A DYNAMIC PROFILE OF GREEN CONSUMERS

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ABSTRACT

Consumers are showing a growing awareness of the environmental impact of their consumption choices, and in response to this trend, firms are increasingly including environmentally friendly options in their product portfolios. To develop marketing strategies that drive demand for these products, it is important for firms to know exactly who their environmentally conscious customers are and how the profile of environmentally conscious consumers is evolving. This study uses actual household-level purchase data in the laundry detergent category, collected in 2013 and 2018 from approximately 55,000 households in the United States, to examine the demographic characteristics that predict preference for environmentally friendly products and, in particular, how this profile changes over time. Using regression analysis, the effects of the demographic variables of age, education, and income on preference for green product options are examined. The results show that younger and better educated households in high income brackets tend to prefer green products. In terms of dynamics, the results suggest a widening of the age gap in green consumption, with younger consumers increasingly switching to green options, while middle-aged and older groups appear to be reluctant to adopt green products. The theoretical and managerial implications of these findings are discussed.

Keywords: Green marketing, eco-friendly products, observational data, panel data methods, empirical methods

YEŞİL TÜKETİCİLERİN DİNAMİK PROFİLİ

ÖZ

Tüketim tercihlerinin çevresel etkileri konusunda farkındalığın artmasıyla firmalar ürün portföylerine çevre dostu seçenekleri giderek daha fazla dahil etmektedir. Çevre dostu ürünlere talebi arttıracak pazarlama stratejileri geliştirmek için, firmaların yeşil tüketicilerin kim olduğunu ve yeşil tüketici profilinin zaman içinde nasıl değiştiğini iyi anlaması önemlidir. Bu çalışma, çevre dostu ürünlere yönelik tercihi belirleyen hanehalkı özelliklerini ve bu profilin zaman içindeki değişimini 2013 ve 2018 yıllarına ait gerçek hane düzeyinde satın alma verileri kullanarak incelemektedir. Sonuçlar, yüksek gelirli, genç ve eğitimli hanelerin yeşil ürünleri tercih etme olasılığının daha yüksek olduğunu vurgulamaktadır. Tercihlerde zaman içinde görülen değişim, genç tüketicilerin giderek daha fazla çevre dostu seçenekleri benimsemesiyle yeşil tüketimde yaş farkının genişlediğini ve 45 yaşın üzerindeki tüketicilerin yeşil ürün benimseme konusundaki isteksizliklerinin kırılamadığını göstermektedir. Sonuç bölümünde bu bulguların teorik ve yönetsel çıkarımları tartışılmaktadır.

Anahtar Kelimeler: Yeşil pazarlama, çevre dostu ürünler, gözlemsel veri, panel veri yöntemleri, ampirik yöntemler

1. Introduction

Some of the most important environmental issues currently facing the world, such as global warming, plastic pollution, deforestation, food and water scarcity, are directly affected by our consumption choices. For example, it is estimated that greenhouse gas emissions, which play a major role in global warming, can be reduced by 70% by changing our consumption habits (White et al., 2019a). In many product categories, demand for sustainable consumption options is increasing in parallel with awareness of these important environmental threats. Surveys in the U.S. suggest that 87% of customers have some awareness of the environmental impacts of their consumption choices and are willing to purchase green products (Lai et al., 2010). According to the Natural Marketing Institute, the market for green products grew to $845 million in 2015, and recent surveys show that brands with sustainability claims are growing twice as fast as the average in their respective categories. It is important that policymakers support this trend and that companies develop product and marketing strategies that facilitate the transition to green consumption.

Effective management of these efforts requires a good understanding of the current green consumer profile and how it is evolving. This knowledge is important both to drive demand among existing customers and to identify segments that are not currently choosing green options and should be targeted in customer acquisition efforts. With this perspective, the current study uses actual purchase data from the laundry detergent category to lay out the dynamics of the demographic profile of green consumers.

Previous research has examined the demographic characteristics that define environmentally conscious shoppers (Jansson et al., 2010; Royne et al. 2011 Thøgersen & Zhou 2012, Muenzel et al., 2019). However, as meta-analyses by Zhuang et al. (2021) and Zaremohzzabieh et al. (2021) show, these studies rely on surveys, and use data collected at a single point in time. This paper differs from the existing literature in two key ways. First, it provides results from real purchase data, which can more truthfully reflect actual consumer preferences compared to surveys. This point may be particularly important in the current context, given that an " attitude-behavior gap" is often observed in topics related to sustainability (White et al., 2019b, Zaremohzzabieh et al., 2021). Second, rather than taking a static perspective, the analysis makes use of the time dimension of the data to focus on dynamic changes in the profile of green consumers, considering a range of demographic characteristics such as age, household size, education, and income.

The empirical setting for the study is the laundry detergent category. The market for laundry detergents is large globally, estimated by Research and Markets (2021) to be worth more than $61 billion as of 2020. Approximately 90 million tonnes of laundry detergent are consumed annually worldwide. Among the countries with the highest per capita consumption of detergents (as of 2019), Turkey ranks first

with 37 kg per person, and the United States, where the data used in this study come from, ranks third, with 30 kg per person. (Indexbox, 2021). Because of this high consumption, large quantities of detergents and their byproducts are released into the environment every day (Warne & Schifko, 1999). Since conventional detergents can contain significant amounts of environmentally harmful substances such as TDS, chlorides, sulphate, carbonate, and bicarbonate, the use of detergents is generally associated with major ecological problems including water and soil pollution. (Goel and Kaur, 2012; Golsteijn et al., 2015). Consequently, there are numerous studies analyzing green product attitudes in the laundry detergent category (e.g., Roozen, 1997; Kruschwitz et al., 2014; Isa et al., 2017).

The data used in this study come from the Nielsen Homescan panel, which tracks the purchases of a large, representative sample of 50000 to 60000 US households on an annual basis. In addition to the purchase history of these households over the course of the year, data on household demographic characteristics is also provided for each panel year. Another important advantage of the data is that it has a temporal dimension, which allows us to compare purchase decisions in 2013 with those in 2018. This allows an analysis of how the impact of household characteristics predicting green consumption has evolved over the intervening five years, in a long-term perspective.

A combination of methods is used to identify the eco-friendly detergent brands, including word matching as well as a review of online customer recommendation platforms and the brands' websites. The share of eco-friendly purchases is calculated as the ratio of the combined share of these brands within the household's total detergent purchases over the year. Regression analysis is employed to examine how this share is predicted by household demographic variables. The regression model controls for market and year fixed effects to account for unobserved variation in supply variables such as distribution, price, promotion, and advertising.

The results confirm survey findings from previous literature that age, education, and income are important predictors of green consumption. In general, younger, more educated, and higher income households are more likely to choose green products. Being under 40 years old and belonging to the highest income quintile significantly increases the proportion of green purchases.

In terms of dynamics, estimates suggest that the increase in green consumption from 2013 to 2018 is entirely attributable to younger populations. Individuals over the age of 40 show no change in the likelihood of choosing green products over time. These estimates suggest significant age differences in green product adoption - a finding that policymakers and companies adopting green policies should consider.

The remainder of this article is organized as follows. The next section reviews the relevant literature on green marketing. In the following section, we describe the

data used in the study. The next section presents the empirical approach, followed by the Results section. The Conclusion section provides an overview of the study's findings and discusses the implications.

2. Literature Review

Green product marketing is a growing area of research. Chamorro et al. (2009) examine a database of 112 articles on green product marketing and classify these articles by topic and method of analysis. They find that about a quarter of these articles take a theoretical approach, while the rest of the studies are empirical. Of the empirical papers, about two-thirds use survey data, while the rest use other primary data collection techniques such as laboratory experiments and personal interviews. Review of the literature confirms that most existing studies in this area rely on surveys rather than observational data and generally lack a time dimension that would allow for temporal comparisons (Leonidou and Leonidous, 2009; Zhuang et al., 2021; Zaremohzzabieh et al., 2021).

In general, previous findings emphasize the role of environmental awareness in customer attitudes toward green products. Psychologically, attitudes toward green purchases are determined by ecological knowledge (Chan, 2001). Cheah et al. (2011), using the results of a survey of 600 students at a large Australian college, find that knowledge of environmental hazards increases consumer interest in green products. Albayrak et al. (2013) study opting out of paper invoices as an indication of consumers' pro-environmental attitudes and highlight concern for the environment as a determinant of environmentally sensitive consumer behavior. In a laboratory study conducted with 312 Norwegian consumers, Koenig-Lewis et al. (2014) find that purchase intention for environmentally harmful products decreases significantly with concern for the environment. Jansson et al. (2011) show that adopters of alternative fuel vehicles have a high awareness of the consequences of fuel consumption. In a face-to-face survey of 696 consumers, Sandra et al. (2021) find that consumers who are more concerned about the environment have a higher appreciation for green textile products.

The research also points to certain psychographic characteristics as potential correlates of green product preference. Based on a survey of 3264 respondents, Shrum et al. (1995) describe the green consumer as a cautious buyer, an opinion leader, and skeptical of advertising. In parallel, Ng (2013) finds that brand credibility influences whether customers believe brands' "green" claims. Straughan and Roberts (1999) and Akehurst et al. (2012) emphasize "perceived consumer effectiveness" and altruism as correlates of environmentally conscious consumer behavior.

Studies show that consumers are generally willing to pay a higher price for environmentally friendly products (Morone et al., 2021; Notaro et al., 2022; Ruf et al, 2022). At the same time, the high cost of many environmentally friendly

alternatives is a barrier to their adoption (Sandra and Alessandro, 2021 Flores and Jansson, 2022). In this context, Thøgersen & Zhou (2012) found that proponents of green products tend to have higher incomes. Among other demographic variables, schooling has been shown to have a significant impact on the adoption of green innovations (Jansson et al., 2010). There is also evidence that education level has a significant impact on the adoption of alternative fuel vehicles (Jansson et al., 2011) and car sharing (Münzel et al., 2019). Laroche et al. (2001) find that this consumer segment tends to be female, married, and with at least one child in the household.

The current study extends the strand of survey-based literature on the green consumer profile by focusing on the evolution of these demographic effects using household purchase data.

3. Data

The empirical analysis in this article draws on household-level detergent purchase data recorded in the AC Nielsen Homescan consumer panel for the years 2013 and 2018. Access to this data is provided to academic researchers through an agreement with the Kilts Center for Marketing at the University of Chicago Booth School of Business.[2]

Table 1. List of Eco-friendly Detergent Brands in the Data Sample

All Nature's Discovery	Ecos	Mountain Green
Baby Ganics	Ecover	Mrs Meyers
Berkley Green	Four Nuts by Nature	Natural Products
Bio Pac	Global Balance	Nature Clean
Bi-o-Kleen	Good Natured	Nature's Miracle
Clorox Green Works	Grab Green	Nature's Power
Common Good	Grab Green	Nature's Sunrise
Earth Friendly	Green Mark	Phurity Green
Earthrite	Green Shield	Planet
Earth's Best	Green Works	Rebel Green
Eco Cool	If you care	Rock in Green
Eco Max	Life Tree	Seventh Generation
Eco Path	Live for Tomorrow	Simple Green
Eco Store	Method	The Honest CO.

Data include a panel of 40,000-60,000 U.S. households for each year. The panel households provide Nielsen with information on their household characteristics

such as place of residence, household size, income level, age, education level, and occupation of the household head, together with the household's shopping history for throughout the year. All U.S. states and all major markets are included in the Homescan data. Households come from a variety of geographic regions and cover all demographic profiles.

For each purchase, Nielsen records the product and brand name, but does not provide information about the product's ingredients or whether the product is labeled as environmentally friendly. The following procedure is used to identify the environmentally friendly detergent brands:

1) Brand names are reviewed for indications of environmental friendliness. Any brand name that contains the following words (or equivalent acronym) is classified as eco-friendly: "organic", "ecological", "earth", "green", "nature", "planet".

2) Customer review blogs and websites are searched to identify brands endorsed as "eco-friendly" by   consumers. Additional brands identified in this manner include "Baby Ganics", "Common Good", "If you care," "Life Tree," "Live for Tomorrow," "Method," "Mrs Meyers," "Seventh Generation," and "the Honest co."

3) For each brand identified as above, the brand website is reviewed to verify that the brand has an environmental claim.[3]

Table 2. Summary Statistics

	2013	**2018**
$ share of eco-friendly purchases	0.0150 (0.100)	0.0238 (0.127)
Young (Age younger than 40)	0.447 (0.497)	0.485 (0.500)
Univ. graduate	0.535 (0.499)	0.549 (0.498)
Yearly income (in 1000$)	57.12 (29.13)	61.76 (29.38)
Household size	2.366 (1.261)	2.451 (1.320)
No. obs.	56606	55580

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3   For example, the "Seventh Generation" brand makes the following statement on its website: "We have been on a mission to create a more healthy, sustainable, and equitable world for the generations to come." In another example, the brand "Mrs. Meyers" describes its products as follows: "Made with plant-derived ingredients, essential oils and other thoughtfully formulated ingredients, our products work hard against dirt and grime, but they're absolutely delightful to use," and also mentions the "cruelty-free" chemical formula of their products and "recyclable packaging that uses less pumps and caps" to back up their claim.

This procedure identifies 42 eco-friendly brands, which are listed in Table 1. Together, these brands account for 1.50% of household detergent purchases in 2013. This share increases to 2.38% in 2018 (Table 2). Table 2 also provides summary statistics on the demographic characteristics of households in the Nielsen Homescan panel for the two panel years. The 2013 panel includes 56606 household-year-level observations, and the 2018 panel year includes 55580 household-year-level observations. The demographic variables that characterize households have similar means and standard deviations in the two panel years, suggesting a similar distribution.

4. Empirical Model

The main objective of this study is to investigate (i)how household demographic characteristics affect the likelihood of preferring environmentally friendly products and (ii) how the effects of these characteristics change over time. To this end, we estimate a flexible regression model that takes the following form:

$$eco\_share_{ht} = \sum_{t=1}^{2} \beta_{yt} young_{ht} + \sum_{t=1}^{2} \beta_{lt} hhsize_{ht} + \sum_{t=1}^{2} \beta_{it} income_{ht} +$$
$$\sum_{t=1}^{2} \beta_{et} educ_{ht} + \beta_t \, I(t=2) + \beta_{m(h)} + \varepsilon_{ht} \qquad (1)$$

The dependent variable in this model is and it represents the dollar share of eco-friendly options in household h's yearly detergent purchases in panel year t. Data includes two time periods, with t=1 if year is 2013, and t=2 if year is 2018.

The model focuses on the effects of key demographic variables that include age, household size, income level, and education. Age is represented by the dummy variable *young*, which takes the value 1 for households in which either household head (male or female) is under 40 years old. The variable denotes the number of members that household h contains, and *income* denotes the household's total yearly income. The effect of education is accounted for by the dummy variable *educ*, which indicates whether either household head has a university degree.

The effects of these variables are allowed to take different values for the two panel years (t=1 and t=2). For example, can be opened up as , where is the coefficient for the variable for t=1, and is the coefficient for the same variable five years later, at t=2. The difference between the respective coefficients would indicate how the effect of the respective variable has changed over time. For example, if and both estimates have a positive sign, this would indicate that younger households have become increasingly more likely to prefer ecological products over time compared to older households.

The model includes the dummy variable which takes the value 1 for observations from the 2018 panel year. The coefficient on this variable, , measures the average increase in preference for green products over time due to other factors not accounted for in the model.

To control for differences in the market characteristics from which households in the sample are drawn, the equation includes a market fixed effect , where *m(h)* is household *h*'s city of residence. These fixed effects can account for differences in relative prices, product availability and marketing activity across markets. In a more stringent specification, we allow these market fixed effects to vary by year, in which case the fixed effect is written as . In this form, the model compares the probability of choosing green products between households in the same panel year who reside in the same market. The final term in the equation, is the regression error term that accounts for household and year level deviations in the purchase share of ecological products from the mean value suggested by the explanatory variables.

Equation 1 is estimated using ordinary least squares (OLS), as recommended by Angrist and Pischke (2009, p. 102) for limited dependent models where the dependent variable is a probability or a share value. We also provide robustness checks of the main results using a logit and probit specification.

5. Results

Pooled results

This section reports the average effects of the demographic variables, pooling panel years and ignoring temporal differences in impact. The results are presented in Table 3. The dependent variable in these regressions is the share of ecological purchases over the year. Column 1 contains the OLS results. The results of the logit and probit models, which suggest similar effects, are reported as robustness checks in columns 2 and 3.

Overall, preference for environmentally friendly products increases with education and income. Holding the other variables constant, a university degree increases the proportion of environmentally friendly purchases by 0.96%, and an income above the median increases this proportion by 0.44%. Considering that the average proportion of green purchases among households ranges from 1.50% to 2.38%, these variables are important predictors of the likelihood of green consumption.

Older households (captured by age of household head) are less likely to use green products. For each increasing age group indicated on the x-axis of Figure 1, the linear formulation predicts a 0.53% decrease in the share of green consumption.

Household size has a negative impact on the probability of choosing green products. For each additional household member, the probability that the household chooses a green detergent decreases by 0.3%. It should be noted that this decrease occurs after controlling for income level, making this estimate independent of variations in household purchasing power. Finally, the estimated coefficient for the 2018 dummy, which indicates the baseline change in green consumption preference, shows an overall increasing trend.

Year-by-year effects

Table 4 reports year-by-year estimates of the effects of the demographic variables, based on Equation 1. Column 1 controls for market fixed effects. Column 2 includes more stringent, year-interacted market fixed effects that allow marketing variables related to price, distribution, advertising, and promotion to change by market year. The two specifications provide very similar estimates for all demographic effects considered. The following discussion focuses on the estimates from the more conservative second specification.

Table 3. Pooled Estimates

	(1) OLS	(2) Logit	(3) Probit
Univ. graduate	0.00964***	0.421***	0.195***
	(0.000721)	(0.0312)	(0.0142)
Income above median	0.00439***	0.286***	0.132***
	(0.000736)	(0.0301)	(0.0140)
Age	-0.00530***	-0.176***	-0.0843***
	(0.000200)	(0.00711)	(0.00346)
Household size	-0.00300***	-0.0259**	-0.0118**
	(0.000286)	(0.0110)	(0.00523)
I(year=2018)	0.00141***	0.0608***	0.0286***
	(0.000162)	(0.00659)	(0.00308)
No. obs.	112186	112186	112186
(Pseudo) R²	0.0138	0.0384	0.0386

Coefficient estimates from OLS, Logit and Probit models. Models include market fixed effects. The R^2 value for the OLS model and Pseudo R^2 values for the logit and probit models are provided at the bottom row. Standard errors indicated in parentheses. * $p<0.10$, ** $p<0.05$, *** $p<0.01$

Comparing the change in coefficient estimates from 2013 to 2018, the positive effect of education on green consumption appears to have strengthened over time. A college degree increases the likelihood of buying green products by 0.90% in 2013, and the effect increases by about one-tenth, to 1.0% in 2018. Note that the time differences in the effects for education and all other demographic variables are statistically significant at all levels.

There is also an increase in the income effect, and in terms of magnitude this increase is much more significant compared to the increase in the effect of education. In the previous panel year, an income level above the median would predict the share of green purchases to be higher by 0.22%. Five years later, this effect is estimated to be 0.59%, about three times larger.

The gap between younger and older generations in the likelihood of consuming green products also appears to have widened over time. In 2013, each step into an older age group represents an average 0.37% decrease in the share of green consumption preference. In 2018, the average difference between successive age groups is 0.66%, almost twice as large.

The same pattern is observed for household size. Based on 2013 data, one additional household member results in a 0.2% decrease in the likelihood of green consumption. In 2018, this effect doubles, reaching a magnitude of 0.38%.

Table 4. Year-by-year Effects

	(1)	(2)
	$ share of eco-friendly	$ share of eco-friendly
University graduate		
2013	0.00925*** (0.00102)	0.00899*** (0.00102)
2018	0.0101*** (0.00102)	0.0101*** (0.00102)
Income above median		
2013	0.00272*** (0.00104)	0.00215** (0.00105)
2018	0.00612*** (0.00104)	0.00586*** (0.00104)
Age		
2013	-0.00378*** (0.000299)	-0.00373*** (0.000299)
2018	-0.00654*** (0.000270)	-0.00661*** (0.000271)
Household size		
2013	-0.00203*** (0.000411)	-0.00196*** (0.000411)
2018	-0.00390*** (0.000398)	-0.00382*** (0.000398)
I(year=2008)	0.00591*** (0.000770)	
No. obs.	112186	112186
R²	0.0143	0.0167

Coefficient estimates from OLS models. Column 1 includes market fixed effects and Column 2 includes market-year fixed effects. Standard errors indicated in parentheses. * $p<0.10$, ** $p<0.05$, *** $p<0.01$

An alternative model specification shows the year-by-year effects in a more flexible way by allowing the effects to vary for different levels of the demographic variables. Figure 1 shows the coefficient estimates of this model, in which age effects are allowed to vary by group. Overall, the curve representing 2018 purchases is higher than the 2013 curve, indicating an overall higher propensity to consume green products. Both curves are generally downward sloping, confirming the linear model result that green product preference is higher among younger age groups. A new finding from this model is that the rate of increase in green consumption is not the same across different age brackets. The gap between the youngest and oldest groups is about 2% in 2013 and increases to 4% by 2018. This reflects the fact that green preference is increasing among those under 45, while no significant change is observed among older generations; the 2013 and 2018 coefficient estimates are essentially identical for the latter group. Thus, the overall increase in green preference from 2013 to 2018 appears to be entirely attributable to younger populations.
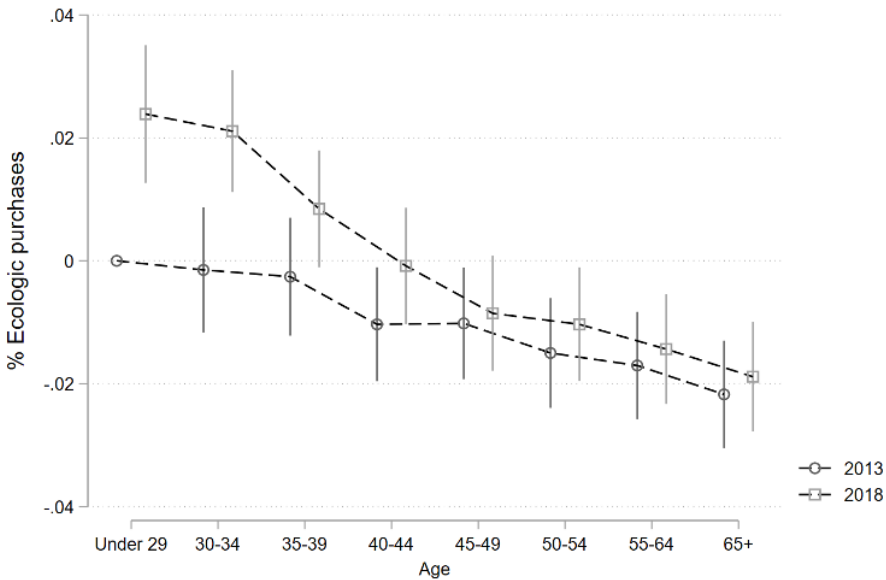

Figure 1. Share of Eco-friendly Purchases by Age

The income graph in Figure 2 shows that in 2013, only the richest households from the top quintile purchased green products. For the lower quintiles, the share of green purchases is not significantly different from zero. As of 2018, green consumption increases for all income groups, albeit at different rates. While the curve for 2013 is flat between the first- and fourth-income quintiles, the curve for 2018 shows an increasing pattern, suggesting that green product adoption has increased more in the higher income groups.

Finally, we examine time trends in education effects. A university degree is expected

to increase the share of green purchases by 3% in 2018, and a postgraduate degree is expected to increase this share by one-third to 4%. The estimates indicate a parallel upward shift between panel years, suggesting similar rates of increase in green purchases at all levels of education.
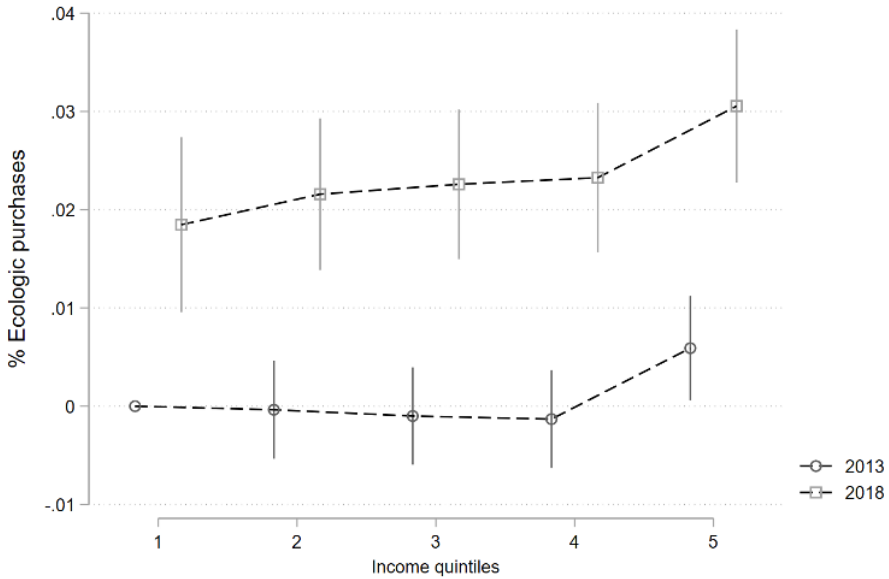

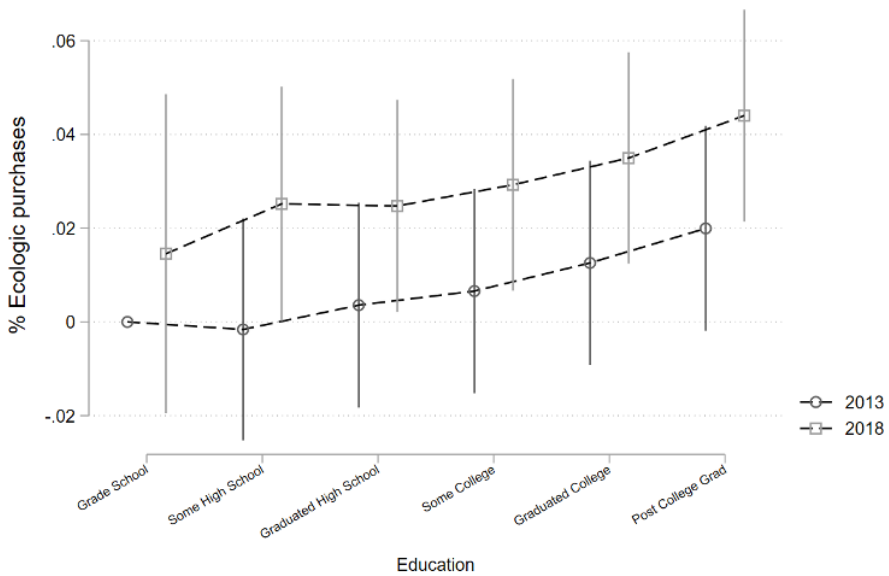
Figure 2. Share of Eco-friendly Purchases by Income

Figure 3. Share of Eco-friendly Purchases by Education

6. Discussion of Findings

Overall, the analyses suggest a positive effect of income and education on pro-environmental consumption. These results, based on actual household purchase histories, support earlier survey-based findings. For example, the positive effect of income on green product adoption confirms the findings of Thøgersen & Zhou (2012), who found a positive relationship between income and green product preference among Chinese consumers. The finding that preference for environmentally friendly products increases with education level is consistent with survey-based findings of Jansson et al. (2011) and Muenzel et al. (2019) for the adoption of alternative fuel vehicles and car sharing, respectively. The negative effect of household size on green purchases extends the findings of Laroche et al. (2001) that environmentally conscious consumers are more likely to have at least one child in the household by showing that the effect of household size becomes negative with a larger number of children.

Importantly, the results reveal how the demographic profile of the environmentally conscious consumer changes over time, an issue that has not been addressed in previous literature. A comparison of purchases in the earlier and later panel years of our data suggests that the effect of income as a determinant of green product choice has strengthened over time; not only the level but also the rate of green product adoption is higher among wealthier households. According to our estimates, the difference in the effect of age over time is particularly significant: while the younger population appears to increasingly prefer green product options, there is no measurable increase in green product adoption among the population over age 45, suggesting that the younger population alone is driving the growth in green product demand.

7. Conclusion

This study uses purchase data from a large panel of U.S. households collected in two cross-sections five years apart to examine household demographic characteristics that predict green product adoption. The results provide an overview of the current profile of the green consumer and how that profile has changed over the five years from 2013 to 2018.

The study's findings have implications for management and public policy. The findings suggest that green product marketing should primarily target the relatively older demographic over the age of 45 in customer acquisition, which tends to be more reluctant to adopt green products. Since lack of awareness could be a major barrier in this older segment, policymakers could focus particularly on this group in their efforts to create awareness of the environmental consequences of consumption choices. Firms can participate in these efforts through targeted advertising and promotion campaigns. Considering that low income appears to be a barrier to environmentally friendly consumption, another conclusion from the

study is that firms should develop and offer green products at affordable prices to increase adoption among low-income households.

The study has two main limitations. First, the data used in the analysis are from households in the United States, so the generalizability of the results to other countries may be questionable. Second, the analysis focuses on the laundry detergent category. Other product categories where green options are available, such as other household and personal care products, paper products, and food, were not examined. Future research could revisit the analysis and expand it to other product categories and geographic regions.

The results of this article are based on real purchase data and can therefore provide reliable estimates of the actual profiles of green shoppers. At the same time, the psychological mechanisms that shape this demographic profile cannot be explored with this data alone. Future research that combines purchase data with surveys to capture the underlying mechanisms driving the documented relationships between demographic characteristics and green product adoption could provide a more complete profile of the environmentally conscious consumer.

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