor and disfavor." Hence, through one-on-one interviews aided with visuals, pupils were

presented with two opposing attitudes and were asked to choose which environmental attitude they thought they favor most. This depends on what they believe is right or wrong.

Public School Kindergarten Children

Consumption Patterns. The public school kindergarten pupils chose positive environmental attitudes toward water (86%), paper (74%), and energy (97%) consumption (Figure 2). It should be noted that more pupils gave ecocentric reasons behind their chosen environmental attitudes in all categories. This result is different from Kahrman-Ozturk *et al.*'s (2012) observation of Turkish preschool children who chose positive environmental attitudes toward consumption but gave anthropocentric reasons behind their answers.

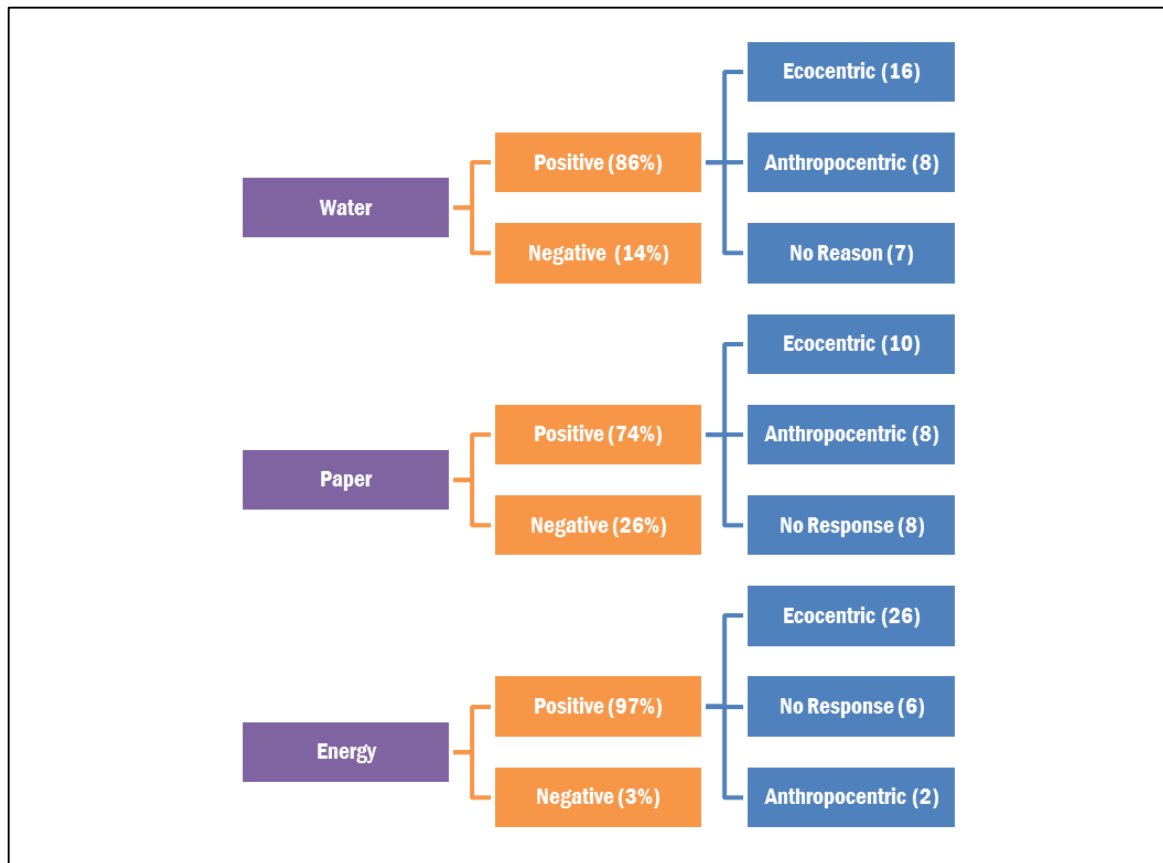


Figure 2. Environmental Attitudes toward consumption of public school kindergarten pupils

Saving water may be one of the first lessons taught to children about the conservation of natural resources. Some children have mentioned that they learn to save water at a younger age because their parents have taught them at home. Ecocentric reasons behind the pupils' choice of positive environmental attitude include (1) water will be put to waste; (2) water will overflow, and (3) electricity will be wasted.

In terms of consumption, it is noticeable that paper consumption has the lowest positive percentages among the three categories of consumption patterns. Meaning, the number of students with a positive response is high, but this number is lower than water and energy consumption. This result is similar to Ozturk *et al.*'s (2012) and Erturk Kara's (2015) studies. This could mean that parents and teachers focus more on teaching children about the conservation of water and energy than paper conservation.

Among the three consumption categories, energy acquired the highest positive percentage. However, some pupils of public school (16 of 34) were more concerned with the technology—"light bulbs getting busted" than the source of energy—"electricity getting wasted." This might be because, at their young age, they are still not taught about where electricity is sourced from. Maybe, the reason given to them by their parents and teachers for saving electricity is that the light bulbs might get busted.

Environmental Protection (Plants, Animals, and Insects). According to Sobel (1996), as cited by White (2006), to foster empathy for the environment, children need to be in regular contact with nature. One of the best ways to do this is to cultivate children's relationships with animals. Generally, public school kindergarten pupils' chosen attitudes toward the environmental protection of plants, animals, and insects are positive (Figure 3). The pupils mostly gave ecocentric reasons behind their positive responses in three of four situations under this category.



Figure 3. Public school kindergarten children's environmental attitudes toward environmental protection of plants, animals, and insects

For the third situation under the environmental protection of animals, plants, and insects, the students were asked if they would opt to leave animals alone (positive attitude) or disturb them (negative attitude). All (100%) kindergarten pupils from the public school stated that the correct action is not to disturb animals; instead, they should be left alone. However, it is notable that even though they all chose the positive environmental response, most of them gave an anthropocentric reason—leaving animals alone and not disturbing them because animals

might harm them. This reasoning explains the results of the experiences the children had with disturbing animals, especially when they were eating or sleeping. Nevertheless, even if their reasons are mostly ecocentric, children observe action-reaction phenomena in the environment. According to early childhood science researchers, "the real evidence of children's early science understanding comes directly from everyday experiences" (Jones & Courtney, 2003).

Also notable is one negative response in the latter situation—taking care of or killing animals. When questioned about the pupil's rationale for considering it acceptable to kill animals, the response was that they are required as a source of food. This illustrates one of the barriers to environmental protection, as people tend to prioritize their immediate necessities over the needs of the environment. Consequently, they may fulfill their requirements at the expense of environmental well-being. However, as Tapia-Fonllem et al. (2013) argue, the concept of sustainability explicitly integrates both meeting human needs and preserving the natural environment. Therefore, the implementation of sustainable natural resource management strategies becomes crucial.

Environmental Protection (Environmental Pollution). For environmental pollution that young children could easily understand, throwing garbage was used as an example. All kindergarten pupils from the public school stated that they would throw their garbage in the garbage bin and not on the ground.

Fifteen of the 35 students said that they chose the picture that shows the child throwing his/her trash into the garbage bin because "the surroundings will get dirty" if it is thrown on the ground or anywhere. This response may be considered ecocentric.

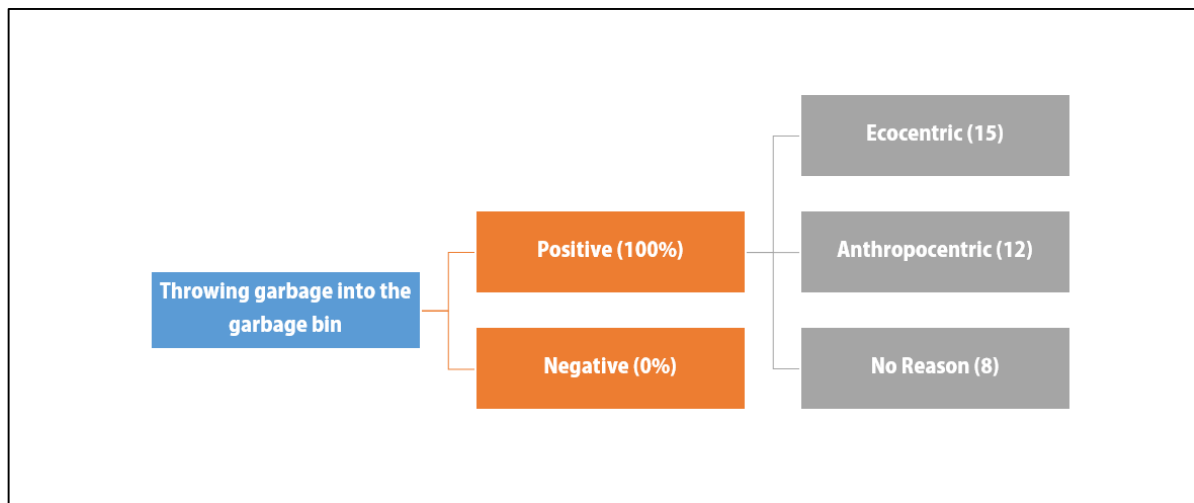


Figure 4. Public school kindergarten children's environmental attitudes toward environmental protection (environmental pollution)

The rest of the responses which were given by 12 of the 35 students are (1) will be taken to prison and pay a fine; (2) people will get hurt if they "trip" on this garbage; (3) unpleasant smell will be produced; and (4) person cleaning will get angry. The rest of these responses are more anthropocentric. Most children narrated that they know the proper place to throw their garbage because their parents or teacher taught them. According to Siraj-Blatchford et al. (2010), children who are taught at an early age to care for the environment—to throw their garbage in the trash can, to recycle and segregate—will most probably sustain these attitudes for a lifetime.

Recycling-Reusing. The public school kindergarten pupils both chose positive environmental responses in the two situations regarding recycling and reusing. The high (80%) percentage of public school kindergarten children's positive responses could be explained by the classroom segregation practices and environmental-friendly school activities conducted.

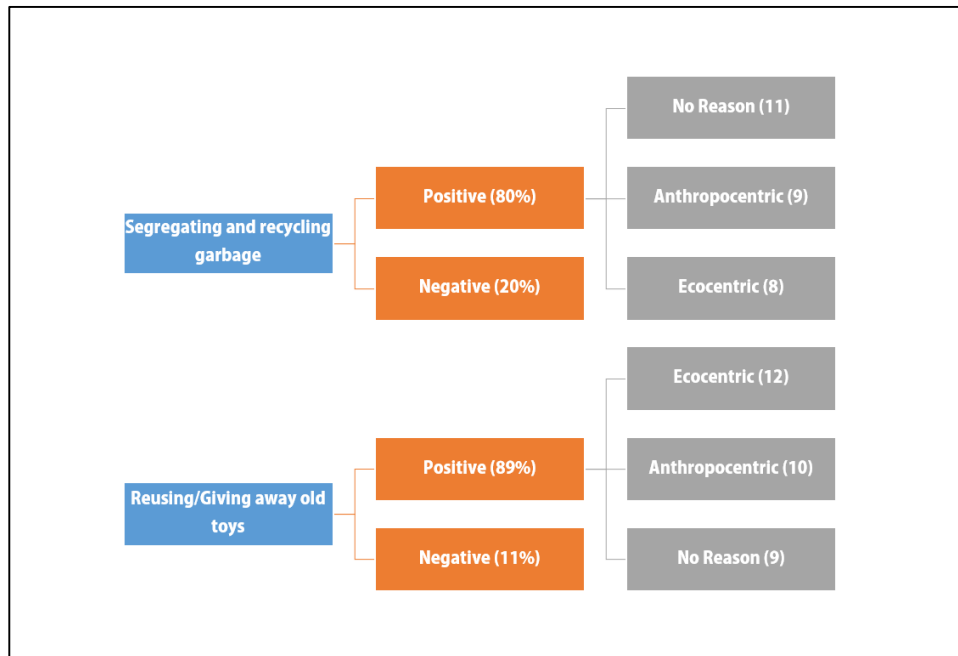


Figure 5. Public school kindergarten children's environmental attitudes toward recycling-reusing

However, it is notable that the number of students who gave no reasons behind their answers is relatively higher compared to the other questions. Also, the anthropocentric and ecocentric reasons in both situations relatively have the same counts. This might be because the pupils, at their developmental stage, have not developed "environmental reasoning" with regard to segregating/recycling or giving toys away (Kahriman-Ozturk et al., 2012). The reasons that they give about what they do and do not do to the environment are based on what they have learned at home and in school.

Living Habits (playground and residence preferences). Of all the categories, the public school kindergarten pupils chose mostly negative rather than positive environmental responses. Since most of the responses are negative for this category, the responses were evaluated in terms of positive attitude's ecocentric and anthropocentric reasons. Results show that more than half of public school children prefer to play inside than outside their houses (Figure 6).

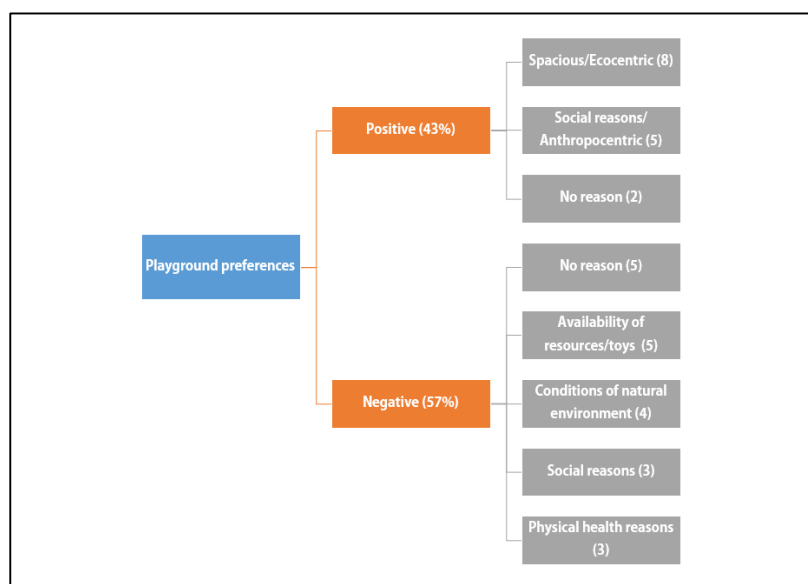


Figure 6. Public school kindergarten children's environmental attitudes toward playground preferences

According to White (2006), children today have fewer outdoor and natural experiences because of the "culture of fear" for the children's safety that parents have developed nowadays. These reasons given by public school kindergarten pupils can be categorized into four: (1) *Social reasons*—the presence of "bad guys" or they might get hit by a car; (2) *Physical health reasons*—playing outside makes them easily tired, or they might get hurt/bruised when they play outside; (3) *Natural environment reasons*—it is too hot outside, or there are animals outside that might bite; and (3) *Availability of resources*—the interesting toys are inside the house. The top two reasons why public school kindergarten children would rather play inside are their toys and physical health.

Most of the public school pupils' prefer to live in the city than in rural areas. There are only two main reasons for this.

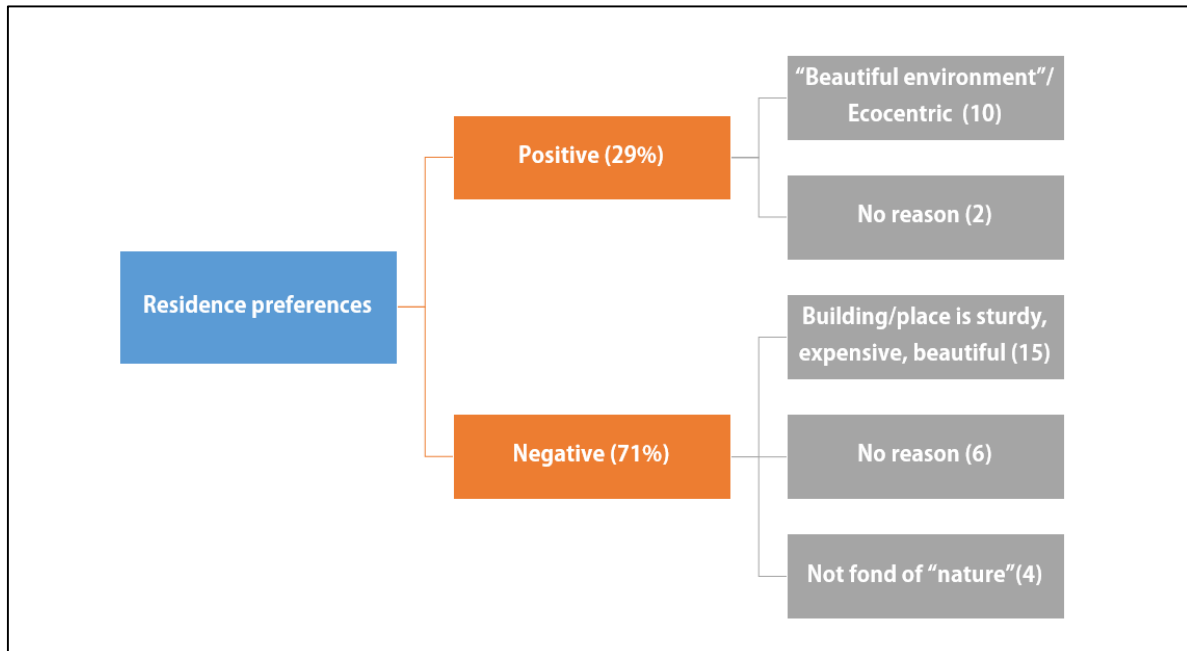


Figure 7. Public school kindergarten children's environmental attitudes toward residence preferences

First, most of them liked the place because the building in the drawing looked sturdy, expensive, spacious, and beautiful. This can be expected because, at this age, usually at four to five years, children start to "demonstrate an understanding of the basic relationship of money for purchase" (COEC, 2014). During the individual interviews, the word often used by the pupils for wanting to live in a place with buildings is 'mayaman', a Tagalog word that means 'rich'. Hence, living in a city may have a connotation of being 'rich' or 'luxurious' for the children. Hence, being in an urban area is more attractive for the pupils than being in a rural area, which they may associate with poverty. It may be that no one has explicitly taught them this, but the mass media and the Filipino culture might have contributed to these ideas instilled in children. For instance—"success" in movies is associated with living in cities, having cars and condominiums, a high position in a big company, shopping malls, luxury hotels, and the like. "Failure" may be associated with living in a rural farm area, walking on dirt roads, and small houses.

Second, some of the children simply do not like nature. One child even said that she does not like living near animals that might bite her and those that give off awful smells. Indeed, what White (2006) says is true, "the loss of contact with nature can be nature's loss". Urbanization offers children so little time to play in natural environments. Hence, if they are so used to playing inside their homes, they might not only detest or fear being in nature, but they will also become insensitive about the state of the environment and its associated problems.

Private School Kindergarten Children

Consumption Patterns. Kindergarten pupils from private schools showed positive environmental attitudes toward water (91%), paper (78%), and energy (100%) consumption (Figure 8). The reasons behind the positive attitudes of the pupils regarding their water and energy consumption are mostly ecocentric.

However, for paper consumption, the majority gave anthropocentric reasons. Specifically for the private school students, 18 gave positive environmental attitude responses. Reasons behind sustainable paper use are: (1) paper will be put to waste; (2) the table is messy; and (3) they will be rewarded/they will not be scolded by their teachers. The last reason is not surprising. Children are known to want to please adults at their age and respond to praise and rewards (Wisconsin Child Welfare Training System, n.d.). Hence, paper consumption for them is not about saving paper *per se* but about writing “a lot” and cleaning the tables to be praised by their teachers and parents.

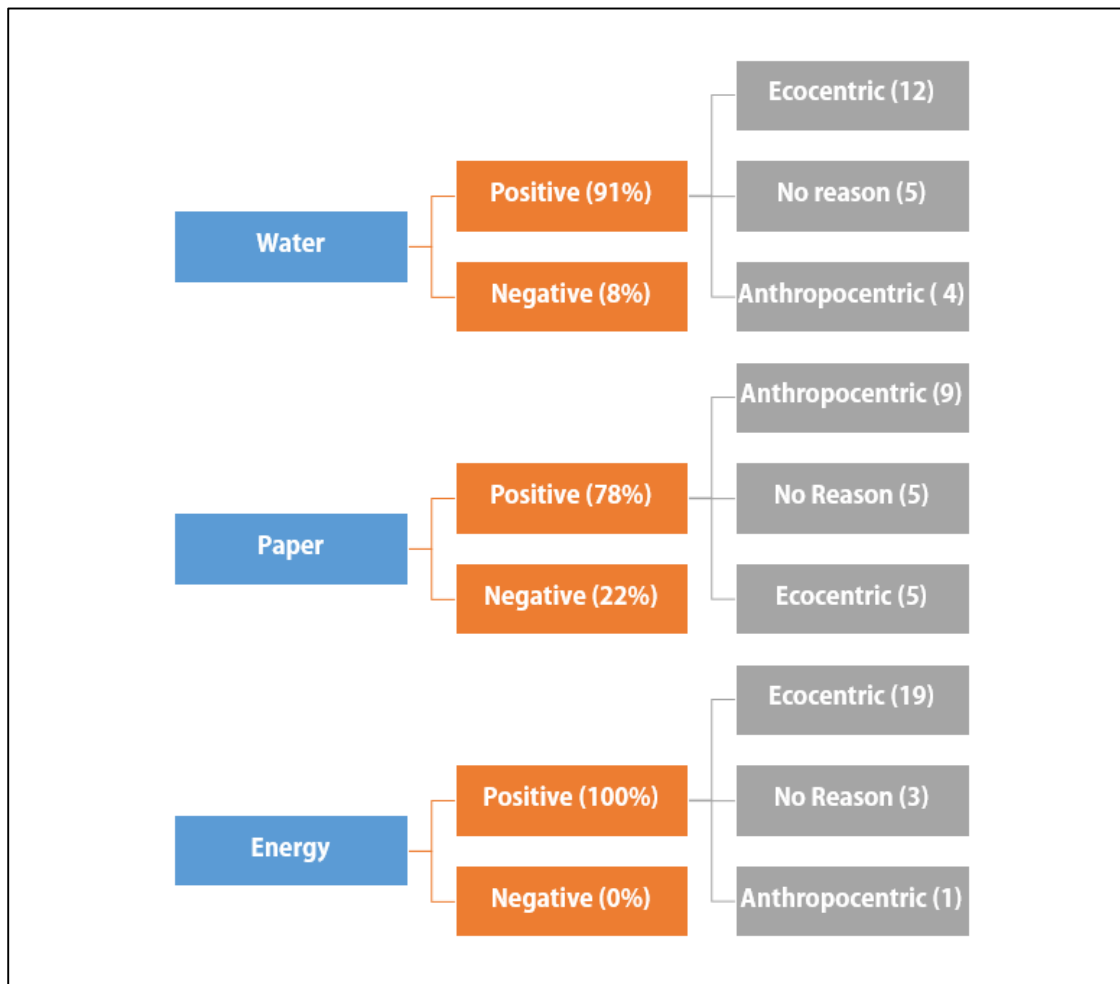


Figure 8. Environmental Attitudes toward consumption of private school kindergarten pupils

All (100.00%) of the kindergarten pupils from the private school chose a positive environmental attitude towards energy consumption. Children are taught to conserve energy at home, and this percentage reflects what the education system might be doing. "Many trends in education today reflect the need to focus on the environment, impressing upon children the need for clean air and water, the conservation of natural resources and energy sources" (Mandel, 2013).

It could be noticed that these numbers are relatively higher than both the pupils' attitudes towards water and paper consumption. This result is similar to that of Kahrman-Ozturk et al. (2012) research with Turkish preschool children. Of the three consumption items, the highest percentage of positive responses is that of

electricity consumption. In fact, in their study, 39 of 40 students gave positive responses (Kahrman-Ozturk et al., 2012).

Environmental Protection (Plants, Animals, and Insects). Private school kindergarten children generally choose a positive environmental attitude towards the environmental protection of plants, animals, and insects (Figure 9). In fact, in the last two situations (not disturbing animals and thinking about caring for or killing them), the positive environmental attitudes are at 100%. Children are naturally curious and caring toward animals at their age, which is the best time to teach them how to respect other living things. According to Mandel (2013), when young children are constantly taught to respect the environment, it becomes a lifestyle. One way to help children foster a caring attitude towards the environment is to teach them "ways to care for animals".

In addition, in three of the four situations, the reasons behind the chosen positive environmental attitudes are ecocentric. The only situation in which reasons were more anthropocentric was when the children were asked why they chose not to disturb animals. Unlike the study of Erturk Kara et al. (2015), the private school kindergarten pupils' reasons behind their positive environmental attitudes were more anthropocentric than ecocentric.

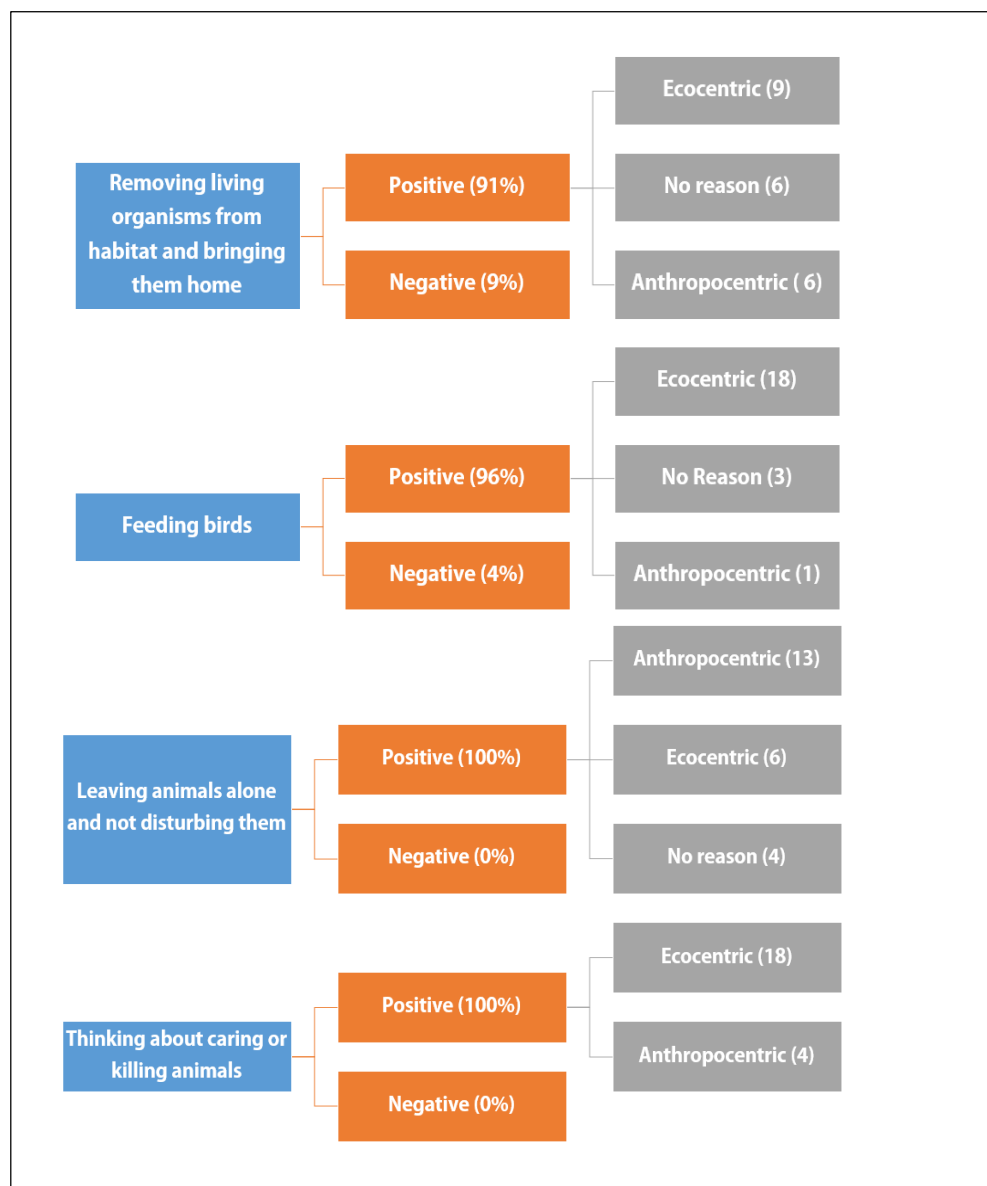


Figure 9. Private school kindergarten children's environmental attitudes toward environmental protection of plants, animals, and insects

Thirteen (57%) pupils reasoned that humans should not disturb animals because this will threaten them and cause them to harm people. On the other hand, only 26% of the pupils gave a more ecocentric reason for their choice of positive environmental attitude. They said that they would not disturb animals because they (the animals) might get hurt or startled. This might be what researchers have called "empathy" for living things in the environment (Sobel, 1996; White, 2006; Cheng and Monroe, 2010) and being aware that animals are able to feel pain or fear. Increased empathy towards the environment was described by Cheng and Monroe (2010) as "seeing or feeling other creatures being harmed may activate people's motivation to protect them." In the early years, the focus of environmental education should be this—developing in children love, empathy, and respect for the environment.

Environmental Protection (Environmental Pollution). All (100%) of the private school kindergarten pupils chose the positive environmental attitude—the child who throws his/her garbage into the trash can. In connection to this, some of the children gave more than one reason behind their choice of a positive environmental attitude. Their reasons were also more ecocentric than anthropocentric.

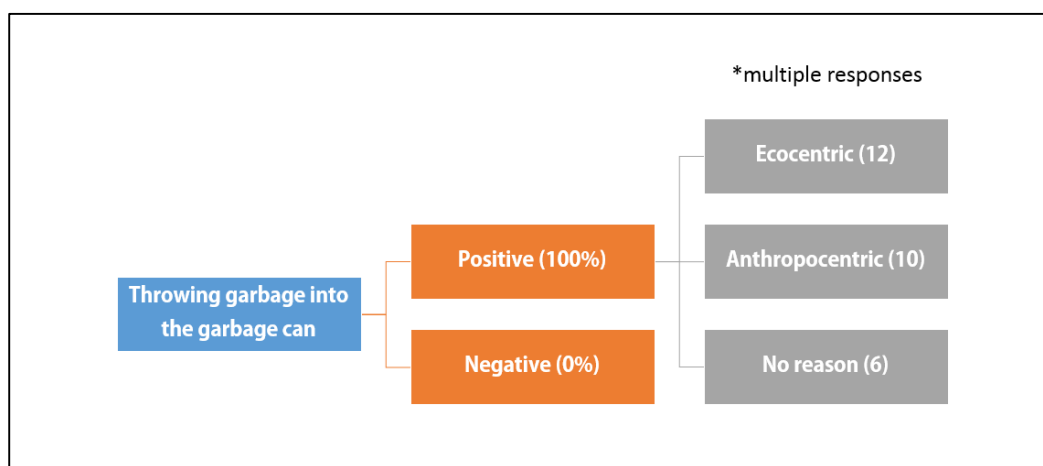


Figure 10. Private school kindergarten children's environmental attitudes toward environmental protection (environmental pollution)

During class observations, it was noticed that the kindergarten pupils from the private school are always being reminded by their teachers to keep their classrooms clean. During recess, the pupils used a tray so that their food crumbs and wrappers would not reach their table or the floor. When they get ready to leave at the end of the day, the pupils are also asked to look under their tables and chairs for trash. They are also asked to throw these into the trash can located inside the classrooms. Hence, this daily routine instills into the child's mind that the surroundings should always be kept clean.

Moreover, regarding the anthropocentric justifications provided by the pupils for disposing of their trash, the children cited three reasons: (1) fear of facing legal consequences such as imprisonment and fines; (2) concern about upsetting the janitor or the person responsible for cleaning the school or house; and (3) the potential harm caused to people if they were to trip on the litter. At the ages of four to six, children are inclined to seek approval from adults, and they respond positively to praise and rewards. Consequently, the desire for praise would discourage them from engaging in behavior that might lead to scolding.

Regarding the fear of legal repercussions and paying fines, children around the ages of four to five years typically begin to grasp the concept of money, as noted by the COEC (2014). They are aware that money is not easily acquired, making the idea of having to pay a fine an undesirable prospect for them. These young children's reasons for disposing of trash reflect their sensitivity to authority figures and their desire to avoid negative consequences, illustrating the influence of social factors in shaping their behavior towards environmental responsibility.

Recycling-Reusing. Most (70%) of the private school kindergarten pupils know that garbage should be segregated. This percentage is relatively low than the other items under the kindergarten pupils' environmental attitudes. Moreover, even though most private school kindergarten children chose a positive environmental attitude towards recycling and segregation, 38% did not give reasons behind this chosen attitude. Overall, whether choosing a negative or positive attitude towards segregation, 57% of them did not give reasons behind their attitude. Hence, it could be assumed that the pupils do not exactly know why recycling and segregation should be done. As Kahriman-Ozturk et al. (2012) put it, it is possible that "they had not developed reasoning for recycling and reusing" yet. The children possibly know that trash should be separated, but they may not know why segregation should be done.

In addition, the students of the private school also gave their reasons. Moreover, their top reason for choosing the child who segregates is that "trash might overflow". Only two children each reasoned that: (1) we can still use some of the garbage (the only ecocentric reason); (2) an unpleasant smell will not be produced; and (3) others might get confused also if we do not segregate.

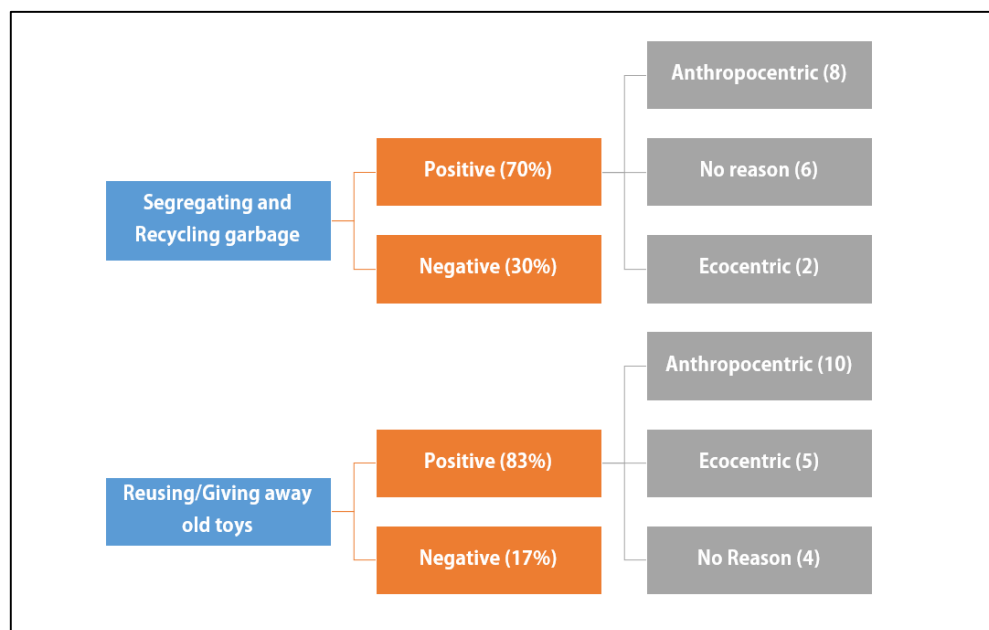


Figure 11. Private school kindergarten children's environmental attitudes toward recycling-reusing

Children were also asked to choose between the child who gives away old toys (positive attitude) or the child who throws away old toys (negative attitude). Nineteen (83%) out of 23 private school kindergarten pupils chose a positive environmental attitude (Figure 11). For the private school children who gave positive responses, more of them gave anthropocentric, moral reasons behind their choice (i.e., giving away old toys will help them make new friends or shows that they are being kind). This result is the same as the 2015 research of Erturk Kara and the 2012 research of Kahriman-Ozturk *et al.* The first response of children in terms of giving is not for environmental but for moral reasons. In fact, of the children who chose a positive environmental attitude, only four gave ecocentric reasons. Again, this shows that five to six-year-old children might not yet have developed the "environmental" reasoning for reusing (Kahriman-Ozturk et al., 2012).

Living Habits (Playground Preferences). Most private school kindergarten pupils chose a negative environmental attitude (68%). Only six of the 23 students said that they prefer to play outside their houses. This result is expected. White (2006) used the phrase "extinction" of nature experience among children today. Children may not feel comfortable in nature because they have not spent much time in it. Moreover, for the pupils who favor playing outside rather than inside, their reasons are still more anthropocentric than ecocentric. The only reason that is more ecocentric is the outside/natural environment being "spacious". The rest of the

responses are anthropocentric/social reasons such as: (1) there are more playmates outside; and (2) playing inside will make the house messy which would, therefore, make their parents angry.

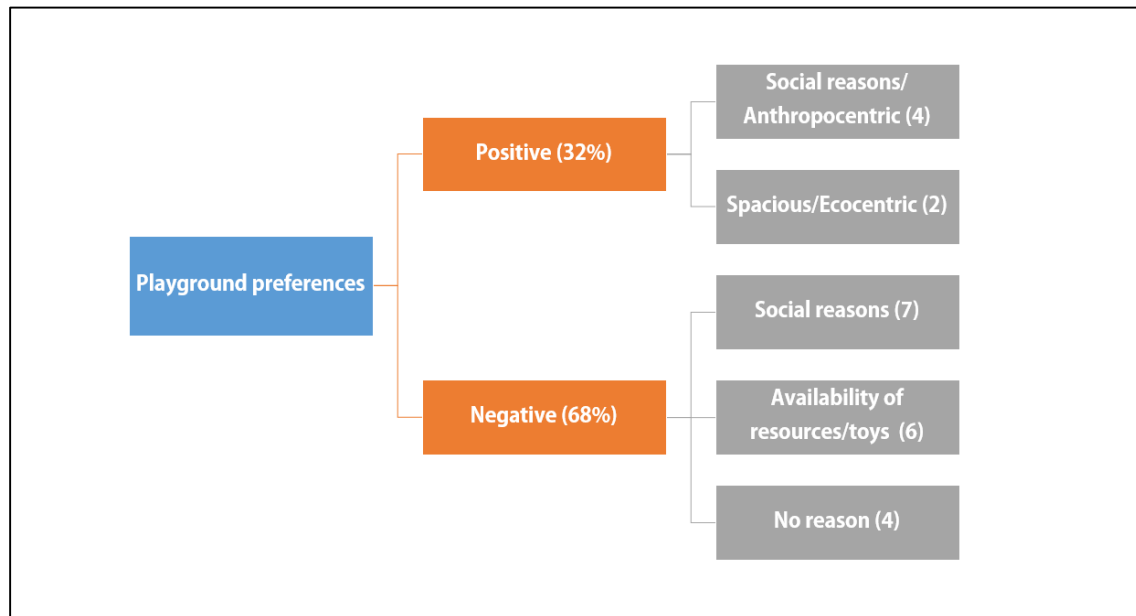


Figure 12. Private school kindergarten children's environmental attitudes toward playground preferences

The private school kindergarten pupils' reasons for choosing to play inside could be categorized into two: (1) *social reasons*—the presence of “bad guys”, they might get hit by a car, and their playmate not being allowed to play inside; and (2) *availability of resources*—gadgets and toys are inside the house. For social reasons, researchers on environmental science and early childhood call this “stranger danger”. Hence, many children are not allowed by their guardians to roam around their neighborhoods or even their yards unless accompanied by “known” adults (White, 2006; Pyle, 2002; Herrington & Studtmann, 1998; Moore & Wong, 1997). According to Davis (1998), “Parents are becoming afraid to let their children visit the local parks, creeks or bushlands for fear that children will step on discarded syringes, be cut by glass, taken by abductors or knocked down by cars.” Hence, even in the 1990s, children were being sheltered from nature. This could be one of the explanations for why environmental problems and worldviews are worsening at this age.

For the second situation, only 10 (43%) of the 23 private school kindergarten pupils want to live in places where there are more plants, trees, and animals (Figure 13). Of the 10 (43%) kindergarten pupils who chose positive environmental attitudes with regard to their living preferences, five of them said that they simply like nature which is why they want to live where there are plants, trees, and fresh air. The other three children who gave positive responses say that the environment with more trees and animals is beautiful in their opinion.

In one of the conversations with a child from the private school, she said that she wants to live in the rural areas because she will not get hurt especially if she accidentally trips while running. She reasoned that compared to hitting the paved, cemented roads that would cause cuts or lesions, falling on the soil with grass would be less painful. This knowledge of a five-year-old came from her previous experiences in the environment.

Of the 23 private school pupils interviewed, thirteen said that they would rather live in a crowded place with buildings. Two pupils said that they do not like nature, especially dirt roads that are muddy and have an animal odor. Furthermore, many pupil respondents like tall, sturdy buildings because they look expensive. One pupil even said that he would like to live there because he wants to work like a boss and be called a “Sir” in the future. Other respondents who gave reasons simply said that the place, in their opinion, looks more beautiful than the other place with trees and animals. These results are similar to that of the research of Leppänen, Haahla, Lensu, and Kuitunen (2012) in which they say that “lesser” love for nature among younger generations may be caused by alienation from it.

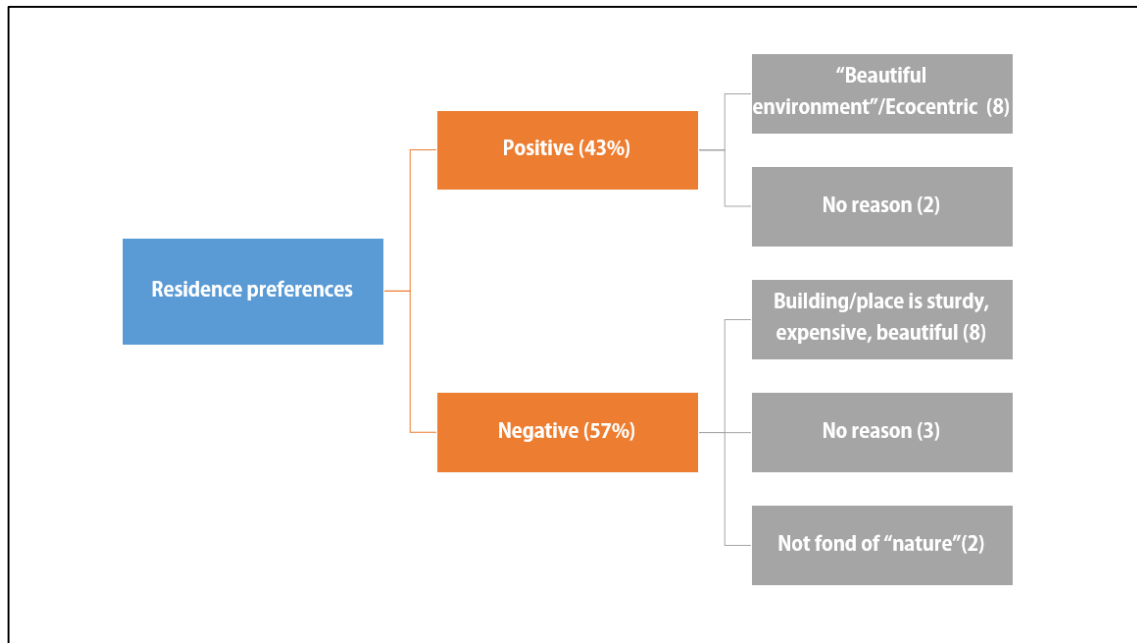


Figure 13. Private school kindergarten children's environmental attitudes toward living preferences

IV. Conclusion

In summary, there is no substantial difference between the environmental attitudes of students from public and private schools. This might be because, at kindergarten, children spend less time at school than they are at home, whether they go to a public school or a private school. Hence, developing positive environmental attitudes must start at home and supplemented by activities organized by the schools.

Both the public and private kindergarten pupils' environmental attitudes concerning consumption patterns, environmental protection, and recycling-reusing are positive. Only environmental attitudes toward living habits are negative. The reasons behind the pupils' positive attitudes were mostly ecocentric except in environmental attitude towards paper consumption, disturbing animals outside, and all the items in the recycling-reusing category.

The pupils have positive attitudes toward segregation but are not particularly knowledgeable about the "how and whys" of segregation. This is especially the case for students from the private school. Hence, activities to teach children about segregation may be organized. Trash cans used in school must also make segregation possible. This means that there must not be only one trash can but a group of trash cans that would help segregate and categorize garbage. Children's parents should also be encouraged to segregate trash in their homes because the family has an important role in promoting a positive environmental attitude.

Based on the results, the pupils, regardless of being from a private or public school, prefer to play indoors than outdoors. Hence, field trips should focus more on nature trips with parents or families. These would spark children's curiosity about their local environment and be a basis for future action to protect it. Reusing activities could be done by the children by bringing old toys to school and donating these to an orphanage.

For the topic and message formulation for the curriculum content for early childhood environmental education pupils, the basics of the following environmental topics for the kindergarten curriculum are suggested: human-environment relationship, segregation, reusing, garbage and flooding, and sustainable paper consumption. Other recommended ways of integration include nature trips with parents or families, watching environmentally friendly-themed movies and documentaries, bringing old toys to school, and donating to the orphanage.

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