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A Scientific Discussion of Post-Materialism Values and Environmental Behavior

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Abstract: Inglehart developed a theory examining the changes of values in post-industrial societies from materialist towards post-materialist views. Inglehart contended that the rise of post-materialism helps explain the rise of environmentalism since the 1960s. Through a 2022 survey targeting individual utility customers, we employed Inglehart's post-materialist index examining the impact of environmental behavior and other attributes. This study considers demographic profiling for material and post-materialist views in light of recent social movements and inflationary pressures. We observed that materialists, predominately Asians and Whites, tend to be older, are homeowners, are either married or widowed, and have lived in their homes the longest. Post-materialists were also found to be young, partnered, politically liberal, and least likely to be Asian. While investigated, environmental behavior was not explained by any of the demographic characteristics. We suggest research assessing any value shifts pertaining to attitudes and behaviors towards environmental behavior. Future research should obtain a more representative minority-group sample.

Keywords: materialism; post-materialism; environmental decision making; renewable energy attitudes; environmentalist viewpoints; environmental concern; environmental values

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1. Introduction

Inspired by Maslow's [1] "hierarchy of human needs" starting in the 1970s, Roger Inglehart and his collaborators advanced a theory that explores the changes in values in post-industrial societies from materialistic views towards more post-materialistic views. Taken together, materialism and post-materialism stand as consumer values. Distinctively, materialist values emphasize physical and economic security, ethnocentrism, a low level of tolerance and respect, and the pursuit of prosperity [2]. In contrast, Inglehart [3] emphasizes that post-materialist values consider the pursuit of self-actualization, self-expression, freedom, emancipation, and quality of life. Perhaps at the more basic level, values that relate to materialism encompass the individual's physical needs, whereas post-materialistic values relate to that individual's well-being or sense of security.

In his research, Inglehart [4] initially proposed a model to measure materialism and post-materialism, called a post-materialist index, which seeks to measure an individual's hierarchy of policy relevant issues. Ultimately, in this sense, post-materialism is a theory of socialization. Inglehart [4] conceptualized this materialism/post-materialism relationship as a single continuum, with some selecting all materialist values at one end and others selecting all post-materialist values at the other. Inglehart [4] later added a grouping for those who chose a mix of materialist and post-materialist values. To operationalize this continuum, Inglehart [4] proposed a single survey question.

If you had to choose among the following things, which are the two that seem most desirable to you?

(1) Maintaining order in the nation;
(2) Giving the people more say in important political decisions;
(3) Fighting rising prices;
(4) Protecting freedom of speech [4].

With two selections required among the four possible options, there are six possible combinations. If respondents select options 1 and 3, they were classified as a materialist. According to Inglehart's methodology, people fall into the materialist category if they choose materialist indicators in either order. Alternatively, respondents that select options 2 and 4 were classified as post-materialist. Again, the order of 2 or 4 does not really matter. Finally, a third "mixed" option exists if respondents select mixed choices.

While Inglehart's 4-item index serves as a rough indicator for values and value changes, Inglehart [4] later proposed a 12-item replacement index that provides additional granularity and seeks to overcome the shortcomings of the 4-item index. In this regard, the index taps into preferences but may be overly sensitive to short-term influences. For instance, high inflation or unemployment may lead to decreasing shares of post-materialists, while high rates of economic growth may enhance the trend towards post-materialism [5].

The 12-item index includes three questions:

(1) People sometimes talk about what the aims of this country should be for the next ten years. On this card are listed some of the goals which different people would give top priority. Would you please say which one of these you, yourself, consider the most important? And which would be the next most important?
    a. A high level of economic growth;
    b. Making sure this country has strong defense forces;
    c. Seeing that people have more say about how things are done at their jobs and in their communities;
    d. Trying to make our cities and countryside more beautiful.
(2) If you had to choose, which one of the things on this card would you say is most important? And which would be the next most important?
    a. Maintaining order in the nation;
    b. Giving people more say in important government decisions;
    c. Fighting rising prices;
    d. Protecting freedom of speech.
(3) Here is another list. In your opinion, which one of these is most important? And what would be the next most important?
    a. A stable economy;
    b. Progress toward a less impersonal and more humane society;
    c. Progress toward a society in which ideas count more than money;
    d. The fight against crime [4].

The three survey questions provide a total of six answers, with half of those being second choices. The three questions together expand the number of possible categories from three to six.

(1) Materialist,
(2) Rather materialist,
(3) Mixed materialist.
(4) Mixed post-materialist,
(5) Rather post-materialist,
(6) Post-materialist.

Overall, Inglehart contended that the rise of post-materialism helps to explain the rise of environmentalism since the 1960s [2,3,5,6]. Moreover, Inglehart [6] (p. 1297) claims that "post-materialist issues" include environmentalism. In this regard, post-materialists should hold more strongly to pro-environmental views than materialists, and this can also be reflected in the actions taken by each of those groups to lower energy consumption, for

example. Inglehart [6] argued both theoretically and empirically that post-materialists are more likely to consist of well-educated, economically privileged, and young individuals. In this regard, by investigating post-materialist values, scholars can draw a wider array of insights beyond just the questions inquired in the indexes.

2. Research Question

While values or attributes associated with post-materialism have remained academically studied since 1970, we acknowledge that many of Inglehart's findings between materialist and post-materialist individuals are now over 50 years old. Subsequent research by scholars Henn, Sloan, and Nunes [7] have more recently applied Inglehart's theory to European individuals, but there remains a need for a recent study on American respondents. As of 2022, the United States has faced significant economic and social disruptions. While inflation runs at forty-year highs, interest rates have also spiked upwards following the novel Coronavirus pandemic in 2020. The country is also experiencing significant social movements, with groups fighting for LGBTQ+ equality and transgenderism in sports. We are interested in seeing the impacts or changes in materialistic values from prior studies given the context of this study and how those changes differ demographically, politically, environmentally, and on an international scale.

Our research not only seeks to validate or invalidate Inglehart's findings on environmentalism with post-materialism but to create a general profile for materialist, mixed, or post-materialist respondents. This reemphasizes the fact that utilizing Inglehart's index not only helps attribute a respondent as materialist or post-materialist but also allows the researcher to dig deeper into the social or cultural instigators of why that specific viewpoint exists. For the purposes of this study, we sought to create only the demographic profiling of each of the materialist views, without diving into potential causes for those biases.

In order for a general profile to be created, we relied on the assumption that there would be proportionate and statistical differences between our demographic data sets. Our research question explores materialism/post-materialism through five hypotheses:

(1) Materialism/post-materialism will be divided among generations.
(2) Materialism/post-materialism will be divided along gender.
(3) Materialism/post-materialism will be divided along the political spectrum (liberal/conservative).
(4) Materialists will hold higher incomes than post-materialists.
(5) Materialists will be less likely to have participated in utility energy-efficiency programs/conservation.

Understanding viewpoints on national strength and order, as opposed to international harmony and equality, along demographic and psychographic lines can be insightful for those wishing to market certain products, encourage participation in renewable energy programs, or foster a more cohesive community. It can also be used to explain why a consumer may or may not choose to reduce his/her energy consumption. According to Inglehart, well-educated and informed post-materialists tend to factor in marginal social costs when making individual economic choices, and this study sought to find out if that theory still holds.

3. Literature Review

Since its introduction, Inglehart's materialism/post-materialism index has been widely studied. Some scholars have found contradictory evidence with respect to post-materialism views in connection to environmentalism. Through an empirical analysis conducted from 1976 to 1986, Clarke and Dutt challenged the adequacy of the four-item index [8]. Flanagan [9] (pp. 433–434) observed concerns relating to inflation in the post-materialist index as a topical political issue. In that regard, inflation concerns differ in times of inflation as opposed to one's political orientation or aversion to inflation. Specifically, as inflation becomes an issue in a community or country, survey respondents place a higher priority on the issue of rising prices.

Davis, Dowley, and Silver [10] contended that if post-materialism exists, then the three indices used to investigate post-materialism in the World Values Survey should be highly correlated. Nonetheless, their findings revealed that the indices were only randomly connected on the macrolevel. In the realm of environmental concern, Pakulski and Crook [11] observed that post-materialism correlates positively with opinions about preserving pristine environments, but negatively with opinions about pollution and environmental hazards.

Moreover, scholars observe that post-materialist values are typically held by more affluent citizens who have fewer worries about basic material needs. These individuals tend to focus on "higher-level" goals, such as self-improvement, personal freedom, and direct participation in government [4]. Australian environmentalists, for example, tend to embrace more post-materialist and secular values [12]. A cross-national study found that espousing post-materialistic values was positively related to environmental concern, along with perceived threat and perceived behavioral control, and predicted a willingness to make sacrifices, leading to various pro-environmental behaviors [13]. Among Canadian students, moral principles were better predictors of environmental actions, whereas among community residents, tangible possessions and material economic rewards were better predictors [14]. In Finland, post-materialist values and political competence were related to increased interest in environmental political action [15].

Materialists and post-materialists may be concerned about different environmental issues. In Turkey, materialists tend to focus on local environmental issues, while post-materialists are more interested in global environmental issues [16]. In contrast, in an Israeli sample, post-materialist values were less important than factors like proximity to an actual environmental hazard [17].

Notably, liberal political views are associated with greater verbal commitment to environmental measures, especially when individuals are exposed to a degraded environment, as seen in a Canadian sample [18]. In a nuanced study of political values in the U.S., differences between liberals and conservatives in environmental attitudes were partially explained by liberals' tendency to view the environment in moral terms, in relation to harm and care. When pro-environmental appeals were reframed in terms of purity, a value resonating more with conservatives, the difference in environmental attitudes was reduced [19]. Still, relationships between values and environmental views are complex because people have multiple values that can conflict. When two values conflict, the difference between the pre-existing endorsement levels of the two values may better predict environmental views than the endorsement level of either single value [20].

Davis [21] found that United States data do not support the relationship between post-materialism and environmentalism in terms of its correlations with an individual's support for the environment, or his/her personal effort to protect the environment. Carlisle and Smith [22] contended that cultural theory indexes may perform better than the post-materialism scale. Nonetheless, scholars would be hard pressed to find a classification approach without criticisms.

Nevertheless, Inglehart's materialism/post-materialism scale has been the topic of much academic empirical investigation. Recently, Henn, Sloan, and Nunes [7] found that post-materialist values, cosmopolitan attitudes, and engagement in environmental politics are closely connected in European youth; young cosmopolitans are very civically and politically active; and young environmental activists are particularly likely to be female and have high educational-attainment levels [7]. Similarly, Bilti [23] found that post-materialism is positively associated with socio-mature economies, whereby citizens with a predominance of post-materialistic values have better skills to invest in financial markets. Furthermore, Booth [24] argued that achieving a post-growth green economy coincides with a global expansion of post-material values and experiences that in turn reduce consumption, lead to more environmentally friendly life forms, and further garner political support for environmental enhancement. Huang [25] detailed a post-material value shift for Generation Y travel professionals in Hong Kong for a greater emphasis on autonomy, expression, and quality of life.

Individualized orientations are often present in engagement with politics as an expression of personal hopes, lifestyles, and grievances. Interestingly, enabled by various communication technologies, the resulting dynamics [4] in post-industrial democracies bear remarkable similarities to action formations in undemocratic regimes, such as those exhibited during the 2010 to 2012 Arab Spring [26]. These multi-faceted processes of individualization vary across societies but generally include the tendency to develop flexible political identifications based on personal lifestyles [27], with implications for collective action [28] and organizational participation [29]. Some argue that these ideational trends are rooted in secularization [30,31] and growing aspirations for high levels of consumption and leisure, with a growth spreading beyond early industrializing countries to Asia [31]) and Latin America [32]. These trends, while rooted in the original demographic transition, are distinct and are expected to extend beyond Europe, driven by the gender revolution [33].

4. Materials and Methods

This study utilized a cross-sectional customer survey encompassing 1021 utility customer respondents in the state of Utah. The sample size was selected based on funding and the desire to have sufficient representation across various demographic groups to yield understanding of materialist/post-materialist distinctions.

Although Inglehart utilized a 12-point metric in his later research on materialism, we utilized his original four-item index for simplicity and parsimony for our respondents. Inglehart's [1] four-item index contains two materialism items (maintaining order in the nation and fighting rising prices) and two post-materialism items (giving the people more say in important government decisions and protecting freedom of speech).

In Inglehart's [1] study, respondents were required to choose two goals that reflected what was most important to them. Thus, they could choose two materialistic goals, two post-materialistic goals, or any one of six combinations of materialist post-materialist goals. This setup forces respondents to prioritize their values; they cannot endorse all four goals as equally strong.

After several psychographic and demographic info-gathering questions, each respondent is presented with those options in the following scenario:

Please rank the following values according to your preferences (1 = most important; 4 = least important):

____ Maintain order in the country,
____ Give people more to say in important government decisions,
____ Fight raising prices,
____ Protect freedom of speech.

Rather than have respondents choose their two most important preferences, we allowed them to select and rank all four to further the granularity of the results and encourage more thought-out responses from the respondents. However, for analysis purposes, only the top two selections were utilized in labeling a respondent as being materialist, post-materialist, or mixed. In parity with Inglehart's research, respondents choosing "maintain order in the country" and "fight raising prices" as their top two choices were regarded as materialist, and those who selected "give people more to say in important government decisions" and "protect freedom of speech" in their top two were considered post-materialist. While we deemed the order of the first two rankings irrelevant, any other combinations of answers resulted in a classification of "mixed" views.

While collective sample results can be insightful, we also collected psychographic attributes best suited to test our hypothesis and research questions. The fourteen different demographic characteristics and groups to be evaluated in this study, with numbers 11–14 focusing specifically on environmentalism, can be found subsequently:

(1) Age;
(2) Gender;
(3) Race/ethnicity;
(4) Marital status;

(5) Income level;
(6) Educational level;
(7) Political orientation;
(8) Homeownership status (renters versus owners);
(9) Household size;
(10) Years in home;
(11) If the respondent made any attempts to conserve energy in the last year;
(12) How respondents compare their homes to their neighbors in terms of efficiency;
(13) Whether the respondent believes it important to conserve energy;
(14) If natural gas consumption in a respondent's home increased, decreased, or stayed the same in the last year.

Multiple methods of analysis were performed on the collected data to find statistically significant differences between psychographic groups (such as males versus females under the gender attribute, for example). For quantitative attributes such as income or age, an ANOVA single-factor test was used to identify statistically significant differences in means. When an attribute such as income was deemed to be statistically different in the ANOVA test, a Tukey–Kramer test was conducted to further identify which materialist category was different from the rest. The Tukey–Kramer test compared the absolute mean differences of the materialist, mixed, and post-materialist groups with the corresponding q critical value with a significance level of 5%.

For qualitative data such as gender or race, a Chi-squared test was conducted to identify statistically significant differences in actual versus expected respondent sampling. If an attribute proved to be statistically significant, confidence intervals were utilized to associate differences between the materialists, post-materialists, and mixed respondents of that attribute. If the produced confidence intervals did not overlap, we concluded the difference to be of statistical significance. While we primarily utilized a 5% level of significance when testing each attribute, any attributes with a significant level just over 5% will also be tested and considered at a 10% significance level for future research opportunities or comparison. Based on our population size of Utah, this sample size desired a margin of error of ± 3 percent.

To collect data for our study, we contracted with a commercial survey sampling and administration company, Qualtrics. For reference, we also used this data set to explore prospect theory [34], the relationship between income and environmental concern [35], and default choices [36]. Qualtrics uses its panel aggregator to recruit online panel participants for internet-based surveys. This aggregator provides clients access to members of various market research panels, and through digital fingerprinting technology and IP address checks, it ensures that participants' data are as valid and reliable as possible. For this reason, Qualtrics is commonly used for academic research in broad academic explorations, such as an analysis of firearm owners [37], a study of people of color experiencing psychedelic experiences [38], and sexual harassment at work since the #MeToo movement [39].

This research received Institutional Review Board approval at the University of Utah. A grant from the University of Utah Sustainable Campus Initiative Fund supported this research. Our survey conducted 1209 responses from adult utility customers currently residing in Utah. We selected Utah due to its unique diversity with significant opportunities for a well-rounded test market; its high growth rate relative to the rest of the United States; its relative conservative slant compared to the rest of the United States; and the fact that we wanted our results to be more salient for our survey sponsor, the University of Utah Sustainable Campus Initiative Fund. While, for some, our sample selection may lack external generalizability, our survey responses are derived from appropriate grant funding; nonetheless, with the quotas and insights established to mirror the state of Utah, we believe that our insights closer reflect the general United States than otherwise may be considered on the surface. Moreover, our results offer valuable insights that can be applied to further contribute to the literature and discussion on materialistic/post-materialistic views.

Once our survey parameters were put into place, Qualtrics recruited panel participants via email. These individuals were invited to participate in the study by clicking on a link to screening questions that assess eligibility. These participants were targeted by certain profiling attributes; for this study, we collected and analyzed respondent data based on resident location (Utah), age (at least 18 years or older), utility customer, and a commitment to provide the highest-quality responses for the survey. The study of utilities presents an exciting case study full of unique industry characteristics (i.e., policy-change resolution [40], environmental commitments [41], regulatory construct [42], and the energy size in U.S. [43].At the beginning of the survey, respondents were asked three filtering questions to ensure the highest quality responses based on the targeted group of interest. First, we inquired if the respondent lived in the state of Utah. Second, we inquired if the respondent was in charge of the electric or natural gas utility bill. Third, we asked if he/she was over the age of 18. Fourth, we requested that respondents commit to provide the highest-quality responses. Respondents who failed to agree to meet any of the above screening questions were excluded from the study and omitted from the analysis.

Qualtrics initially gathered 1209 responses. Through Qualtrics' scrubbing based on filtering criteria and our own scrubbing procedures that included identifying and removing incomplete responses/outliers, a total of 1021 respondents were presented as the final group for analysis. The survey embodied a cross-sectional survey. The responses for the survey were collected between 11 July 2022 and 4 September 2022.

To explore materialistic/post-materialistic views among certain respondents, we initially analyzed the sample group as a whole and according to several personal demographics. Demographics used in this study include age, electric and gas utility, gender, marital status, race/ethnicity, annual household income, living status, number of years at current residence, number of people living in respondent's home, political preference, and energy efficiency preferences.

5. Results

Despite the several psychographic attributes of the respondents collected and analyzed in this study, only age, gender, race/ethnicity, marital status, educational level, political orientation, homeownership status, and years spent in current home had statistically significant differences between materialist, mixed, and post-materialist categories. After scrubbing our survey results by removing outliers or incomplete responses, a total of 1021 respondents remained from the 1209 sampled. Overall, the mixed category illustrated the highest proportion of survey respondents, at 65.9%, as opposed to 20.8% as materialists and 13.3% as post-materialists (see Table 1).

Table 1. Collective sample results.

Materialist	Mixed	Post-Materialist	Total
20.8%	65.9%	13.3%	100%
212	673	136	1021

5.1. Age

First, we examined the impact of age on materialist views. Survey respondents ranged between 18 and 83 years of age, with an average of 42 years and a median of 39 years. Of respondents considered materialists, an average age of 47.5 years was observed, as opposed to 41 for mixed respondents and 40.5 for post-materialists. As observed in Table 2, the ANOVA single-factor test highlighted statistical differences between these three categories at an alpha level of 5%.

Table 2. Materialism and age.

ANOVA Summary						
Groups	**Count**	**Sum**	**Average**	**Variance**		
Materialist	212	10,072	47.50943	273.6634		
Mixed	673	27,610	41.02526	221.5544		
Post-materialist	136	5506	40.48529	241.7924		
ANOVA						
Source of variation	SS	Df	MS	F	*p*-value	F crit
Between groups	7294.768	2	3647.384	15.51822	2.2973×10^{-7}	3.004565
Within groups	239,269.5	1018	235.0388			
Total	246,564.3	1020				

While the difference of at least 6.5 years between materialists and the other two groups can be easily spotted in Table 2, we applied the Tukey–Kramer test to define those observable differences at a statistical level (Table 3). As expected, the absolute differences between materialists and the post-materialists/mixed groups were beyond the appropriate critical values, illustrating statistically significant differences.

Table 3. Tukey–Kramer test.

	Abs. Mean Diff.	**Critical Value**	**Significant**
Mat vs. Mix	6.48	2.83	Yes
Mix vs. Post	0.54	3.38	No
Post vs. Mat	7.02	3.95	Yes

These findings suggest that materialists are more likely to be older individuals, whereas mixed and post-materialists tend to be younger individuals.

5.2. Gender

Next, we explored the impact of gender on materialist views. For this study, only the two binary genders of male and female were included, with a total of 408 males and 613 females included in the sample. Our sample did not reveal sufficient results from nonbinary respondents to include in this study. The first statistical test performed was the Chi-squared test. While it is clear in Table 4 that females have twice as many materialists than post-materialists, males are more evenly split among the materialist and post-materialist groups. Our Chi-squared test subsequently returned a *p*-value of 0.056 at a significance level of 5%.

Table 4. Respondent totals by gender.

	Materialist	**Mixed**	**Post-Materialist**	**Total**
Female	142	395	76	613
Male	70	278	60	408
Total	212	673	136	1021

Given its close proximity to our targeted alpha of 5%, we wanted to take this attribute a step further by creating a confidence interval at a 10% significance level to further examine the proportional differences between males and females. The confidence interval test in Table 5 below found that females were more likely to be materialist than post-materialist.

For the mixed and post-materialist groups, however, there were no statistically significant differences between the genders. As for males in Table 6, there were no statistical indications for a male to be more likely materialist than post-materialist or mixed.

Table 5. Confidence intervals by gender.

Scenario: Female				
		Mat	**Mix**	**Post**
Proportion of materialism		23%	64%	12%
Confidence interval	Upper limit	0.260	0.676	0.146
	Lower limit	0.204	0.613	0.102

Table 6. Confidence intervals by gender.

Scenario: Male				
		Mat	**Mix**	**Post**
Proportion of materialism		17%	68%	15%
Confidence interval	Upper limit	0.202	0.719	0.176
	Lower limit	0.141	0.643	0.118

5.3. Race/Ethnicity

Subsequently, we considered the impact of race or ethnicity on materialist views. For this study, respondents were given several racial or ethnic categories to describe themselves. These included American Indian, Asian, Black or African American, Hispanic or Latinx, Pacific Islander, Caucasian, and multiple ethnicities/other. Table 7 shows the respondent totals by race/ethnicity. Table 8 shows the percentage respondent breakdown by race/ethnicity.

Table 7. Respondent totals by race/ethnicity.

	Materialist	**Mixed**	**Post-Materialist**	**Total**
American Indian or Alaska Native	3	8	7	18
Asian	18	21	1	40
Black or African American	5	23	7	35
Hispanic or Latinx	12	78	11	101
Native Hawaiian or Pacific Islander	2	11	6	19
White/Caucasian	170	516	101	787
Multiple ethnicities/other	2	16	3	21
Total	212	673	136	1021

Due to an insufficient sampling size for the Chi-squared test of Black or African Americans, American Indians or Alaskan Natives, Native Hawaiians or Pacific Islanders, and those belonging to the multiple ethnicities/other groups, these individuals were grouped together.

Table 8. Respondent percentages by race/ethnicity.

	Materialist	Mixed	Post-Materialist	Total
American Indian or Alaska Native	17%	44%	39%	100%
Asian	45%	53%	3%	100%
Black or African American	14%	66%	20%	100%
Hispanic or Latinx	12%	77%	11%	100%
Native Hawaiian or Pacific Islander	11%	58%	32%	100%
White/Caucasian	22%	66%	13%	100%
Multiple ethnicities/other	10%	76%	14%	100%

Respondent totals for each of the racial categories can be seen in Table 9. When the Chi-squared test was performed on the Asian, Hispanic or Latinx, White/Caucasian, and all other races/ethnicities groups, a resulting *p*-value of 0.000 was returned at a 5% level of significance. While this proves with statistical significance that race or ethnicity has an impact on materialism selection overall, we wanted to identify further which races/ethnicities, in particular, are more likely to choose one materialism selection over the other.

Table 9. Respondent totals by race/ethnicity.

	Materialist	Mixed	Post-Materialist	Total
White/Caucasian	170	516	101	787
Hispanic or Latinx	12	78	11	101
Asian	18	21	1	40
Other	12	58	23	93
Total	212	673	136	1021

Table 10 illustrates the proportions of each race/ethnicity in each of the materialism viewpoints. We identified that 45% of Asians were materialistic, as opposed to only 22% of the next highest group (Whites/Caucasians), illustrating a difference of over two times. While the mixed category has a more equal spread among the racial groups than the materialist or post-materialist categories, Asians have the lowest proportion, at 53%, with Hispanics or Latinx holding the highest, at 77%. In terms of post-materialists, however, the "other" category had the highest proportion, at 25%.

Table 10. Respondent proportions by race/ethnicity.

	Materialist	Mixed	Post-Materialist	Total
White/Caucasian	22%	66%	13%	100%
Hispanic or Latinx	12%	77%	11%	100%
Asian	45%	53%	3%	100%
Other	13%	62%	25%	100%

To further illustrate and test statistical differences in proportions, confidence intervals were performed for each of the racial/ethnic groups under study. While Whites/Caucasians carried the highest proportion of respondents for each materialism category due to a larger representation in the sample, there were no statistically significant differences observed in materialism selection (see Table 11). For Hispanics or Latinx, however, we observed a statistical difference between materialists and mixed, with no statistical differences between

mixed and post-materialist (see Table 12). We can therefore conclude that Hispanics or Latinx are more likely to be mixed over materialist.

Table 11. Confidence intervals by race/ethnicity.

Scenario: White/Caucasian				
		Mat	**Mix**	**Post**
Proportion of materialism		80%	77%	74%
Confidence interval	Upper limit	0.856	0.799	0.816
	Lower limit	0.748	0.735	0.669

Table 12. Confidence intervals by race/ethnicity.

Scenario: Hispanic or Latinx				
		Mat	**Mix**	**Post**
Proportion of materialism		6%	12%	8%
Confidence interval	Upper limit	0.088	0.140	0.127
	Lower limit	0.025	0.092	0.035

We also observed the same statistical differences between materialists and the other two viewpoints for Asians (see Table 13), except there being a higher proportion of materialists than the other two categories. While only 3% of Asians were post-materialist, 53% were mixed and 45% were materialist. While the mixed category still holds the highest proportion of respondents, Asians are more likely to exhibit materialistic values.

Table 13. Confidence intervals by race/ethnicity.

Scenario: Asian				
		Mat	**Mix**	**Post**
Proportion of materialism		8%	3%	1%
Confidence interval	Upper limit	0.122	0.044	0.022
	Lower limit	0.047	0.018	−0.007

Finally, the groups placed into the "other" category—Black or African Americans, American Indians or Alaskan Natives, Native Hawaiians or Pacific Islanders, and those identifying as multiple ethnicities/other—also exhibited a statistical difference in materialist views. While this category exhibited only 6% of total respondents for materialism, it also exhibited the highest proportion of post-materialists than any other category, at 17% (see Table 14). Unlike for Asians, we found this category most likely to be post-materialist.

Table 14. Confidence intervals by race/ethnicity.

Scenario: Other				
		Mat	**Mix**	**Post**
Proportion of materialism		6%	9%	17%
Confidence interval	Upper limit	0.088	0.107	0.232
	Lower limit	0.025	0.065	0.106

In conclusion, we found several racial/ethnic categories that had an effect on materialistic viewpoints. While we observed that the majority of respondents in each group

fell into the mixed category, Hispanics or Latinx had the highest proportion. They were also more likely to be mixed or post-materialist than materialist. We also discovered that Asians were more likely to be materialist than any other racial group and least likely to be post-materialist. On the contrary, we found that those belonging to the "other" group were more likely to be post-materialist than materialist.

5.4. Marital Status

We next examined the impact of marital status on materialist views. For this study, respondents were asked to describe themselves as married, divorced, partnered, single, or widowed. Respondent totals for each reported marital status and materialist viewpoint can be found in Table 15. When the Chi-squared test was performed, a resulting p-value of 0.000 was returned at an alpha level of 5%. While this proves with statistical significance that marital status has an impact on materialist values overall, we wanted to identify further which statuses, in particular, favor a certain materialist viewpoint.

Table 15. Respondent totals by marital status.

	Materialist	**Mixed**	**Post-Materialist**	**Total**
Married	129	339	60	135
Divorced	27	89	19	528
Partnered	9	59	19	87
Single	32	164	33	229
Widowed	15	22	5	42
Total	212	673	136	1021

Table 16 illustrates the proportions of each marital-status category according to the differing materialist viewpoints. For the materialist category, the highest proportions observed were widows, at 36%, and those who were married, at 24%. For the mixed category, the highest proportions were among those who are single, at 72%, or partnered, at 68%. For the post-materialist category, we observed the highest proportion among those who are partnered, at 22%.

Table 16. Respondent proportions by marital status.

	Materialist	**Mixed**	**Post-Materialist**	**Total**
Married	24%	64%	11%	100%
Divorced	20%	66%	14%	100%
Partnered	10%	68%	22%	100%
Single	14%	72%	14%	100%
Widowed	36%	52%	12%	100%

To further illustrate and test statistical differences in proportions, confidence intervals were performed for each of the marital status groups under study. We found that married respondents are statistically more likely to be materialist than any of the other materialist categories (see Table 17). Along with widows, they are also the least likely to be post-materialist. For divorced individuals, while we did observe a higher proportion of materialists than post-materialists, the calculated confidence intervals did not yield statistically significant differences (see Table 18).

Table 17. Confidence intervals by marital status.

Scenario: Married				
		Mat	**Mix**	**Post**
Proportion of materialism		61%	50%	44%
Confidence interval	Upper limit	0.674	0.541	0.525
	Lower limit	0.543	0.466	0.358

Table 18. Confidence intervals by marital status.

Scenario: Divorced				
		Mat	**Mix**	**Post**
Proportion of materialism		13%	13%	14%
Confidence interval	Upper limit	0.172	0.158	0.198
	Lower limit	0.082	0.107	0.081

In regard to respondents with a partner, our calculated confidence intervals show that they are statistically more likely to be post-materialist than materialist (see Table 19). This finding reaffirms their proportionate tendency towards post-materialism, as found in Table 16. We were also able to statistically prove the higher likelihood of mixed views among single individuals as opposed to materialist in Table 20. Finally, we did not find any statistically significant differences in widows for either of the three materialism selections. Despite our confidence interval findings in Table 21, however, we believe the composition of widows as materialists at 36% versus only 12% for post-materialist (Table 16) to be of significance and attribute this inconsistency to a limited sample size of widows.

Table 19. Confidence intervals by marital status.

Scenario: Partnered				
		Mat	**Mix**	**Post**
Proportion of materialism		4%	9%	14%
Confidence interval	Upper limit	0.070	0.109	0.198
	Lower limit	0.015	0.066	0.081

Table 20. Confidence intervals by marital status.

Scenario: Single				
		Mat	**Mix**	**Post**
Proportion of materialism		15%	24%	24%
Confidence interval	Upper limit	0.199	0.276	0.315
	Lower limit	0.103	0.211	0.171

Table 21. Confidence intervals by marital status.

Scenario: Widowed				
		Mat	**Mix**	**Post**
Proportion of Materialism		7%	3%	4%
Confidence interval	Upper limit	0.105	0.046	0.068
	Lower limit	0.036	0.019	0.005

In conclusion, we found that one's marital status indeed has an effect on materialist views. We observed that widows and married individuals were more likely to lean towards being materialist than post-materialist. We also found that single individuals are statistically more likely to be mixed. Finally, we observed that partnered individuals were more likely to be post-materialist than materialist.

5.5. Income Level

Next, we investigated the impact of income level on materialist views. For this study, respondents were asked to state their approximate annual household income, which ranged from USD 0 to USD 195,000 annually, with an average of USD 60,913. Of materialist respondents alone, an average income of USD 64,600 was observed, as opposed to an average income of USD 59,500 for mixed respondents and an income of USD 61,200 for post-materialist respondents. As observed in Table 22, the ANOVA single-factor test did not highlight statistical differences between these three categories at a 5% level of significance. We can therefore conclude that income does not have a statistically significant impact on materialist views.

Table 22. Materialism and income level.

ANOVA Summary						
Groups	**Count**	**Sum**	**Average**	**Variance**		
Materialist	212	10,072	64,646.0094	1,603,859,175	64,646.0094	
Mixed	673	27,610	59,544.4421	1,557,974,088	59,544.4421	
Post-materialist	136	5506	61,223.7868	1,532,064,649	61,223.7868	
ANOVA						
Source of variation	SS	df	MS	F	*p*-value	F crit
Between groups	4.22×10^{-9}	2	2,110,225,437	1.34920697	0.25990946	3.00456532
Within groups	1.59×10^{-12}	1018	1,564,048,724			
Total	1.6×10^{-12}	1020				

5.6. Educational Obtainment

Subsequently, we next examined the relationship between educational obtainment and materialist views. For this study, respondents were asked to explain the extent of their academic background, including those with less than a high school experience, a high-school diploma or equivalent, some college, an associate's degree, a bachelor's degree, and a graduate/doctorate degree. Survey respondents were also given an "other" category, wherein some reported trade school or another form of specialized training unrelated to formal degree attainment. Due to a limited sample size of those who did not complete high school or classified themselves as "other", these groups were combined when conducting the Chi-squared test.

Respondent totals for each reported level of education can be found in Table 23. When the Chi-squared test was performed, a resulting *p*-value of 0.019 was returned at a 5% level of significance. While this proves, with statistical significance, that educational level overall has an impact on materialist values, we wanted to further identify which reported level of obtainment, in particular, had a preference for a certain materialist view.

Table 23. Respondent totals by educational obtainment.

	Materialist	Mixed	Post-Materialist	Total
High-school degree or equivalent	31	157	34	222
Some college but no degree	54	192	33	279
Associate degree	24	80	12	116
Bachelor's degree	70	159	39	268
Graduate or doctorate degree	27	55	15	97
Less than high school or other	6	30	3	39
Total	212	673	136	1021

Table 24 illustrates the proportions of each educational obtainment category that selected the specified materialist view. For the materialist category, the proportion of materialists was positively correlated with educational level, meaning that the more educated a respondent was, the higher his/her probability of being materialist; 28% of graduate/doctorate degree-holding individuals and 26% of those with a bachelor's degree were the highest. For the mixed category, we saw a negative association, meaning that the less educated a respondent was, the more likely he/she was to be mixed; those with less than high school/the other, at 77%, and those with only a high-school degree, at 71%, were the highest. Finally, for the post-materialist category, we observed differing results, with a high of 15% across three different categories and a low of 8% for the less-than-high-school/other category.

Table 24. Respondent proportions by educational obtainment.

	Materialist	Mixed	Post-Materialist	Total
High-school degree or equivalent	14%	71%	15%	100%
Some college but no degree	19%	69%	12%	100%
Associate degree	21%	69%	10%	100%
Bachelor's degree	26%	59%	15%	100%
Graduate or doctorate degree	28%	57%	15%	100%
Less than high school or other	15%	77%	8%	100%

5.7. Political Orientation

Next, we examined the impact of political orientation on materialist views. For this inquiry, respondents were asked to describe themselves as very conservative, conservative, moderate, liberal, and very liberal. Respondent totals for materialism selection for each political orientation can be found in Table 25. When the Chi-squared test was performed, a resulting p-value of 0.036 was returned at an alpha level of 5%. While this proves, with statistical significance, that political orientation has an impact on materialist values overall, we wanted to identify which orientation, in particular, had a preference for a certain materialist view.

Table 26 illustrates the proportions of each materialist category according to political orientation. For materialists, the highest proportion of respondents were conservatives. For post-materialists, the highest proportion of respondents were liberals. For those with mixed views, however, we saw differing results.

Table 25. Respondent percentages by political orientation.

	Materialist	Mixed	Post-Materialist	Total
Very conservative	17	61	9	87
Conservative	73	157	30	260
Moderate	89	297	63	449
Liberal	26	126	24	176
Very liberal	7	32	10	49
Total	212	673	136	1021

Table 26. Respondent proportions by political orientation.

	Materialist	Mixed	Post-Materialist	Total
Very Conservative	20%	70%	10%	100%
Conservative	28%	60%	12%	100%
Moderate	20%	66%	14%	100%
Liberal	15%	72%	14%	100%
Very liberal	14%	65%	20%	100%

We also conducted a confidence interval at a 5% level of significance to confirm these findings; however, we found statistically significant differences between conservatives and liberals only among materialists, with liberals having the lowest proportion and conservatives holding the highest. Nevertheless, considering the proportionate differences in Table 26 and the fact that our survey sample encompassed more conservative-leaning individuals, we believe that a more representative sample of liberal respondents would reinforce our theory that liberals are more likely to be post-materialists.

5.8. Homeownership Status (Renters versus Owners)

We subsequently observed the impact of homeownership status on materialist views. Infrequently, individuals may choose to rent rather than own their own property due to liability concerns or income limitations. To account for this possibility, respondents were asked to specify whether they rent, own, or have some other arrangement at their current place of residence. Due to the limited sample size of those stating they do not own/rent their home but have some other type of arrangement, this group was not used when conducting our Chi-squared test.

Respondent totals for each homeownership status can be found in Table 27. When the Chi-squared test was performed, a resulting p-value of 0.014 was returned at a 5% level of significance. While this proves with statistical significance that homeownership status has an impact on materialism selection overall, we wanted to further identify which reported status, in particular, had a preference for a certain materialist view or views.

Table 27. Respondent percentages by homeownership status.

	Materialist	Mixed	Post-Materialist	Total
Own	133	350	69	552
Rent	74	302	58	434
Total	207	652	127	986

Table 28 illustrates the proportions of each homeownership status according to each materialist viewpoint. Of materialist respondents, those who own their own home reported the highest proportion, at 24%, as opposed to those who rent, at 17%. For post-materialists, there were no proportional differences observed between the two statuses.

Table 28. Respondent proportions by homeownership status.

	Materialist	Mixed	Post-Materialist	Total
Own	24%	63%	13%	100%
Rent	17%	70%	13%	100%

While we also conducted confidence intervals for these two variables individually, we found no statistical differences (for example, an owner is not statistically more likely to be a materialist than post-materialist). However, we did find a statistical difference between owners versus renters among materialists, specifically, illustrating that a materialist is more likely to be an owner than a renter. Our findings for the materialist category can be found in Table 29.

Table 29. Confidence intervals by homeownership.

Scenario: Materialist			
		Mat	Mix
Proportion of materialism		64%	36%
Confidence interval	Upper limit	0.708	0.423
	Lower limit	0.577	0.292

5.9. Household Size

We next explored the impact of household size on materialist views. Whether the respondent lives alone, has a large family size, or exists in an extended family cohabitation, assessing this factor allows us to analyze whether having more people in the home affects one's materialistic views. To do this, respondents were asked, "Including yourself, how many people live at your home?" While respondents reported anywhere from one to fourteen people, the average household size among respondents was three. As observed in Table 30, the ANOVA single-factor test did not highlight statistical differences between the three materialist views, with a calculated *p*-value of 0.573 at a 5% level of significance.

Table 30. Materialism and household size.

ANOVA Summary						
Groups	**Count**	**Sum**	**Average**	**Variance**		
Materialist	212	651	3.07075472	2.54947241		
Mixed	673	2161	3.21099554	2.84529558		
Post-materialist	136	432	3.17647059	3.33159041		
ANOVA						
Source of variation	SS	df	MS	F	*p*-value	F crit
Between groups	3.170812	2	1.58540622	0.55658177	0.57333925	3.00456532
Within groups	2899.742	1018	2.84846957			
Total	2902.913	1020				

5.10. Years in Home

We next observed the number of years a respondent has spent in his/her current home and his/her materialist views. Since our results ranged from 18 to 83 years of age, our sample respondents could be said to be in varying life stages and have varying living statuses. While survey respondents reported being in their current home anywhere from 0 to 60 years, the average timespan was 8 years. Of respondents considered materialists, an

average timespan of 10.4 years was observed, as opposed to 7.4 years for mixed respondents and 7.0 years for post-materialists. The ANOVA single-factor test in Table 31 below highlights statistical differences between these three categories, with a calculated *p*-value of 0.000 at an alpha level 5%.

Table 31. Materialism and years in home.

ANOVA Summary						
Groups	**Count**	**Sum**	**Average**	**Variance**		
Materialist	212	2212.5	10.4363208	151.921281		
Mixed	673	4969.8	7.38447251	92.2739289		
Post-materialist	136	962	7.07352941	88.5130719		
ANOVA						
Source of variation	SS	df	MS	F	*p*-value	F crit
Between groups	1629.525	2	814.762383	7.82385346	0.00042461	3.00456532
Within groups	106,012.7	1018	104.138247			
Total	107,642.3	1020				

While the difference of at least three years between materialists and the other two groups can be easily seen, we applied the Tukey–Kramer test to illustrate the observable difference at a statistical level (Table 32). As expected, the absolute differences between the materialists, post-materialists, and mixed groups were beyond the appropriate critical values, illustrating statistically significant differences.

Table 32. Tukey–Kramer test.

	Abs. Mean Diff.	**Critical Value**	**Significant**
Mat v. Mix	3.05	1.88	Yes
Mix v. Post	0.31	2.25	No
Post v. Mat	3.36	2.63	Yes

These findings suggest that materialists are more likely to have lived in their homes longer than those who are mixed or post-materialist.

5.11. Energy Saving Practices

We next wanted to observe the impact of energy-conscientious respondents and materialist views. To do this, each respondent was asked, "In the past year, have you taken any actions or changed anything in your household to save energy?" Of the 1021 respondents, 54% said yes. Respondent totals of those who said yes versus those who said no can be found in Table 33. When the Chi-squared test was performed, a resulting *p*-value of 0.80 was returned at a 5% level of significance.

Table 33. Respondent percentages by energy-saving practices.

	Materialist	**Mixed**	**Post-Materialist**	**Total**
Yes	113	361	77	551
No	99	312	59	470
Total	212	673	136	1021

These findings suggest that there are no statistical differences between those seeking to save energy and those who are not.

5.12. Describe Your Home

We next considered the impact of home efficiency on materialist views. For this attribute, respondents were asked, "How would you describe your home?" with three possible choices to choose from: "less efficient compared to those around me", "about the same compared to those around me", and "more efficient compared to those around me." How one perceives his/her home in terms of energy-efficient systems or features can be reflective of other viewpoints or values, such as materialism versus post-materialism. Respondent totals for each of the three options can be found in Table 34. When the Chi-squared test was performed, a resulting *p*-value of 0.73 was returned at a 5% level of significance.

Table 34. Respondent percentages by political orientation.

	Materialist	Mixed	Post-Materialist	Total
More Efficient	55	164	35	254
Less Efficient	31	98	14	143
About the same	126	411	87	624
Total	212	673	136	1021

These findings suggest that there are no statistical differences between those who view their homes as more, less, or equal to other surrounding homes in terms of efficiency.

5.13. Important to Reduce

Next, we investigated the impact of respondent's preferences to save energy with materialist values. For this attribute, respondents were asked, "Is it important for you to reduce your energy consumption?" with two possible options to choose from: "Yes" or "No". Upon survey completion, 90.6% said yes and 9.4% said no. Respondent totals for those who said yes and those who said no can be found in Table 35. When the Chi-squared test was performed, a resulting *p*-value of 0.25 was returned at a 5% level of significance.

Table 35. Respondent percentages according to whether they deem it important to reduce.

	Materialist	Mixed	Post-Materialist	Total
Yes	14	70	12	96
No	198	603	124	925
Total	212	673	136	1021

These findings suggest that there are no statistical differences between those who consider it important to reduce and those who do not.

5.14. Natural Gas Conservation

Lastly, we examined the impact of natural gas conservation on materialist views. Although similar to the question on if respondents have made changes to save energy, this attribute asks specifically about whether respondents have succeeded by actual lowering their natural gas consumption over the past year. Respondents were asked, "In the past year has your natural gas consumption decreased, increased, or stayed about the same?" with four possible choices to choose from: "increased", "stayed about the same", "decreased", or "N/A (I don't have natural gas)". Respondent totals for each of the three options of conservation can be found in Table 36. When the Chi-squared test was performed, a resulting *p*-value of 0.66 was returned at a 5% level of significance.

Table 36. Respondent percentages by political orientation.

	Materialist	Mixed	Post-Materialist	Total
Increased	26	92	16	134
Stayed about the same	134	405	85	624
Decreased	40	119	28	187
N/A	12	57	7	76
Total	212	673	136	1021

These findings suggest that there are no statistical differences between those whose consumption increased, decreased, or stayed the same in the past year in regard to materialism selection.

6. Conclusions and Policy Implications

As mentioned, data collection for this study took place from 11 July 2022 to September 4, 2022, and encompassed 1021 respondents. We observed that a majority of respondents (66%) held mixed values, 21% held materialist values, and 13% held post-materialist values. While the mixed category held the highest proportion of respondents for each psychographic attribute under study (gender, race, income, etc.), we were particularly interested in finding the demographic or psychographic differences between materialists and post-materialists. Not only were we able to answer our research question examined via our hypotheses, but we were also able to create demographic profiles for each of the viewpoints.

While we tested all demographic data collected in the study on materialist values, we were specifically interested in our hypotheses, as they reflect prior research on post-materialism. The following list illustrates our stated hypothesis and associated findings.

(1) Materialism/post-materialism will be divided among generations.
    a. We observed in the study that materialists were more likely to be older, whereas mixed or post-materialist respondents were more likely younger. While we did not find any differences between mixed and post-materialists, we were able to conclude that materialism/post-materialism is divided among generations.

(2) Materialism/post-materialism will be divided along gender lines.
    a. We observed in the study that females were more likely to be materialist than post-materialist. However, we did not observe any statistical differences among males.

(3) Materialism/post-materialism will be divided along the political spectrum (liberal/conservative).
    a. We observed in the study that materialists were more likely to be conservative than liberal. However, we did not find any statistical differences between conservatives and liberals in the mixed or post-materialist groups. While we cannot definitively say that materialism/post-materialism is divided along the political spectrum, we can conclude that materialists are more likely to be conservative than liberal.

(4) Materialists will hold higher incomes than post-materialists.
    a. We observed in the study that income had no effect on materialist or post-materialist groups. These findings could reflect the impact of inflation on respondents' decisions.

(5) Materialists will be less likely to have participated in utility energy-efficiency programs/conservation.

a. We observed in the study that participation in utility energy-efficiency programs/conservation had no statistical differences between materialists and post-materialists.

To provide a better demographic representation of materialist/post-materialist respondents, we created three separate profiles based on our statistical findings and observations. While we found marital status to be significant regarding materialism/post-materialism values, we do recognize that it may be correlated with age—older individuals may more likely be married or widowed than young individuals, who might not be in a relationship.

6.1. Materialist Values

We found, with statistical reasoning, that materialists are more likely to be older individuals, married or widowed, who own their own homes and have lived in their current place of residency the longest. These individuals lean conservative on the political scale and are more educated. While we did not find statistical differences between materialist and post-materialist values with males, we did find differences with females, wherein females are more likely to be materialist or mixed than post-materialist. Finally, people who are Asian are most likely to be materialist, followed thereafter by Whites/Caucasians.

6.2. Mixed Values

We found, with statistical reasoning, that mixed-value respondents are more likely to be young, are not currently in a relationship, or have lower educational attainment, (meaning that they have achieved only an associate's degree at most). Hispanic or Latinx individuals, in particular, are more likely to have mixed values than materialist values.

6.3. Post-Materialist Values

Finally, we found, with statistical reasoning, that those with post-materialist values are more likely to be young individuals, those with partners, and those who lean liberal on the political spectrum. While many of the racial/ethnic categories did not have statistical differences between materialist or post-materialist values, Asians did and are least likely to be post-materialist. Despite Inglehart's findings on environmentalism rising from the shift towards post-materialist views, we did not find those same associations in our study.

While we find these representative profiles of materialists/mixed/post-materialists insightful, we found the demographic attribute of race/ethnicity particularly interesting. Asians, for instance, held to materialist values more than two times that of any of the other racial categories and were also least likely to be post-materialist: only 1 Asian had post-materialist values out of the 40 sampled. For Asians specifically, we observed an average age of 40 years, slightly below the average age of all survey respondents, at 42 years. We suggest further research on whether factors such as immigration status, years spent in the United States, and potential cultural beliefs have any impact on materialist values.

We also suggest further study on the racial groups we classified together in our confidence intervals and Chi-squared tests. These groups include Black or African Americans, American Indians or Alaskan Natives, Native Hawaiians or Pacific Islanders, and those identifying as multiple ethnicities/other. Together, these groups total 93 respondents, or just over 9% of the whole survey sample. Upon further examination of these groups, there appears to be a strong proportionate lean for each of these groups towards post-materialist values, with indigenous peoples holding the highest at 39% of all reported post-materialists. We find these proportions to be of great interest, particularly on whether their post-materialist lean is also associated with more environmental views. We recommend this area for further study with a larger sample size.

While several of the attributes in this study were useful in creating our demographic profiles, we also had several attributes that did not yield findings of statistical significance. In his research, Inglehart [5] contended that post-materialists were more likely to be economically privileged or young individuals. We went into this study with similar

hypothesis and expectations Inglehart had on environmentalism and demographic types overall; however, we did not validate or satisfy all of our hypotheses.

For example, while our study agreed with Inglehart's findings in terms of age differences, we did not find statistical differences between those who are or are not economically privileged (higher incomes versus lower incomes). This difference may be attributed to the substantial rise in inflation in 2022, negatively hitting consumer spending as a whole. However, this finding coincides with Flanagan's research even further in that, as inflation becomes a more pressing concern in a country, individuals are more likely to lean towards fighting raised prices as opposed to other views, such as environmentalism [9], pp. 433–434. Our study was useful in providing a standing for materialist views in times of rapid economic growth and high inflation; however, we recommend subsequent research when the inflation rate slows or plateaus to identify just how large of an impact it may have had on respondent views.

Environmentalism, or the theory of promoting environmental standards by reducing energy consumption and/or carbon footprints, was also a big focus for this study. Unfortunately, none of the energy-specific questions posed to respondents—whether they believe it important to save energy or are actually taking steps to do so—yielded any statistical differences between materialists and post-materialists. While Inglehart advocates environmentalism as a post-materialist value, our findings better support Davis's findings [21], in that the United States does not support the relationship between environmentalism and post-materialist values.

Nevertheless, we find the work of Henn, Sloan, and Nunes [14] to be particularly interesting when comparing American materialist values with European materialist values. Their research found that European youth held most strongly to post-materialist values, cosmopolitan attitudes, and environmental politics, with young environmental activists being predominately female and having extensive educational backgrounds. While our findings did not attribute younger ages to post-materialist values specifically, we did find them more likely to be mixed or post-materialist than materialist. However, we did not find any indications on environmentalism preferences with any of our attributes under study. In terms of education, we found quite the opposite of Henn, Sloan, Nunes, and Inglehart's research: well-educated individuals were more likely to be materialist than post-materialist.

While we decided to utilize a four-item index with only three categories (materialist, post-materialist, and mixed), we acknowledge that utilizing another index with more categories could have been helpful in breaking up the vast majority of mixed respondents. As already expounded upon, economic and social stability can have an effect on materialist views. Utilizing a larger index could have been helpful in identifying groups that are more or less affected by such movements but still leaned one direction over the other. We would recommend using an enlarged index for further research purposes to attempt to more closely observe differences in demographics and prior research.

In conclusion, our findings have supported and refuted several academic studies. Nevertheless, this article contributes to the academy by expanding the work of Inglehart and others on individual utility customers and compares the attitudes of materialists and post-materialists against the concepts of energy efficiency, renewable energy, and the ideals presented by previous scholars. If anything, our research illustrates the natural tendency for materialistic views to change with economic or sociopolitical movements. By providing a profiling of materialists and post-materialists, subsequent scholars can potentially utilize these findings to consider possible causes or inconsistencies.

As the United States experiences high inflation, rising tuition prices, and proactive social movements involving racial or sexual-orientation equality, it will be interesting to observe the potential lasting impacts these will have on society. As prices begin to plateau and social movements advance, it is quite possible to see a rise in pro-environmental views and activism. Booth [16] argues that achieving a post-growth green economy coincides with a global expansion of post-material values and experiences that in turn reduce consumption,

lead to more environmentally friendly life forms, and further garner political support for environmental enhancement.

Currently a very large proportion of United States citizens are aging, and although our study highlights the tendency for older individuals to be materialist, it is unknown whether one should expect that to continue going into the future or whether that generation's views will go along it them. Deep cultural beliefs or stigmas in these older generations created by foreign wars, economic downturns, or social practices during their upbringing may be a reason for their strong materialist views. As new generations continue to arise in America, the preference for physical security versus self-expression may very well change.

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