

Recycling Behavior Among Urban South African Households: The Role of Race, History and Social Status

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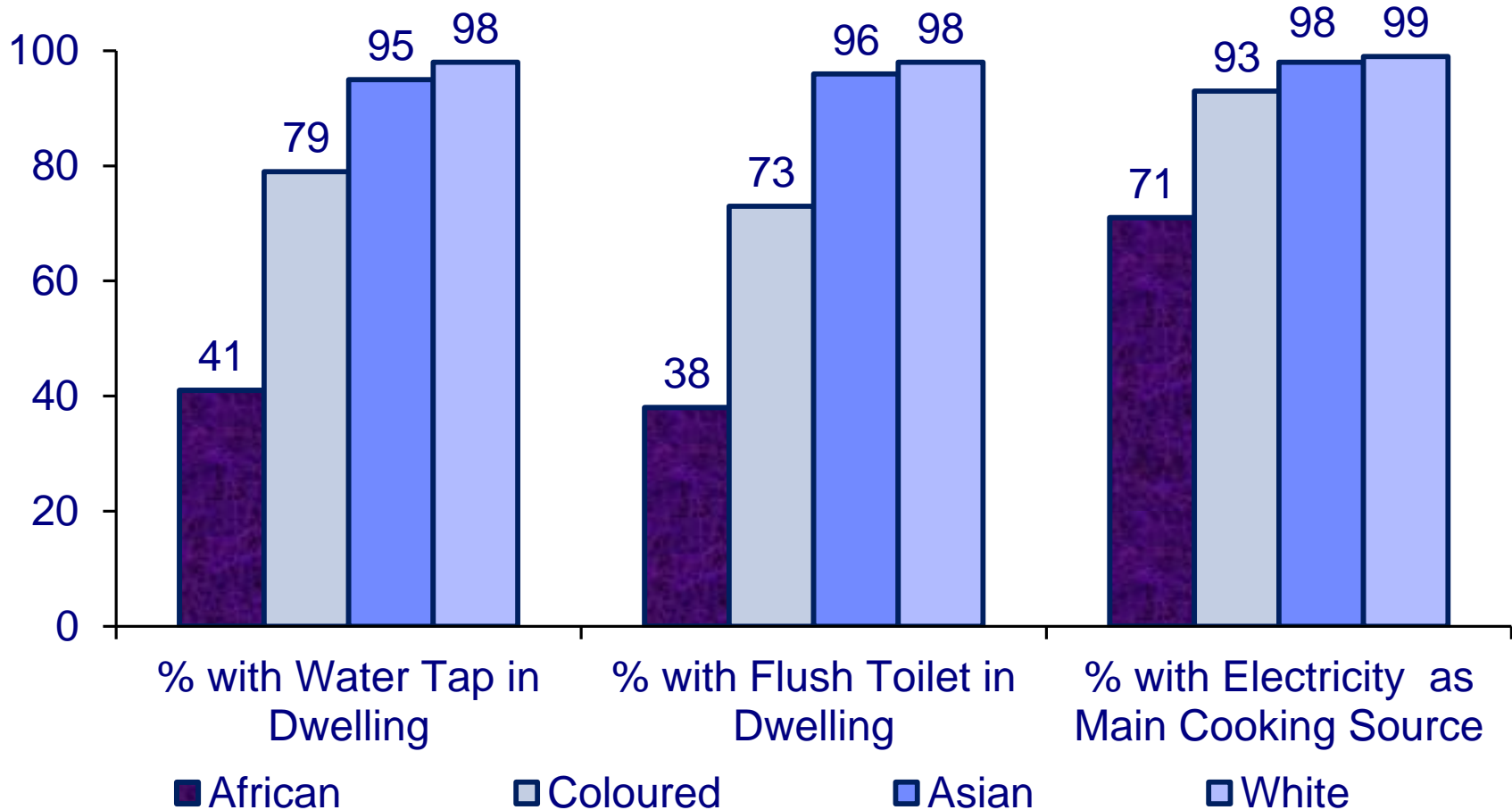
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Overview of Study

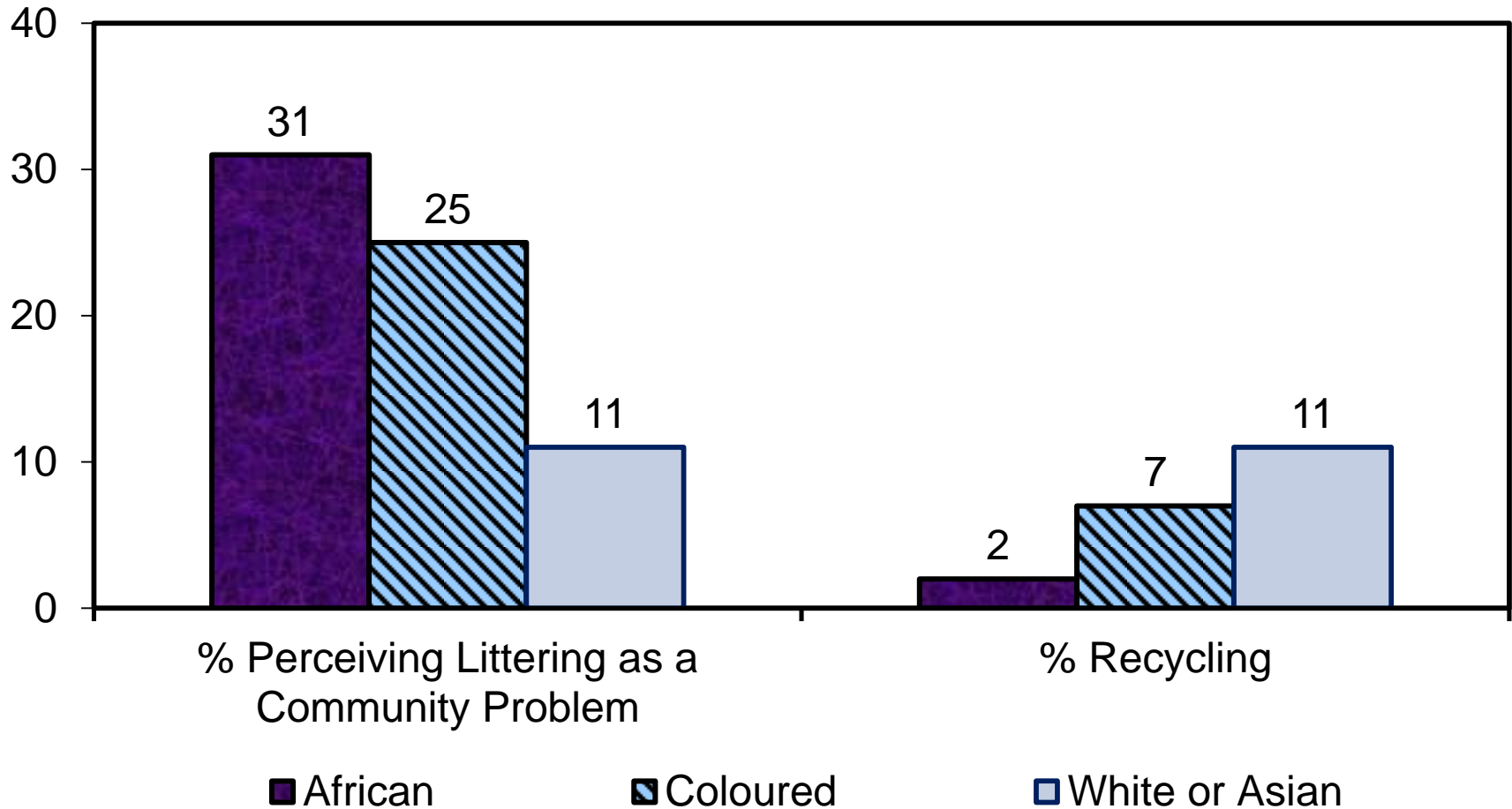
- This study examines household recycling behavior among urban South Africans, based on the 2003, 2005 and 2006 General Household Surveys. The focus is on recycling for normative (non-money) reasons.
- Research in Europe and North America finds that recycling is more likely when it is easier for households to recycle. This was true for all South African households. Also, recycling for normative reasons (not to get money) has been found to be strongly positively related to education and often is more common among older people. This was found for non-African households.
- Among African households, recycling is much less common and increases little with education. However, African households with a schoolchild are more likely to recycle, possibly to cooperate with school programs and to provide a good model for children.
- Among African households, those with older household heads are not more likely to recycle, possibly because older Africans spent more of their lives under apartheid and thus are not more motivated than younger Africans to recycle for the common good.

Characteristics of Urban Households by Population Group of Household Head, 2006



White and Asian households have similar characteristics. They are better off than Coloured households or African households. Coloured households are better off than African households. We group together White and Asian households in the analysis.

Percent of Urban Households Considering Littering a Community Problem and Percent Recycling by Population Group of Household Head



African households are the **most** likely to perceive littering as a community problem but are the **least** likely to recycle.

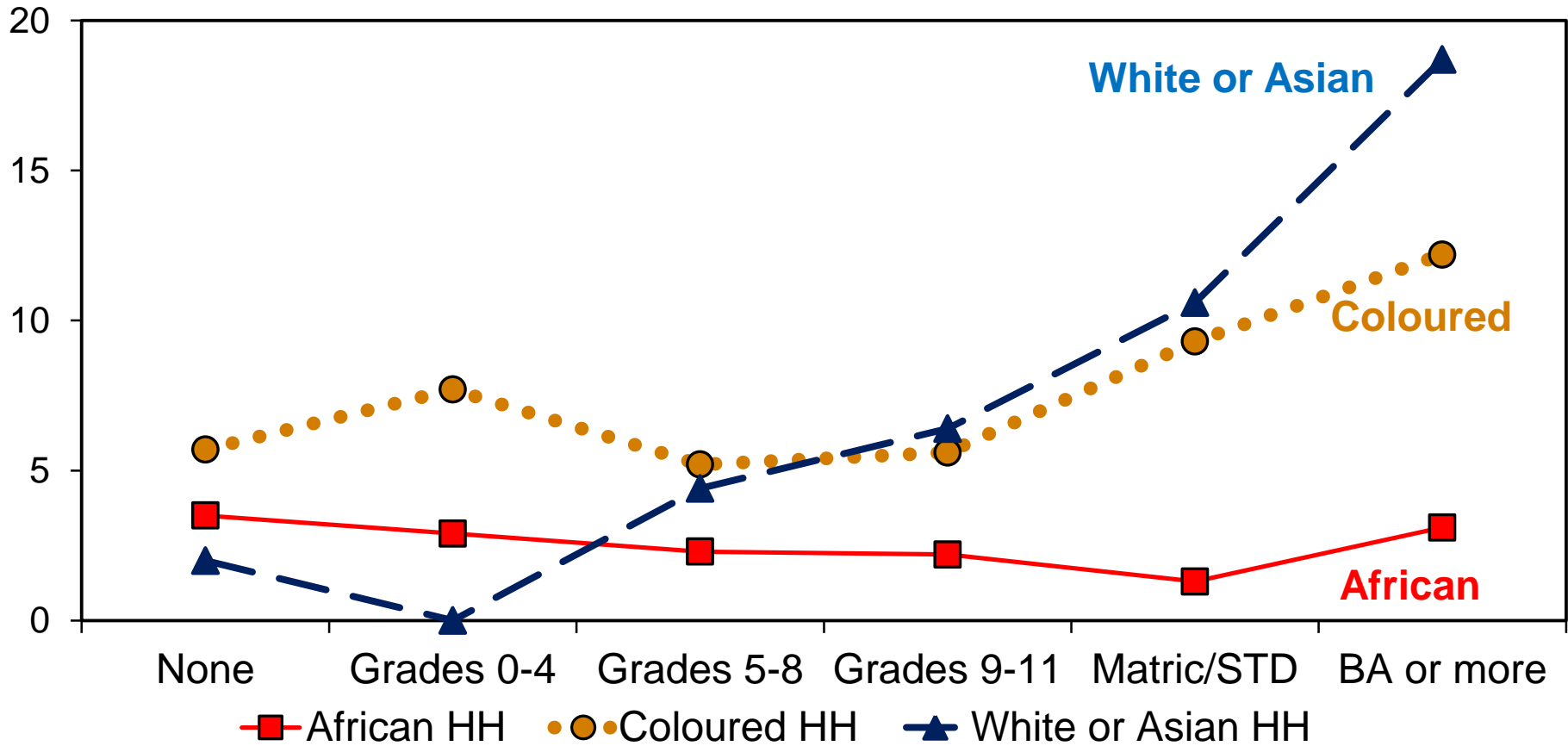
Earlier Research on Recycling

- In developed countries, higher social status has usually been found to be positively related to recycling, especially for recycling for normative (non-money) reasons.
- In developed countries, often older people are more likely to recycle than younger people.
- Only recently has there been much research in developed countries on the level of recycling in neighborhoods with a large minority population.
- There has been little research on variations in recycling behavior within racial or ethnic groups in relation to socio-economic status in developed countries.
- There has been little research on recycling behavior in the developing world.

How this Study Proceeded

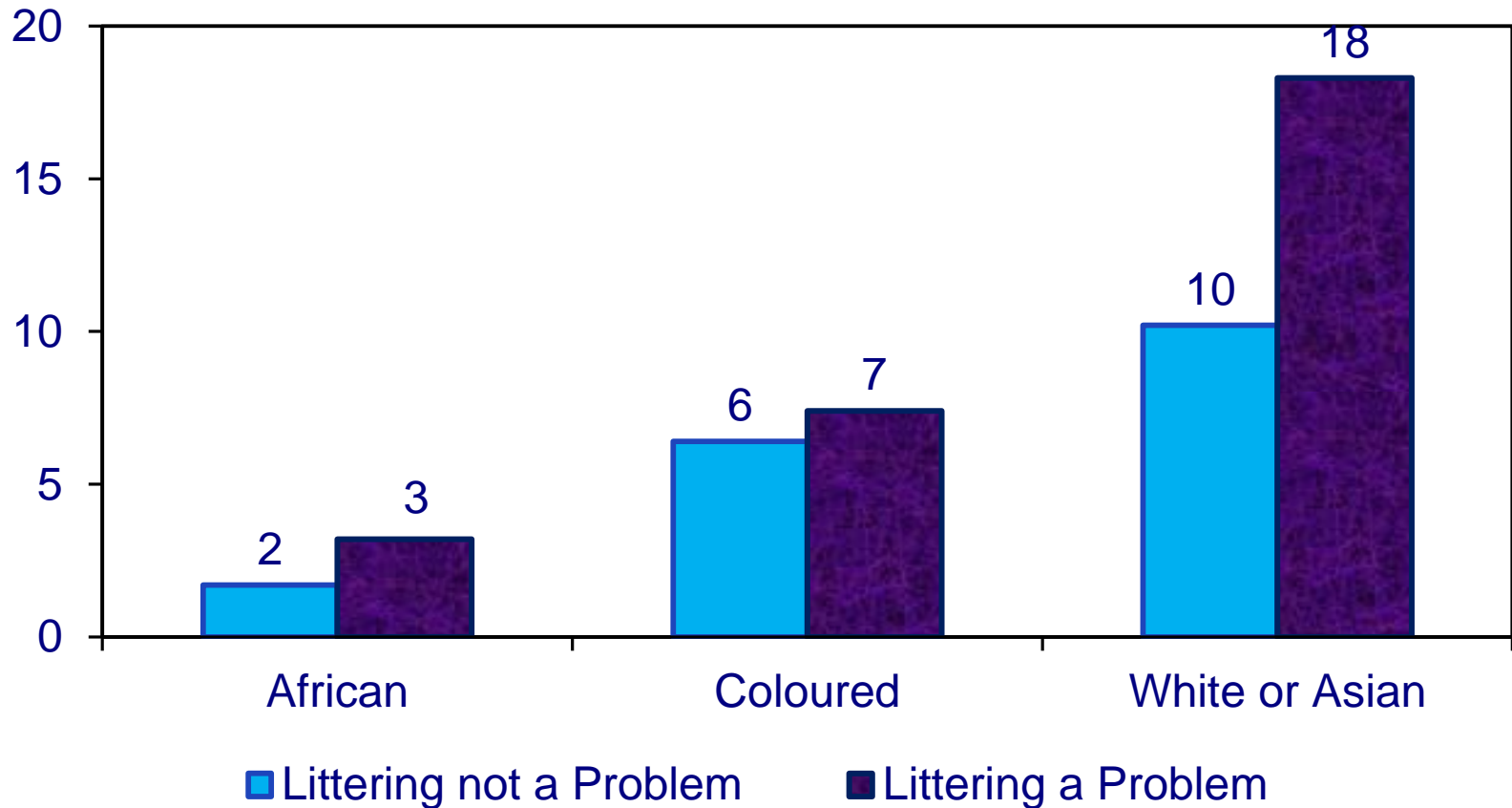
- We found questions in the South African General Household Surveys (2003, 2005, 2006) about household recycling behavior and combined data from the three surveys to study recycling among urban South African households.
- We examined behavior by population group: 1) African households, 2) Coloured households, and 3) White or Asian households.
- We expected that more educated households would be more likely to recycle, especially for normative (non-money) reasons.
- White or Asian households showed the expected pattern of more educated households being more likely to recycle, and Coloured households also showed this pattern to some extent.
- The results for Africans were different – there was no increase in household recycling among Africans until a very high educational level.
- We talked with African colleagues and gained insight into possible reasons why the behavior of African households was different. These discussions focused on the legacy of apartheid and on the efforts of urban African parents to help their children succeed in school.
- We included additional variables in the analyses and obtained results for African households consistent with suggestions from African colleagues.

Percent of Urban Households Recycling by Education and Population Group of Household Head



Education is significantly **positively** related to recycling for White or Asian households, less positively related for Coloured households, and significantly **negatively** related to recycling for African households – no increase for African households until BA degree or higher (4% of urban African household heads).

Percent of Urban Households Recycling by Whether Littering is Seen as a Community Problem



For every group, perceiving littering as a community problem is positively related to recycling, but the level of recycling is the lowest among African households, somewhat higher among Coloured households, and even higher among White or Asian households

For households that recycle, a question was asked about the main reason the household recycled.

One reason was for money. The other reasons were normative reasons, such as to reduce waste.

Next we look at multivariate analyses of whether a household recycles for normative (non-money) reasons.

The complete paper presents analyses of recycling for all reasons and of recycling for money reasons.

Variables in Multivariate Analysis

Dependent variable: Household recycles	0=Household does not recycle or recycles for money reasons; 1=Household recycles for non-money reasons
Education	Educational level of household head in six categories
Littering problem	0=Littering not a community problem; 1=Littering a community problem
Local recycling program	0=No community/school recycling program; 1=Has a community/school recycling program
Distance to local buyback program	1=No buyback program; 2=DK if there is a buyback program; 3=Is a buyback program, DK distance to program; 4=10+ km; 5=5km - <10km; 6=1km - <5km; 7=200m - 1km; 8=100m - 199m; 9=<100m
Child in Elem/Sec School	0=Household does not include a child in elementary or secondary school; 1=Household includes a child in elementary or secondary school
Age of Household Head	Age of household head in years
Dummy 2005	0=Data not from 2005 survey; 1=Data from 2005 survey
Dummy 2006	0=Data not from 2006 survey; 1=Data from 2006 survey

Results of Logistic Regression of Whether an Urban Household Recycles for non-Money Reasons

* p < .05, ** p < .01	African	Coloured	White or Asian
Education	.120*	.510**	.612**
Littering a Problem	.205	.084	.756**
Local Recycling Program	1.625**	1.826**	2.083**
Proximity of Local Buyback Program	.111**	.119**	.219**
Dummy 2005	.489**	-.022	-.315**
Dummy 2006	-.839**	-.239**	-.956**
Constant	-6.255	-6.293	-6.590
X²	170.3**	260.8**	1608.4**
d. f.	6	6	6
n	30,183	7,480	8,028

Multivariate Results for Whether an Urban Household Recycles for non-Money Reasons

- In all results, ease of access to recycling (existence of a local recycling program and proximity of a local buyback program) is *positively* related to recycling -- the easier it is to recycle, the more likely a household is to recycle.
- Among White or Asian households, perceiving littering as a problem is *positively* related to recycling -- those households that perceive recycling as a problem are more likely to recycle.
- Education is significantly *positively* related to recycling for all groups, but the relationship between education and recycling is much weaker for African households than for other groups.

Presence of a Schoolchild in the Household

- An African scholar in South Africa noted that she grew up in an urban township where many people recycled to gain a little money.
- Now, she and her husband, both of whom are professionals with Masters degrees, do not think about recycling much. The only time she recycles is when she sends paper with her son for a school paper drive.
- She noted that her son is taught in school that behaviors such as wearing a seat belt and recycling are good things to do. Her son often reminds her to fasten her seat belt, and then she does so.
- Motivated by her observations, we looked at the relation of the presence of a child in elementary or secondary school in the household and whether the household recycles.

Age of Head of Household

- In developed countries, older people often are more likely to recycle than younger people, possibly due to a greater sense of social responsibility.
- Older Africans were exposed to the effects of apartheid for a longer time than younger Africans and might not be any more interested in recycling than younger people. Older Africans might associate recycling with unpleasant memories of the need to recycle for income under apartheid.

Results of Logistic Regression of Household Recycling for non-Money Reasons, including Schoolchild in Household and Age of Household Head

	African	Coloured	White or Asian
	(1)	(2)	(3)
Education	.152*	.603**	.657**
Littering a Problem	.243	.137	.775**
Local Recycling Program	1.579**	1.779**	2.111**
Proximity of Local Buyback Program	.120**	.115**	.215**
Child in Elem/Sec School	.477**	.029	-.196*
Age of Household Head	.006	.022**	.019**
Dummy 2005	.482**	-.042	-.331**
Dummy 2006	-.813**	-.276	-.990**
Constant	-6.906	-7.692	-7.659
X²	183.0**	276.6**	1443.5**
d. f.	8	8	8
n	30,130	7,476	8,011 ¹⁴

Multivariate Results Including Presence of a Schoolchild and Age of Household Head

- For **African** households, the presence of a schoolchild is *positive* and significant for recycling for non-money reasons.
- The results are consistent with African households with schoolchildren recycling due to the desire:
 1. To cooperate with school programs in order to help their children and
 2. To set a good example for their children.
- For African households, the age of the head of household is not significantly related to whether the household recycles, perhaps because the older a person was, the more of their life they spent under apartheid.
- For **non-African** households, the presence of a schoolchild in the household is significantly *negatively* related to recycling. The results are consistent with the interpretation that for non-African households, when there are schoolchildren, life is seen as very busy and such households are less likely to bother about recycling.
- There is **no significant relation** between age of household head and recycling for **African** households. For **non-African** households, the age of the head of household has a *significant* positive relation.

Discussion

- The positive relation between education status and recycling among White or Asian households looks similar to that seen in developed countries.
- The level of recycling among African households is low and increases little with education, until a very high level of education is reached.
- Under apartheid, there was little reason for Africans to feel much commitment to the general welfare and only somewhat more reason for Coloured persons to feel such a commitment. These experiences could have contributed to the low level of household recycling by African households and by Coloured households.
- Under apartheid, collecting recyclables was important in poor townships as a means of earning money, a history that African households seem to be eager to put behind them.
- It might take some time for African households to see recycling as a worthwhile activity to engage in for the common welfare.

Discussion (Cont.)

- What could spur a higher level of household recycling among African households in the future?
 - Fairly well-educated urban African households have only been urban and fairly well-educated for a short time.
 - Children learn about the advantages of recycling in school.
 - In a generation, this might lead to a higher level of recycling among urban Africans.
- “Wait a generation” is not a policy recommendation.
- In the meantime: We know that the presence of a schoolchild increases African household recycling.
- More and better school education about recycling, along with more collection programs and more and better located recycling buyback centers, would likely increase recycling among all urban residents, especially among urban Africans.

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