

UNIVERSITY of **HOUSTON** | UH ENERGY

# Insights into the Oil and Gas Workforce of the Future

Authored by the Hobby School of Public Affairs in collaboration with UH Energy

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# White Paper Contributors

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# EXECUTIVE SUMMARY

UH Energy and the Hobby School of Public Affairs at the University of Houston (UH), in partnership with the Environmental Defense Fund, conducted an online survey of UH students who are likely to consider a future career in the energy industry. Houston is often referred to as the “energy capital” of the world and has been at the center of innovation in the oil and natural gas business for decades. The purpose of this survey is to understand how potential employees in the energy industry perceive corporate social responsibility (CSR) and how CSR influences their employment decisions. A total of 608 respondents completed the online survey in April and May, 2018. The main results of this study are as follows:

- A majority of respondents say that CSR plays an important role in their employment decisions.
- A majority of respondents say that environmental stewardship practices play an important role in their decision to accept an offer with a company in the oil and gas industry.
- When evaluating hypothetical job offers, the importance of environmental stewardship remains and is very substantial, even after taking into consideration the type of industry and starting salary offered.
- Students in technical fields such as petroleum engineering, and students in social science, business and humanities, all view corporate social responsibility as important to their employment decisions.
- The majority of the respondents think the United States should participate in the Paris Agreement on climate change.
- The majority of the respondents think the United States should use more renewable energy sources and less fossil fuel in the future.

## INTRODUCTION

The oil and gas industry is undergoing the “Great Crew Change,” an industry-wide gap in mid-level managers stemming from the oil bust in the 1980s. To keep pace with the current rates of retirement, the industry needs to hire approximately 30,000 people annually over the next 20 years. Meanwhile, new and upcoming entrants to the workforce increasingly recognize that climate change is a serious threat to our way of life. The latest Energy Poll conducted by UH in October, 2016, found that 91% of survey respondents under 35 years of age agreed that climate change is occurring. Furthermore, a study of millennials by PricewaterhouseCoopers found that nearly 60% of survey participants said they would actively seek an employer whose corporate values match their own. Specifically, over half the millennials surveyed by PricewaterhouseCoopers (58%) stated that they would purposefully avoid an employer with a negative image of environmentalism. Similarly, Ernst and Young found that perceptions of the industry have dropped significantly with each generation. The most recent generation is the first to have a net negative view of the oil and gas industry’s contribution to society. These data suggest that corporate social responsibility (CSR), especially in terms of environmental stewardship, defined as responsible use and protection of the natural environment through conservation and sustainable practices, is increasingly important to people’s employment decisions.

Given the growing importance of corporate social responsibility in individual employment decisions, this study aimed to examine how corporate social responsibility influences the choices made by current students at UH, especially those involved in energy-related programs, some of whom will supply the future workforce in the energy capital of Houston and around the world. Specifically, the purpose of this study was to:

1. Understand the importance of various factors, such as wages and benefits, in individuals’ decisions to accept or not accept an employment offer.
2. Understand to what extent environmental stewardship is a significant determinant of employer selection in the oil and gas industry.
3. Understand the role of social and environmental responsibilities in the decision

to accept an employment offer from an energy company.

4. Understand individual perceptions about the importance of the sustainability efforts and policies of prospective employers for different groups of people.

The remainder of this study is structured as follows. Section II offers a brief review of past studies on corporate social responsibility and environmental stewardship. Section III describes the study design, including the survey instrument and sample selection. Section IV presents the results of the study by examining how different factors such as monetary incentives, types of companies, and environmental stewardship affect individuals’ employment decisions. Section V summarizes the key findings and discusses the implications of the study.

## BACKGROUND

Concerns about social responsibility have taken a central stage in the corporate world in recent years. Customers, clients, investors, employees, and other stakeholders are increasingly demanding that firms internalize the environmental and social impact of their business practices. The response by firms to stakeholder demands for social responsibility and environmental stewardship has been defined as corporate social responsibility (CSR). CSR is neither entirely altruistic (Polonsky 2011; Turker 2008; Friedman 1970), nor necessarily problematic for businesses. Business survival is largely based on profit margin as the bottom line, and the means of attaining financial profit varies. A company’s decision to engage in CSR is a strategic calculation to maintaining market competitiveness for stakeholder preferences (Waddock and Graves 1997; Burke and Logsdon 1996), especially for the preferences of consumers, employees, and investors (Friedman 1970, Freeman and Velamuri 2006; Greenwood 2002; Maignan and Ferrell 2004). Under some conditions, demonstrating a commitment to corporate social responsibility could result in a brand-enhancing signal (Boulding and Kirmani 1993), which communicates enhanced product quality and corporate citizenship (Maignan and Ferrell 2001), allowing the firm to differentiate itself and its products from the competition.

While many nuances of definitions exist for corporate social responsibility (Rahman and Post 2011), an alliterative definition set forth by



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the Dutch Social and Economic Council (2001) and expanded upon in Cramer (2006) describes corporate social responsibility as the strategic embedding of three pillars within the organization: “people,” “planet,” and “profit.” Responsible governance, social awareness, and community engagement are key to sustainable business practices such as talent retention, financial health, and customer care. This study deploys this broad definition by understanding how UH students who are potential job candidates (people) perceive the value of becoming an employee in a company (profit) after learning about the company’s poor/minimal/leading commitment to environmental impact mitigation (planet). The pillars are integrated, as the data suggest, but it is important to note that environmental stewardship is only one component of corporate social responsibility. The survey experiment distinguishes between students’ receptiveness to corporate social responsibility and environmental stewardship explicitly. For a sector that is typically considered to be harmful to the environment, such as oil and natural gas, perhaps minimal commitments to corporate social responsibility would be sufficient for stakeholders, compared to wind as a clean energy sector where leadership is expected.

Previous research has found a potential attitudinal-behavior gap among consumers depending on their individual attributes, attitudes, and needs (Mainieri et al. 1997). In particular, a job applicant might be attracted to the value of corporate social responsibility demonstrated by a firm, but s/he may not be willing to accept a lower salary. Salary differences could be considered personal costs of being part of a corporation that behaves in more socially and environmentally conscientious ways (Laroche et al. 2009). Individuals who are more receptive to corporate social responsibility and environmental stewardship when searching for a job, and particularly those who would accept a lower salary based on the firm’s CSR practices, may present personal characteristics and attitudes that make them differ from the rest of the applicant pool (Duarte et al. 2014; Barber and Roehling 1993; Albinger and Freeman 2000; Alniacik et al. 2011). In other words, some people would self-select into applying for jobs in oil and gas irrespective of the practices of the potential employer, others would choose to apply for jobs in firms with better environmental stewardship practices, and some would have an altruistic tendency to accept a

lower salary to be a team member at a firm with a high CSR reputation.

Some employees may interpret firm reputation for environmental stewardship as a reflection of their own value contributions (Lee 2008; Ashforth and Mael 1989; Dutton and Dukerich 1991; Jones et al. 2014; Judge and Bretz 1992). By deploying corporate resources for environmental stewardship, individuals within these companies are able to implement green ideas and initiatives on a larger scale than otherwise feasible at the individual level. For example, enhancing product design for recycling capabilities, tweaking production processes to reduce carbon emissions, and committing to zero-waste administrative offices are simple initiatives companies might take, which could have exponential effects. Employees who contribute to the design and production processes or who meet their team goal of zero-waste for a day or week are part of this corporate culture of sustainability. Without the employees’ commitment to their role in the firm, corporate goals would be unattainable.

To sum up, a company’s corporate social responsibility and environmental stewardship practices could play a role in individual employment decisions. To understand the impact of corporate social responsibility and environmental stewardship on job choices, this study deploys conventional survey techniques and experimental designs embedded in the survey – a conjoint experiment and survey experiment – that can help us clearly identify the causal relationships between the variables of interest. We provide a detailed discussion of the research design in the next section.

## SURVEY DESIGN

To examine how corporate social responsibility and environmental stewardship practices influence individuals' employment decisions, we surveyed a sample of University of Houston (UH) students with characteristics consistent with an interest in joining the oil and gas workforce upon graduation. The Houston metropolitan area hosts over 5000 energy firms, earning it the moniker "the world capital of the oil and gas industry," and UH is the training ground for a large proportion of that industry's workforce. Thus, although the findings of this study may not generalize to the entire US population, they provide insights into how the next generation of energy sector employees think about corporate social responsibility and environmental stewardship.

To that end, the survey exploits three complementary strategies. First, it poses questions that directly ask students about their attitudes toward corporate social responsibility and environmental stewardship. Next, an embedded survey experiment randomly assigns respondents to one of three informational conditions; this allows us to identify the effects that information about environmental practices has on perceptions of environmental issues and initiatives. Finally, to further understand respondents' underlying

preferences, the survey employs an empirical strategy known as a choice-based conjoint experiment. (see Appendix I for the complete survey instrument). This final approach presents respondents with a choice of two hypothetical job profiles that vary along three characteristics: pay scale, energy sub-industry and environmental stewardship. Respondents select which of the two profiles they prefer (a task which they complete a total of five times), and their choices are analyzed to discover the relative weight they place on each of the characteristics. This allows us to, for example, distinguish to what extent respondents are willing to trade income for a firm's reputation as a leader in environmental stewardship within each energy sub-industry.

The survey was distributed via email between April 17 and May 14, 2018, and a total of 608 respondents completed it. Table 1 compares the sample to the overall population of all University of Houston students.

In the next section, we present results in terms of individual attitude toward corporate social responsibility and environmental stewardship for the conjoint and survey experiments. For further analysis not discussed below, please see Appendix 1.

**Table 1: Comparison between the sample and UH Students**

	Sample	UH students
<b>Gender</b>		
Female	52.7%	49.8%
Male	46.4%	50.2%
Other	0.9%	0.0%
<b>Ethnicity</b>		
White	16.1%	26.8%
African American	2.0%	9.7%
Hispanic	24.9%	29.1%
Asian American/Asian	31.6%	20.5%
Hawaiian/Pacific Islander	0.6%	0.2%
Native American	0.4%	0.1%
Others	24.5%	13.5%
<b>Student level</b>		
Undergraduate	88.3%	79.6%
Postbaccalaureate	0.0%	2.7%
Graduate	6.3%	14.2%
Special Professional	5.4%	3.5%
<b>Age (Mean)</b>	22.8	23.9

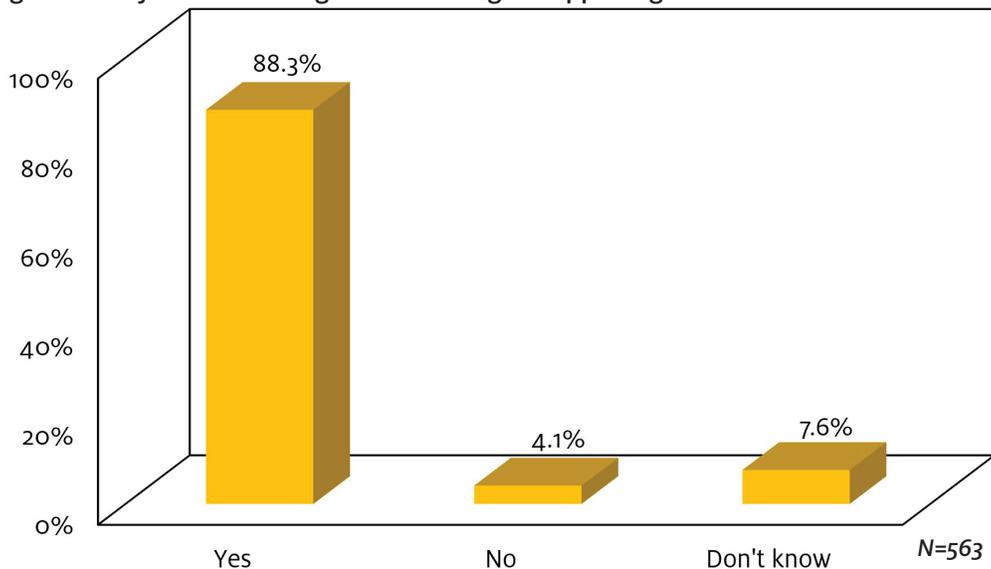


# RESULTS

## 1. Global Warming

Respondents are asked to express their opinions on global warming. As shown in Figure 1, more than four-fifths (88.3%) of respondents think that global warming is happening.

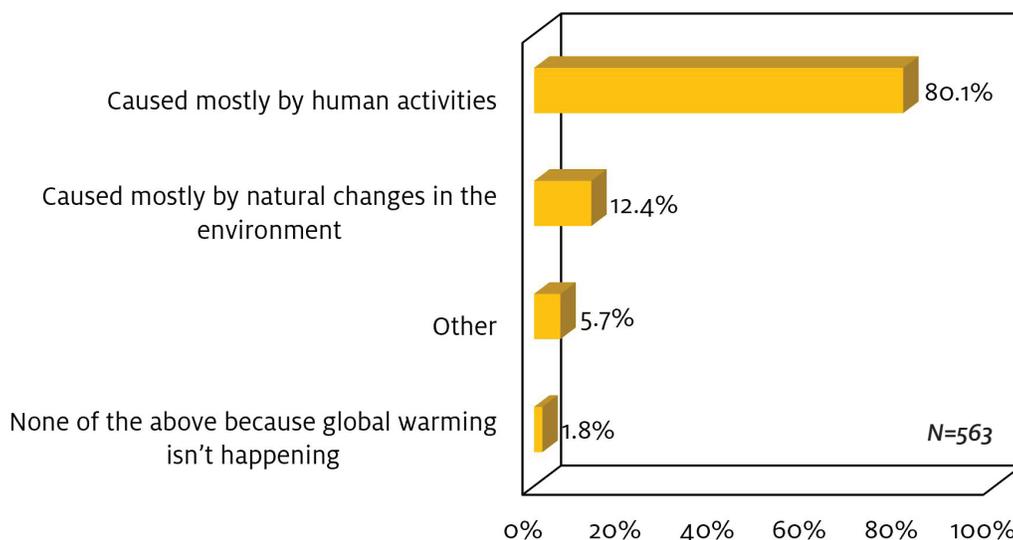
Figure 1: Do you think that global warming is happening?



## 2. Causes of Global Warming

If it is assumed that global warming is happening, approximately four-fifths (80.1%) of the respondents attribute global warming mainly to human activities, while 12.4% of the respondents think that global warming is caused mostly by natural changes in the environment (see Figure 2). Very few (1.8%) respondents maintain that global warming is not happening.

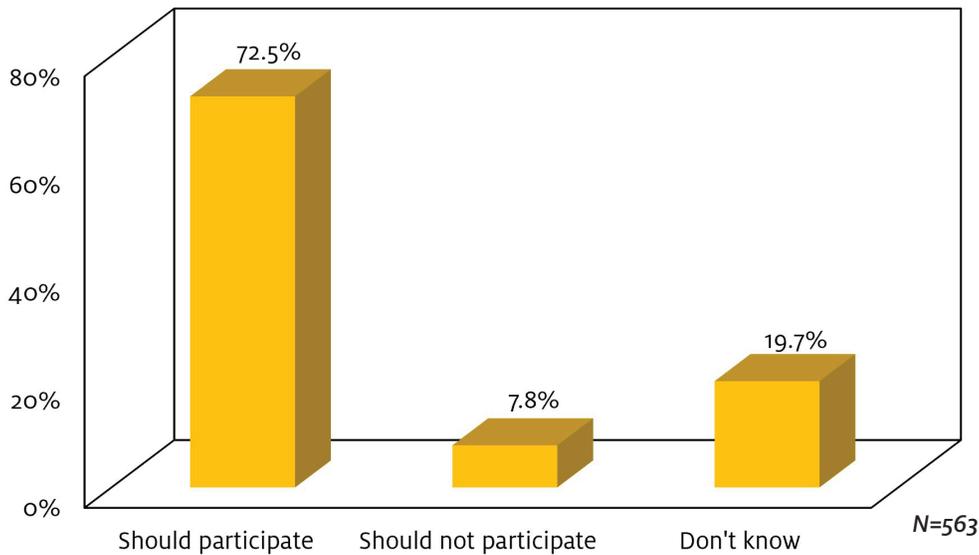
Figure 2: Assuming global warming is happening, do you think it is...?



### 3. U.S. Participation in Paris Agreement

When asked whether the United States should participate in the Paris Agreement, more than seven-tenths (72.5%) think that the United States should participate, and less than one-tenth (7.8%) do not (see Figure 3). This result is similar to that of a national poll conducted by the Yale Program on Climate Communication in 2017, which found that seven out of 10 Americans support remaining in the Paris Agreement. As a result, it seems that the students surveyed are not different from the general population in terms of the United States' participation in the Paris Agreement.

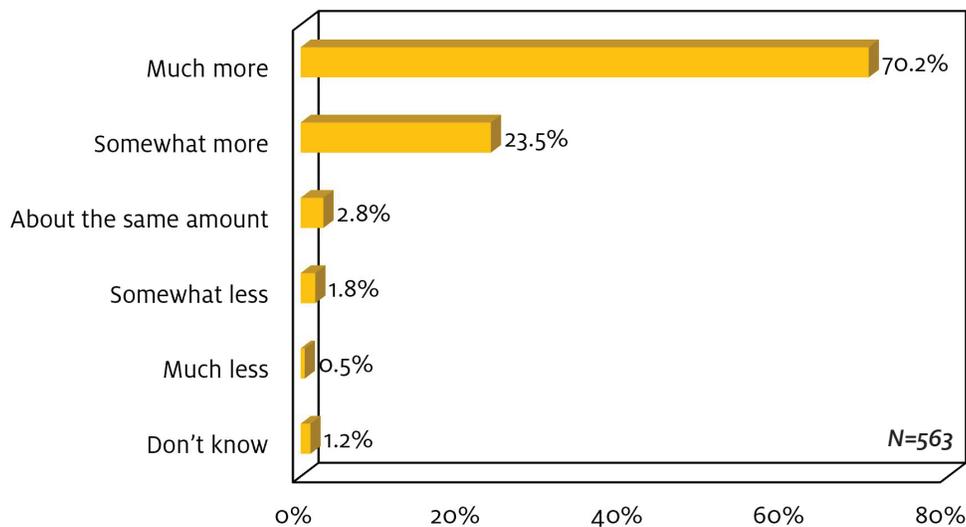
**Figure 3: Should the U.S. participate in the Paris Agreement?**



### 4. Use of Renewable Energy Sources

With regard to the use of renewable energy sources in the future, more than nine-tenths (93.7%) of the respondents think that the United States should use either much more or somewhat more renewable energy sources than we currently do (see Figure 4). By contrast, only 2.3% of the respondents think the United States should use renewable energy sources either somewhat less or much less. It appears that the respondents have a very high level of consensus on the use of renewable energy sources for the United States in the future.

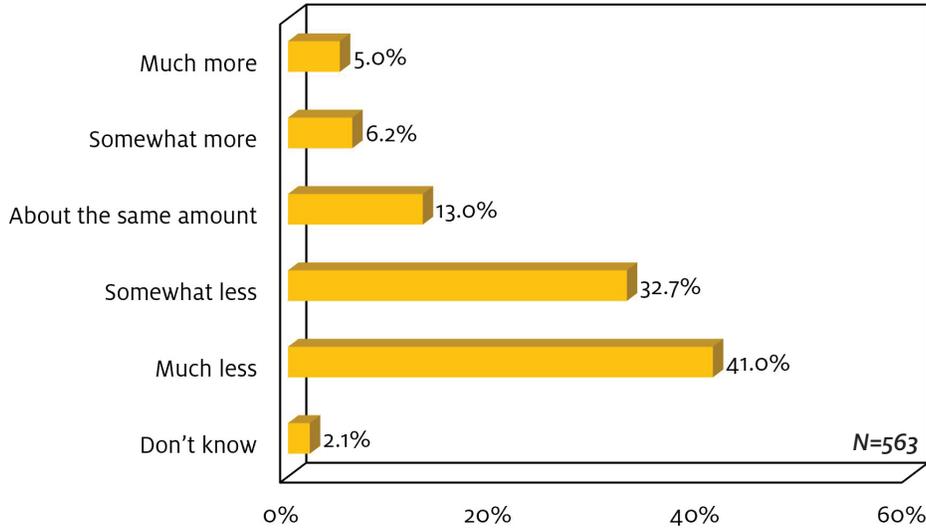
**Figure 4: In the future, do you think the U.S. should use renewable energy sources (solar, wind, geothermal) less, more, or the same amount as we do today?**



### 5. Use of Fossil Fuels

On the other hand, nearly three-fourths (73.7%) of the respondents think the United States should use fossil fuels either somewhat less or much less, whereas slightly more than one-tenth (11.2%) of the respondents are in favor of the increased use of fossil fuels for the United States in the future (see Figure 5). In toto, Figures 4 and 5 suggest the survey respondents prefer renewable energy sources over fossil fuels.

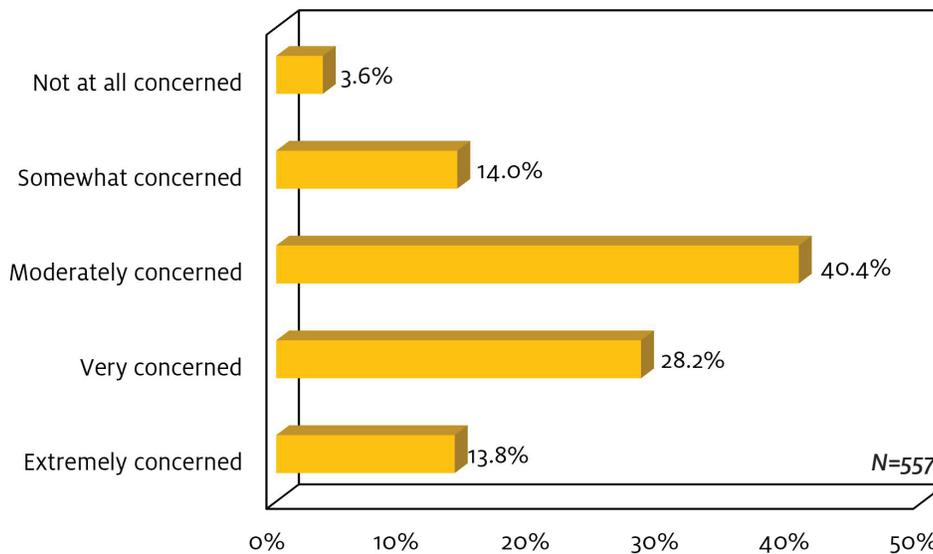
**Figure 5: In the future, do you think the U.S. should use fossil fuels (coal, oil, and natural gas) less, more, or the same amount as we do today?**



### 6. Concern about the State of the Environment

This study also asks the respondents to indicate the extent to which they are concerned about the state of the environment. As shown in Figure 6, more than two-fifths (42.0%) of the respondents are either extremely concerned or very concerned about the state of the environment. Moreover, another two-fifths (40.4%) of the respondents express moderate concern about the state of the environment.

**Figure 6: Generally speaking, how concerned are you about the state of the environment?**



## 7. Perceptions of Concern about the State of the Environment

By contrast, respondents largely indicate that members of other groups are not as concerned about the state of the environment as they are. As shown in Table 1, the percentages of the “very concerned” and “extremely concerned” answers vary from 7.8% for Texas residents in general to 23.3% for UH students in general. Notably, 17.8% of the respondents think that their families are not at all concerned about the state of the environment, followed by Blacks in Texas (17.7%) and Texas residents in general (16.6%).

**Table 1: Generally speaking, how concerned do you think members of the following groups are about the state of the environment?**

	Not at all concerned	Somewhat concerned	Moderately concerned	Very Concerned	Extremely concerned	Total
Your family	99 (17.8%)	168 (30.2%)	186 (33.5%)	73 (13.1%)	30 (5.4%)	556 (100.0%)
Your friends	44 (7.9%)	170 (30.6%)	219 (39.4%)	94 (16.9%)	29 (5.2%)	556 (100.0%)
UH students in general	31 (5.6%)	141 (25.4%)	254 (45.7%)	112 (20.1%)	18 (3.2%)	556 (100.0%)
Texas residents in general	92 (16.6%)	263 (47.3%)	158 (28.4%)	32 (5.8%)	11 (2.0%)	556 (100.0%)
People in the U.S. in general	60 (10.8%)	216 (38.9%)	207 (37.2%)	57 (10.3%)	16 (2.9%)	556 (100.0%)
Whites in Texas	83 (15.0%)	205 (37.0%)	183 (33.0%)	68 (12.3%)	15 (2.7%)	554 (100.0%)
Blacks in Texas	98 (17.7%)	245 (44.1%)	160 (28.8%)	39 (7.0%)	13 (2.3%)	555 (100.0%)
Hispanics in Texas	89 (16.0%)	248 (44.7%)	163 (29.4%)	43 (7.8%)	12 (2.2%)	555 (100.0%)
Asians in Texas	63 (11.4%)	217 (39.1%)	198 (35.7%)	58 (10.5%)	19 (3.4%)	555 (100.0%)

## 8. Importance of CSR Practices

The respondents are asked to evaluate how five attributes relevant to CSR influence their decisions on whether to accept an employment offer. As demonstrated in Table 2, the majority of the respondents view all five attributes relevant to CSR as either very important or important to their employment decisions. The percentages vary from 68.9% for the company’s recycling standards and policies to 83.5% for the company’s ethical standards of products, services and marketing practices. In terms of environmental stewardship, 76.1% of the respondents think of the company’s efforts to mitigate and reduce its contribution to air, water and soil pollution as either very important or important to their employment decisions. Furthermore, 74.4% of respondents regard the company’s policies to reduce negative effects on climate and environmental conditions as either very important or important to their employment decisions. In general, CSR plays an important role in individuals’ decisions on whether to accept an employment offer.

**Table 2: For each of the CSR-related statements presented below, please indicate how important you perceive each attribute to be when deciding whether to accept an employment offer?**

	Not important	Slightly important	Moderately important	Important	Very important	Total
The company's ethical standards of products, services and marketing practices.	9 (1.5%)	17 (2.9%)	71 (12.1%)	215 (36.6%)	275 (46.9%)	587 (100.0%)
The company's efforts to mitigate and reduce its contribution to air, water and soil pollution.	13 (2.2%)	22 (3.8%)	105 (17.9%)	219 (37.3%)	228 (38.8%)	587 (100.0%)
The company's recycling standards and policies.	24 (4.1%)	39 (6.6%)	120 (20.4%)	217 (37.0%)	187 (31.9%)	587 (100.0%)
The company's policies to reduce negative effects on climate and environmental conditions.	14 (2.4%)	32 (5.5%)	104 (17.7%)	202 (34.4%)	235 (40.0%)	587 (100.0%)
The company's representation of women and minorities.	24 (4.1%)	20 (3.4%)	79 (13.5%)	165 (28.1%)	299 (50.9%)	587 (100.0%)

### 9. Importance of CSR on Employment Decisions

The respondents are also asked to indicate the extent to which they agree with several statements about environmental responsibility when deciding whether to work for a company in the oil and gas industry. As shown in Table 3, more than three-fifths (63.7%) of the respondents are willing to accept a lesser role or a lower salary to work for a company in the oil and gas industry that prioritizes environmental responsibility, but just over one-third (35.7%) of the respondents think that other students in their programs or majors would also be willing to do so. Besides, more than four-fifths (85.1%) of the respondents mention that it is important for them to work for a company in the oil and gas industry with policies aimed at addressing climate change and other environmental issues. However, only 54.6% of the respondents view environmental responsibility as their top priority when deciding to work for a company in the oil and gas industry compared to other factors. Overall, environmental responsibility can come into play when individuals think about whether to work for a company in the oil and gas industry.

**Table 3: Please indicate the extent to which you agree with the following statements when deciding whether to work for a company in the oil and gas industry:**

	Strongly disagree	Disagree	Agree	Strongly agree	Total
I am willing to accept a lesser role or a lower salary to work for a company in the oil and gas industry that prioritizes environmental responsibility.	48 (8.6%)	154 (27.7%)	283 (50.8%)	72 (12.9%)	557 (100.0%)
For me, it is important that a company in the oil and gas industry has policies aimed at addressing climate change and other environmental issues.	46 (8.3%)	37 (6.6%)	301 (54.0%)	173 (31.1%)	557 (100.0%)
Compared to other factors, environmental responsibility is my top priority when deciding to work for a company in the oil and gas industry.	65 (11.7%)	188 (33.8%)	234 (42.0%)	70 (12.6%)	557 (100.0%)
I think that, on average, students in my program or major are willing to accept a lesser role or a lower salary to work for a company in the oil and gas industry that prioritizes environmental responsibility.	89 (16.0%)	269 (48.3%)	175 (31.4%)	24 (4.3%)	557 (100.0%)

## SURVEY EXPERIMENT

In addition to directly gauging students' attitudes toward CSR and environmental stewardship, this study also assesses whether providing information about firms' environmental practices affects respondents' perceptions of environmental issues and initiatives. To accomplish this, we embedded into the survey a randomized experiment comprised of three experimental groups, or informational conditions. In one group, respondents are shown a brief report on environmental concerns and the oil industry. The second group exposes respondents to a short commentary on greenwashing in the oil industry. The third group serves as the control (or neutral) group; respondents in this group were presented with a story unrelated to the environment. Appendix 2 shows the full text of each experimental group. We first examine whether respondents' perceptions of global warming are influenced by their assigned informational condition. As shown in Tables 4 and 5, there is no significant relationship between the informational conditions and individuals' perceptions of global warming. That is, the majority of respondents think that global warming is happening and view human activities as the main cause of global warming – regardless of the experimental group to which they were assigned. This suggests that individuals' views on global warming and its causes are unaffected by exposure to the commentary on environmental topics.

**Table 4: Experiment Analysis - Is Global Warming Happening**

Experimental manipulation	Is global warming Happening		Total
	Yes	No	
Control group	171 (96.6%)	6 (3.4%)	177 (100.0%)
Environmental Concerns	166 (95.4%)	8 (4.6%)	174 (100.0%)
Greenwashing	160 (94.7%)	9 (5.3%)	169 (100.0%)
Total	497 (95.6%)	23 (4.4%)	520 (100.0%)

Note: 1. The number in parentheses shows row percentage.  
2. Chi-square test shows no relationship between experimental manipulation and individual opinion on happening of global warming.

**Table 5: Experiment Analysis - Cause of Global Warming**

Experimental manipulation	Cause of global warming				Total
	Human activities	Natural changes	Other	No global warming	
Control group	152 (80.9%)	25 (13.3%)	9 (4.8%)	2 (1.1%)	188 (100.0%)
Environmental Concerns	151 (79.5%)	22 (11.6%)	13 (6.8%)	4 (2.1%)	190 (100.0%)
Greenwashing	148 (80.0%)	23 (12.4%)	10 (5.4%)	4 (2.2%)	185 (100.0%)
Total	451 (80.1%)	70 (12.4%)	32 (5.7%)	10 (1.8%)	563 (100.0%)

Note: 1. The number in parentheses shows row percentage.

Table 6 shows no statistically significant relationship between informational conditions and individual opinion on the United States' participation in the Paris Agreement. Specifically, no matter which information condition the respondents receive, the majority of them think that the United States should participate in the Paris Agreement.

**Table 6: Experiment Analysis - Participation in the Paris Climate Agreement**

Experimental manipulation	Participation in the Paris Climate Agreement		Total
	Yes	No	
Control group	142 (92.8%)	11 (7.2%)	153 (100.0%)
Environmental Concerns	132 (90.4%)	14 (9.6%)	146 (100.0%)
Greenwashing	134 (87.6%)	19 (12.4%)	153 (100.0%)
Total	408 (90.3%)	44 (9.7%)	452 (100.0%)

Note: 1. The number in parentheses shows row percentage.  
2. Chi-square test shows no relationship between experimental manipulation and individual opinion on participation in the Paris Climate Agreement.

Tables 7 and 8 demonstrate that there are no significant relationships between informational conditions and individual opinions on the use of renewable energy sources and fossil fuels. In other words, no matter which information condition the respondents receive, the majority of respondents think that the United States should use more renewable energy sources but less fossil fuels in the future.

**Table 7: Experiment Analysis - Use of Renewable Energy Sources**

Experimental manipulation	Use of renewable energy sources					Total
	Much more	Somewhat more	About the same amount	Somewhat less	Much less	
Control group	132 (70.6%)	49 (26.2%)	4 (2.1%)	1 (0.5%)	1 (0.5%)	187 (100.0%)
Environmental Concerns	132 (70.6%)	39 (20.9%)	8 (4.3%)	6 (3.2%)	2 (1.1%)	187 (100.0%)
Greenwashing	131 (72.0%)	44 (24.2%)	4 (2.2%)	3 (1.7%)	0 (0.0%)	182 (100.0%)
Total	395 (71.0%)	132 (23.7%)	16 (2.9%)	10 (1.8%)	3 (0.5%)	556 (100.0%)

Note: 1. The number in parentheses shows row percentage.  
2. Chi-square test shows no relationship between experimental manipulation and individual opinion on use of renewable energy sources.

**Table 8: Experiment Analysis - Use of Fossil Fuels**

Experimental manipulation	Use of fossil fuels					Total
	Much more	Somewhat more	About the same amount	Somewhat less	Much less	
Control group	10 (5.4%)	7 (3.7%)	25 (13.4%)	64 (34.2%)	81 (43.3%)	187 (100.0%)
Environmental Concerns	11 (5.9%)	11 (5.9%)	28 (15.1%)	62 (33.3%)	74 (39.8%)	186 (100.0%)
Greenwashing	7 (3.9%)	17 (9.6%)	20 (11.2%)	58 (32.6%)	76 (42.7%)	178 (100.0%)
Total	28 (5.1%)	35 (6.4%)	73 (13.3%)	184 (33.4%)	231 (41.9%)	551 (100.0%)

Note: 1. The number in parentheses shows row percentage.  
2. Chi-square test shows no relationship between experimental manipulation and individual opinion on use of fossil fuels.

Tables 9 through 13 show the relationships between the respondents' majors and five attributes relevant to CSR when they decide whether to accept an employment offer. Respondents for the most part think that CSR is important to their employment decision; moreover, we find no difference between students in technical fields, such as engineering, and those enrolled in other majors.

**Table 9: Importance of Corporate Social Responsibility When Deciding Whether to Accept an Employment Offer - Ethical Standards and Marketing Practices**

Majors	The company's ethical standards of products, services, and marketing practices					Total
	Not important	Slightly important	Moderately important	Important	Very important	
Engineering	2 (1.3%)	4 (2.6%)	16 (10.4%)	58 (37.7%)	74 (48.1%)	154 (100.0%)
Other	7 (1.6%)	13 (3.0%)	55 (12.7%)	157 (36.3%)	201 (46.4%)	433 (100.0%)
Total	9 (1.5%)	17 (2.9%)	71 (12.1%)	215 (36.6%)	275 (46.9%)	587 (100.0%)

Note: 1. The number in parentheses shows row percentage.  
2. Chi-square test shows no relationship between engineering majors and importance of the company's ethical standards of products, services, and marketing practices.

**Table 10: Importance of Corporate Social Responsibility When Deciding Whether to Accept an Employment Offer - Efforts to Mitigate and Reduce Pollution**

Majors	The company's efforts to mitigate and reduce its contribution to air, water and soil pollution					Total
	Not important	Slightly important	Moderately important	Important	Very important	
Engineering	1 (0.7%)	5 (3.3%)	30 (19.5%)	58 (37.7%)	60 (39.0%)	154 (100.0%)
Other	12 (2.8%)	17 (3.9%)	75 (17.3%)	161 (37.2%)	168 (38.8%)	433 (100.0%)
Total	13 (2.2%)	22 (3.8%)	105 (17.9%)	219 (37.3%)	228 (38.8%)	587 (100.0%)

Note: 1. The number in parentheses shows row percentage.  
2. Chi-square test shows no relationship between engineering majors and importance of the company's efforts to mitigate and reduce its contribution to air, water, and soil pollution.

**Table 11: Importance of Corporate Social Responsibility When Deciding Whether to Accept an Employment Offer - Recycling Standards and Policies**

Majors	The company's recycling standards and policies					Total
	Not important	Slightly important	Moderately important	Important	Very important	
Engineering	4 (2.6%)	12 (7.8%)	35 (22.7%)	53 (34.4%)	50 (32.5%)	154 (100.0%)
Other	20 (4.6%)	27 (6.2%)	85 (19.6%)	164 (37.9%)	137 (31.6%)	433 (100.0%)
Total	24 (4.1%)	39 (6.6%)	120 (20.4%)	217 (37.0%)	187 (31.9%)	587 (100.0%)

Note: 1. The number in parentheses shows row percentage.  
2. Chi-square test shows no relationship between engineering majors and importance of the company's recycling standards and policies.

**Table 12: Importance of Corporate Social Responsibility When Deciding Whether to Accept an Employment Offer - Climate and Environmental Conditions**

Majors	The company's policies to reduce negative effects on climate and environmental conditions					Total
	Not important	Slightly important	Moderately important	Important	Very important	
Engineering majors	1 (0.7%)	7 (4.6%)	28 (18.2%)	50 (32.5%)	68 (44.2%)	154 (100.0%)
Non-engineering majors	13 (3.0%)	25 (5.8%)	76 (17.6%)	152 (35.1%)	167 (38.6%)	433 (100.0%)
Total	14 (2.4%)	32 (5.5%)	104 (17.7%)	202 (34.4%)	235 (40.0%)	587 (100.0%)

Note: 1. The number in parentheses shows row percentage.  
2. Chi-square test shows no relationship between engineering majors and importance of the company's policies to reduce negative effects on climate and environmental conditions.

**Table 13: Importance of Corporate Social Responsibility When Deciding Whether to Accept an Employment Offer - Representation of Women and Minorities**

Majors	The company's representation of women and minorities					Total
	Not important	Slightly important	Moderately important	Important	Very important	
Engineering	8 (5.2%)	5 (3.3%)	23 (14.9%)	51 (33.1%)	67 (43.5%)	154 (100.0%)
Other	16 (3.7%)	15 (3.5%)	56 (12.9%)	114 (26.3%)	232 (53.6%)	433 (100.0%)
Total	24 (4.1%)	20 (3.4%)	79 (13.5%)	165 (28.1%)	299 (50.9%)	587 (100.0%)

Note: 1. The number in parentheses shows row percentage.  
2. Chi-square test shows no relationship between engineering majors and importance of the company's representation of women and minorities.

Tables 14 through 17 show the relationships between the respondents' majors and their perceptions of environmental responsibility when deciding to work for a company in the oil and gas industry. The results show that the respondents' majors have no significant relationships with their willingness to accept a lesser role or a lower salary for the sake of working for a company in the oil and gas industry that prioritizes environmental responsibility, has policies aimed at addressing climate change and other environmental issues, and considers environmental responsibility as a top priority. However, engineering respondents are less likely to agree that students in their programs or majors are willing to accept a lesser role or a lower salary to work for a company in the oil and gas industry that prioritizes environmental responsibility.

**Table 14: Willingness to Accept a Lesser Role or a Lower Salary to Work for a Company that Prioritizes Environmental Responsibility**

Majors	Willingness to accept a lesser role or a lower salary to work for a company in the oil and gas industry that prioritizes environmental responsibility				Total
	Strongly disagree	Disagree	Agree	Strongly agree	
Engineering	17 (11.7%)	37 (25.5%)	72 (49.7%)	19 (13.1%)	145 (100.0%)
Other	31 (7.5%)	117 (28.4%)	211 (51.2%)	53 (12.9%)	412 (100.0%)
Total	48 (8.6%)	154 (27.7%)	283 (50.8%)	72 (12.9%)	557 (100.0%)

Note: 1. The number in parentheses shows row percentage.  
2. Chi-square test shows no relationship between engineering majors and willingness to accept a lesser role or a lower salary to work for a company in the oil and gas industry that prioritizes environmental responsibility.

**Table 15: Importance of Policies Aimed at Addressing Climate Change and Other Environmental Issues**

Majors	The importance of a company in the oil and gas industry that has policies aimed at addressing climate change and other environmental issues				Total
	Strongly disagree	Disagree	Agree	Strongly agree	
Engineering	13 (9.0%)	13 (9.0%)	73 (50.3%)	46 (31.7%)	145 (100.0%)
Other	33 (8.0%)	24 (5.8%)	228 (55.3%)	127 (30.8%)	412 (100.0%)
Total	46 (8.3%)	37 (6.6%)	301 (54.0%)	173 (31.1%)	557 (100.0%)

Note: 1. The number in parentheses shows row percentage.  
2. Chi-square test shows no relationship between engineering majors and the importance of a company in the oil and gas industry that has policies aimed at addressing climate change and other environmental issues.

**Table 16: Importance of Environmental Responsibility When Deciding to Work for a Company in the Oil and Gas Industry**

Majors	Top priority over environmental responsibility when deciding to work for a company in the oil and gas industry				Total
	Strongly disagree	Disagree	Agree	Strongly agree	
Engineering	15 (10.3%)	43 (29.7%)	70 (48.3%)	17 (11.7%)	145 (100.0%)
Other	50 (12.1%)	145 (35.2%)	164 (39.8%)	53 (12.9%)	412 (100.0%)
Total	65 (11.7%)	188 (33.8%)	234 (42.0%)	70 (12.6%)	557 (100.0%)

Note: 1. The number in parentheses shows row percentage.  
2. Chi-square test shows no relationship between engineering majors and top priority over environmental responsibility when deciding to work for a company in the oil and gas industry.

**Table 17: Are Students in My Program or Major Willing to Accept a Lesser Role or a Lower Salary to Work for a Company that Prioritizes Environmental Responsibility**

Majors	Individual opinion that students in my program or major are willing to accept a lesser role or a lower salary to work for a company in the oil and gas industry that prioritizes environmental responsibility				Total
	Strongly disagree	Disagree	Agree	Strongly agree	
Engineering	34 (23.5%)	64 (44.1%)	39 (26.9%)	8 (5.5%)	145 (100.0%)
Other	55 (13.4%)	205 (49.8%)	135 (33.0%)	16 (3.9%)	412 (100.0%)
Total	89 (16.0%)	269 (48.3%)	175 (31.4%)	24 (4.3%)	557 (100.0%)

Note: 1. The number in parentheses shows row percentage.  
 2. Chi-square test shows a significant relationship between engineering majors and individual opinion that students in my program or major are willing to accept a lesser role or a lower salary to work for a company in the oil and gas industry that prioritizes environmental responsibility. The relationship is statistically significant at the 0.05 level.

Table 18 shows the relationship between the respondents' majors and their concern about the state of the environment. The results indicate that there are no significant differences between majors. In general, both engineering and non-engineering respondents exhibit similar levels of concern about the state of the environment.

**Table 18: Concern about the State of the Environment**

Majors	Concern about the state of the environment					Total
	Not at all concerned	Somewhat concerned	Moderately concerned	Very concerned	Extremely concerned	
Engineering	2 (1.4%)	20 (13.8%)	60 (41.4%)	46 (31.7%)	17 (11.7%)	145 (100.0%)
Other	18 (4.4%)	58 (14.1%)	165 (40.1%)	111 (26.9%)	60 (14.6%)	412 (100.0%)
Total	20 (3.6%)	78 (14.0%)	225 (40.4%)	157 (28.2%)	77 (13.8%)	557 (100.0%)

Note: 1. The number in parentheses shows row percentage.  
 2. Chi-square test shows no relationship between engineering majors and concern about the state of the environment.

## CONJOINT CHOICE EXPERIMENT

One of the key features of this study is the inclusion of a choice-based conjoint experiment, which allows us to better understand how three key factors – environmental stewardship, starting salary and type of industry – influence individuals’ employment choices. Each respondent was sequentially shown five pairs of company profiles; for each pair, respondents had to select from which of the two companies they would accept a job offer. The company descriptions are randomly shuffled such that respondents see unique company profiles across the five pairs that are displayed to them. Specifically, the environmental stewardship factor randomly displays one of three values: (1) recognized as being a leader in environmental impact mitigation for their sector by an independent watchdog

organization, (2) meets minimum standards for environmental impact mitigation for their sector by an independent watchdog organization, and (3) criticized for not meeting minimum standards for environmental impact mitigation for their sector by an independent watchdog organization. The factor of starting salary randomly presents one of five potential values: (1) \$75,000 per year, (2) \$80,000 per year, (3) \$85,000 per year, (4) \$90,000 per year, and (5) \$95,000 per year. Finally, type of industry includes one of four potential categories: (1) natural gas (hydraulic fracturing) company, (2) natural gas (non-hydraulic fracturing) company, (3) oil drilling company and (4) wind energy company. Figure 7 presents an example pairing from the conjoint choice experiment included in this study. Each respondent was asked to choose between five different pairings of randomly generated job profiles like the one shown in Figure 7.

Figure 7: Example of One of the Possible Conjoint Choice Experiments



Please carefully review the options detailed below, then please answer the question.

Suppose you are in the market for a job and receive the following two job offers. If you had to choose one of the two, which job offer would you accept?

	Company A	Company B
<b>Starting Salary</b>	\$90,000 per year	\$75,000 per year
<b>Environmental Stewardship</b>	Recognized as being a leader in environmental impact mitigation for their sector by an independent watchdog organization.	Meets minimum standards for environmental impact mitigation for their sector by an independent watchdog organization.
<b>Industry</b>	Oil Drilling Company	Natural Gas (Non-Hydraulic Fracturing) Company

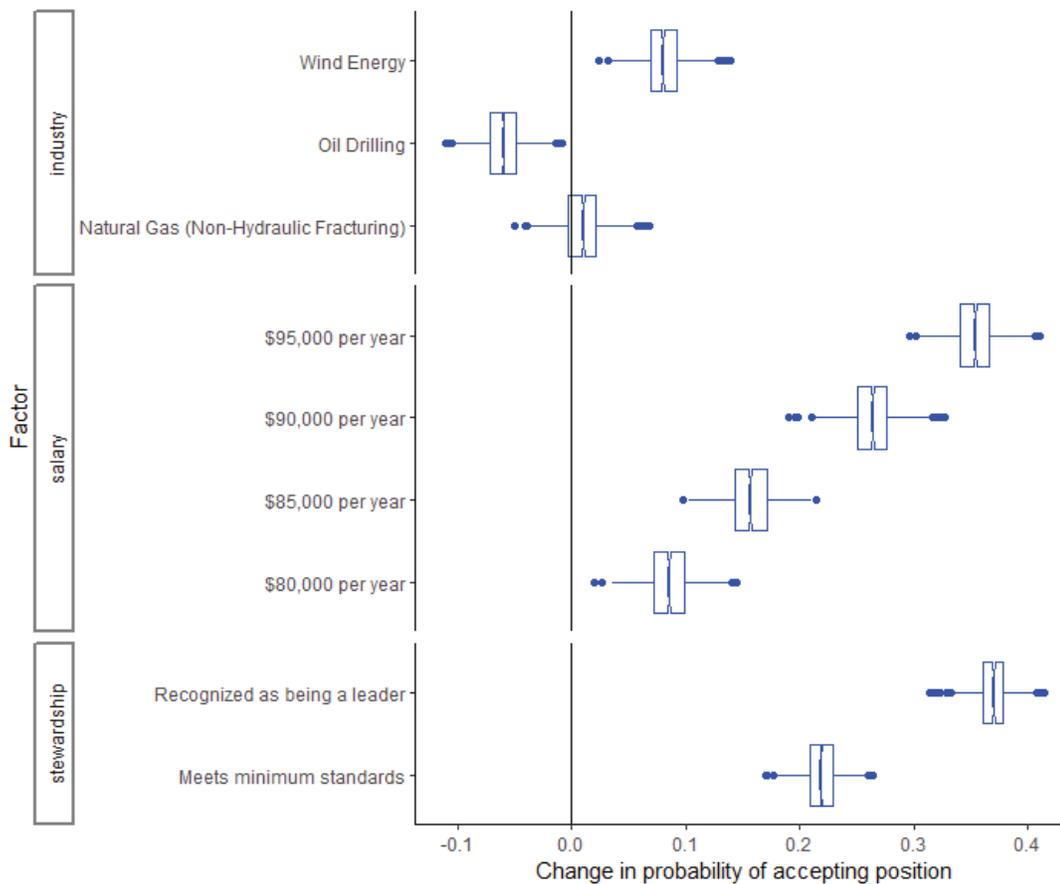
Job offer from Company A

Job offer from Company B

We estimate the impact of environmental stewardship, starting salary, and type of industry on employment choice, using “criticized for not meeting minimum standards for environmental impact mitigation,” “\$75,000,” and “natural gas (hydraulic fracturing) company,” respectively, as the reference group for each factor. As shown in Figure 8, all three factors of environmental stewardship, starting salary, and type of industry exert significant influence on individual employment decisions. In terms of the primary variable of interest in this study, environmental stewardship, the conjoint analysis reveals that, compared to a company criticized for not meeting minimum standards for environmental impact mitigation, a company that either meets minimum standards for environmental impact mitigation or is recognized as being a leader is more likely to attract people to work for it, controlling for the factors of starting salary and

type of industry. Moreover, respondents are more willing to work for a company recognized as a leader in environmental impact mitigation than one that simply meets minimum standards for environmental impact mitigation or one that is criticized for not meeting minimum standards for environmental impact mitigation. Compared to a company criticized for not meeting minimum standards for environmental impact mitigation, respondents are 22.0% more likely to choose a company that meets minimum standards for environmental impact mitigation, and 37.0% more likely to choose a company that is recognized as being a leader in this category. In sum, environmental stewardship plays a pivotal role in individuals’ employment decisions, even after taking starting salary and type of industry into consideration (see Figure 8).

**Figure 8: Change in Probability of Accepting Position**



Reference categories: i) Industry: Natural Gas (Hydraulic Fracturing); ii) Salary: \$75,000; iii) Environmental stewardship: does not meet industry standards.

Perhaps unsurprisingly, starting salary also affects individuals' employment decisions. The coefficients for the four different starting salaries suggest that respondents are more likely to choose a company that can offer a higher salary, as shown in Figure 8. For instance, respondents are 8.50% more likely to choose a job with a starting salary of \$80,000 per year than a job with a starting salary of \$75,000 per year. This trend gets noticeably stronger; respondents are 35.4% more likely to choose a job with starting salary of \$95,000 per year compared to a job whose starting salary is \$75,000 per year. Turning to the last attribute, we first find that respondents are indifferent to choosing between natural gas (non-hydraulic fracturing) and natural gas (hydraulic fracturing) companies. However, compared to a natural gas (hydraulic fracturing) company, respondents are more willing to work for a wind energy company (by 8.1%), but less willing to work for an oil drilling company (by 6.0%). This suggests that people prefer renewable energy companies over fossil fuel companies when selecting a potential employer in the energy industry.

Based on the above statistical model, we compute the predicted probabilities of accepting a position at four hypothetical companies. As shown in Table 19, the predicted probability of accepting a job in an oil drilling company that is criticized for not meeting minimum standards for environmental

impact mitigation but offers the highest starting salary is 41.6%. By contrast, there is a higher predicted probability of accepting a job in an oil drilling company that is recognized as a leader in environmental impact mitigation and offers the lowest starting salary (43.2%). This implies that environmental stewardship might be more important than monetary incentives in influencing individual employment decisions.

A comparison of hypothetical companies B and D uncovers an interesting finding. Specifically, the predicted probability of accepting a job in a wind energy company that meets minimum standards for environmental impact mitigation and offers the middle level of starting salary (58.0%) is only slightly higher than the predicted probability of accepting a job in a wind energy company that is recognized as a leader in environmental impact mitigation and offers the lowest starting salary (57.3%). This suggests that when a company has the best performance in environmental impact mitigation, people might be willing to make a compromise on salary. It is noteworthy that recognition as being a leader in environmental stewardship practices seems to play a very important role when choosing among different companies. Overall, we may conclude that environmental stewardship is a key factor of individual employment decisions.

**Table 19: Predicted Probability of Accepting Position**

Hypothetical company	Environmental stewardship	Starting salary	Type of industry	Predicted Probability
A	Criticized for not meeting minimum standards	\$95,000 per year	Oil drilling company	41.6%
B	Meets minimum standards	\$85,000 per year	Wind energy company	58.0%
C	Recognized as a leader	\$75,000 per year	Oil drilling company	43.2%
D	Recognized as a leader	\$75,000 per year	Wind energy company	57.3%

Table 20: Conjoint analysis of company attributes and employment choices

	Coef.		(S.E.)
<b>Environmental stewardship</b>			
Meets minimum standards	0.220	***	(0.015)
Recognized as being a leader	0.370	***	(0.015)
<b>Starting salary</b>			
\$80,000 per year	0.085	***	(0.019)
\$85,000 per year	0.157	***	(0.019)
\$90,000 per year	0.264	***	(0.019)
\$95,000 per year	0.354	***	(0.019)
<b>Type of industry</b>			
Natural gas (non-hydraulic fracturing) company	0.009		(0.017)
Oil drilling company	-0.060	***	(0.017)
Wind energy company	0.081	***	(0.017)
Constant	0.122	***	(0.019)
N	5722		
Log likelihood	-3674.57		
AIC	7375.13		
BIC	7461.61		

Note: \*\*\*:  $p < 0.01$ .

## CONCLUSION

This study aims to better our understanding of the role of CSR and environmental stewardship in career choices. To that end, we surveyed a total of 608 UH students, many of whom are prospective job applicants in the energy industry. The following are our key findings.

- The great majority of the respondents believe that global warming is happening (88.3%) and attribute global warming to human activities (80.1%).
- More than seven-tenths (72.5%) of the respondents think that the United States should participate in the Paris Agreement on climate change.
- A large majority of respondents support increasing the use of renewable energy sources (93.7%) and decreasing the use of fossil fuels (73.7%).
- The great majority (96.4%) of the

respondents indicate that they are concerned about the state of the environment. By contrast, they do not think that other people have similar levels of concern about the state of the environment.

- A majority of respondents state that CSR plays an important role in their employment decisions. Specifically, 83.5% of respondents view a company's CSR standards as very important or important for their employment decisions; 76.1% of the respondents regard the company's efforts to mitigate and reduce its contribution to air, water, and soil pollution as either very important or important to their employment decisions; 74.4% of the respondents think of the company's policies to reduce negative effects on climate and environmental conditions as either very important or important to their employment decisions; and finally, 68.9% of the respondents see the company's recycling

standards and policies as either very important or important to their employment decisions.

- A majority of respondents agree with the importance of environmental responsibility in their employment decisions on whether to work for a company in the oil and gas industry. Specifically, 85.1% of respondents agree that it is important to work for a company in the oil and gas industry that has policies aimed at addressing climate change and other environmental issues; 63.7% of respondents are willing to accept a lesser role or a lower salary to work for a company in the oil and gas industry that prioritizes environmental responsibility; and finally, 54.6% of respondents agree that compared to other factors, environmental responsibility is their top priority when deciding to work for a company in the oil and gas industry.
- Environmental stewardship plays a pivotal role in individual employment decisions even after taking industry and starting salary into consideration.
- Regardless of what kind of information respondents received about firms' environmental practices, a majority of respondents think that global warming is happening and human activities are the leading cause of global warming.
- Regardless of what kind of information respondents received about environmental practices, a majority of respondents support US participation in the Paris Agreement.
- Regardless of what kind of information respondents received about environmental practices, a majority of respondents still think that the United States should use more renewable energy sources and less fossil fuels in the future.
- There is no significant difference between engineering and non-engineering respondents in terms of perceptions of corporate social responsibility when deciding whether to accept an employment offer.
- There is no significant difference between engineering and non-engineering respondents in terms of consideration of environmental responsibility when deciding whether to work for a company in the oil and gas industry.

- There is no significant difference between engineering and non-engineering respondents in terms of self-evaluation of concern about the state of the environment.

“

Specifically, 85.1% of respondents agree that it is important to work for a company in the oil and gas industry that has policies aimed at addressing climate change and other environmental issues.

”

## FOOTNOTES

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# APPENDIX I

## Frequencies of Survey Questions

Figure 1: What is the highest level of education you have already completed?

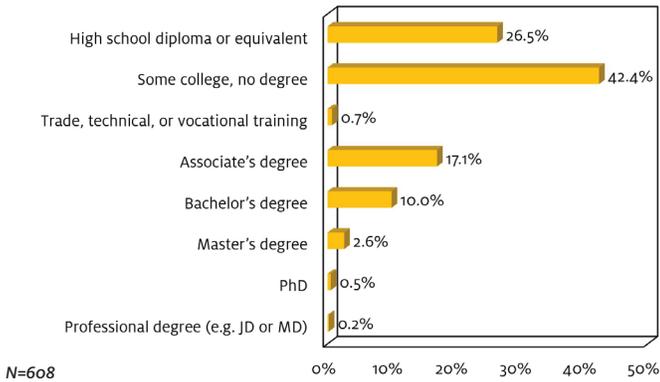


Figure 4: What subfield are you studying [if the respondent answers "Engineering" in Q3]?

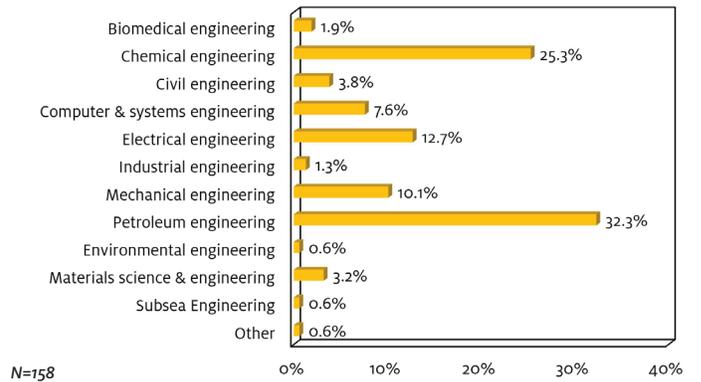


Figure 2: What degree will you receive when you graduate from your current program?

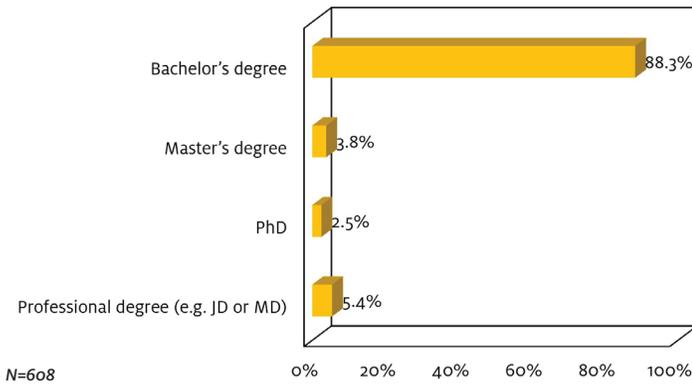


Figure 5: What subfield are you studying [if the respondent answers "Social sciences" in Q3]?

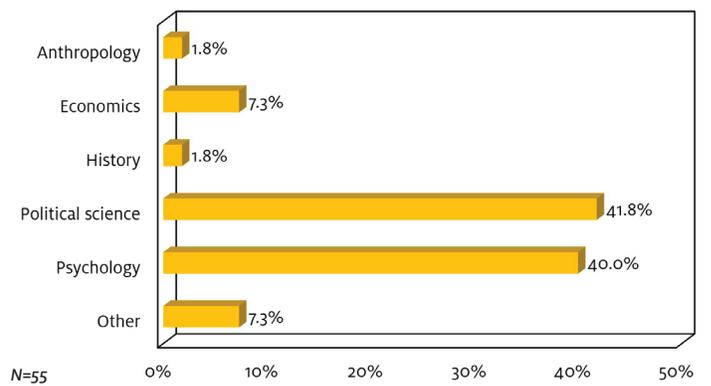


Figure 3: In what field are you currently pursuing your degree?

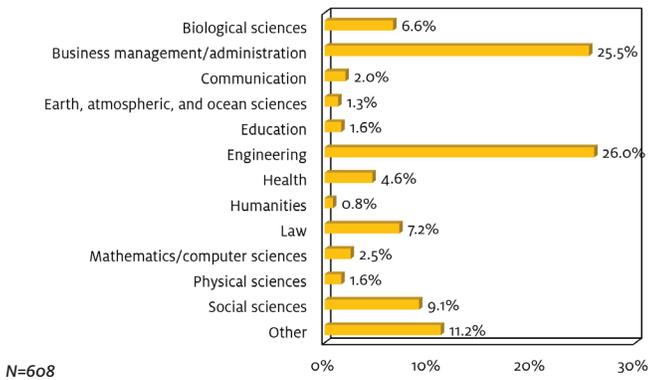
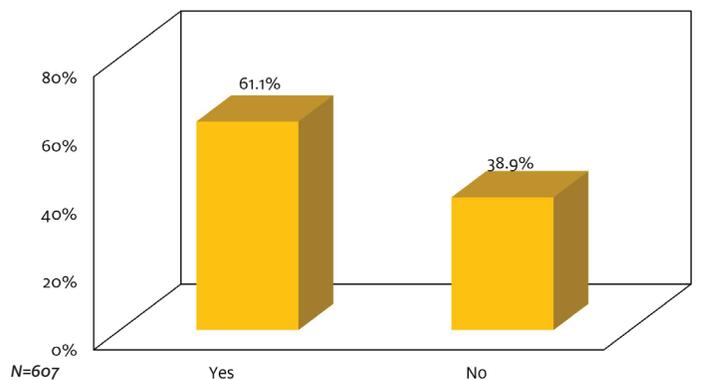


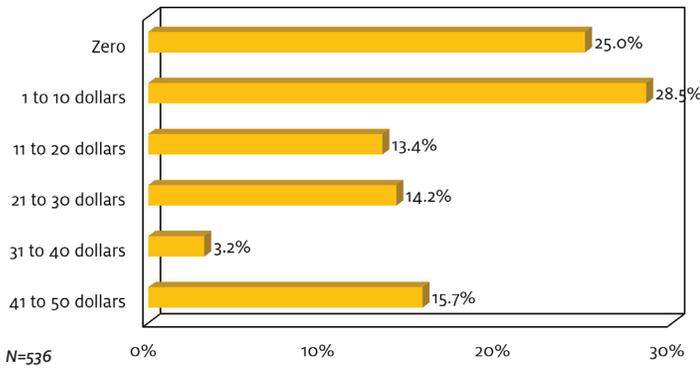
Figure 6: Have you taken any courses related to economics?



**Table 1: Please indicate whether you agree with the following statements:**

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
I think math is important in life.	27 (4.5%)	9 (1.5%)	46 (7.7%)	227 (37.8%)	292 (48.6%)	601 (100.0%)
In middle school, my math teachers listened carefully to what I had to say.	32 (5.3%)	96 (16.0%)	208 (34.6%)	184 (30.6%)	81 (13.5%)	601 (100.0%)
I feel confident in my abilities to solve math problems.	29 (4.8%)	27 (4.5%)	97 (16.1%)	255 (42.4%)	193 (32.1%)	601 (100.0%)
In the past, I have not enjoyed math class.	112 (18.6%)	145 (24.1%)	114 (19.0%)	132 (22.0%)	98 (16.3%)	601 (100.0%)
I receive good grades on math tests and quizzes.	17 (2.8%)	39 (6.5%)	94 (15.6%)	256 (42.6%)	195 (32.5%)	601 (100.0%)
When I see a math problem, I get nervous.	123 (20.5%)	182 (30.3%)	144 (24.0%)	91 (15.1%)	61 (10.2%)	601 (100.0%)

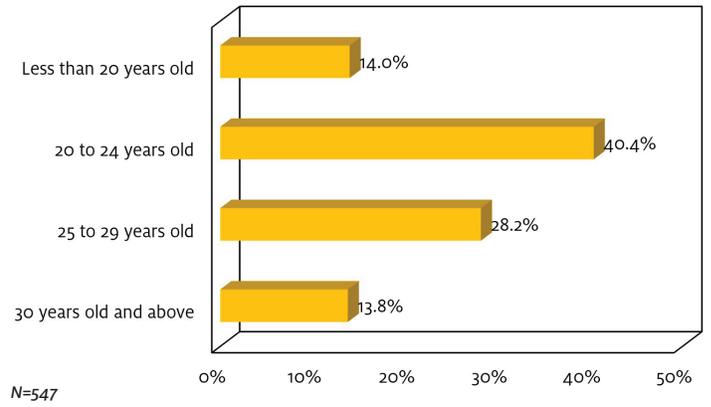
**Figure 7: How much of the \$50 the respondents would be willing to donate to the EDF if they win the drawing?**



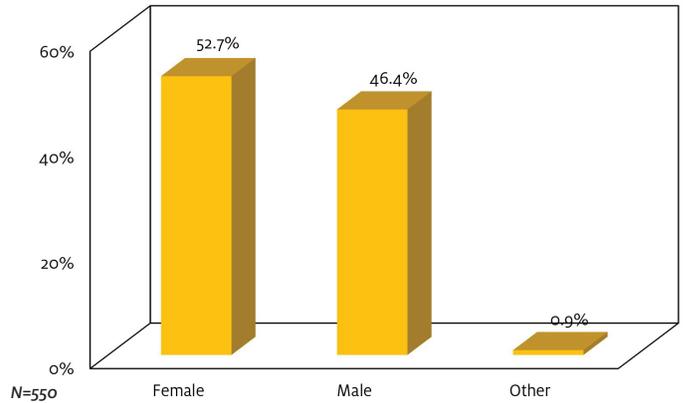
**Table 2: Below is a list of 10 personality traits, each of which is defined by two characteristics. Please indicate the extent to which each personality trait, as defined below, applies to you.**

	Disagree strongly	Disagree moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree moderately	Agree strongly	Total
Extraverted, enthusiastic	33 (6.0%)	57 (10.3%)	72 (13.0%)	72 (13.0%)	140 (25.4%)	105 (19.0%)	73 (13.2%)	552 (100.0%)
Critical, quarrelsome	45 (8.2%)	71 (12.9%)	63 (11.4%)	123 (22.3%)	147 (26.6%)	74 (13.4%)	29 (5.3%)	552 (100.0%)
Dependable, self-disciplined	8 (1.5%)	8 (1.5%)	28 (5.1%)	54 (9.8%)	126 (22.8%)	196 (35.5%)	132 (23.9%)	552 (100.0%)
Anxious, easily upset	68 (12.3%)	95 (17.2%)	95 (17.2%)	98 (17.8%)	105 (19.0%)	52 (9.4%)	39 (7.1%)	552 (100.0%)
Open to new experiences, complex	3 (0.5%)	5 (0.9%)	26 (4.7%)	62 (11.2%)	134 (24.3%)	181 (32.8%)	141 (25.5%)	552 (100.0%)
Reserved, quiet	43 (7.8%)	49 (8.9%)	51 (9.2%)	84 (15.2%)	141 (25.5%)	116 (21.0%)	68 (12.3%)	552 (100.0%)
Sympathetic, warm	5 (0.9%)	23 (4.2%)	22 (4.0%)	76 (13.8%)	138 (25.0%)	166 (30.1%)	122 (22.1%)	552 (100.0%)
Disorganized, careless	151 (27.4%)	115 (20.9%)	85 (15.4%)	84 (15.3%)	75 (13.6%)	26 (4.7%)	15 (2.7%)	551 (100.0%)
Calm, emotionally stable	9 (1.6%)	21 (3.8%)	46 (8.4%)	95 (17.2%)	132 (24.0%)	157 (28.5%)	91 (16.5%)	551 (100.0%)
Conventional, uncreative	115 (20.8%)	101 (18.3%)	115 (20.8%)	101 (18.3%)	82 (14.9%)	22 (4.0%)	16 (2.9%)	552 (100.0%)

**Figure 8: Age distribution of the respondents**



**Figure 9: Gender distribution of the respondents**



**Figure 10: The respondents' marital status**

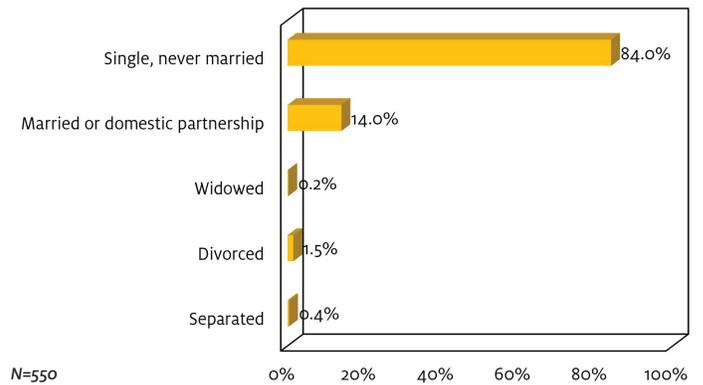


Figure 11: The respondents' country of birth

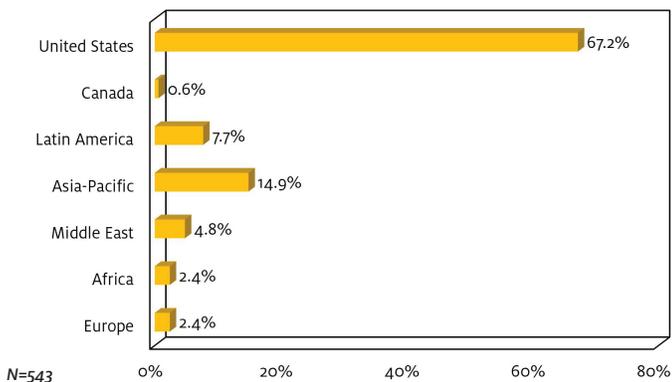


Figure 12: Citizenship of the United States

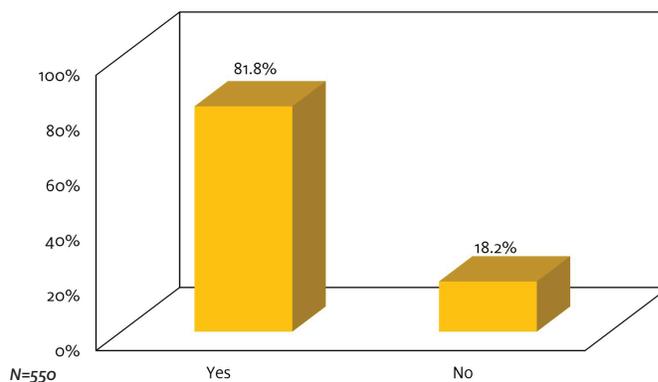


Table 3: Citizenship of the respondents who are not U.S. citizens

Country	Observations	Percent
Africa	2	2.0%
Angola	2	2.0%
Canada and Pakistan	1	1.0%
China	7	7.1%
Colombia	2	2.0%
Czech Republic	1	1.0%
El Salvador	4	4.0%
France	1	1.0%
Hong Kong	2	2.0%
India	13	13.1%
Iran	6	6.1%
Jamaica	1	1.0%
Lebanon	1	1.0%
Malaysia	1	1.0%
Mexico	13	13.1%
Moldova	1	1.0%
Nigeria	1	1.0%
Pakistan	4	4.0%
Peru	1	1.0%
Philippines	4	4.0%
Saudi Arabia	4	4.0%
South Korea	1	1.0%
Syria	1	1.0%
Taiwan	1	1.0%
Tunisia	1	1.0%
Turkey	1	1.0%
United Kingdom	1	1.0%
Venezuela	2	2.0%
Vietnam	19	19.2%
<b>Total</b>	<b>99</b>	<b>100.0%</b>

Table 4: Citizenship of the respondents' parent/guardian 1

Country	Observations	Percent			
Angola	2	0.4%	Pakistan and Canada	1	0.2%
Australia	1	0.2%	Palestine	1	0.2%
Brazil	2	0.4%	Panama	1	0.2%
Bulgaria	1	0.2%	Peru	2	0.4%
Cambodia	1	0.2%	Philippines	9	1.7%
Chile	1	0.2%	Puerto Rico	1	0.2%
China	13	2.4%	Saudi Arabia	4	0.8%
Colombia	3	0.6%	Singapore	1	0.2%
Cuba	1	0.2%	South Korea	1	0.2%
Czech Republic	1	0.2%	Switzerland	1	0.2%
Dominican Republic	1	0.2%	Syria	2	0.4%
Ecuador and France	1	0.2%	Taiwan	3	0.6%
El Salvador	12	2.3%	The Netherlands	1	0.2%
France	1	0.2%	Tunisia	1	0.2%
Germany	1	0.2%	Turkey	1	0.2%
Ghana	1	0.2%	United Kingdom	4	0.8%
Guatemala	2	0.4%	United States	262	49.3%
Haiti	1	0.2%	United States and Afghanistan	1	0.2%
Honduras	2	0.4%	United States and Argentina	1	0.2%
Hong Kong	2	0.4%	United States and Brazil	1	0.2%
India	19	3.6%	United States and Croatia	1	0.2%
Iran	12	2.3%	United States and El Salvador	1	0.2%
Iraq	1	0.2%	United States and Guatemala	1	0.2%
Jamaica	1	0.2%	United States and India	1	0.2%
Laos	1	0.2%	United States and Kenya	1	0.2%
Lebanon	1	0.2%	United States and Mexico	6	1.1%
Lithuania	1	0.2%	United States and Nigeria	4	0.8%
Malaysia	1	0.2%	United States and Pakistan	4	0.8%
Mexico	56	10.5%	United States and Venezuela	1	0.2%
Moldova	1	0.2%	United States and Vietnam	1	0.2%
Monaco, Switzerland, and Libya	1	0.2%	United States, United Kingdom and Tanzania	1	0.2%
Nicaragua	1	0.2%	Venezuela	5	0.9%
Nigeria	6	1.1%	Vietnam	40	7.5%
Pakistan	14	2.6%	<b>Total</b>	<b>532</b>	<b>100.0%</b>

Table 5: Citizenship of the respondents' parent/guardian 2

Country	Observations	Percent
Africa	1	0.2%
Angola	2	0.4%
Brazil	2	0.4%
Bulgaria	1	0.2%
Cambodia	1	0.2%
Canada	1	0.2%
Chile	1	0.2%
China	15	2.9%
Colombia	4	0.8%
Costa Rica	1	0.2%
Cuba	1	0.2%
Czech Republic	1	0.2%
Dominican Republic	2	0.4%
Egypt	1	0.2%
El Salvador	15	2.9%
France	1	0.2%
Germany	1	0.2%
Ghana	1	0.2%
Guatemala	3	0.6%
Hong Kong	2	0.4%
India	20	3.9%
Iran	12	2.3%
Iraq	1	0.2%
Jamaica	1	0.2%
Laos	1	0.2%
Lebanon	3	0.6%
Malaysia	1	0.2%
Mexico	63	12.1%
Moldova	1	0.2%
Nigeria	5	1.0%
Pakistan	13	2.5%
Pakistan and Canada	1	0.2%

Palestine	1	0.2%
Panama	1	0.2%
Peru	1	0.2%
Philippines	8	1.5%
Saudi Arabia	3	0.6%
Singapore	1	0.2%
South Korea	1	0.2%
Syria	3	0.6%
Taiwan	2	0.4%
The Netherlands	3	0.6%
Trinidad and Tobago	1	0.2%
Tunisia	1	0.2%
Turkey	1	0.2%
United Kingdom	5	1.0%
United States	242	46.6%
United States and Afghanistan	1	0.2%
United States and Argentina	1	0.2%
United States and China	1	0.2%
United States and Colombia	1	0.2%
United States and Croatia	1	0.2%
United States and El Salvador	1	0.2%
United States and Guatemala	1	0.2%
United States and India	2	0.4%
United States and Kenya	1	0.2%
United States and Mexico	6	1.2%
United States and Nigeria	3	0.6%
United States and Pakistan	3	0.6%
United States and Tanzania	1	0.2%
United States and Vietnam	1	0.2%
United States, Belize, and Libya	1	0.2%
Venezuela	5	1.0%
Vietnam	36	6.9%
<b>Total</b>	<b>519</b>	<b>100.0%</b>

Figure 13: The number of countries the respondents have visited in the past 5 years

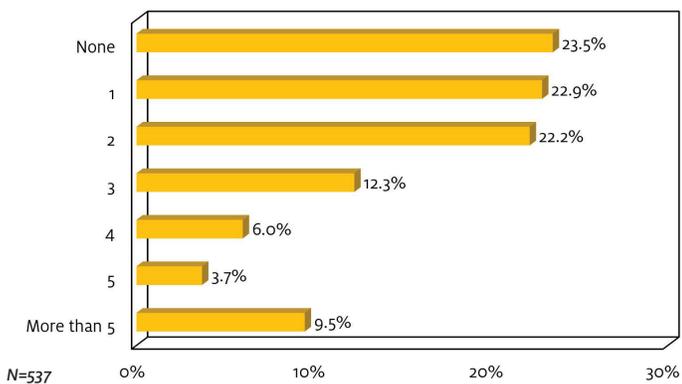


Figure 14: The respondents' attention to international events

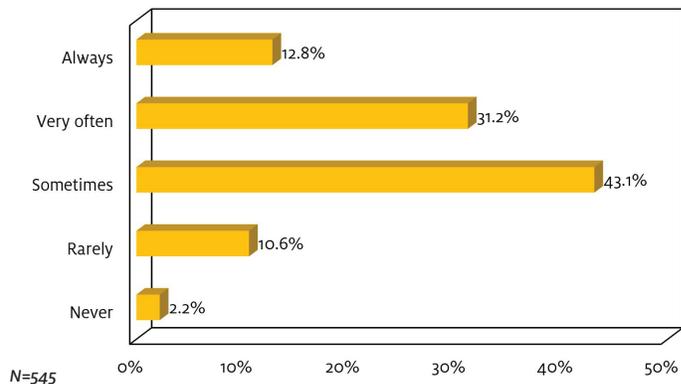


Figure 15: Hispanic origin of the respondents

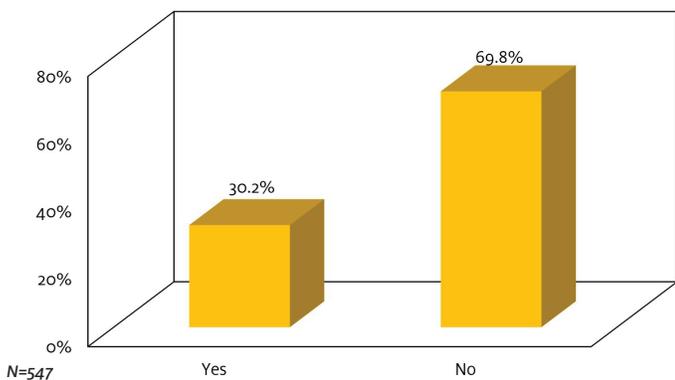


Figure 18: The respondents' religious preference

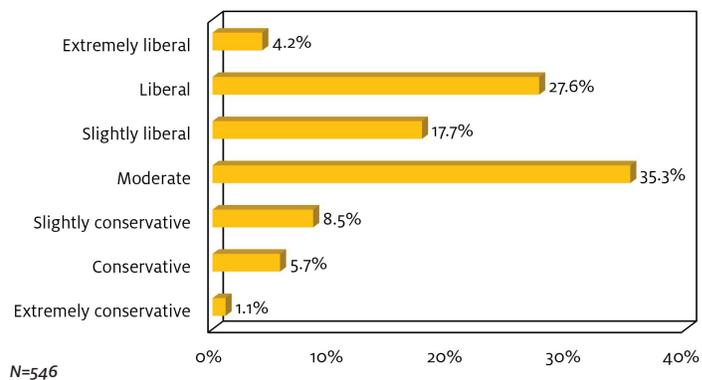


Figure 16: The respondents' ethnicity

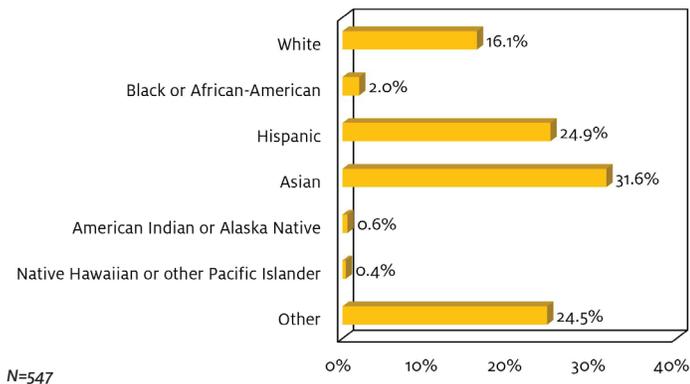


Figure 19: The respondents' ideology

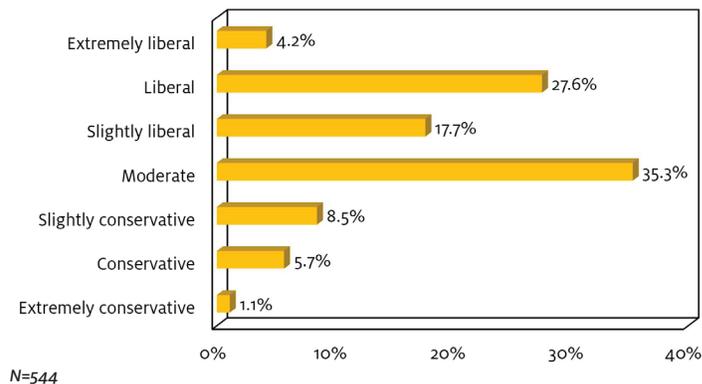


Figure 17: The respondents' current employment status

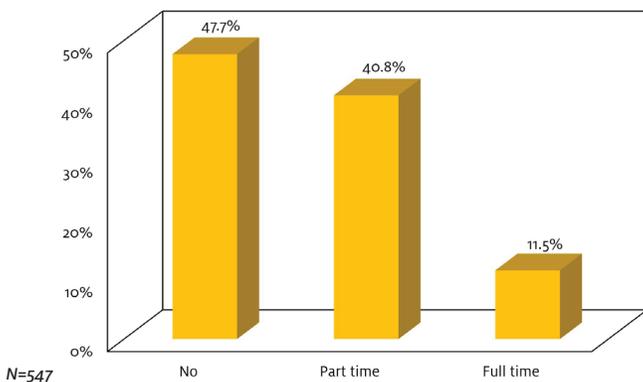


Figure 20: The respondents' partisanship

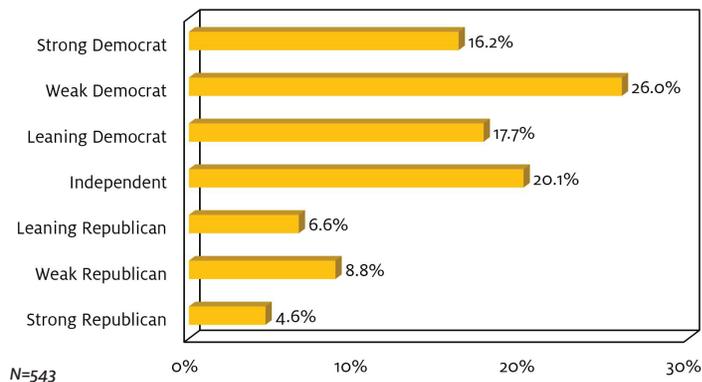


Figure 21: The respondents' levels of following politics

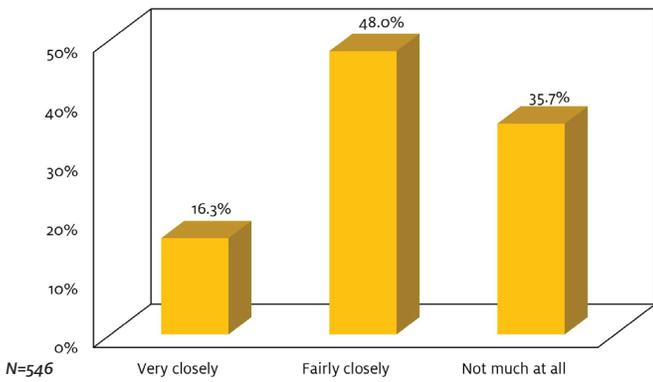


Figure 22: The respondents' current financial situation

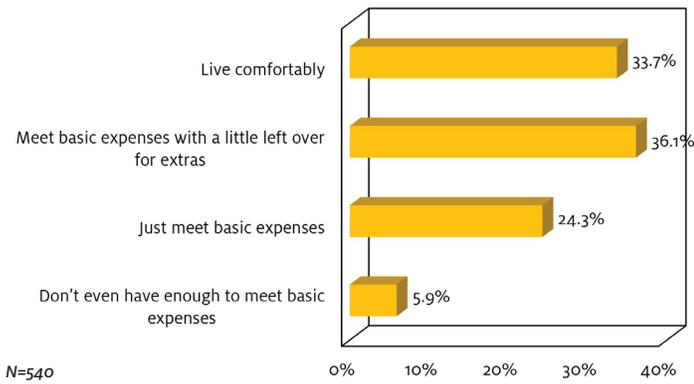


Figure 23: The respondents' total annual personal income falls into before taxes.

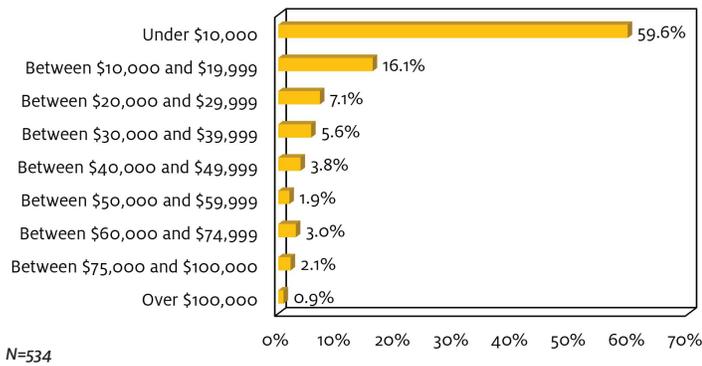


Figure 24: The respondents' total annual household income falls into before taxes.



Figure 25: The highest level of education of the respondents' parent/guardian 1

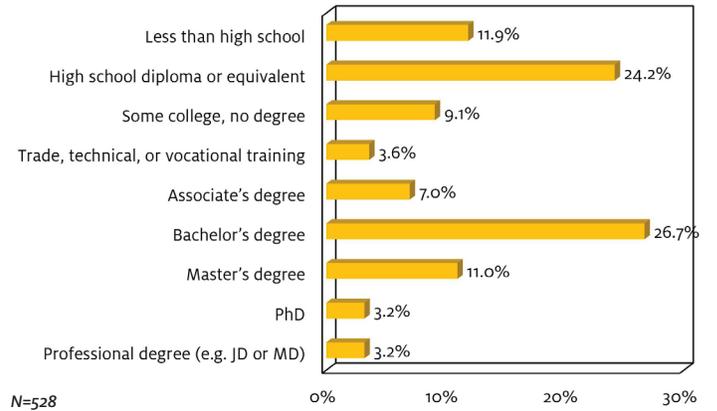
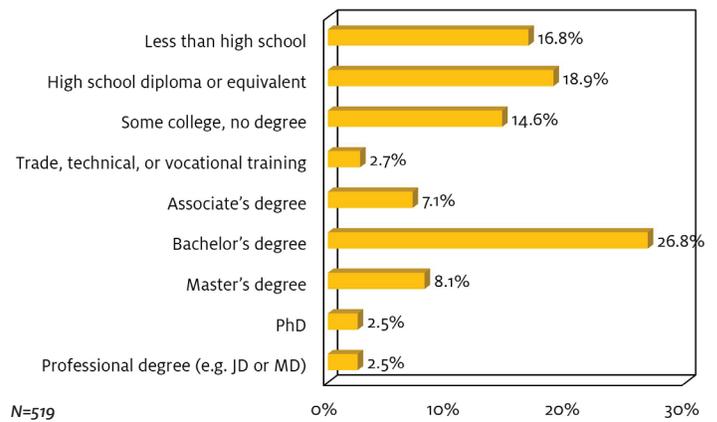


Figure 26: The highest level of education of the respondents' parent/guardian 2



## APPENDIX II

### Survey Instrument/Questionnaire

The Hobby School of Public Affairs at the University of Houston invites you to participate in a survey about the importance of factors influencing the job and career choices of students. The purpose of this survey is to help us understand the factors that influence students' employment choices. The survey should take 10 minutes or less to complete. Your participation in this survey is completely voluntary. All of your answers are confidential and will only be used in statistical summaries that do not allow for identification of individual respondents. If you have any questions about this survey, please contact Profs. Ryan Kennedy (rkennedy@uh.edu) or Pablo M. Pinto (ppinto@central.uh.edu). This project has been reviewed by the University of Houston Committee for the Protection of Human Subjects (713) 743-9204. If you are willing to participate in the survey, please press "I Agree" to continue.

**Q1. What is the highest level of education you have already completed?**

- (1) High school diploma or equivalent (GED)
- (2) Some college, no degree
- (3) Trade, technical, or vocational training
- (4) Associate's degree
- (5) Bachelor's degree
- (6) Master's degree
- (7) PhD
- (8) Professional degree (e.g. JD or MD)

**Q2. What degree will you receive when you graduate from your current program?**

- (1) Bachelor's degree (e.g., BA, BS)
- (2) Master's degree (e.g., MA, MS, MBA, MPA, MFA)
- (3) PhD
- (4) Professional degree (e.g. JD or MD)

**Q3. In what field are you currently pursuing your degree?**

- (1) Agricultural sciences => Skip to Q6
- (2) Biological sciences => Skip to Q6
- (3) Business management/administration => Skip to Q6
- (4) Communication => Skip to Q6
- (5) Earth, atmospheric, and ocean sciences => Skip to Q6
- (6) Education => Skip to Q6
- (7) Engineering => Ask Q4
- (8) Health => Skip to Q6
- (9) Humanities => Skip to Q6
- (10) Law => Skip to Q6
- (11) Mathematics/computer sciences => Skip to Q6
- (12) Physical sciences => Skip to Q6
- (13) Social sciences => Skip to Q5
- (14) Other => Skip to Q6

**Q4. What subfield are you studying?**

- (1) Biomedical engineering
- (2) Chemical engineering
- (3) Civil engineering
- (4) Computer & systems engineering
- (5) Electrical engineering

- (6) Industrial engineering
- (7) Mechanical engineering
- (8) Petroleum engineering
- (9) Aerospace engineering
- (10) Environmental engineering
- (11) Geosensing system engineering
- (12) Materials science & engineering
- (13) Subsea Engineering
- (14) Other

**Q5. What subfield are you studying?**

- (1) Anthropology
- (2) Economics
- (3) History
- (4) Political science
- (5) Psychology
- (6) Sociology
- (7) Other

**Q6. Have you taken any courses related to economics?**

- (1) Yes
- (2) No

**Q7. Please indicate whether you agree with the following statements:**

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I think math is important in life.	<input type="checkbox"/>				
In middle school, my math teachers listened carefully to what I had to say.	<input type="checkbox"/>				
I feel confident in my abilities to solve math problems.	<input type="checkbox"/>				
In the past, I have not enjoyed math class.	<input type="checkbox"/>				
I receive good grades on math tests and quizzes.	<input type="checkbox"/>				
When I see a math problem, I get nervous.	<input type="checkbox"/>				

**Q8. Corporate social responsibility, often abbreviated "CSR," is a corporation's initiatives to assess and take responsibility for the company's effects on environmental and social wellbeing. For each of the CSR-related statements presented below, please indicate how important you perceive each attribute to be when deciding whether to accept an employment offer.**

	Not important	Slightly important	Moderately important	Important	Very important
The company's ethical standards of products, services, and marketing practices.	<input type="checkbox"/>				
The company's efforts to mitigate and reduce its contribution to air, water, and soil pollution.	<input type="checkbox"/>				
The company's recycling standards and policies.	<input type="checkbox"/>				
The company's policies to reduce negative effects on climate and environmental conditions.	<input type="checkbox"/>				
The company's representation of women and minorities.	<input type="checkbox"/>				

(Note: writing between these lines will not be published on survey)

**Conjoint Analysis**

Respondents will be presented with a table like the one shown below. Each table will have two hypothetical companies. The middle column displays four attributes: Environmental Stewardship, Industry, and Starting Salary. For each attribute, a “level” – represented by (A/B/C) in the table below – will be randomly selected and inserted into the table.

**Attributes:**

**Industry**

1. Wind Energy Company that uses air flow through wind turbines to mechanically power generators for electric power.
2. Natural Gas (Non-Hydraulic Fracturing) Company that operates and maintains natural gas pipes, reads meters and distributes natural gas.
3. Oil Drilling Company that involves the drilling and pumping of oil from underground wells.

**Starting Salary**

1. \$75,000
2. \$80,000
3. \$85,000

**Environmental Stewardship**

1. Recognized as being a leader in environmental impact mitigation for their sector by an independent watchdog organization
2. Meets minimum standards for environmental impact mitigation for their sector by an independent watchdog organization
3. Criticized for not meeting minimum standards for environmental impact mitigation for their sector by an independent watchdog organization.

Given the two hypothetical companies and their corresponding characteristics, respondents will then have to select from which one company they would they would accept a job offer. Respondents will be asked to make a handful of comparisons of pairs of random company profiles; pooling across responses will allow us to estimate the magnitude of the tradeoff between income and environmental stewardship practices.

A full description of the conjoint experiment, including the different levels of attributes, can be found in Appendix A (at the end of this document).

Examples of populated company profiles are displayed in Appendix B (at the end of this document).

Imagine you are in the market for a job. In each of the following pages, you will be shown a table with two job profiles from two different companies. For each pair, read each profile carefully and indicate your response based on the two job profiles. Please consider each pair of profiles independently of the pairs listed on other pages.

**[Example 1]**

Below are brief profiles of two jobs at two different companies:

	Company A1	Company B1
Industry	Wind Energy Company	Natural Gas (Non-Hydraulic Fracturing) Company
Starting Salary	\$75,000	\$80,000
Environmental Stewardship	Recognized as being a leader in environmental impact mitigation for their sector by an independent watchdog organization	Meets minimum standards for social responsibility for their sector by an independent watchdog organization

**Q9a. Suppose you are in the market for a job and receive the above two job offers. If you had to choose one of the two, which job offer would you accept?** [Forced selection]

- (1) Job offer from Company A1
- (2) Job offer from Company B1

**[Example 2]**

Below are brief profiles of two jobs at another two different companies:

	Company A2	Company B2
Industry	Wind Energy Company	Natural Gas (Non-Hydraulic Fracturing) Company
Starting Salary	\$80,000	\$85,000
Environmental Stewardship	Meets minimum standards for environmental impact mitigation for their sector by an independent watchdog organization	Criticized for not meeting minimum standards for environmental impact mitigation for their sector by an independent watchdog organization

**Q9b. Suppose you are in the market for a job and receive the above two job offers. If you had to choose one of the two, which job offer would you accept?** [Forced selection]

- (1) Job offer from Company A2
- (2) Job offer from Company B2

**Paragraph not included in instrument**

**Experimental manipulation:** the random assignment of respondents to one to three different informational conditions (neutral or control, environmental concerns, and greenwashing) in this part of the instrument allows us to assess whether providing respondents information about environmental practices affects perceptions of environmental issues and initiatives. We added questions about company choice as a function of the informational cues provided.

Please read the statement below [Note: respondents are randomly assigned to read one of three statements]

**Control group:**

**Too Many Bowl Games?**

It’s a familiar lament this time of year, from the media, fans in sports bars, internet message boards and even some college football industry leaders: there are too many bowl games. To which the staunchest proponents of the bowl system reply: so what? “We have 38 bowls and half of the teams leave as winners,” said Wright Waters, executive director of the Football Bowl Association. “That may not be important to you or someone else but coaches going out recruiting and an athletic director trying to sell season tickets know it’s a big deal.” Still,

critics wonder if the Football Bowl Subdivision hasn't been hit with the "everyone gets a trophy" syndrome. A combination of other factors related to the large number of bowl games is contributing to lower attendance across the board. Crowds dropped five percent last season for all bowls combined.

#### *Treatment group: Environmental Concerns*

##### **Study Finds Oil Industry Attempted to Cover Up Environmental Impact**

Two Harvard researchers reviewed nearly 200 documents representing Exxon's research and its public statements and concluded that the company "misled the public" about climate change, even as its own scientists were recognizing greenhouse gas emissions as a risk to the planet. They found that Exxon's climate change studies, published from 1977 to 2014, were in line with the scientific thinking of the time. Some 80 percent of the company's research and internal communications acknowledged that climate change was real and was caused by humans. However, 80 percent of Exxon's statements to the broader public, which reached a much larger audience, expressed doubt about climate change. "We stress that the question is not whether Exxon Mobil 'suppressed climate change research,' but rather how they communicated about it," the researchers wrote. "Exxon Mobil contributed quietly to the science and loudly to raising doubts about it."

#### *Treatment group: Greenwashing*

##### **Oil Industry Using 'Greenwashing' To Portray Environmental Activities**

The world's major oil companies are making large claims about their environmental stewardship. The British oil company BP, for example, says its initials now stand for Beyond Petroleum instead of British Petroleum. "In response to increasing demand for energy with a lower-carbon footprint, we have made a major commitment to develop low-carbon sources of energy," BP's website states. Despite the claims of BP, Chevron, Exxon, and others, the reality is that they do not invest in either sound environmental policies or alternative fuel. According to a 2007 Senate document, the oil industry spent \$98 billion on alternative fuels, but "very little of the \$98 billion spent on these technologies was invested in renewable or alternative energy sources." The Senate document further states that the oil industry "modestly invested in...vehicle fuel efficiency technologies," and oil companies used "their market power to discourage service stations from stocking or offering E85 fuel and to create rules that make it difficult for consumers to compare prices for, fill up with, or purchase ethanol (E85)."

Please answer the following questions:

**Q10. Do you think that global warming is happening?**

- (1) Yes
- (2) No
- (9) Don't know

**Q11. Assuming global warming is happening, do you think it is?**

- (1) Caused mostly by human activities
- (2) Caused mostly by natural changes in the environment
- (3) Other
- (4) None of the above because global warming isn't happening

**Q12. Do you think that the U.S. should participate in the Paris Climate agreement or not participate?**

- (1) Should participate
- (2) Should not participate
- (9) Don't know

**Q13. In the future, do you think the United States should use renewable energy sources (solar, wind, and geothermal) less, more, or the same amount as we do today?**

- (1) Much more
- (2) Somewhat more
- (3) About the same amount
- (4) Somewhat less
- (5) Much less
- (9) Don't know

**Q14. In the future, do you think the United States should use fossil fuels (coal, oil, and natural gas) less, more, or the same amount as we do today?**

- (1) Much more
- (2) Somewhat more
- (3) About the same amount
- (4) Somewhat less
- (5) Much less
- (9) Don't know

Please indicate the extent to which you agree with the following statements when deciding whether to work for a company in the oil and gas industry.

**Q15. I am willing to accept a lesser role or a lower salary to work for a company in the oil and gas industry that prioritizes environmental responsibility.**

- (1) Strongly disagree
- (2) Disagree
- (3) Agree
- (4) Strongly agree

**Q16. For me, it is important that a company in the oil and gas industry has policies aimed at addressing climate change and other environmental issues.**

- (1) Strongly disagree
- (2) Disagree
- (3) Agree
- (4) Strongly agree

**Q17. Compared to other factors, environmental responsibility is my top priority when deciding to work for a company in the oil and gas industry.**

- (1) Strongly disagree
- (2) Disagree
- (3) Agree
- (4) Strongly agree

Q18. I think that, on average, students in my program or major are willing to accept a lesser role or a lower salary to work for a company in the oil and gas industry that prioritizes environmental responsibility.

- (1) Strongly disagree
- (2) Disagree
- (3) Agree
- (4) Strongly agree

Q19. Generally speaking, how concerned are you about the state of the environment?

- (1) Not at all concerned
- (2) Somewhat concerned
- (3) Moderately concerned
- (4) Very Concerned
- (5) Extremely concerned

Q20. Generally speaking, how concerned do you think members of the following groups are about the state of the environment?

	Not at all concerned	Somewhat concerned	Moderately concerned	Very Concerned	Extremely concerned
Your family	___	___	___	___	___
Your friends	___	___	___	___	___
UH students in general	___	___	___	___	___
Texas residents in general	___	___	___	___	___
People in the U.S. in general	___	___	___	___	___
Whites in Texas	___	___	___	___	___
Blacks in Texas	___	___	___	___	___
Hispanics in Texas	___	___	___	___	___
Asians in Texas	___	___	___	___	___

Finally, we would like to ask some questions about yourself.

Q21. Below is a list of ten personality traits, each of which is defined by two characteristics. Please indicate the extent to which each personality trait, as defined below, applies to you.

Personality Trait	Disagree strongly (1)	Disagree moderately (2)	Disagree a little (3)	Neither agree nor disagree (4)	Agree a little (5)	Agree moderately (6)	Agree strongly (7)
Extraverted, enthusiastic (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Critical, quarrelsome (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dependable, self-disciplined (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anxious, easily upset (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Open to new experiences, complex (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reserved, quiet (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sympathetic, warm (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disorganized, careless (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Calm, emotionally stable (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conventional, uncreative (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q22. What is your age?

Q23. What is your gender?

- (1) Female
- (2) Male
- (3) Other

Q24. What is your marital status?

- (1) Single, never married
- (2) Married or domestic partnership
- (3) Widowed
- (4) Divorced
- (5) Separated

Q25. What is your current residence (ZIP Code)?

Q26. What is your permanent residence (ZIP Code)?

Q27. In what country were you born?

Q28. Are you a citizen of the United States?

- (1) Yes => Skip to Q30
- (2) No

Q29. Which country are you a citizen of?

Q30. Which country or countries are your parents/guardians citizens of?

- Q30(a). Parent/Guardian 1
- Q30(b). Parent/Guardian 2

Q31. How many countries have you visited in the past 5 years?

Q32. How often do you pay attention to international events?

- (1) Always
- (2) Very often
- (3) Sometimes
- (4) Rarely
- (5) Never

Q33. Are you Hispanic or Latino?

- (1) Yes
- (2) No

Q34. What is your ethnicity? (select all that apply)

- (1) White
- (2) Black or African-American
- (3) American Indian or Alaska Native
- (4) Asian
- (5) Native Hawaiian or other Pacific Islander
- (6) Other

Q35. Are you currently employed?

- (1) No
- (2) Part time
- (3) Full time

Q36. What is your religious preference?

- (1) Mormon
- (2) Jewish
- (3) Roman Catholic
- (4) Protestant
- (5) Seventh-day Adventist
- (6) An Orthodox Church
- (7) Muslim
- (8) Christian Scientist
- (9) Atheist
- (10) Agnostic
- (11) Other
- (12) No religious preference

Q37. Where would you place yourself on this scale?

- (1) Extremely liberal
- (2) Liberal
- (3) Slightly liberal
- (4) Moderate
- (5) Slightly conservative
- (6) Conservative
- (7) Extremely conservative

Q38. Generally speaking, do you usually think of yourself as a Democrat, a Republican, or an independent, or what?

- (1) Democrat
- (2) Republican
- (3) Independent => Skip to Q40
- (4) Other => Skip to Q40

Q39. Would you call yourself a strong [Democrat / Republican] or a not very strong [Democrat / Republican]?

- (1) Strong => Skip to Q41
- (2) Not very strong => Skip to Q41

Q40. Do you think of yourself as closer to the Democratic Party or to the Republican Party?

- (1) Closer to Democratic Party
- (2) Neither
- (3) Closer to Republican Party

Q41. Would you say that you follow politics?

- (1) Very closely
- (2) Fairly closely
- (3) Not much at all

Q42. How would you describe your current financial situation?

- (1) Live comfortably
- (2) Meet your basic expenses with a little left over for extras
- (3) Just meet your basic expenses
- (4) Don't even have enough to meet basic expenses

Q43. Please indicate which category your total annual personal income falls into before taxes.

- (1) Under \$10,000
- (2) Between \$10,000 and \$19,999
- (3) Between \$20,000 and \$29,999
- (4) Between \$30,000 and \$39,999
- (5) Between \$40,000 and \$49,999
- (6) Between \$50,000 and \$59,999
- (7) Between \$60,000 and \$74,999
- (8) Between \$75,000 and \$100,000
- (9) Over \$100,000

Q44. Please indicate which category your total annual household income falls into before taxes.

- (1) Under \$10,000
- (2) Between \$10,000 and \$19,999
- (3) Between \$20,000 and \$29,999
- (4) Between \$30,000 and \$39,999
- (5) Between \$40,000 and \$49,999
- (6) Between \$50,000 and \$59,999
- (7) Between \$60,000 and \$74,999
- (8) Between \$75,000 and \$100,000
- (9) Over \$100,000

Q45. What is the highest level of education of your parents/guardians?

	Parent/Guardian 1	Parent/Guardian 2
Less than high school		
High school diploma or equivalent (GED)		
Some college, no degree		
Trade, technical, or vocational training		
Associate's degree		
Bachelor's degree		
Master's degree		
PhD		
Professional degree (e.g. JD or MD)		

Thank you for completing this survey. If you have any questions regarding this survey, please contact the Hobby School of Public Affairs at [cwang3@central.uh.edu](mailto:cwang3@central.uh.edu).

# About UH Energy

## UH ENERGY

UH Energy is an umbrella for efforts across the University of Houston to position the university as a strategic partner to the energy industry by producing trained workforce, strategic and technical leadership, research and development for needed innovations and new technologies.

That's why UH is the Energy University.

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