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Value(s) based diversification: environmental, social, and governance investing sub-issue preferences mapping through forced trade-offs

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by

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Abstract

Using empirical evidence on consumer preferences for environmental, social, and governance (ESG) investing issues, this author builds upon the economic literature that agents have pro-social inclinations. Evidence from the study shows that ESG preferences are nuanced and heterogeneous, unlike the assumptions in academia and the financial services world today of homogenous preferences across ESG issue categories. This author employs the relatively new methodology of MaxDiff to analyze preferences by forcing trade-offs. A survey with 1,000 respondents was administered to create a rank ordering of ESG issue preferences. The project finds that the highest ranked issues fall within the "social" category of ESG. It also finds that environmental issues rank in the lower-middle, and that governance issues fall to the bottom. The finding challenges the conventional wisdom that people fall into only two categories of returns-focused or morally-focused consumers. The data show that morally-focused consumers have a range of preference structures. In other words, different people have different non-pecuniary preferences. Moreover, their preferences are well-structured, measurable, and useful to help them make choices as consumers in the marketplace as investors.

Literature Review

History of ESG

Investments have the primary purpose of earning an individual or a company a financial return. In recent years, investments have been used to address a second concern: the sustainability and social responsibility of the companies in which someone holds a share of ownership. This type of value-based investing has a longer history, even though it has only recently emerged in the mainstream financial services industry. Investment with the purpose of social impact and responsibility first stemmed from religious groups.

> Ethical investing has ancient origins and is rooted in Jewish, Christian, and Islamic traditions. Judaism has a wealth of teachings on how to use money ethically, and in medieval Christian times, there were ethical restrictions on loans and investments which were based on the Old Testament. The Catholic Church imposed a universal prohibition on usury in 1139, which had not been relaxed until the 19th century... in the 17th century, the Quakers ("Society of Friends") refused to profit from the weapons and slaves trade when they settled in North America. The founder of Methodism, John Wesley (1703-1791), stated in his sermon "The Use of Money" that people should not engage in sinful trade of profit from exploiting others. (Horst , Zhang , & Renneboog , 2007)

In addition to the examples from the Jewish and Christian traditions, Sharia investing - rules that governed Islamic investments - were a form of investment targeted for social good. Religious based groups and organizations shaped the early stages of socially responsible investing to screen out certain categories of investments. They didn't want to invest in companies that could cause harm, such as firms producing alcohol, tobacco, casinos, or more. Investments in these realms were deemed "sin stocks." Muslim groups also screened out banks from their investments. Since its early roots based on negatively screening things out, socially responsible investing has expanded to funds that screen

positively for top performers on sustainability and social issues or invest in companies whose primary purpose is a social or sustainable goal. Socially responsible investing has also taken the form of activism on pressing social issues.

Starting in the 1960s, socially responsible investing shifted to include more young people, women, and activists. Students' dissatisfaction with the Vietnam war led to boycotts of any companies producing weapons for the war. The Civil Rights Movement also led to leveraging financial strategies for social impact. Community banks were established in low-income and minority neighborhoods and were part of helping to create the Civil Rights Act of 1964 and the Voting Rights Act of 1965 (Bidoggia , Gordon, & Guo, 2016) (Kell, 2018).

The 1970s was a time of increased concern with environmental issues, especially nuclear power. It was also the first time that shareholder resolutions[1] were approved by the Securities Exchange Commission to appear on proxy ballots. Ralph Nadar brought two environmental concern shareholder resolutions to GE, the country's largest employer at the time. The 1970s was also a time of major progress for socially responsible investing abroad. Cities, states, universities, and churches in the United States boycotted companies with operations in South Africa in protest of Apartheid. This led to $625 billion dollars being withdrawn from South Africa and subsequent economic instability, which contributed to Apartheid's eventual collapse in 1993 (Berry , 2013).

Other issues that have gained traction with aid from socially conscious investors have been the Sudanese crimes against humanity and the movement to reduce fossil fuel use and greenhouse gas emissions. In 2006, the genocide in Sudan was another topic of

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[1] A legal avenue for shareholders to propose a business solution that has to be voted on publicly and by other shareholders at the annual meeting of a corporation.

concern in the United States. Public pressure led to the creation of the Sudan Divestment Task Force and the subsequent Sudan Accountability and Divestment Act of 2007 by Congress. Since 2014, there has been a large movement towards fossil fuel divestment for universities, churches, and high net-worth individuals. As of 2018, over 1,000 institutions and over 8,000 billion dollars-worth of assets divested from the fossil fuels industry (see Figure 1).

Figure 1
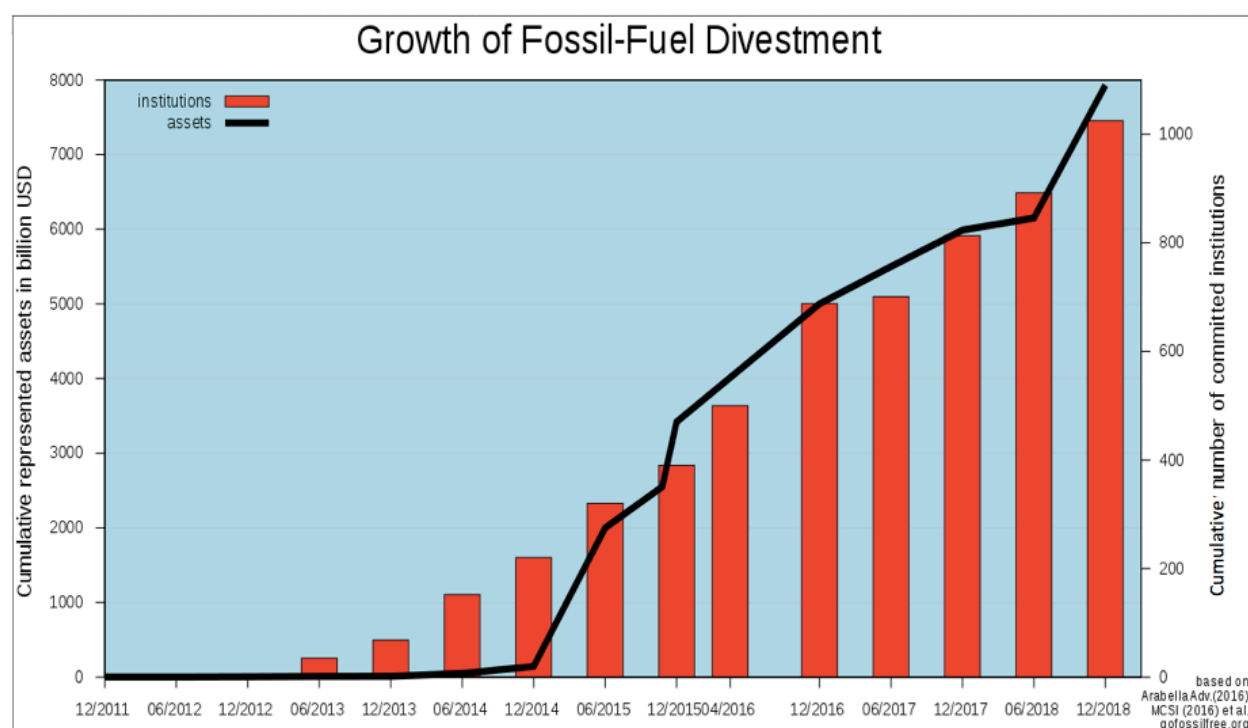
Source: MCSI 2016

Socially conscious individuals had learned how to work with institutions like universities and political bodies to harness the power of the purse. The large divestments led to material change. However, divestment strategies were not always possible or strategically sound. ESG investment vehicles were created so that investors could make investments in line with their values as well as send signals about their

ethical preferences to firms where they had become partial stakeholders by holding their investments .

The first socially responsible fund is considered the Pioneer Fund of 1928 and the first socially responsible index was the Domini Social Index (1990). In the 1980s mutual funds started applying "screens" to their investments, including funds from Calvert and Parnassus. A screen was the commitment of a particular fund to always include or always exclude a certain class of investments from their portfolio (i.e. fossil fuel companies, alcohol companies etc.) A negative screen excludes a company selling certain products or engaged in certain controversies from a fund's investing universe. A positive screen incorporates companies committed to sustainable business practices into their portfolio. The screens included the classical screens of religious organizations - weapons, gambling, alcohol, tobacco (also known as sin stocks) - but also started applying screens for environmental pollution, treatment of workers, and nuclear energy. The Domini Social Index monitored the performance of socially responsible investing mutual funds that were continuing to gain popularity in the market. The index eventually helped to establish arguments against the belief that investors had to give up returns in order to invest sustainably.

Many different vehicles and nomenclature have been used for socially conscious investing. Socially responsible investing was based primarily on positive and negative screens to evaluate how companies were performing on key issues. The industry eventually expanded their goals and creating environmental, social, and governance (ESG) investing, which covered a broader range of issues and drove the movement for larger amounts of data on companies' sustainability metrics. Other investment vehicles that are not discussed in this project include impact investing, where investors put

capital into companies making a positive social or environmental impact (but might not use the stock market to do so), or B corporations which meet the highest standards of performance on social issues and environmental protection.

Turning towards ESG investing, the space has seen intense growth over the last ten years. ESG investing differed from socially responsible investing by using sustainable criteria to assess not only business risk but also business opportunities. In 2004, the former UN Secretary General, Kofi Annan, invited over 50 CEOs of major financial institutions to participate in a joint initiative with the UN General Compact. The goal was to identify ways to integrate ESG into capital markets. The initiative spurred disruption in the industry, and in 2005 Ivo Knoepfel wrote "Who Cares Wins." It began a shift in thinking about sustainable investing away from mere screening and using the practice for moral or religious reasons, and argued that ESG investing was also good business practice. The Finance Initiative of the United Nations Environment Program also produced the "Freshfield Report" which showed that ESG factors were important for financial valuation. These two publications aided the launch of the Principles for Responsible Investment by the UN at the New York Stock Exchange in 2006 and the launch of the Sustainable Stock Exchange Initiative (SSEI) in 2007. Today, the ESG space has about 20 trillion in AUM (Kell, 2018).

One recent, and major, step for ESG investing occurred in the UK. In 2010, legislation was passed requiring trustees of occupational pension funds to disclose the extent to which social, environmental and ethical considerations were taken into account for pension management. Since then, other countries such as Canada and Australia have established similar requirements. Pension funds are huge institutional investors, and their involvement with ESG investing and requirement to disclose will

put pressure on companies for better sustainable and social practices and their disclosure.

This project contributes to the ongoing research about ESG investing. While substantial attention has been given to whether ESG investments can achieve the same returns as regular portfolios, little research has been dedicated to consumer preferences for ESG issues. The preferences are important to understand because they can lead to better tailoring of products to what investors actually want and show companies the sustainable issues their shareholders are most interested in them achieving. The next step for the ESG investing space is to have a nuanced understanding of investors' preferences for sustainability issues, rather than the way that issues are currently treated homogenously. This project is a step in that direction.

Theory

ESG investing involves someone feeling responsibility for a "common good" or, in other words, something that benefits society more broadly and not just onesself. They could either feel pleasure when the common good is improved or pain when the common good is threatened.

> The questions of justice that are important to economists concern the distribution of benefits and burdens among members of a community. What claims can persons legitimately make upon one another or upon the state? What burdens can the state place on its citizens or can individuals place on one another? As the "jealous virtue," justice deals with conflicts of interest among people in society. (Hausman , McPherson , & Satz, 2016)

This conflict between the burden to be placed on individuals and the role of the state is called the social contract. The theoretical origins or the social contract stem from early Western thinkers such as Hobbes (1651), Locke (1690), Rousseau (1762), and Kant (1785). Anyone who lives within a society adheres to a social contract to some extent, even if they adhere to it for their own social or economic gain in the long run. Those who funnel their investments into ESG options place a high value on some – or all – issues affecting not just themselves. Even though almost everyone adheres to the social contract, people do it in different ways. Maybe they care to express their benevolence through volunteer work rather than through ESG investments. Perhaps they do not have the extra resources of time or money, but they still carry out the social contract in the interactions they have. Regardless of the means by which they participate in the social contract, they individuals do not hold every part of it with the same regard. This project uses consumers' revealed preferences to examine the range of how individuals regard different aspects of the social contract. Each individual will have a specific structure to their preferences, either with a clear hierarchy to the *types* of issues they find most

important, or a noisier issue ranking without clear clustering of types of issues. Currently, academia and industry assume that ESG preferences are all the same, and that individuals have preference rankings that are noisy because they do not have strong preferences for certain types of issues. The author hypothesizes that, in reality, consumers' preferences vary and that some people believe certain aspects of the social contract are more important than other aspects. If this is the case, individual preference structures should be used to construct more unique ESG options and offerings.

Generally, economists espouse a very narrow view of what motivates human behavior. Many theories that dominate modern mainstream economic thought were developed to simplify reality in order to represent it mathematically. Theory makes beautiful models, but fails to accurately predict some fundamental human behaviors. Little experimentation work has been done to quantify the breadth and nuance of human motivation, especially pro-social orientations. Patterns of preferences for that which falls outside of strictly self-interested behavior remains ripe for exploration. Neoclassical economic theory, the prevailing school of thought in economics, assumes that everyone exhibits perfectly rational, self-interested behavior. They call the person in their models *homo economicus,* someone always maximizing their economic outcomes. Amartya Sen, a Nobel prize-winner in economics for his contributions to welfare economics and social choice theory, links assumptions of self-interest maximization in economic theory to a departure from ethical considerations.

> The sense of invulnerability from ethics that predictive economics seems to enjoy arises partly from the alleged force of the hypothesis that human behavior, at least in economic matters, can be well approximated by self-interest maximization. (Sen, Of ethics and economics., 1999)

Ethics and rationality is not a natural pair, but economists' belief that any pro-social act is irrational has allowed economists to ignore the natural ethical considerations with which humans frequently engage. In fact, pro-social behavior is part of the social contract and something that almost everyone does on a regular basis. In order to gain the most from society people must engage in pro-social behavior, or else others will not want to associate with or help that person. This section will highlight that economics has only recently developed this divorce from ethical considerations. There have been several reasons for this shift, including but not limited to the Marginal Revolution, the mathematization of Economics, the conception of economists as engineers, and the focus on positive economics (Hausman , McPherson , & Satz, 2016).

This section will trace the thinking of Adam Smith, John Stuart Mill, Amartya Sen, and others in their considerations of the foundations of morality and its place within economic behavior and society as a whole. The thinking will vary considerably, but it is powerful to realize that three major influencers in the field of Economics all acknowledge the influence of ethical thinking on behavior, of which much of Neoclassical economics is devoid.

Smith - Moral Sentiments

Although Adam Smith's most acclaimed work is *The Wealth of Nations* (1776), *The Theory of Moral Sentiments* (1759) was arguably of deeper import to him, as he continually revised it until his death. Unlike Aristotle, Kant, or theorists after Smith such as Mill (1863), Smith posited that our moral ideas and actions are a byproduct of our inherent social nature. He believed that morality was natural to us:

> How selfish soever man may be supposed, there are evidently some principles in his nature, which interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it, except the pleasure of seeing it. (Smith, 1759)

He argued against prevailing theories that *reason* was the basis of our moral judgements, and instead that social psychology was a better reflection of how these judgements were formed and persisted. *The Theory of Moral Sentiments* outlines the essential elements of a functioning society, namely individuals' commitments to prudence and justice. It goes further to say that benevolence is that which makes a society flourish. This section stands in stark contrast to his most quoted section of *Wealth of Nations* regarding benevolence: "It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own self-interest. We address ourselves not to their humanity but to their self-love, and never talk to them of our own necessities, but of their advantages." Smith's stance on benevolence has been reduced to assumptions of self-interest, but he believed that the basis of society had to be built on ethics and virtue and that self-interest was not the only important factor in an economy.

These elements that comprise morality - prudence, justice, benevolence - are, according to Smith, not something we have to will ourselves to do. Rather they are a natural part of human beings. In our existence as social creatures, we learn empathy. We feel the distress or the joy of others, albeit less strongly than our own emotional reactions. Smith theorizes that we develop what he calls the Impartial Spectator. This imaginary figure is meant to epitomize the virtuous and empathetic citizen, whose own emotions do not play a role in his reactions to others. He posits that people regulate their emotions to the point where they know that the Impartial Spectator would approve

of their outward expression. In other words, we have a social model that we use to regulate the expression of our raw emotions.

He argues that this Impartial Spectator exists not only to guide our interactions with others, but to guide our conscience. He posits that the rules of society -- and the complementary punishments -- are only one part of what deters us from certain behaviors. Our conscience and the threat of self-criticism plays an important role in regulating our actions. Because of the conscience, and Smith's belief in our natural proclivity towards moral action due to our socialness, Smith believed that freedom and nature were stronger contributing forces to morality than reason. Smith's theory suggests that moral action is ingrained in human nature. Thus, the "invisible hand" that regulated the market, is a theory *predicated* on an already just society.

Smith's sentiments will contrast sharply with other thinkers, especially his ideas on the origin of morality (natural human instinct vs. the product of reason). Such distinctions have implications for society and the interest society has in encouraging the development of morality in its citizens. One poignant distinction between Smith and Mill's theories is that Smith believes that the pleasure of others gives an individual pleasure, whereas Mill believes that treating others well and punishing others' moral transgressions is a mechanism of protection against wrongdoing unto you. This difference has an interesting application to this line of research. Do people naturally derive joy from protecting others and bringing them greater happiness? Or do people protect others in order to uphold a social contract that would someday protect *them*? This author does not offer answers to these inquiries, but the history of thought about morality's role in society is an important underpinning when considering the structure of individual's preferences for different ethical issues.

Mathematization of Economics

Impact of Psychology

Before the mathematization of economics, other social sciences were highly influential in the field. Because the mainstream economic perspective was that of political economy, other disciplines such as political theory, anthropology, and psychology played a role in shaping the theoretical trajectory of economics. Psychology impacted economics in particular when it underwent a theoretical shift away from the Functionalism toward Behaviorism.

Functionalism had attempted to investigate the function and purpose of consciousness. It was formalized by William James (1842-1910) and adapted by Sigmund Freud (1856-1939). It involved the self-report of patients to their analyst in the context of therapy. Freud, in particular, was known for his contributions to the advancements of psychotherapy, using various methods to try to "draw out" the unconscious of the patient during a session. The most well-known methods he used included analysis of dreams and the use of a couch to remove the therapist from the patient's visual frame.

Behaviorists, on the other hand, believed that the only way to learn about someone was through observing their behavior (Watson, 1913). It was hyper-focused on operationalizing psychological phenomena instead of relying on patient self-reporting. John Watson (1878-1958) and later B.F. Skinner (1904-1990) revolutionized psychology to take a more behaviorist approach. Behaviorists believed strongly in conditioning, and strict behaviorists even believed that anyone could learn anything through conditioning,

regardless of genetic makeup or personality traits. This orientation towards observable behavior (i.e. outcomes) is an important precursor to modern Neoclassical economics, which emphasizes economic outcomes without a focus on the *process* which led to that outcome.

Certain aspects of functionalism - especially the importance of processes that lead to certain behaviors - have been recalled again within Economics for renewed inquiries into ethics. However, these discussions exist outside of the mainstream part of the field.

Physics (impact on Political Economy)

The mathematization of Economics began with the Enlightenment in Europe and the rising regard for the sciences. Methodologies for controlled experiments were beginning to take off, which established evidence and proof for scientific conclusions. This, in turn, gave science more clout than other academic disciplines, and a greater claim on what was deemed Truth. In response, Economics began to pursue ways of affiliating themselves with the natural sciences. Specifically, they started to try and associate their theories using frameworks and measurements similar to physics. Utilitarians theorized that all human behavior could be explained by individual satisfaction, which they measured using what they called a util. A util was a small, subjective unit of satisfaction based on the preferences of the individual. They based their theory and the consequent conception of the util on the unit "joule" in physics, used to measure work or energy. The joule is equal to one watt-second of electrical energy. If an electrical current is understood as a metaphor for one action, the util and joule are similarly the building blocks of a larger action. In and of itself, striving to create scientific measurements within the field of Economics is not a problem. However,

in mimicking physics, Economics began to simplify phenomena in an attempt to produce controlled experiments or elegant models. The measurements, and the subsequent assumptions made to construct those measurements, hindered Economics in capturing the true complexity of human behaviors.

Marginal Revolution

The Marginal Revolution took place in the 1870s with the work of three major Economists, William Stanley Jevons in England, Carl Menger in Austria, and Leon Walras in Switzerland (Jevons 1866, 1871; Menger 1871; Walras 1874). The Revolution represented a shift away from the Political Economy analysis that had dominated the intellectual scene previously. While economic growth had been a central concern, the new fulcrum of Economics was in maximizing consumer satisfaction. As such, a particular emphasis was put on *efficiency*. Economic inquiries began to examine how to derive the highest possible level of satisfaction for individuals given the current resources (land, labor, and capital) and available technologies. Maximizing efficiency of a market was, for producers, predicated on "perfect competition" and "perfect mobility" and for consumers on "perfect competition." This new line of inquiry and the simplified "perfect" conditions, furthered the mathematization of Economics.

Calculus became especially important. Calculus was the perfect vehicle to formalize optimization questions in Economics. Calculus allows one to analyze an object's rate of change with a method called derivatives. It also shows the *direction* of this rate of change (positive or negative). Because one could track when the direction of change switched (in other words the apex of an arc), one was able to see the maximum or minimum point, or in other words, the optimal point if applied to resource allocation

problems. With the convergence of the Marginal Revolution and a theoretical shift away from normative Economics (how the economy *should be)* to positive Economics (how the economy *is),* more and more thought and attention was paid to the possibilities of mathematics within Economics.

In some ways, this did little to advance the initial goal of the Marginal Revolution which was to increase consumer satisfaction. The allure of mathematizing theory gave little policy application for real world (and not "perfect") circumstances. (Lutz, 1999) described the period as follows:

> ...economics became more of an abstract exercise, a game to be played on an increasingly theoretical level by academics eager to exhibit their command of elegant formalism and logical rigor. (pg. 109)

Although economics has become increasingly abstract, it has seen remarkable rise in influence in politics, business, and academics since the Marginal Revolution. Perhaps this rise in power has dis-incentivized economists from critically re-evaluating the legitimacy of their models and their true predictive power for real-world phenomena.

Axioms

With the mathematization of Economics began the theorizing of human behavior in terms of axioms. Axioms are statements considered self-evident. They outlined the ways Economists understood 'rational' humans to act. For example, in Samuelson's conception of preference theory, axioms outlined the structure of how these preferences ranked against one another (Samuelson P. A., 1948). His axioms included the Strong Axiom of Revealed Preference (SARP) and the Weak Axiom of Revealed Preferences (WARP) and. They are established with the following logic:

WARP (Weak Axiom of Revealed Preference):

Given a revealed preference of A to B, there will never be a case when the consumer *strictly* prefers B to A if both goods are affordable.

SARP (Strong Axiom of Revealed Preference):

Given a revealed preference of A to B, SARP lets us make inferences about other preferences, or, in other words, use transitivity. If it is also revealed that a consumer prefers B to C, then one can infer that the consumer also prefers A to B.

Such axioms are useful, particularly in establishing mathematical ways analyzing and deducing preferences. The drawback of axioms is that they may not capture situations that fall outside of their frameworks but are still perfectly rational. Sen (1999) gives a particular example of this as follows:

> Imagine you are at a cocktail party, and both drinks and nuts are being served. You arrived at the party thinking that dinner would be served after drinks, so, even though you were hungry, you refrained from eating many nuts. In other words, you preferred less nuts to more nuts. However, halfway through the party, someone mentions that dinner will not be served. Since you are still hungry, your preferences immediately change. You would rather have more nuts than less in order to satisfy your hunger.

Within classical economic theory, this would be regarded as irrational even though it makes perfect sense within the context of the story. Such an example shows the shortcomings of axioms.

Mill - Utilitarianism

Mill's father, James Mill was also an Economist and he educated John himself. His father was strict with Mill, and used the educational philosophy of logical thinking over emotion purported by his fellow Economist, friend, and mentor, Jeremy Bentham. His education played a part in helping him to develop his work on utilitarianism (1861),

which contributed to the evolution of utilitarianism generally (see also Bentham (1789) and Sidgwick (1883)). This emphasis on logic can be traced to his analysis of Justice in *Utilitarianism,* a concept which he saw many people treat as an instinct of Nature and therefore fail to scrutinize. In contract, he traced it historically and strove to understand the logical mechanisms behind it. Mill expanded his thinking from an exclusively cold perspective to place value on equality after visiting Paris and reading Jean Charles Léonard de Sismondi in 1830.

Mill does not just write about how the world *is* (as many Economists do today), rather how the world *should be*. According to Crisp (1998), *Utilitarianism* (1863) aims to answer three major questions that have been of concern to humanists and social scientists for the entirety of human societies, namely

What is happiness?

What is the morally right way to live or to act? And,

What is the relation between happiness and morality?

In the most simplified form, *Utilitarianism* offers three answers to these questions. First, happiness is pleasure. Second, the right way to act is to maximize one's overall happiness. And third, given a world of perfect norms and general law, the individual will derive happiness from doing what is morally correct.

He was part of the movement to develop utilitarianism, a way of measuring behavior based on rationality and preferences. Utilitarianism coincided with the rise of the Neoliberal tradition in Economics and the increased mathematization of the field. It aimed to formalize a way of measuring the "rationality" of any behavior. It did this by assigning a universal unit of value, a util, to every possible choice of an individual. The amount of utils that a specific choice represented was not universal, rather the reflection

of the individual's personal preferences. The sum of utils for a set of particular choices was your overall utility. By comparing the utilities of different scenarios, one could assess situations and make decisions rationally. There was backlash against utilitarianism claiming that it could not explain prosocial or ethical behavior because, in those days, it only dealt with individual utilities. Mill aimed to extend his analysis of utilitarianism to include the relationship between an individual's utility and their societal choices.

Mill's essay *Of the Connection between Justice and Utility*[2], traces societal conceptions of Justice and Injustice and the connection to his theories of utility. He begins by doubting that deep commitments to upholding Justice are not *a priori* an instinct that is separate from utility, like many people believe. He outlines the ways in which Justice is not positive *simply* because it is a Natural orientation. Instead, he traces (1) the defining features that bind what is considered Just (2) the way the law has formalized conceptions of Justice and (3) the protections afforded to individuals themselves when they defend conceptions of Justice. He outlines the main themes of Injustice to be:

(a) violate someone's legal rights, at least those that ought to be his rights,

(b) not to treat people as they deserve,

(c) to break faith with anyone,

(d) to be partial in those situations where impartiality is required, and

(d) to treat people unequally, although the moral definition of equality varies greatly across different thinkers and groups

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[2] An essay in *Utilitarianism.*

At the end of this section in his argument, he struggles to define one absolute and common thread binding the that which he considers the commonly accepted features of Justice. In his mind, the feature binding these discrete issues is the desire for people to punish those who commit injustices. This conception of justice has echoes to early thinkers' ideas on the social contract. In fact, it's relationship to society as a whole is explored by Mill himself with a lengthy discussion on the etymology of the word Justice and its connection to laws and governing bodies within a state who have capacity for punishment. Though Mill seemed unsatisfied not to find a common thread that bound these concepts rationally and philosophically, he was convinced of the importance of Justice given his ability to trace their importance within society historically. If he could not find the underlying reason that they became institutions of human society, at least he could analyze the importance of those institutions.

Although Mill's essay begins with a statement about how Justice is an instinct which, similar to other instincts, sometimes needs to be suppressed, the essay ends in his calculation that commitment to Justice is a useful orientation and that it fits into the larger theoretical framework of utilitarianism.

> ...If (Justice) is simply the natural feeling of resentment, moralised by being made coextensive with the demands of social good; and if this feeling not only does but ought to exist in all the classes of cases to which the idea of justice corresponds; that idea no longer presents itself as a stumbling-block to the utilitarian ethics. (67)

Indeed, modern examinations of ethical behavior has used utility theory to prove their points. Mathematically, utility functions can include the functions of others within an individual's own calculation. Mill may not have predicted utility theory to be used as proof of such theories. Although Mill's view of Justice is rather pessimistic and fear based, it is powerful that the beginnings of utility theory can be traced to *this* conclusion

rather than to the conclusion of pure self-interest espoused by most modern economists when employing utility theory.

Sen - On Ethics and Economics

Sen published his work *On Ethics and Economics* in 1987, a seminal work on ethical considerations within Economics. This was especially apparent in Sen's dedication of the book to Kenneth Arrow (who is discussed later in this chapter and who contributed to social choice theory). The book traces the history of ethical thinking within economics. Sen's main argument is that the field of economics has made strides with its current ways of thinking (that excludes ethics), but that an expansion to include ethical considerations would lead to important developments.

The book comments on both the development of theory and provides examples of how ethics cannot be divorced from economics. One important criticism that Sen outlined was his rejection of utility, which he doubted could provide a robust measurement how people evaluate the world and ultimately find well-being. He takes issue with two features of utility:

- On the ground that well-being is not the only thing that is valuable;
- On the ground that utility does not adequately represent well-being

His main objection is that wellbeing cannot be reduced to the fulfillment of one's desires. Both because one may value the needs or desires of someone in one's community, and because one's desires may be muted based on one's circumstances (Sen gave the example of a beggar). This poses issues for techniques that try to aggregate well-being including but not limited to utility, pareto optimality, and social choice theory. He also provides discussions of what he believes to provide value, but which are

not generally incorporated into economic theory. These include freedom and agency, among other things.

The work also frequently references Sen's earlier works, as if *Of Ethics and Economics* is a compilation of all his important thinking. His ideas provided useful contrast to the ideas of morality being innate versus emerging from reason that have been presented in this chapter.

Modern Economists

Neoclassical economic theory has deviated significantly from earlier economic thought, focusing less on the roots of human behavior and more on creating a framework for predicting outcomes, assuming the rationality of agents as given. Modern Neoclassical theory has its roots in the Marginal Revolution and therefore, a theoretical focus on efficiency. Neoclassical Economics is most frequently associated with the Chicago school of economics including thinkers such as Gary Becker, Milton Friedman, and Friedrich Hayek, whose work built on the Austrian tradition. Efficiency was connected to maximization, and the way in which economic actors maximize their happiness or utility. Jevons, one of the early Neoclassical thinkers, wrote about rational choice, laying the groundwork for Rational Choice Theory. The theory uses axioms to derive whether the rankings of choice alternatives are consistent. On the most basic level, a rational actor would make a set of choices that was (1) goal-oriented, (2) reflective (evaluative), and (3) consistent (across time and setting). Rational Choice Theory does not aim to evaluate the *process* of making these choices, just the outcome.

Why is this important? Neoclassical economists are right to focus on economic outcomes as the fulcrum of their analysis. The data from decision-making is important. However, failing to analyze the *process* of decision-making hinders their insights and the development of their theories. The hypothesis that economic decisions stem from perfectly rational thinking in every situation and at all times cannot account for the complex contexts and constraints under which humans make decisions. Failing to account for the most basic fact that humans sometimes act in a non-self-interested way overlooks a large facet of human decision-making.

This has several important consequences. Not only do the data oversimplify behavioral mechanisms, but the prevalence of this thinking has had major implications for policy and economic theory developments generally. Neoclassical Economics has come to dominate economic thought, in part because of the Marginal Revolution, the subsequent mathematization of economics, and the power and prestige of discipline that followed this orientation towards the natural sciences and quantitative analysis. Economics education became more focused on technical math and data skills, creating higher and higher barriers to entry for some students interested in its social science dimensions and more adept at qualitative analysis. This narrowed the field to produce intellectual leaders with refined technical skills but who may have had less of education or encouragement to critically evaluate the theory and assumptions associated with the technical investigations. Furthermore, the mathematization also produced a large technical vocabulary necessary for interpreting economic findings. This blocked both policy makers and other social scientists from making meaningful contributions to economic debates without previous training in economics. Economic predictions, used in policy and business to plan and allocate resources for the future, were also influenced

by this phenomenon. If policy-makers or business people were not well-versed in economic theory or jargon, they could not evaluate for themselves whether the underlying assumptions of a prediction were accurate. For example, if economic growth was predicted to reach 5% the next year, but it was based on an assumption of perfect information, a business person who could make meaningful evaluations of this projection might decide that they did not believe consumers had perfect information and therefore not make investments based on this figure.

The relevance of modern economics and Neoclassical theory to this work has to do with the assumption that economic actors are perfectly rational and therefore completely self-interested. With economic models based on rationality and self-interest, analysis of preferences for products that are not completely self-interested in nature has been limited.

Figure 3: The rise of ESG investments since 1995
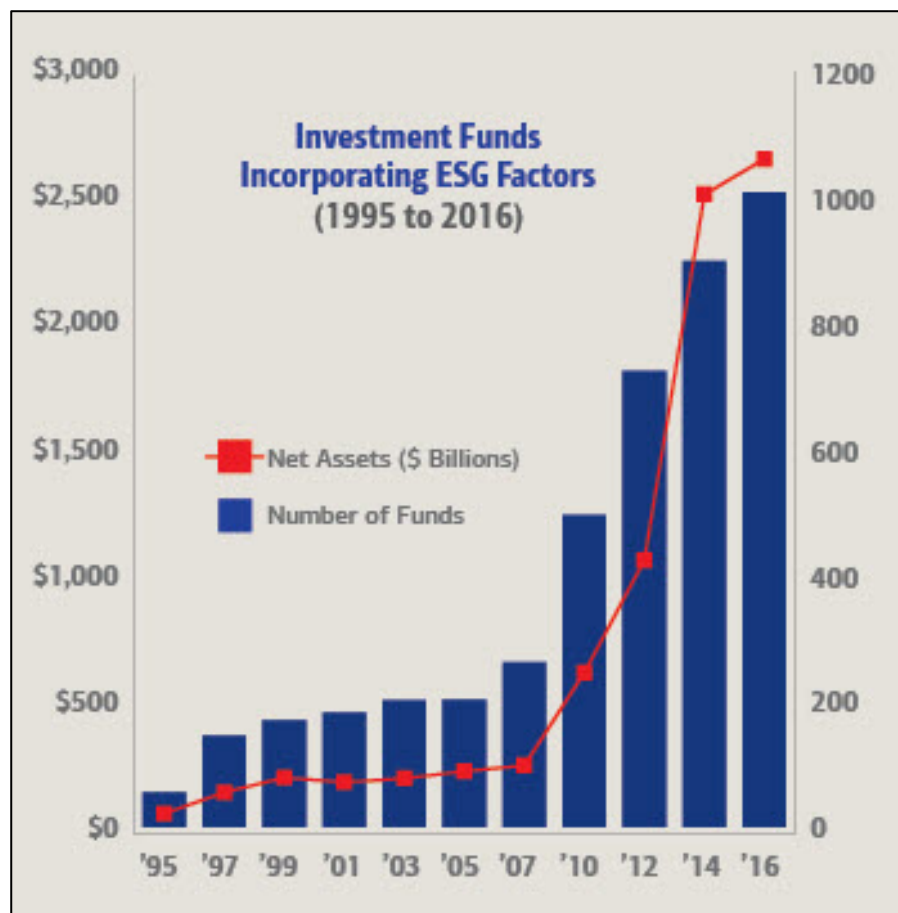
U.S. SIF Foundation; Bank of America Merrill Lynch Global Research: "ESG: Good companies can make good stocks," Dec 18, 2016

The data in Figure 3 show an exponential growth of net assets under ESG management since the mid-1990s.

Since traditional models don't have ways of evaluating the nuances of this growing interest (i.e. evaluating investor's preferences for prosocial products), this project aims to make a contribution to such inquiries. This project draws upon some of the important contributions made by the forefathers of Neoclassical theorists, namely the Utilitarians. The using trade-offs to calculate preference rankings. However, this author rejects the idea that people are perfectly rational and operates from the assumption that prosocial decisions have a positive effect on some individuals' utility.

Frameworks for Evaluating Preferences

Although mainstream economic thought has generally separated economics from ethical concerns, several attempts have been made to construct a framework with which to analyze aggregated individual preferences (i.e. welfare). These analyses can address moral preferences in addition to more benign preferences.

Pareto optimality

Economists generally think that welfare is when one's preferences are satisfied. They also agree that individual preferences cannot be compared because the units and weights of preferences are too varied and non-binary measurements of satisfaction are impossible. Economists still wanted to find a way to evaluate aggregate wellbeing for a population, for which they came up with Pareto optimality. The concept posits that everyone wants to be better off (i.e. have more of their preferences satisfied) but that, all else equal, even a mildly benevolent person will prefer an option that is better for someone if everyone else is *at least* as well off. This is particularly relevant to ESG investing since sustainable investing has been proven not to lower returns (Gunnar , Busch , & Bassen, 2015). In other words, ESG investing makes you at least as well off (gives you the same returns) while mitigating ESG issues *in addition*.

Some problems have been identified with Pareto optimality, particularly because the theoretical win-win situation, although observed in ESG investing, is relatively rare. Many economic outcomes for policies result in winners and losers. Pareto optimality should also be evaluated in context to make sure that the equity and improvements are worth it in reality and not just theoretically. For example, if situation A allows for person

1 and person 2 to both have $500, but situation B allows for person 1 to have $500 and for person 2 to have $500.01, the second option is technically better but may not be worth the resources of trying to achieve it. Additionally, suppose there are 10 loaves of bread to distribute between person 1 and person 2. Situation A gives person one seven loaves of bread and person two three loaves. Situation B wastes two loaves of bread but gives each person four. Situation A is not a pareto improvement over situation B even though some resources are wasted. These examples illustrate the limitations of Pareto optimality in showing the nuances of equity. The construct is useful theoretically but has drawbacks in its applications to real-world scenarios.

Social welfare function & Arrow's theorem

Another way of aggregating the welfare of individuals was outlined by Kenneth Arrow (1967). His Impossibility Theorem outlined how ranked choices from a set of three or more alternatives could not be logically continuous when the number of choices was reduced. For example, consider a situation where respondents are asked to rank A, B, and C:

- 45 votes A > B > C (45 people prefer A over B and prefer B over C)
- 40 votes B > C > A (40 people prefer B over C and prefer C over A)
- 30 votes C > A > B (30 people prefer C over A and prefer A over B)

Choice A is the most preferred. However, if B was not included in the options, C would be most preferred, as more people prefer C over A (A would have 45 votes and C would have 70).

- 45 votes A > B > C (45 people prefer A over C)
- 40 votes B > C > A (40 people prefer C over A)
- 30 votes C > A > B (30 people prefer C over A)

This result is a demonstration of Arrow's theorem. It shows the difficulty of determining a rank that *always works*. It relates to ESG preference rankings because the survey showed the rank order of individuals' preferences for ESG issues. However, if some issues were removed, Arrow's theorem suggests that our ranking might shift or reverse.

Arrow also discusses how to *judge* preferences (i.e. the decision should be universal, not made by a dictator). Arrow first developed the theorems as a way to analyze voting (Arrow 1950, 1951). He showed that when given three or more alternatives, no ranked voting electoral system could take the ranked preferences of individuals and convert them into a population-wide score (with the constraints of being complete and transitive) that met the specified criteria of (1) Pareto efficiency (2) non-dictatorship (3) irrelevance of irrelevant factors and (4) universal domain. These elements are elaborated on as follows:

(P) If everybody prefers *A* to *B,* then *A* is better than *B* (weak Pareto).

(D) Whether *A* is better than *B* should not depend on the preferences of a single individual only, regardless of what everybody else prefers (non-dictatorship).

(I) Whether *A* is better than *B* should depend on how individuals rank *A* and *B* and on nothing else (independence of irrelevant alternatives).

(U) No matter what the preferences of individuals may be, the social welfare function must always be able to rank alternatives (universal domain).

(CR) The social ranking of alternatives must be complete and transitive (collective rationality).

Arrow concludes that his findings don't mean that systems with three or more options *always* fail, but rather that they *sometimes* don't work. Some relaxation of his constraints can decrease the chance of failure, as well as pairwise comparisons. But even *some* failure in an election system is not good. Pairwise comparisons randomly select two options from a master list and the repeated choices that an individual makes given

these trade-off constraints gives a complete ranking of their preferences. Pairwise comparisons, however, are highly influenced by the way that that pair was chosen. In other words, the process *leading up to* the comparison usually influences the outcome of the comparison. In other words, there is no optimal way to measure preferences that always meets particular criteria. Because this project uses comparisons of four issues to produce rankings, Arrow's work is an important consideration.

Social choice theory has continued to evolve since Arrow's theorem. Sen (1986) posits that the subject matter of social choice theory is: "aggregating the interests, or preferences, or judgements, or views, or different persons (or groups) in a particular society" (p. 214). The methods of social choice theory are formal and axiomatic. The aggregation that allows us to evaluate societal preferences is broken into two categories by Sen. They are *deciding* and *evaluating.* Someone may want, for example, (a) to decide which movie a group will see or (b) to decide which movie was best out of the movies the group has seen collectively. Pure majorities are more useful for making decisions (movie choice) rather than evaluating an aesthetic (movie rank). On the other hand, transitivity is more important in evaluations given that a ranking of X and Y cannot express that X is better than Y without the principle of transitivity (Hausman , McPherson , & Satz, 2016). Additionally, it is more important that group decisions strive for Pareto optimality than group evaluations, since individuals should be able to hold dissenting preferences within evaluation (Broome, 1987). This project aims to create an aggregate ranking of ESG investing issues, so these distinctions are important to evaluate.

Empirical Evidence & Behavioral Economics

Although Economics has evolved with a particularly Western outlook that assumes a high cultural value on individualism, both common sense and contributions to the field by groups such as Feminist and Behavioral Economists have highlighted the ways in which purely self-interested behavior is only a small sliver of the human experience. Benevolence, fairness, and justice have always played a role in human interactions and human communities. As is outlined in the earlier sections of this chapter on the social contract, Smith, Mill, and Sen, early economic thinkers believed in the role of prosocial behavior in economic life. More and more research is emerging to document and quantify these phenomena. Research on fairness (Fehr & Schmidt, 1999), altruism (both its existence and importance in economics) (Arrow 1972; Becker (1981); Boulding (1978); Collard (1978); and Batson (1993)), and predictable irrationality (with implications for individual motivation and honesty) (Ariely 2008, 2012) have made important advances in economic thought over the last 50 years.

It is not a historical norm for economists to separate ethics from economics, rather a modern phenomenon. Because the rise of theory on rationality and pure self-interest arose in conjunction with the mathematization of economics, methods and measures have not been developed to study ethical behavior in economic agents until recently. In Amatrya Sen's *Of Ethics and Economics,* he summarizes the problem as such: "The real issue is whether there is a plurality of motivations, or whether self-interest *alone* drives human beings." (19) The last several decades have proven that a plurality of motivations do exist -- both through the rise of new theory as well as empirical examples. Socially Responsible (and later ESG) investing is one example,

having seen exponential growth over the past decade, with dollars pouring into the

space even before evidence concluded that one could actualize the same returns from

such alternative investments. In fact, recent Morningstar research from 2018 (Konish,

2019) shows that interest in ESG investing is roughly normally distributed. These data

illustrate that the majority of the population is interested in making prosocial economic

decisions of some sort, contrary to Neoclassical assumptions.

SPOTLIGHT ON CHARITABLE GIVING
Its role in the US and UK

Charity plays a large role in American life. It routinely reaches approximately 2% of GDP per year. This is over 100% more than in the UK, where charity has yet to reach 1% of GDP. Philanthropic spending has historical roots with cultural connotations. In the United States, charity is viewed positively and used by people on both the left and right. In the UK, charity still evokes images of Victorian "do-gooderism" and is often seen as elitist, patronizing, morally judgmental, and ineffective, as well as old-fashioned and out of-date (Wright, 2001; Dickens, 1853; Prochaska, 1988, 1990). In both countries, there is a lingering sense that charity or philanthropy could be the product of one's benevolent superiority. This baggage certainly acts as a deterrent, but more so in the UK than in the US.

Indeed, both countries share a history of philanthropic giving. Voluntary and community action are common in both, as is the creation of trusts and foundations which generally fund projects with a public purpose (Owens, 1965). Throughout the 1990s, charitable donations from households in the US within a given year has been 70%, according to the Gallup Independent Sector poll in 1998. Gifts averaged $754, and represented about 1.7% of households' income. Religious giving dominates household donations, representing 43.6% of total US giving in 1998 ((AAFRC), 1999). Giving rates are also not uniform across the population. Men tend to give larger gifts, perhaps because they have access to larger incomes or because they see charitable donations as a prerequisite to career success (Wright, 2001). Retirees make charitable contributions at high rates, given the accumulated assets they hold. This deviates from charitable giving in the UK, which tends to come from women and where giving rates from retirees are insignificant due to the reliance on small state pensions.

Giving rates are increasing dramatically in the United States. Prior to 1996, giving increased between 5-8%

per year (Saxon-Harrold, 1999). From 1996-1998, giving increased by 36.8% (AAFRC, 1999). According to Wright:

> ...these increases were fueled by a strong economy, and especially by the unprecedented growth in the value of the stock market in which the majority of U.S. households now participate, largely via pension plans. The U.S. tax code provides significant tax benefits to donors for any gifts of appreciated stock; there is no capital gains tax to be paid on the stock, and the donor can claim a deduction from her or his own tax for the full current value of the stock.

Pension plans allow many Americans to benefit (and in this case, pay that benefit foward through charitable donations) from a strong stock-market. Pension plans and other retirement options are frequently administered automatically by employers. This makes stock-market participation easy for individuals. Secondly, tax incentives and straight-forward tax deductions for donations have built the financial infrastructure and framework with which middle-class individuals can easily make philanthropic gifts. The ease with which these systems work for Americans is vital to the persistent *rise* of philanthropic giving. Indeed, tax policy favorable to charitable giving has existed since the 17th century in the United States and amounts to almost $17 billion in tax expenditures (Howard, 1997). This is by no means an international norm, the UK recently changed their tax code for charitable donations, which, along with other factors, has contributed to a decline in rates of giving. Additionally, tax breaks have usually not gone directly to the donor, like they do

in the United States. Instead, charities themselves could fill out a form for the Inland Revenue in order to get an additional refund of the tax that the donor had owed on the donation. Analysts have concluded that the tax structures to not significantly affect the ultimate amount of money donated (Wright, 2001). Both structures increase the donation to be an amount that the donor would previously not have been able to afford by kicking back some of the taxes. However, the public perception of the two programs has contributed to significantly different outcomes in charitable giving.

Wright (2001) finds that the cultural context is a determining factor in the *kinds* of charities that people tend to give to. Americans tend to give to causes that they can see or feel directly such as their church, the university they attended, or a hospital that helped a family member. The differences are especially stark between religious organizations (43.6%) and environmental (3%) or international causes (1.2%) (See Figure 1). It is important to keep these figures in mind when evaluating the ranking of ESG issues. ESG issues are almost entirely *non-local*, which may be a shortcoming in their ability to be universally attractive to American investors, based on the evidence that Americans like to make charitable contributions to organizations they are familiar with or from which they have benefitted. Those in the UK tend to be much more inclined to give donations to people and organizations far less well-off and for people who may be very different from them. This indicates the way culture influences people's propensity to spend money. It suggests a potential misalignment of ESG issues to American values. If this is the case, one could

conclude from this research the need for ESG to be catered to the American public in order to provide avenues for investors to choose ethical investment vehicles in line with their cultural values.

Figure 1

Religion	43.6%
Education	14.1%
Health	9.7%
Charitable foundations	9.7%
Human services	9.2%
Public/society benefit	6.2%
The arts	6.0%
The environment	3.0%
International affairs	1.2%

Source: AAFRC, 1998

American's giving for religion and education (mainly higher education), can be traced to the funding structure of these institutions. Both churches and universities rely on charitable gifts to survive, a model that is very different from other wealthy nations. The Church of England funds its clergy and buildings almost entirely from its corporate holdings, which, coincidentally, are invested using some ESG screens. Higher education in the UK only needs private donations to fund 6% of its operating budget, which stands in stark contrast to the reliance of universities in the United States on private donations. Because religion and education are important to most people in most societies, it is logical that Americans tend to donate to these causes given the threat of their failure

should charitable donations slow down. Since these institutions are not threatened in the UK, the British are able to donate to issues further from their own local communities.

The role of giving in public and private life plays a major role in traditions of giving. The US and UK differ quite significantly in this respect, even though they have similar cultural influences. Other cultures, therefore, may have even starker differences in cultural expectations for spending and charity. Ironically, British attitudes to giving might be better suited for ESG investing than American attitudes. It's role as a private activity and focus on the "universal" causes would align with investing in ESG products. However, the American attitude that giving is an expression of personal or social identity (that you are aligning your investments with your values) and the role of self-interest (returns on your ESG investments), are components that make ESG investing work. Giving as an expression of self-interest is particularly poignant for this project, given that the survey allows individuals to calculate their own personal rank-order of ESG issues. Additionally, the self-interested giving driven by tax incentives in the US could be paralleled in ESG investing, where one profits from ESG investments.

Traditional preference theory argues that people's preferences are inherent and stable. Evidence, on the other hand, suggests that individuals are influenced by culture and even tax code. If charitable giving was the only measure of morality, it would imply that Americans are more moral than Brits. This is obviously not the case, but we can see that there are factors that play a material role in determining how people give to charity that do not have to do

with their own moral compass. Policy, incentives, and infrastructure all play a role.

Collection methods in the US are dominated by donations made at weekly church services, followed by direct payroll deductions created through a yearly commitment to a charitable foundation. These methods are most effective because they involve the social pressure of a church and the inconvenience of reversing a payroll deduction. These may partly explain the higher rates of giving in the US, since the UK relies mostly on donations made by passerby on the street or door-to-door collections, both of which average much lower donations. The possibility of redirecting some charitable donation to ESG investments is promising, given the evidence of higher commitment rates for institutionalized charitable giving. Since an investment is long-term and usually made into an employee-sponsored retirement fund that individuals rarely look at, individuals are unlikely to move their investments *out* of ESG funds. Additionally, we see the largest amount of money going to people's own church community. Most people feel that their values align with their church. This project provides a way for individuals to also align their values with their investments, which could lead to a persistence of their investments in an ESG fund, just like the persistence of their donations to their church.

Charitable giving and ESG investing are not the same, but there are important aspects of the *culture* of giving in the United States that is applicable to this work. Charitable giving is seen as positive in the US, and it is associated with identity and self-interest. The positivity could drive tangential ethical decisions with capital such as ESG investing. Giving as a part of identity aligns with the development of ESG as more and more customized to individuals' values. Lastly, the acceptable element of self-interest in benevolence in the US aligns with the returns available on ESG investments. Therefore the increases in giving and the best methods for persistence are essential lessons to be applied to the ESG investing space.

Given the pro-social investment preferences of the population, this project explores the trade-offs people make in regard to these preferences. The inquiry will lead to a greater and more nuanced understanding of ethical considerations in making decisions. Sen (1999) drew attention to the importance of these considerations as well:

> I am... not arguing that the non-ethical approach to economics must be unproductive. But I would like to argue that economics, as it has emerged, can be made more productive by paying greater and more explicit attention to the ethical

considerations that shape human behavior and judgement. It is not my purpose to write off what has been or is being achieved, but definitely to demand more. (9)

That which *"has been or is being achieved"* has helped us to develop elegant methods and models. Indeed, some of those methods are used in this analysis. But the breadth of human considerations when making decisions expands beyond the simplifying assumptions of Neoclassical Economics. The Morningstar research showed that these investment considerations are important to the majority of people in the population (about 72% indicated through pairwise comparisons that they preferred some ESG integration rather than a purely returns-driven portfolio) (Konish, 2019), and it is therefore important, and the focus of this project, to understand the mechanisms behind these preferences. Not every consumer has the same structure to their preferences for ESG issues, and it is therefore essential to map the *range* of these preference structures. The following methodology section will outline how this author deduced consumer preferences from online survey results using forced trade-offs and MaxDiff methodology.

Methodology

The work aims to reveal consumer preferences for ESG sub-issues through relative ranking. There are several factors that are important to consider when constructing a model of preferences, especially preferences based on values. Some of these factors include (A) choosing which issues, (B) MaxDiff model, (C) survey design (question framing and format), and (D) distribution design (Mechanical Turk). In this chapter, the author discusses each element in more detail.

Choosing the Issues

Throughout the history of values based investing the practice itself has been defined in different ways. The broad umbrella described everything from exclusionary investing for religious reasons to investments in green technology with goals of high returns. Whatever the issues were, values based investing encompassed all investment decisions that went beyond analysis of returns. In this way, such investing did not represent *homo economicus*, the perfectly rational economic man. To make a decision that did not directly increase returns assumed that the actor was garnering another benefit. Behavioral economics would argue that humans value things like fairness, altruism, and cooperation (Fehr & Schmidt, 1999). The value of fairness, altruism, and cooperation should add to the value of the market returns that the individual is risking or giving up. This is the classic economic theory behind why individuals choose values based investing.

Because the umbrella of values based investing has encompassed so much, it is

difficult to discern which issues *define* the practice. One cannot say it is only

environmental, social, or governance issues, for at its inception the religious screens

only took sin stocks into account. However, it would also be short-sighted to define the

field based on its original form as a tool to carry out religious convictions. The central

concept of values based investing has always been to honor the beliefs and convictions

of investors. Therefore, this author constructed a framework using *empirical data* of

what Americans are ethically concerned about today.

The set of ESG sub-issues used for this analysis was based off of the empirical

data from 2015. It comes from a study of issues important to Americans collected by an

organization called Just Capital. Just Capital began in 2013 and is a registered non-

profit committed to measuring American's values, rating companies based on those

values, and working with companies to incorporate those values into mainstream

investment decisions. Beginning in 2014, Just Capital has surveyed over 81,000 people

nationwide.

Just Capital employs the following polling methodology[3]:

> JUST Capital partnered with National Opinion Research Center
> (NORC) at the University of Chicago to design and conduct the three
> surveys which generated the data. The surveys were conducted using
> NORC's AmeriSpeak online panel, a nationally representative probability-
> based survey panel in which respondents are recruited using traditional
> probability methods and those without internet access complete surveys by
> telephone.
>
> The first survey consisted of 4,113 respondents (799 by telephone and 3,314
> online), the second consisted of 4,119 respondents (425 by telephone and
> 3,694 online), and the third consisted of 1,772 respondents (290 by
> telephone and 1,482 online). All surveys were weighted to Census
> parameters to ensure representativeness. The two larger surveys have

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[3] For additional information see: https://justcapital.com/methodology/

margins of error of +/- 2.1 percentage points, and the third has a margin of error of +/- 3.22 percentage points. Some questions were asked of random subsets of respondents, which increases the margin of error.

The relative importance weights for the issues and subtopics were derived using a MaxDiff design and Sawtooth software. Additional survey work was conducted with YouGov, but is not included in 2017 Survey Results.

This author chose to create this study's framework from the issues that Just Capital's data determined to be most significant to the American people. There are three levels of issues. The first level has seven categories including workers, customers, products, environment, communities, jobs, and management & shareholders. Each category has a set of sub-issues, and each sub-issue has additional sub-issues. This author chose to base her model off of the first level sub-issues. Just Capital had identified 38 of these sub-issues from their data.

This author created a way to measure issues against each other. To begin, this author evaluated the weighted percent overall issue category importance of each of the seven categories. Workers were 23%, customers 19%, products 17%, environment 13%, communities 11%, jobs 10%, and management and stakeholders 6%.
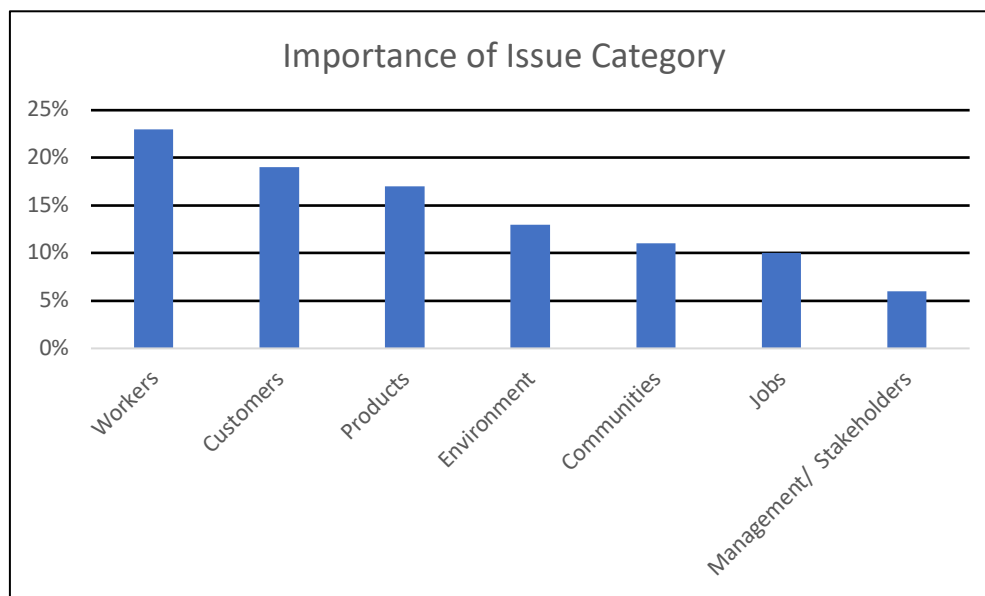
Issue Category	Workers	Customers	Products	Environment	Communities	Jobs	Management/ Stakeholders
Importance	23%	19%	17%	13%	11%	10%	6%

Just Capital also provided how heavily each issue within those seven categories was weighted. To understand how each sub-issue compared to each other overall, this author multiplied their weight within each category by the weight of the category as a

whole. This allowed the author to compare sub-issues to each other. From this

information, the author was able to construct a threshold from which they narrowed

down the sub-issues to include in the model.

Inclusion threshold	1.5%	2%	3%
% Issues captured	$\frac{26}{38} = 88.48\%$	$\frac{22}{38} = 80.02\%$	$\frac{11}{38} = 51.17\%$

The author constructed three possible thresholds. The first included any

company that made up at least 1.5% of the total importance of issues (issue importance

multiplied by category importance). The second included companies above 2% and the

third included companies above 3%. The 1.5% threshold ended up including 26 of the 38

issues and made up 86.48% of the total, 2% included 22 of the 38 issues and made up

80.02% of the total and 3% made up 11 issues and captured 51.17%. The author decided

to select the 2% threshold because it captured a good amount of the empirical data but

also narrowed down the issues significantly, which is important when conducting a

repetitive survey.

Importance of Issue Category

[Bar chart showing, from left to right: Workers ~23%, Customers ~19%, Products ~17%, Environment ~13%, Communities ~11%, Jobs ~10%, Management/Stakeholders ~6%. Y-axis ranges from 0% to 25% in 5% increments.]

After constructing the framework from the sub-issues that fell within the 2% threshold, the author evaluated the breadth of issues. The author observed thin coverage within the governance category and some overlap of certain issues. The author made one exception to the aforementioned threshold by including the sub-issues to the sub-issue of *Leaders act and communicate with integrity* (a category that contributed 1.26% to Just Capital's overall "Issues of Importance" list). The author eliminated the category itself because they found it vague. Instead, they included 3 of the sub-categories, which they found important: *Leadership and business practice controversies, board Jaccard index* (measure of board diversity)*, and independent board leadership.* This author determined that it was important to include such governance issues because they wanted to make sure that the model could accurately measure nuances in individuals' revealed preferences for governance issues. The sub-issues[4] measured in the survey are:

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[4] See the *Qualtrics Survey* section for a discussion on why this author chose to frame these issues negatively.

1. Does not pay a living wage
2. Does not provide a safe workplace or take injury prevention precautions
3. Discriminates in pay based on irrelevant characteristics
4. Does not provide health insurance
5. Discriminates against certain groups of customers or potential customers
6. Does not protect customer/consumer privacy
7. Is not truthful in advertising or labeling
8. Makes decisions about product quality that negatively affect durability or safety
9. Does not minimize pollution
10. Does not use environmental resource efficiently
11. Does business with companies with abusive conditions
12. Does business with governments who oppress their people or violate international human rights
13. Does not create jobs in the US
14. Has leadership and business practice controversies or routinely violates laws and regulations
15. Board does not have diversity based on age, gender, nationality, race, socioeconomic background and tenure
16. Does not have independent board leadership, risks conflicts of interest

MaxDiff

The Maximum Difference scaling (MaxDiff) is a relatively new way of measuring preferences through tradeoffs (Louviere 1991, Finn and Louviere 1992, Louviere 1993, Louviere, Swait, and Anderson 1995). MaxDiff is believed to be developed by Professor Jordan Louviere at University of Alberta in 1987 (Louviere, Personal Correspondence, 2005) However, it has its roots in the Method of Paired Comparisons (MPC). Paired comparisons have been used since the early 20th century at least (Thurstone, 1927), with some documentation even dating back to the 19th century (Fechner 1860). MaxDiff is an extension of Thurstone's Law of Comparative Judgement. MPC uses paired items to elicit tradeoffs from respondents, a method which allowed for significant inference and robust preference rankings. MaxDiff was developed in order to include choices between larger sets, not just pairs (i.e., three items, four items, etc.). MaxDiff is also called best-worst scaling.

In a MaxDiff survey or questionnaire, options are presented in bundles (with a minimum of three options per bundle) and respondents are asked to select the option they like the least and the option they like the most (however, in this study the author flips the perspective by asking respondents to choose which issues they *dislike* least and most). This process is repeated with a set of randomized bundles. The choices made -- given the forced tradeoffs -- produce robust data to construct a rank order of the choices. This can be used to make inferences about an individual's preference structure. Since measuring *every* choice scenario would take too long, Paul Samuelson's axioms of preferences are helpful in inferring preference patterns from a sample of all possible choice comparisons that could be presented to an individual. The Strong Axiom of

Revealed Preferences posits that preferences are transitive, and that one can infer preferences that are not directly measured based on other preferences that *have* been directly measured. For example, from the choices made about a four-item comparison between A, B, C and D, we can glean information about five out of six possible implied compared comparisons. If the respondent chooses A as the item disliked least and D as the item disliked most, their choices gives us lots of information. First, we know that A was chosen as better than the other three options, implying:

A>B, A>C, A>D

We also know that D was disliked most, meaning we also have the information:

B>D, C>D

Only two clicks gave us lots of information about the relationships between items. The only information we can't infer is about B vs. C. Extending this logic, in a MaxDiff question with five items we could infer seven of ten implied paired comparisons.

There are two theories about how respondents evaluate different items. The first is that they evaluate every possible pair and subsequently deduce which items are best and worst (or in the case of this study, which items they dislike least and most). The respondent would recognize this best and worst by identifying the pair that reflects the maximum difference in preference (Louviere 1993). The second theory is that respondent scans the set of issues to identify their extreme preferences for best and worst (Sawtooth, 2013). During user testing, this author received feedback from respondents that indicated that some of them were using the comparison method and

some were using the scanning method. The author did not specify how to evaluate one's preferences within the instructions, because they did not see a reason why one method would produce significantly better results than the other.

MaxDiff has important attributes that make it better than other methods for evaluating preferences. MaxDiff does a better job at capturing preferences than ratings, since ratings assume that someone can express their affinities using a numeric scale. Ratings can also be subject to scale use bias, which occurs when respondents use the scale in disparate ways, such as mainly using the top or bottom of the scale or using too few or too many available scale points. MaxDiff requires choices instead of indications of preference strength, which makes it "scale free" (Cohen & Markowitz, 2002). Research has shown that MPC has outperformed standard rating scales in terms of "discrimination among items" and "predictive validity of holdout (ranking) questions" (Cohen and Orme 2004). Evidence has also showed that MaxDiff superseded the MPC method in terms of predictive accuracy.

The cardinality of the issues in question is a critical feature of MaxDiff. MaxDiff cannot take into account whether the relationship of any issue to any other issue is the same. For example, the difference between issue 5 and 8 might be drastically different, whereas issues 2 and 11 may be quite similar. Because the issues in this work are qualitative, it is difficult to assess a good way to even assess these cardinal differences, let alone address them. This issue of cardinality is compounded when the survey data is used to construct MaxDiff scores. One method of finding a MaxDiff score is to use an arithmetic mean to compare how many times an issue was disliked least and most to how many times it appeared for a respondent. An arithmetic mean assumes that the

data are inherently additive, which, due to the issues of cardinality, is not the case in this work. The MaxDiff score still provides useful information, but the use of arithmetic means in relation to the cardinality of these issues must be critically considered.

In addition to the powerful analytic properties of MaxDiff, the format lends itself well to human subject research. MaxDiff questionnaires are relatively easy for most respondents to understand. Easily understandable questionnaires reduce the chance that people respond to survey questions in ways that are not representative of their actual preferences. Additionally, humans are better at making judgements about extremes than differentiating between items for which their preference is weak or in the middle (Louviere 1993).

In order to be the most effective, the research design for MaxDiff should have frequency balance, orthogonality, connectivity, and positional balance. These features ensure that the respondent makes enough choices between items to be able to meaningfully both analyze and infer their full ranking of preferences.

Frequency balance. Each item appears an equal number of times.

Orthogonality. Each item is paired with each other item an equal number of times.

Connectivity. If, under a condition where all the items under consideration are split into two groups, every item is paired with an item from the other group *at least* once.[5]

Positional balance. Each item appears an equal number of times on the left as it

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[5] A simple illustration from Sawtooth (2013) is as follows: *imagine four items: A, B, C and D. Assume that we ask just two paired comparisons: AB and CD. We could place each pair in a separate group and we could not determine the relative preferences across the items, since, for example, A was never used within the pairs of the other group. In contrast, if we had asked pairs AB, BC, and CD, then all items would be interconnected. Even though many pairs (such as AC and AD) had not been asked, we could infer the relative order of preference of these items.*

does on the right in the survey for each respondent.

This study achieves all four features of optimal MaxDiff survey design. Each ESG sub-issue appears an average of four times for each survey respondent, creating frequency balance. Each respondent did not see each item *exactly* four times (one could have seen it twice and the other six times and the overall average still would have been four), which was a shortcoming of the data. Qualtrics software has a built-in algorithm for orthogonality, so each sub-issue was paired with every other sub-issue equally. Because the subset of 4 issues generated for each question is generated randomly, every sub-issue will eventually be paired with every other sub-issue to create connectivity. Because the survey is set up with the sub-issues centered between the radio buttons (see Figure 1), positional balance was achieved.

Additionally, Sawtooth (2013) recommends asking each respondent 1.5x as many paired comparisons as items for which you are measuring preferences. Since this author uses MaxDiff, they were able to employ a smaller number of questions than an MPC study to get an even more robust measurement than the MPC. There are k(k-1)/2 possible paired comparisons, or (16)(15)/2 = 140 possible pairs. This author was able to present only 16 questions while still having each issue compared four times, meaning that they collected 64 choice data points (the issue they disliked least, the issue they disliked most, and the two other issues presented in the comparison) from each respondent. Only having to present 16 questions reduces survey fatigue for respondents while still collecting enough information to produce inferences about their preferences.

Figure 1

When you consider investing in a particular company, which attribute do you dislike least and which do you dislike most?

Dislike Least		Dislike Most
●	Issue A	○
○	Issue B	○
○	Issue C	●
○	Issue D	○

Like any methodology, MaxDiff also has weaknesses. Some of its strengths have already been discussed. Other strengths include: cultural differences as seen in rating questions are absent and MaxDiff's the ability to achieve greater discrimination among items and between respondents than with the use of scales.

Some drawbacks include the question of whether a MaxDiff analysis gives researchers the absolute strength of an item, or just the relative strength. Since every question compares a list of issues relative to other issues of interest, can a researcher know whether these issues matter to the respondent in the first place? In fact, research has shown (Orme, 2018) that absolute preferences and scores can be established using an anchor question (e.g. would you buy/not buy this product, do you like/dislike this thing). This project assumes that the ESG issues the author is comparing are, fairly universally, considered negative, and therefore the relative ranking is most important and an absolute ranking would give the author redundant information.

Another drawback of the method is the risk of survey fatigue for the respondent. Because MaxDiff is repetitive in nature, there is a chance that the efficacy of respondents' answers declines over the course of the survey. For this reason, a marker of progress throughout the survey can be an important motivating element, as well as limiting the survey to a reasonable number of questions. The survey for this project had both features.

Fundamental to the analysis of results is the construction of MaxDiff scores and the drawbacks of this measure. The score is constructed using an arithmetic mean:

$$\frac{\sum Issue_{LD} - \sum Issue_{MD}}{\sum Issue\ Appearance}$$

Where $Issue_{LD}$ is when an issue was disliked the least, and $Issue_{MD}$ is when an issue was disliked the most. This formula essentially measures the ratio of disliking an item least or most to the number of times that the issue appeared.

Arithmetic means are best for ratio-scale variables that are inherently additive. It reveals the intervals or differences between variables. The MaxDiff methodology produces a rank-based scale. It gives relative, not absolute, differences between variables. Whether it is appropriate to add MaxDiff score averages is a question of whether the scale or difference in preferences is the same across respondents. While the MaxDiff score gives us useful information of difference, the use of an arithmetic mean in the context of ranking differences as opposed to absolute differences is of concern.

Qualtrics Survey[6]

The survey consists of an introduction to the study, a disclaimer page with consent, an example page, a looped MaxDiff question regarding ESG sub-issue preferences that runs 16 times, and a section to collect demographic data. A full copy of the survey can be found in the Appendix. This author chose demographic questions based off of commonly asked information in social science surveys. Every question was not required, but age, sex, and zipcode were mandatory[7]. Zipcode is an important piece of information in constructing a robust understanding of urban/rural context, relative wealth (socioeconomic attributes of the zipcode area), and for understanding local policies and the political landscape. Religion and religiosity were not required questions, but were also important elements of the demographic section. Given the history of ESG's connection to religion, and the variety of value codes associated with different religions, this was important to analyzing the preferences displayed by the respondent for ESG sub-issues and whether certain patterns of preferences were connected to specific religious affiliations.

This author used a loop and merge function in Qualtrics to construct the MaxDiff ESG sub-issue question in the survey. This function allowed her to enter the 16 ESG sub-issues as the list from which four issues were selected randomly to be displayed for each iteration of the loop. The author also employed a function that ensured that each issue

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[6] Qualtrics is a survey design platform designed for individual and corporate subscriptions. It has a user-friendly interface that allowed the author to select their MaxDiff feature as well as randomize a subset of 4 from the issue master list. Qualtrics is comparable to other survey design platforms like Survey Gizmo and Survey Monkey. The author chose Qualtrics for the simplicity of using MaxDiff features and for the randomization capabilities. See website for more information: https://www.qualtrics.com/.

[7] Respondents were not able to advance in the survey without completing a required question.

from the list of 16 would appear an equal number of times. This meant that, given that the loop functioned 16 times and that the study had 16 questions, 64 issues would be presented over the course of the survey in blocks of four. No two people had exactly the same order of these questions. The sub-issues in each question were randomized as well, as was the order in which they appeared. It could have been possible that the same sub-issues appeared in a particular question in the same order as they appeared in a question on a different survey, but given the number of combinations possible it is highly unlikely that more than one question (i.e., iteration of the randomized loop) appeared in more than two surveys. This level or randomization insured that there was not systematic bias for preferences of certain issues based on what the sub-issues were paired with. This was a large part of the research design, because researchers want to avoid situations where choices were paired in such a way that it influenced the respondents' answers. For example, if there were two recent news stories about how pollution was worse than scientists had thought and how the gender wage gap was due to maternity leave rather than discrimination, the immediacy of that information could bias someone who actually cared about pay discrimination, to choose pollution. A preference seemingly "changing" based on the newest information a respondent has received is commonly called an availability heuristic, specifically anchoring (Tversky & Kahneman 1974). By establishing the full randomization of both (1) which sub-issues were selected for a question and (2) the order in which they appeared, any unintentional anchoring effect that could have occurred based on someone's recent exposure to information would not be systematic across the survey.

The respondent was asked to specify which issues they dislike the least and which they dislike the most. The choice to use a negative frame for the question (i.e., dislike vs.

like) was both for aesthetics and for consistency. Most questionnaires about ESG preferences are framed in the positive, or oscillate between positive and negative questions. ESG issues are all undesired, so this author thought it would be an interesting twist to frame every issue in the negative. The aesthetic nature of this choice also serves a function. Since people are accustomed to answering ESG questions using a negative frame, the use of the double negative (i.e., disliking discrimination) forces people think about the question anew. If the survey was framed in the same way as other surveys, it could result in people making quick judgements because they have done so repeatedly in the past and developed a quick neural response related to a certain question (Tversky & Kahneman 1974), rather than evaluating the issue in terms of its new context. According to Kahneman (2011), this is the activation of a deeper level of thinking, one that we can't do automatically. He calls this System II. One downside of this aesthetic choice is the difficulty of conceptualizing double negatives. Comparisons are generally easier when the question is framed in the positive. During user testing a couple of respondents did comment on this. It is unclear whether the gains from decreasing heuristics outweigh the drawback of respondents having to evaluate double negatives.

Had this author framed everything positively, they would have run into a similar issue of conceptualizing comparisons. For example, it is easy to understand the question of *do you like when employees receive fair wages?* It is a bit trickier to quickly assess whether you *like decreases in pollution?* It is easier to say that you *dislike an increase in pollution*. The ease with which a question is presented can contribute to survey fatigue and is a serious issue of research design. Wording questions in the most straightforward way is probably why some surveys switch between negative and positive frames. In this respect, the choice of a negative frame is a drawback of the design.

However, keeping the frame negative also increases consistency across the survey. Once respondents have gotten used to answering questions using a negative frame, they do not have to worry about switching back and forth between negative and positive frames. Such switching might make the questions themselves more straightforward, but it has its own disadvantages. It requires an extra level of attention of respondents, which may take away from their full and accurate evaluation of the comparisons posed. In this respect, the consistency of framing the issues in the negative could be activating System I, which can operate in a more automatic fashion, instead of System II (Kahneman, 2011). This author decided on the consistent negative frame for these reasons, even with some of its disadvantages.

Mechanical Turk

To collect data, the author used Amazon's Mechanical Turk service. The platform employs people worldwide to take a wide variety of surveys. A link to the Qualtrics survey was used to redirect respondents to the survey page. Data collection for 1,000 respondents took roughly 17.5 hours. The average time taken to complete the survey, as recorded by Mechanical Turk, was about 19 minutes. No email or personal contact information was collected from respondents. Data was downloaded from the Qualtrics site as an excel spreadsheet.

Data collection from Mechanical has gained popularity in the social sciences in recent years. The service is very fast (a large number of responses can be collected within hours) and relatively inexpensive. Additionally, it offers a wider range of possible respondents than the normal college student population used for many social science

experiments. Questions about the quality of data collection on MTurk have arisen within academia (Buhrmest, Kwang, and Gosling 2011 and Horton, Rand, and Zeckhauser 2010), but recent work has shown that MTurk samples yield similar results to traditional samples. Gosling et. Al (2004) found that samples collected online tend to be diverse, not negatively affected by non-serious or habitual responders, and produce results similar to traditional methods. For discussion on questions of external validity and compensation per respondent, see Berinsky et. Al (2012). For additional information and discussion of Mechanical Turk, refer to the Appendix.

Results

Descriptive Statistics

The descriptive statistics do not show unexpected trends. They only diverge from U.S. population statistics on a couple of issues. The differences are not significant enough that they would lead to results significantly different from the population.

Turkers tended to be younger than the population as a whole, but this is expected given that this is an online platform. Younger people also tend to engage in less formal work, or supplement other sources of income with freelance type work such as Mechanical Turk. It is surprising that those in the 19-25 age range were represented roughly half as much as those in the 26-34 and 35-54 age range. The use of Mechanical Turk to supplement income might be the driver of the older cohort participation. Conversely, it makes sense that fewer people in the 0-18 age range use Mechanical Turk because they would still be financially supported by their families.

Figure 1
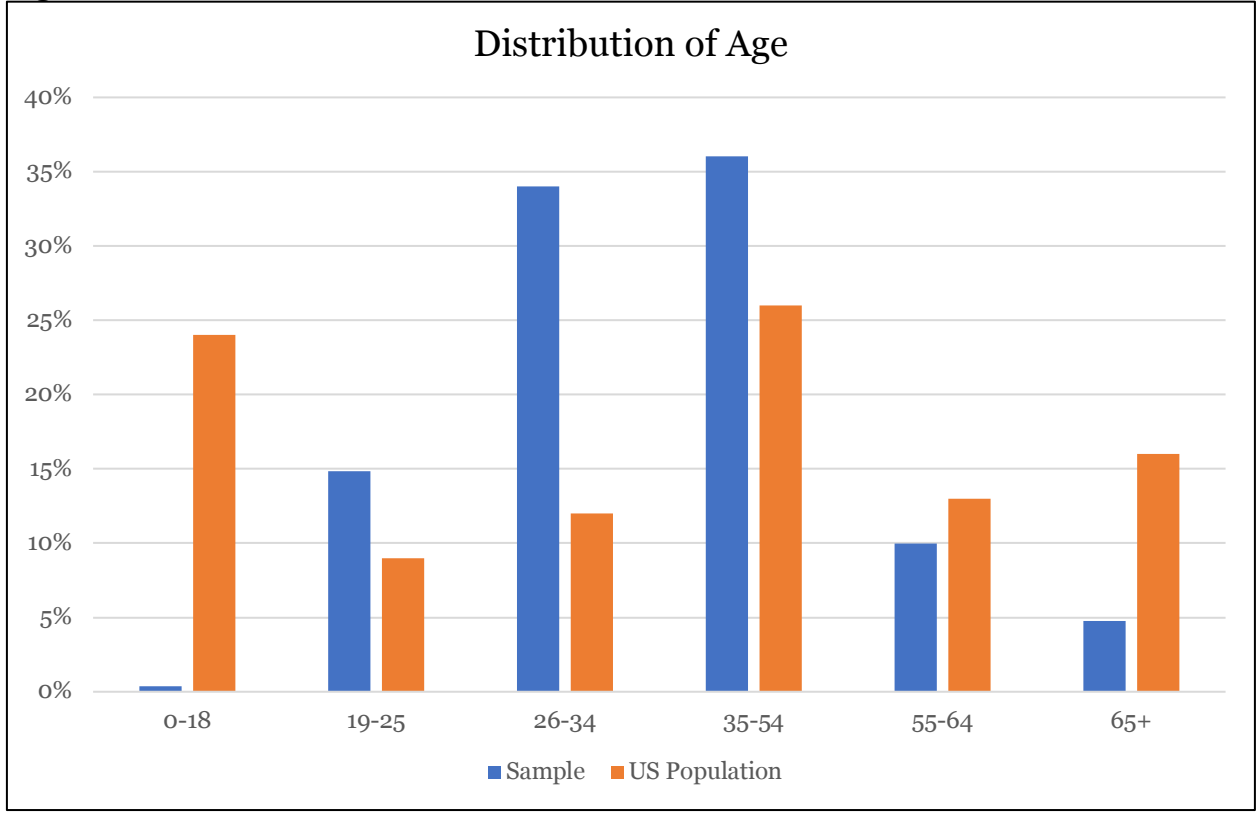
Source: Author calculations based on original data and Kaiser Family Foundation data on US population age distribution

The larger participation of women might derive from the tendency for more women to engage in informal work relative to their male peers. ESG investing has also historically been of relatively greater importance to women, which may have attracted a larger number of female respondents.
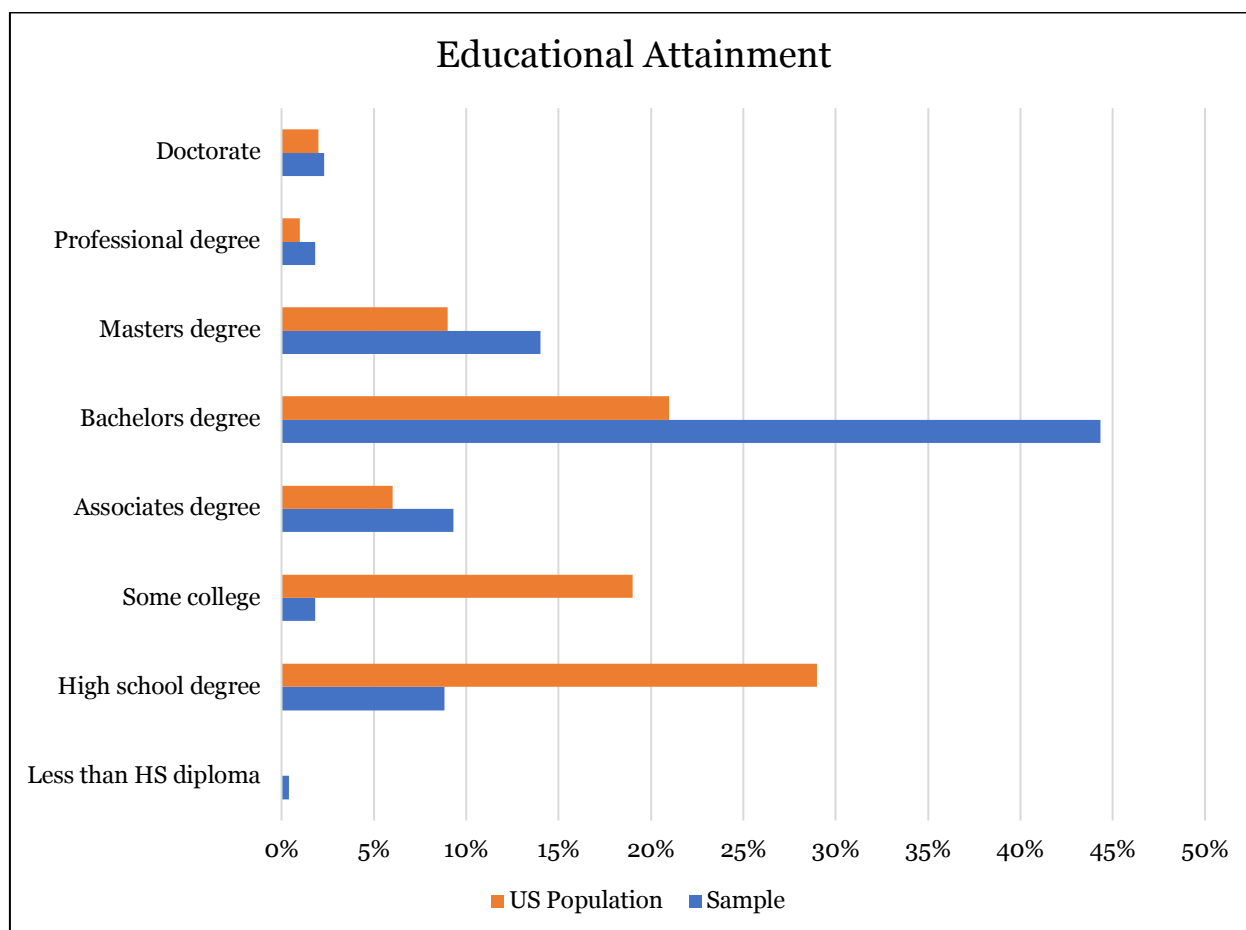
Figure 2
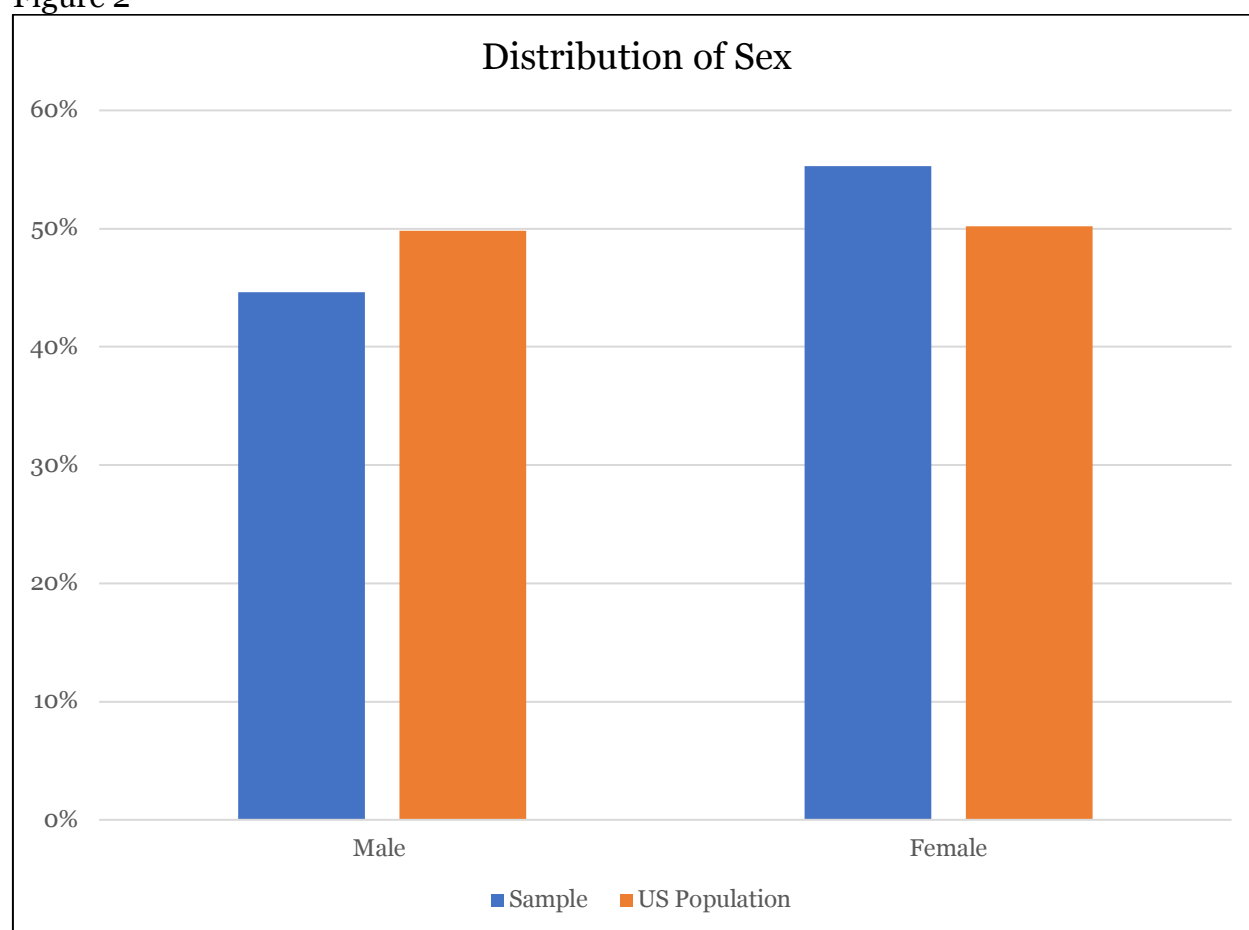
Distribution of Sex

Source: Author calculations based on original data and the Census Bureau data on US population distribution of sex

We see significantly larger population of college educated participants. The author hypothesized that the greatest number of respondents would have less than a bachelor's degree, due to the opportunity cost of earning a wage on Mechanical Turk versus in the formal sector. One driver of the high representation of bachelor's degree holders could be aspirations for certain levels of income and enough flexibility of skills to easily navigate and maximize the use of Mechanical Turk. More surprising is the representation of people with advanced degrees, given their higher opportunity cost. However, this is a major asset to the dataset, given that this demographic is the primary

holder of financial instruments. This makes them the most likely population to consider their own ESG investments.
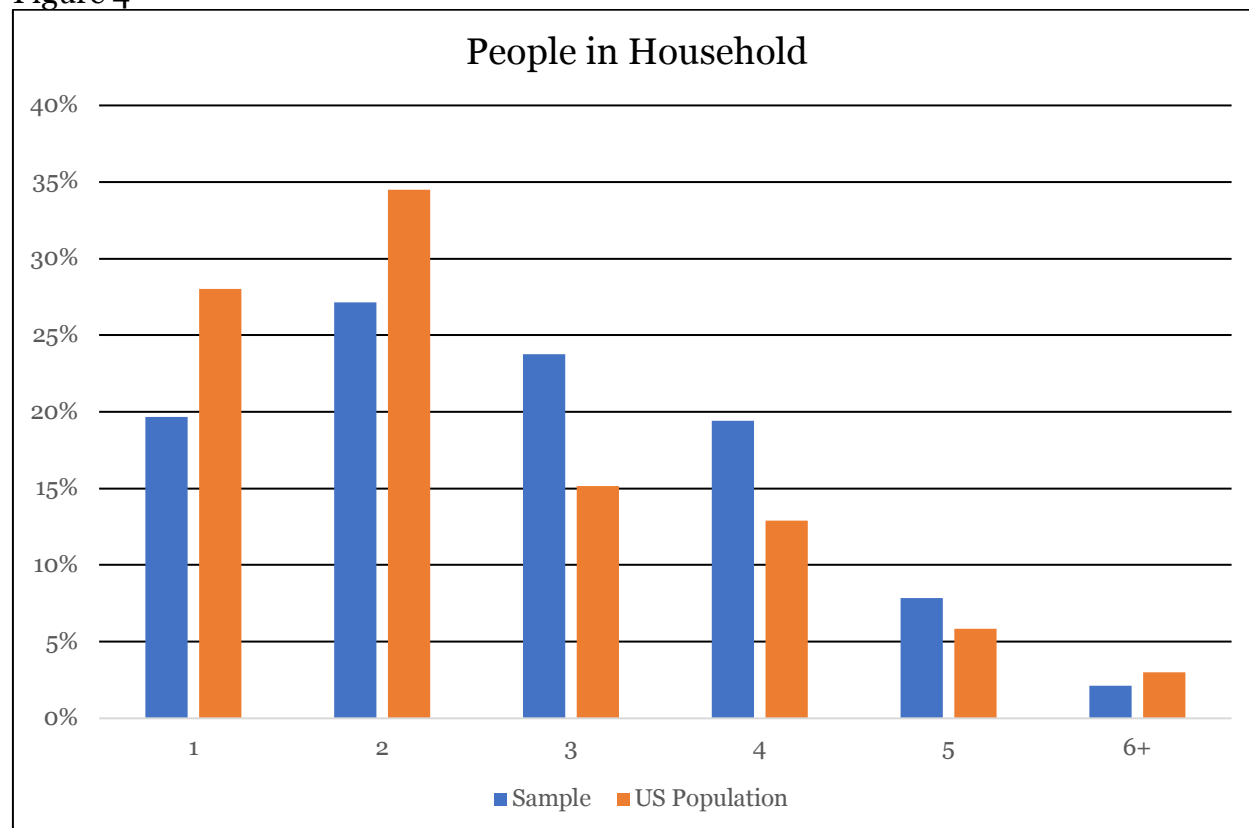
Figure 3

Source: Author calculations based on original data and the Census Bureau data on US population distribution of educational attainment

We see a similar representation of household size among the sample and US population. A surprising difference is the number of single and four-person households. This author had hypothesized these households would have been the largest population represented given the relative financial constraints that they represent (either fully supporting oneself on a single income or difficulty supporting children. The smaller number of households with more than four members is consistent with the author's hypothesis, given the demands of childcare and household work associated with larger

families. The largest share of households being in the two to three-person range would make sense if one partner worked and the other supplemented income through more informal means. These households are probably those with the greatest incentives to maximize income, given cultural goals of homeownership and other asset accumulation for families. This could also indicate an underlying pattern of specialization (Becker, 1985), where a certain member of the household is the primary income earner and the other does household work or childcare.
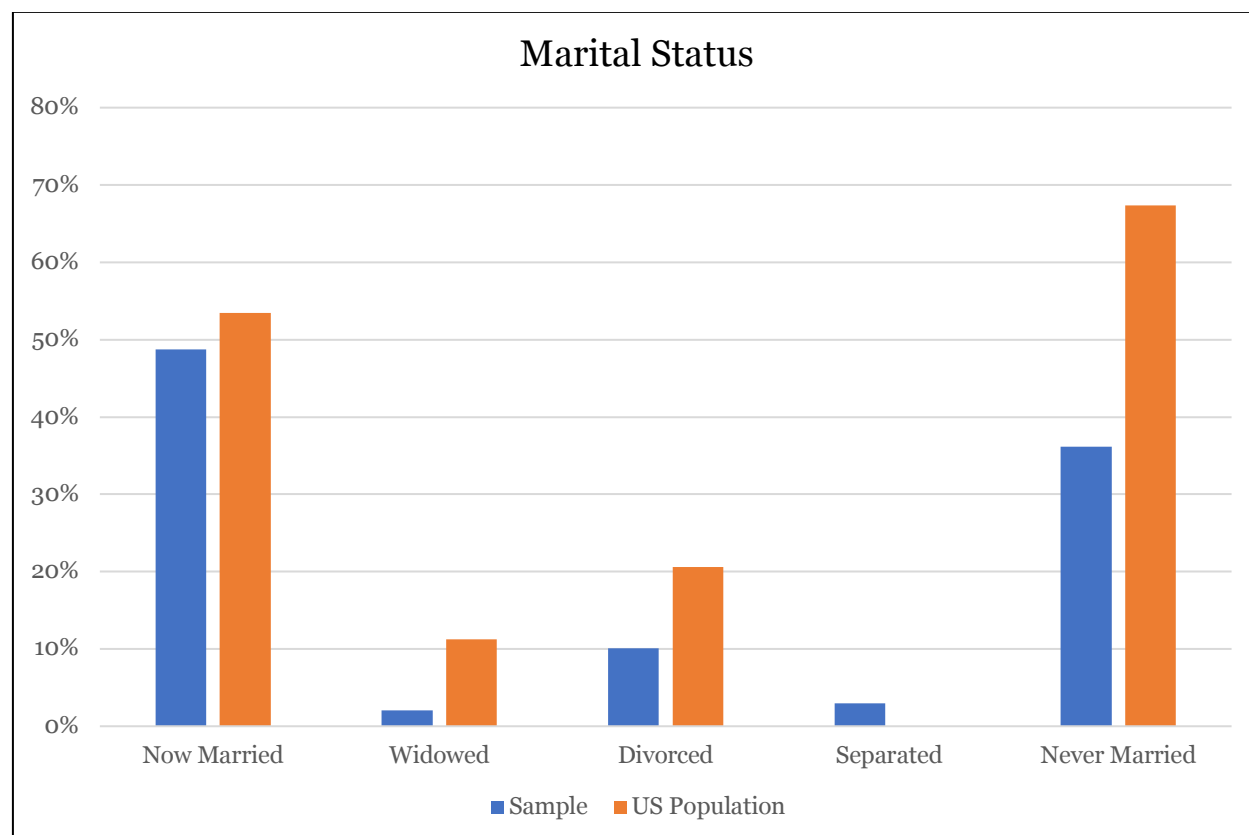
Figure 4

Source: Author calculations based on original data and the Census Bureau data on US population distribution of people in household

Respondents showed patterns different from the U.S. population. The population data is from Americans age 15 and above, and we know that there was a very small number of survey respondents under the age of 18. The percent of married respondents

was about the same as within the overall U.S. population. However, we see a very small number of widowed respondents, and about half as many divorcées. There were about half as many respondents who had never been married, as compared to the U.S. population.

Figure 5

Source: Author calculations based on original data and the Census Bureau data on US population distribution of marital status

We observe a larger representation of Democrats relative to Republicans and Independents. This is consistent with the rank order results that give priority to social issues. This could have been self-selection bias when choosing which tasks to complete on Mechanical Turk.[8] The high representation of Independents (slightly larger than

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[8] The survey was entitled A Survey about Your Preferences about Sustainability on MTurk, which could have attracted more sustainably-minded individuals. This group tends to be more liberal.

Republicans) makes it difficult to discern the values they might espouse, given that

Independents can fall on both the conservative and liberal spectrum of political beliefs.
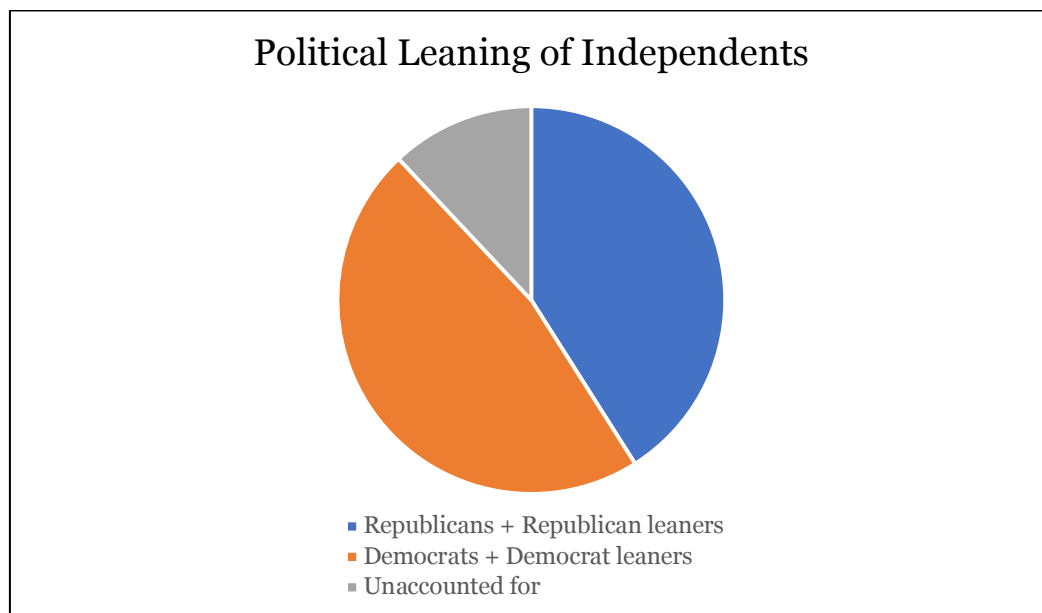
Figure 6
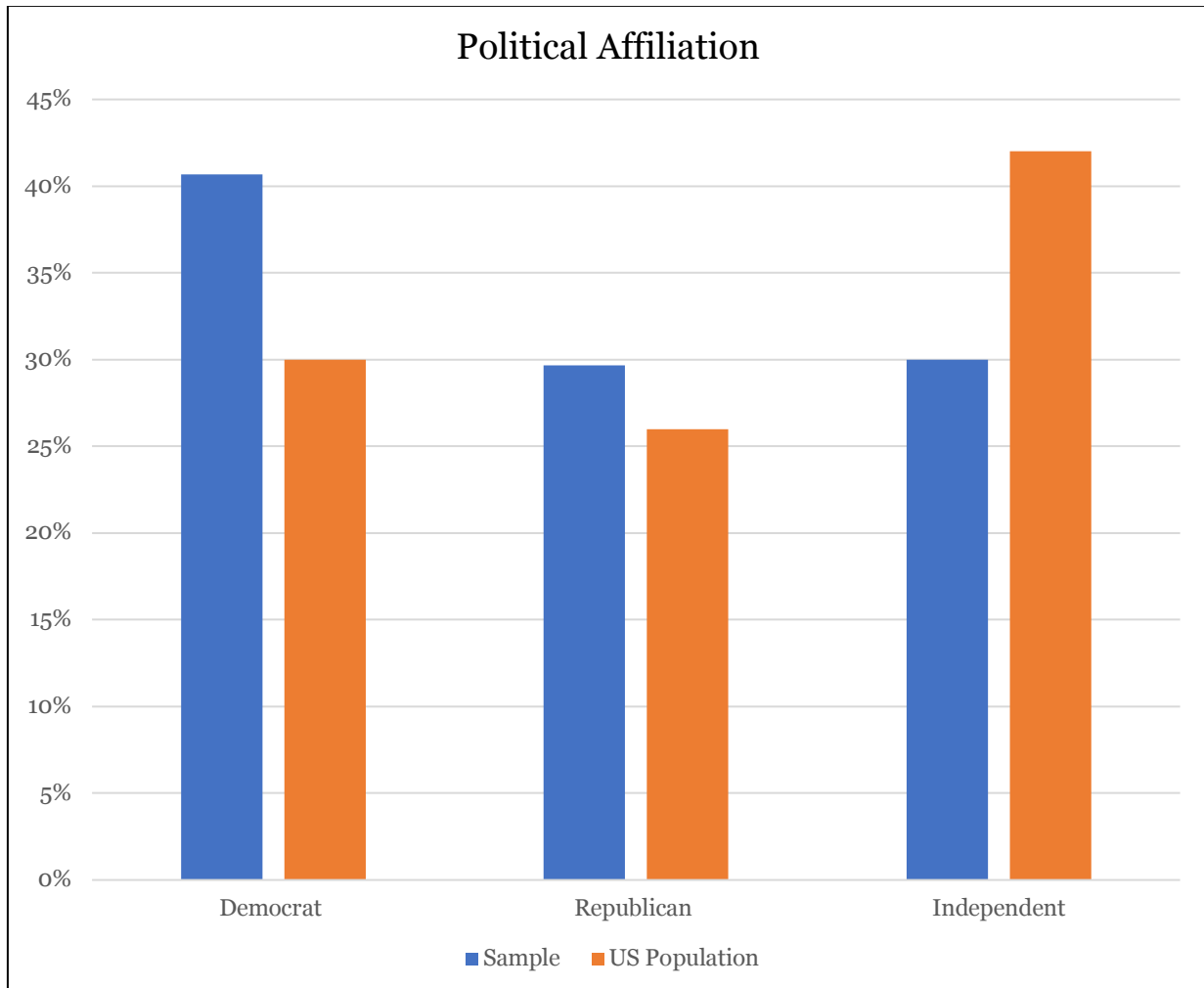
Source: Author calculations based on original data and Gallup Poll data on US population distribution of political affiliation

From a 2019 Gallup poll, we observe that those who identify as Independent tend

to lean more towards democratic ideology by about 6 percentage points. Gallup only had

data for about 88% of Independents. The democratic leaning of Independents could

play a role in the high ranking of social issues by respondents and the relatively lower

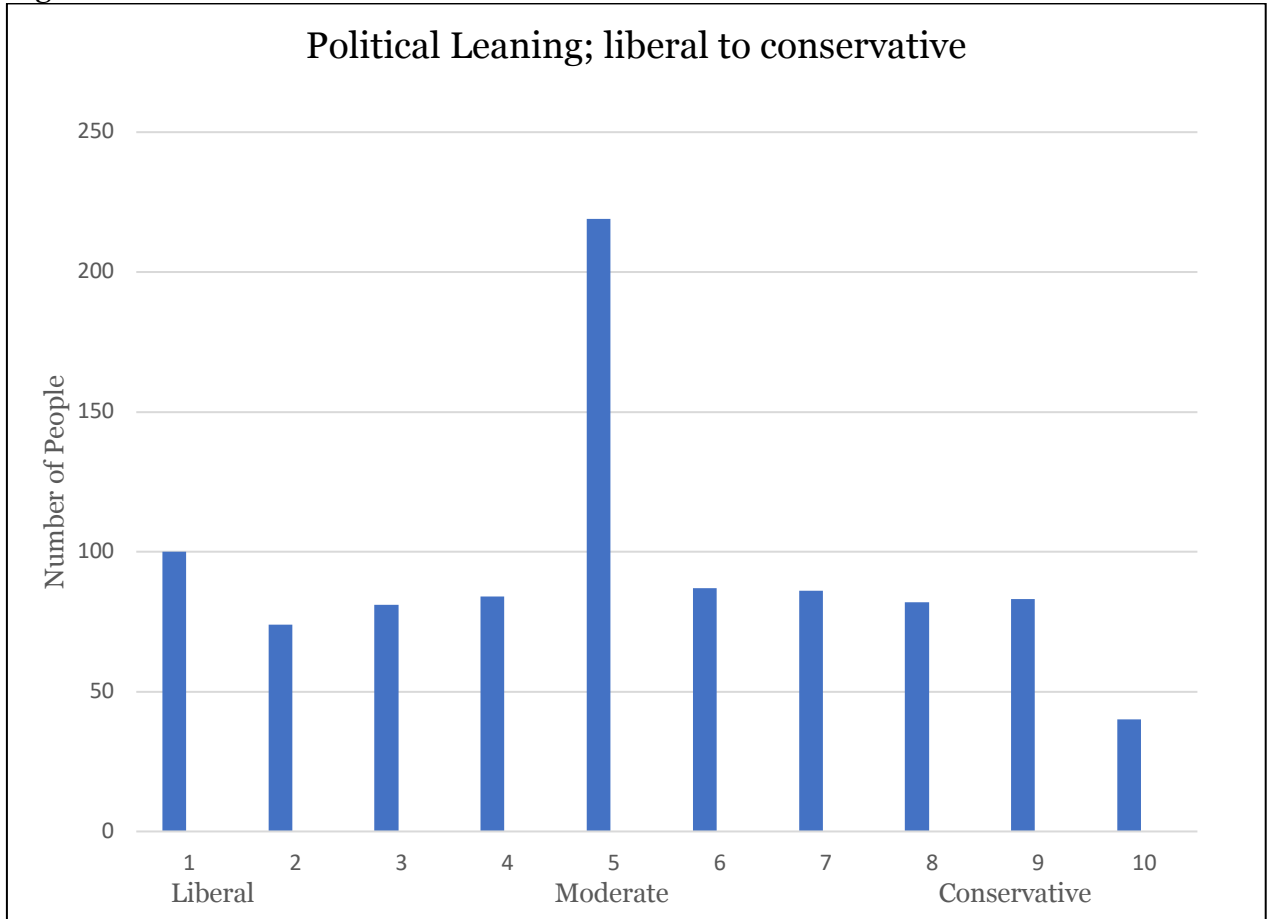ranking of certain governance issues such as board structure.

Figure 7

Source: Author calculations based on original data and Gallup Poll data on US population political affiliations

Within the respondents, the extremity of their political ideologies varies. Three

distinct attributes are observed in these data. The first is that most people see

themselves as moderate, as indicated by the prevalence of selecting the central value of

5. The second is that there were more than twice as many people who identified as very

liberal than those that identified as very conservative (100 people vs. 40). The third

trend is that there was not much difference between groups 2, 3, and 4 versus groups 6,

7, 8, and 9. Groups 6-9 had slightly higher counts, but we see a homogenous distribution

among these "middle" categories.

Figure 8

**Political Leaning; liberal to conservative**

Source: Author calculations based on original data and Gallup Poll data on US population political affiliations

Given the roots of ESG investing in Protestant Christianity, the connection between religious affiliation and ESG issue ranking is poignant. We see about an equal representation of Catholics and Protestants, and a high percentage of respondents who are both agnostic and atheist. The high ranking of social issues points to the importance of social issues in American culture generally, not just for religious groups. This may point to the incorporation of social issues into political affiliation in contrast to purely economic issues. The importance of religion to survey respondents fell below religious
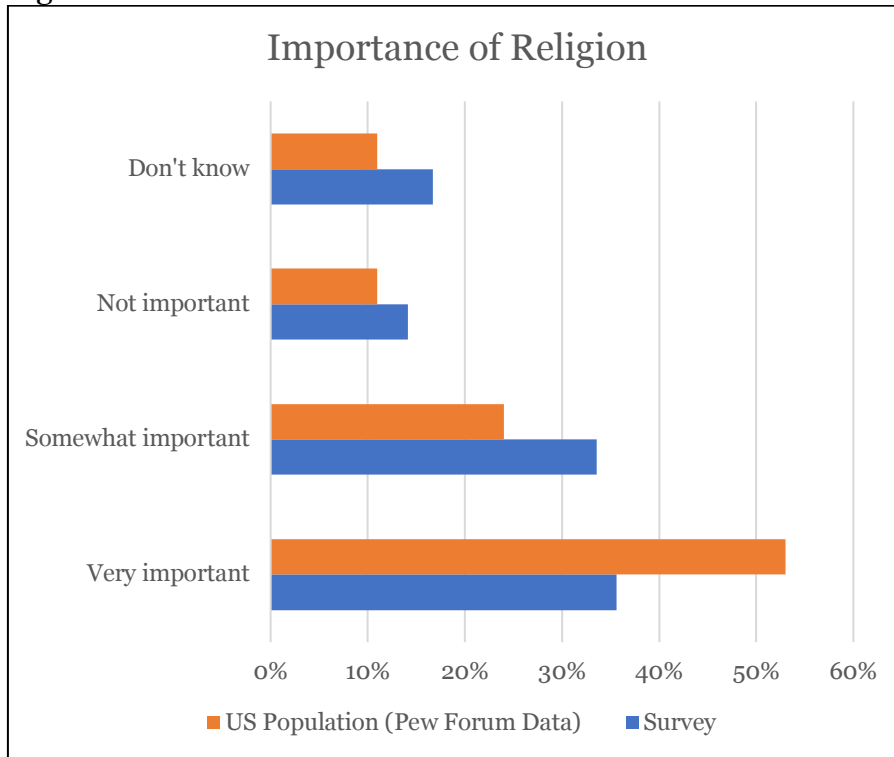
importance to the general US population. Respondents also had a higher rate of indicating religion as not important to them. This is further evidence to the secular importance of social issues.

Figure 9
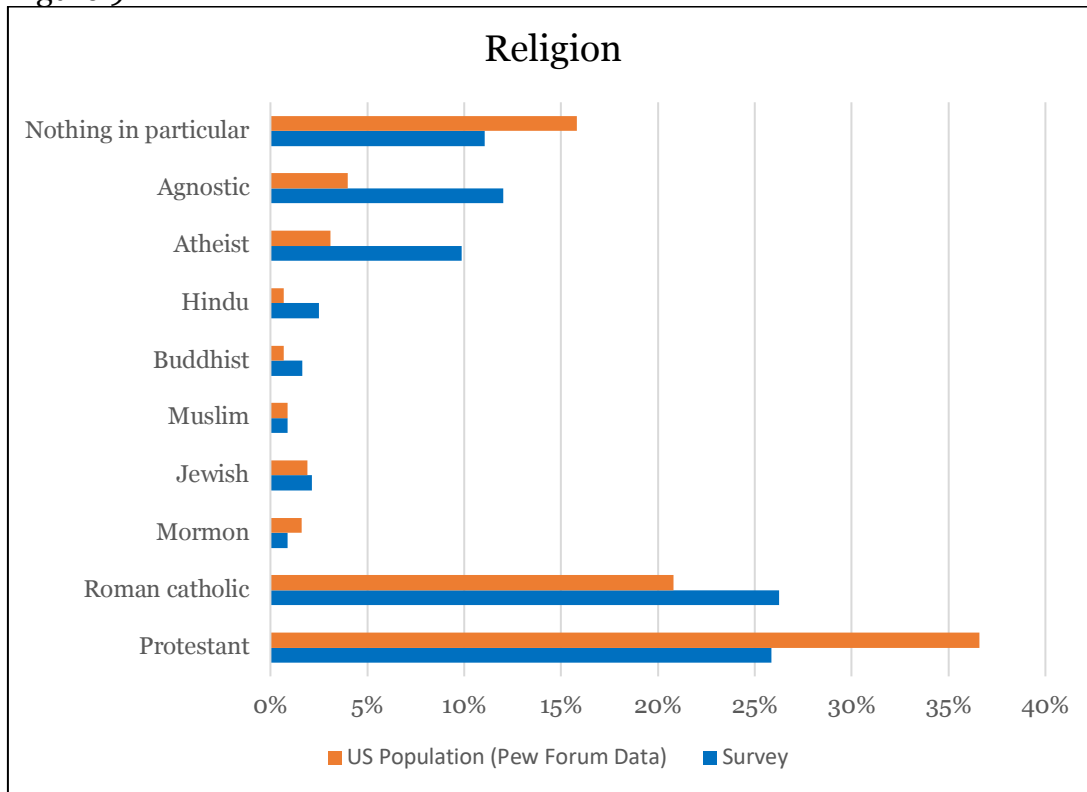
Religion

Source: Author calculations based on original data and Pew Forum data on US population political affiliations

Figure 10

Importance of Religion

Source: Author calculations based on original data and Pew Forum data on US population political affiliation

We also measured household income and found that the median income range was from $50,000-74,999, similar to the median American income of $58,820. We can see that incomes in the second, third, and fourth brackets are more represented in the survey respondents. We also see a lower representation in the lowest and highest brackets.

Figure 11

Income Distribution of Sample and US Population
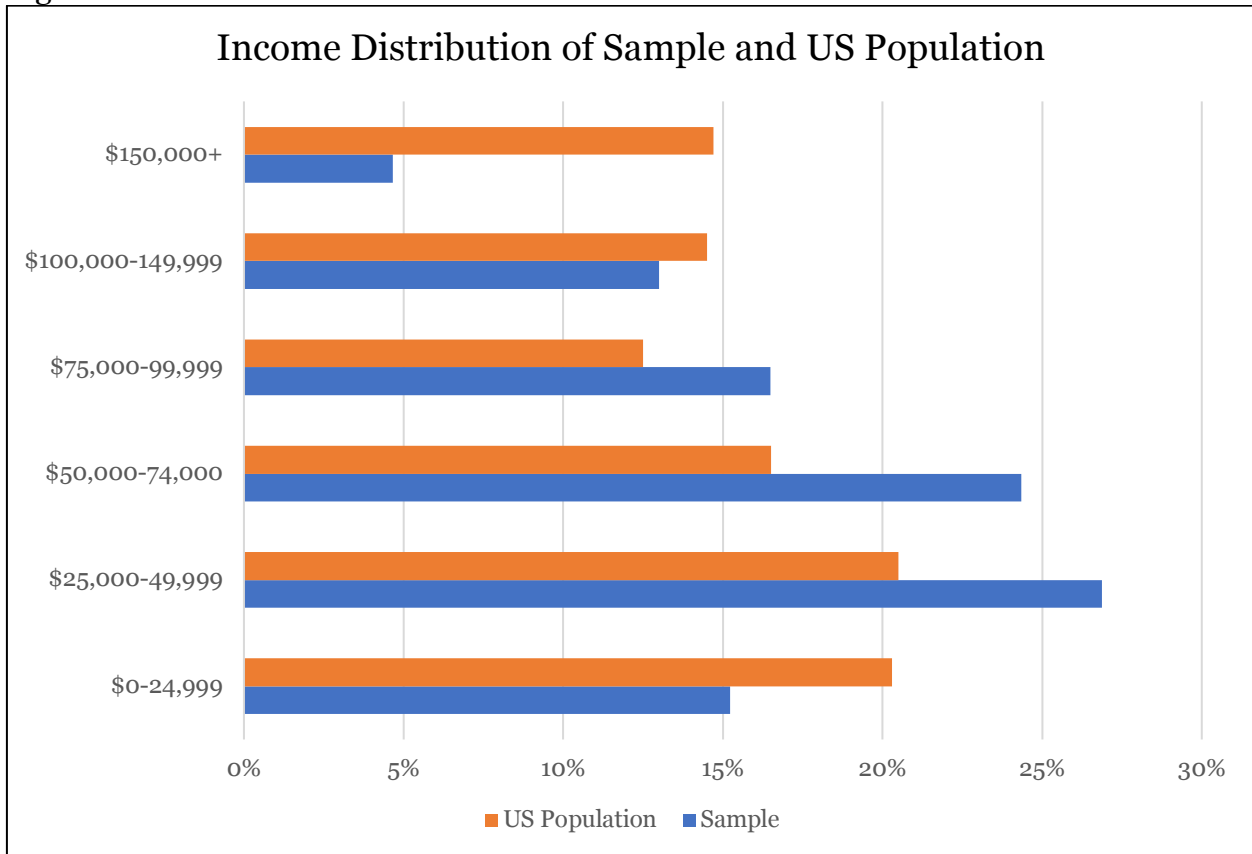
Source: Author calculations based on original data and the Census Bureau data on the US population income distribution

We also observe that more survey respondents are the primary income earner in their household. This is fairly surprising, given the expectation that Mechanical Turk is used to supplement income and this author would expect non-primary income earners to be the main Mechanical Turk users. These data suggest that specialization theory is not particularly salient in this instance, and that Mechanical Turk may be used more as primary income than supplemental income.

Figure 12

Primary Income Earner Status
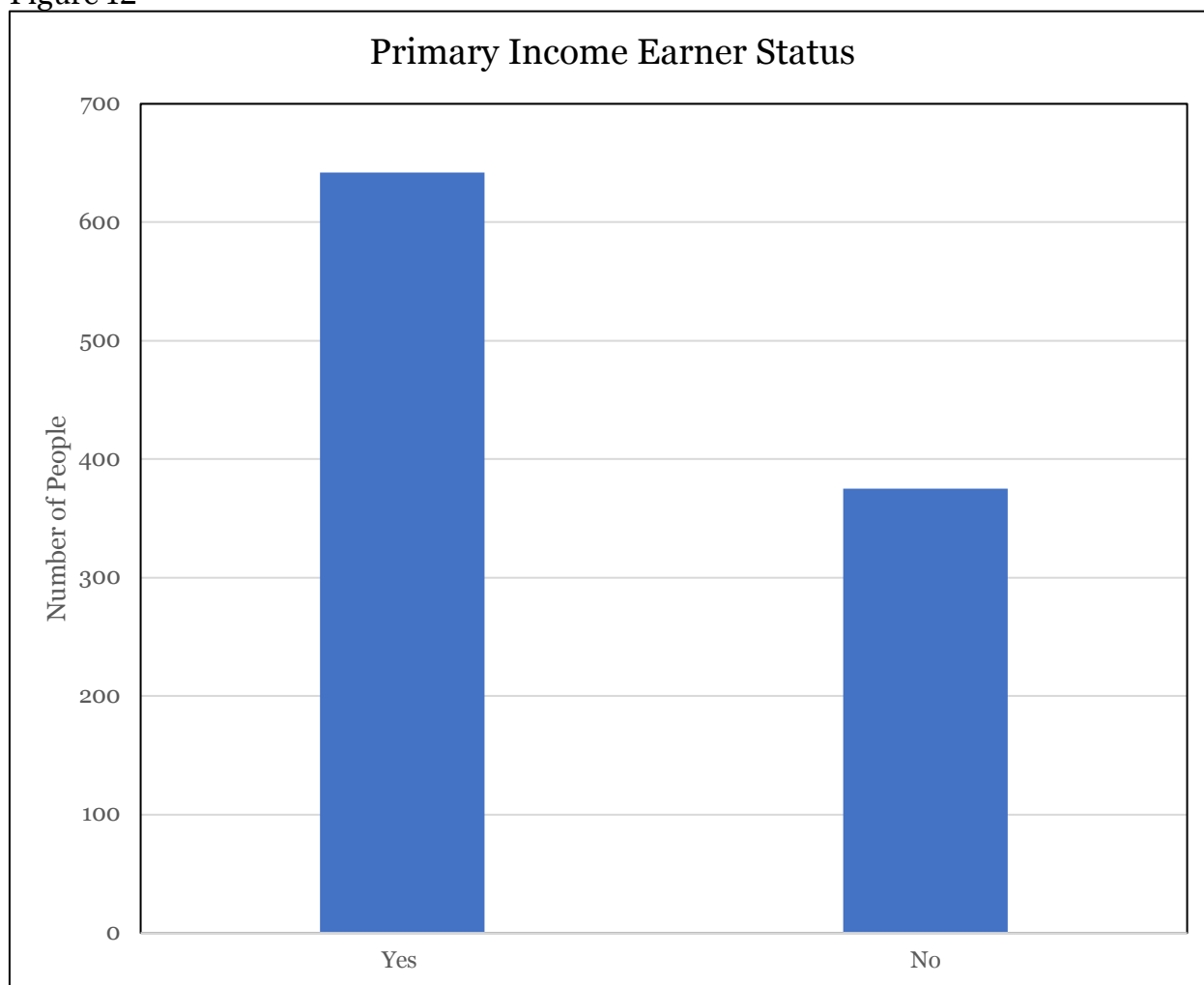
Source: Author calculations based on original data

Lastly, the data show that over two-thirds of respondents had some sort of

investment vehicle (a little less than 300 respondents did not have any). It is important

to note that respondents were not restricted to one financial instrument, so they could

have selected all four investment vehicle options (employer provided retirement,

individual retirement, direct investments, and other financial instruments). For this

reason, it is difficult to parse out exactly how many respondents are beginning or

advanced investors. We can see that over 500 respondents have employer provided

retirement plans. This does not automatically indicate investment experience, since

their employer is managing their retirement for them. Respondents with individual retirement accounts, direct investments, or other financial instruments are the most likely to have experience making their own investment decisions, and are the most likely to have decided whether or not to move funds into an ESG vehicle.

Figure 13
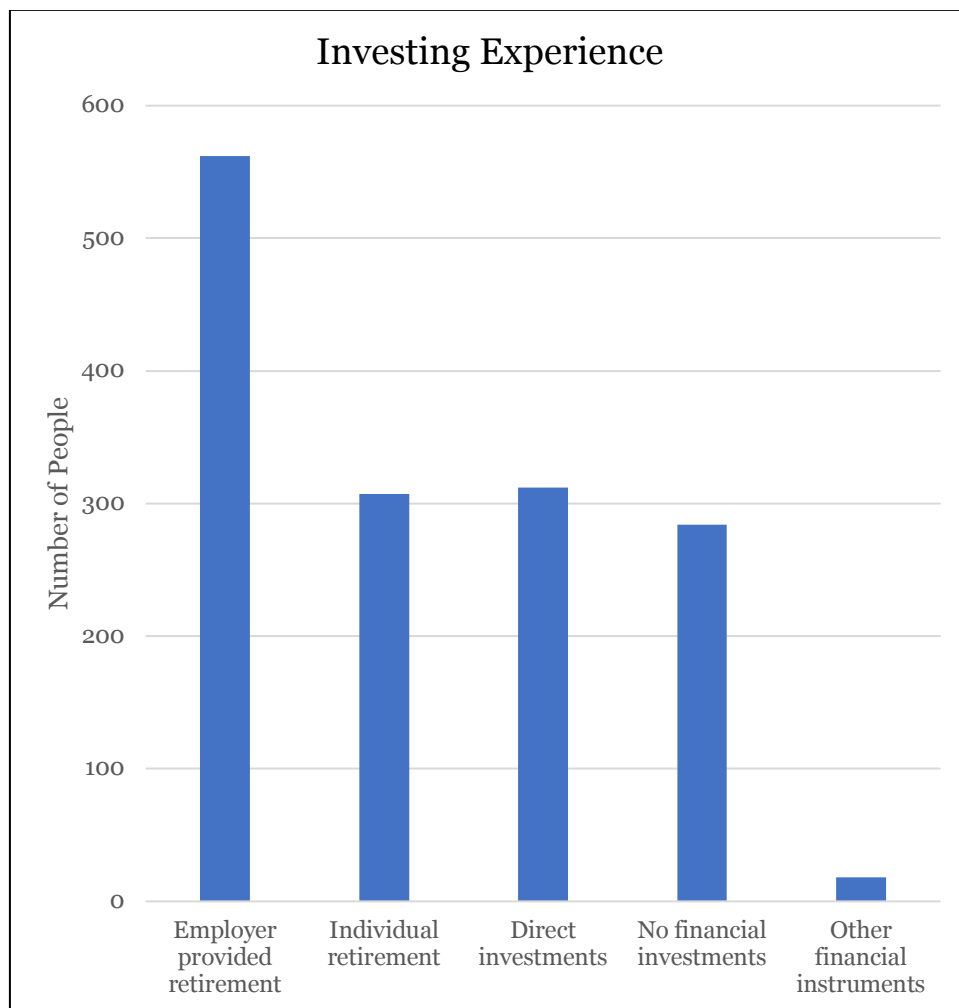
Source: Author calculations based on original data

MaxDiff Results

Each individual received a MaxDiff score for each of the 16 issues presented in the study. The MaxDiff score was calculated by using the equation:

$$\frac{\sum Issue_{LD} - \sum Issue_{MD}}{\sum Issue\ Appearance}$$

Where $Issue_{LD}$ is when an issue was disliked the least, and $Issue_{MD}$ is when an issue was disliked the most. When an issue was consistently disliked least, that issue was not as important as other issues to an individual. Conversely, when an issue was consistently disliked most, that issue was of the utmost concern to an individual. When an issue was neither disliked least or disliked most, that issue was not neutral to a person. It was more important than an issue that was frequently disliked least, but less important than an issue that was frequently disliked most. An issue that received a score of -1 would be the most important (consistently disliked most), whereas a score of 1 would be the least important (consistently disliked least).

It is important to note that each issue appeared to every person four times, *on the aggregate.* One respondent could have seen an issue more times than another person and the survey would have still shown each person that issue four times. For example, in a two-person study, person one could have seen issue five six times, while person two could have seen it two times, and on average, it would have appeared four times for each respondent. This is important to keep in mind when evaluating the MaxDiff score of an issue for an individual. The equation for a MaxDiff score gives us the same score for an individual that saw an issue two times and disliked it least both times and an individual that saw an issue six times and disliked it least every time. Areas of further research include accounting for the weights of each score. For example, survey designs that could

identify the issue that was shown twice and disliked both times and the issue that was

shown six times and disliked every time and generating a question within the survey to

compare the two issues. Because this method has not been fully developed yet, it is

important to keep in mind the drawbacks of the current method and the limitations of

an issue's MaxDiff score.

The MaxDiff score of each issue for every individual was aggregated to create an

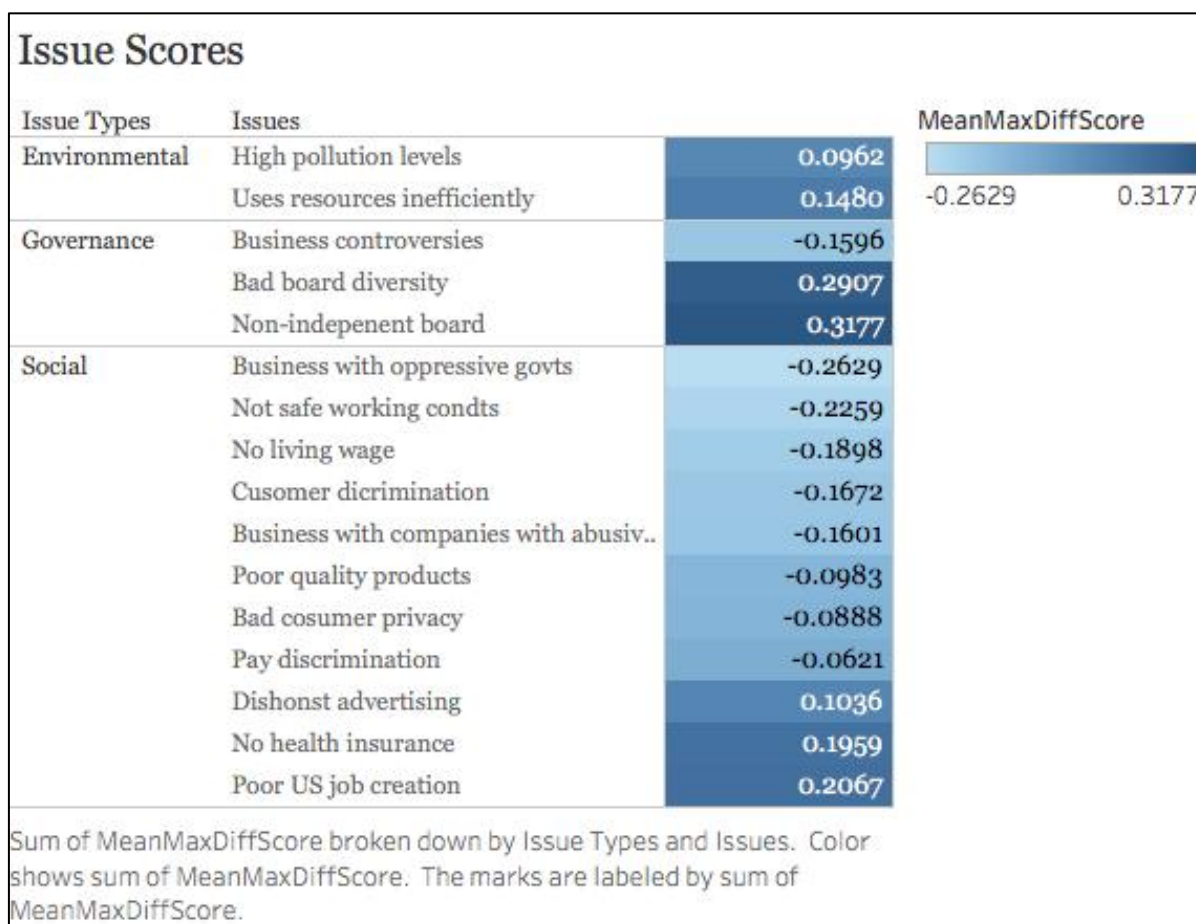overall MaxDiff score for each issue. The ranking is as follows:

Figure 1

Rank	Issue	MaxDiff Score
1	Does business with governments who oppress their people or violate international human rights	-0.2629
2	Does not provide a safe workplace or take injury prevention precautions	-0.2259
3	Does not pay a living wage	-0.1898
4	Discriminates against certain groups of customers or potential customers	-0.1672
5	Does business with companies with abusive conditions	-0.1601
6	Has leadership and business practice controversies or routinely violates laws and regulations	-0.1596
7	Makes decisions about product quality that negatively affect durability or safety	-0.0983
8	Does not protect customer/consumer privacy	-0.0888
9	Discriminates in pay based on irrelevant characteristics	-0.0621
10	Does not minimize pollution	0.0962
11	Is not truthful in advertising or labeling	0.1036
12	Does not use environmental resources efficiently	0.1480
13	Does not provide health insurance	0.1959

14	Does not create jobs in the US	0.2067
15	Does not have a board with diversity based on age, gender, nationality, race, socioeconomic background, and tenure	0.2907
16	Does not have independent board leadership, risks conflicts of interest	0.3177

The top-ranked issue was the issue most frequently ranked as most disliked and the lowest-ranked issue was the issue most frequently ranked as least disliked. Those in the middle were neither disliked least nor disliked most consistently, indicating that respondents disliked them more than lower ranked issues, but not as much as highly ranked issues.

In the following graph, issues are sorted by issue type and then listed in the rank of most disliked to least disliked. Lighter blue indicates a higher degree of dislike for an issue. The graph shows that social issues had were ranked as most important to respondents.

Figure 2

Issue Scores

Issue Types	Issues		MeanMaxDiffScore
Environmental	High pollution levels	0.0962	
	Uses resources inefficiently	0.1480	
Governance	Business controversies	-0.1596	
	Bad board diversity	0.2907	
	Non-indepenent board	0.3177	
Social	Business with oppressive govts	-0.2629	
	Not safe working condts	-0.2259	
	No living wage	-0.1898	
	Cusomer dicrimination	-0.1672	
	Business with companies with abusiv..	-0.1601	
	Poor quality products	-0.0983	
	Bad cosumer privacy	-0.0888	
	Pay discrimination	-0.0621	
	Dishonst advertising	0.1036	
	No health insurance	0.1959	
	Poor US job creation	0.2067	

MeanMaxDiffScore scale: -0.2629 to 0.3177

Sum of MeanMaxDiffScore broken down by Issue Types and Issues. Color shows sum of MeanMaxDiffScore. The marks are labeled by sum of MeanMaxDiffScore.

This graph shows the ranked preference order with the most disliked issues on the left-hand side and the least disliked issues on the right. The blue bars represent social issues, the orange represent governance issues, and the green environmental issues. The graph shows a fairly smooth decline in relative preference of the negative values (most disliked), but a choppier, stair-like pattern of the least-disliked issues. These patterns show more refined preference structure for that which is cared about most because there is more nuance and the relative importance of issues to one another is smoother. The preference structure for the least-disliked issues has less refined relative strengths of preferences.
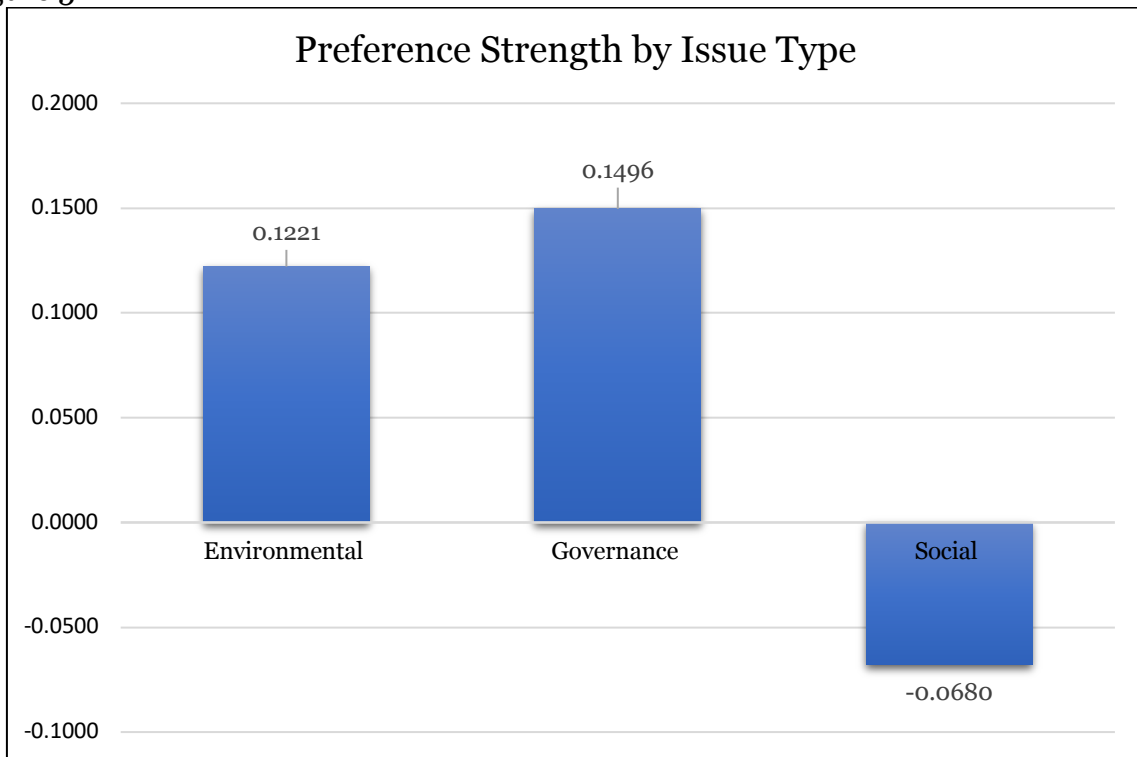
Figure 3
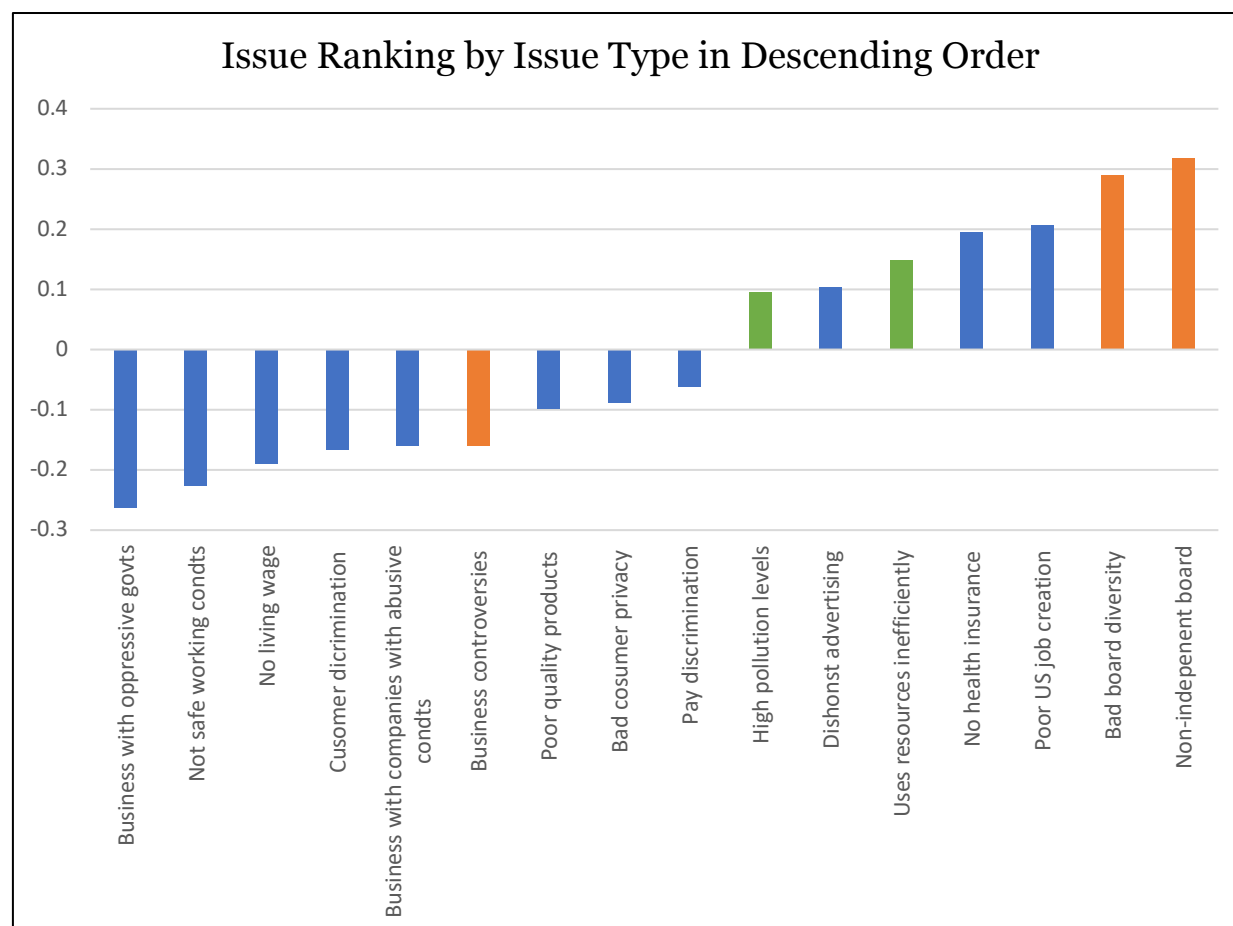
Issues were not consistently ranked into environmental, social, or governance "clusters." While socially-oriented issues ranked highest, many of them are strongly related to the governance of a firm. The author categorizes many issues as social, but their relationship to how a firm makes and executes decisions is important. The prevalence of social issues as a percentage of the total number of issues evaluated may have a bearing on how often they are highly ranked. However, social issues were empirically found to be the most important to Americans by Just Capital. Environmental issues fell well below the top-ranked issues, in positions 10 and 12. The ranking in terms of categories is as follows:
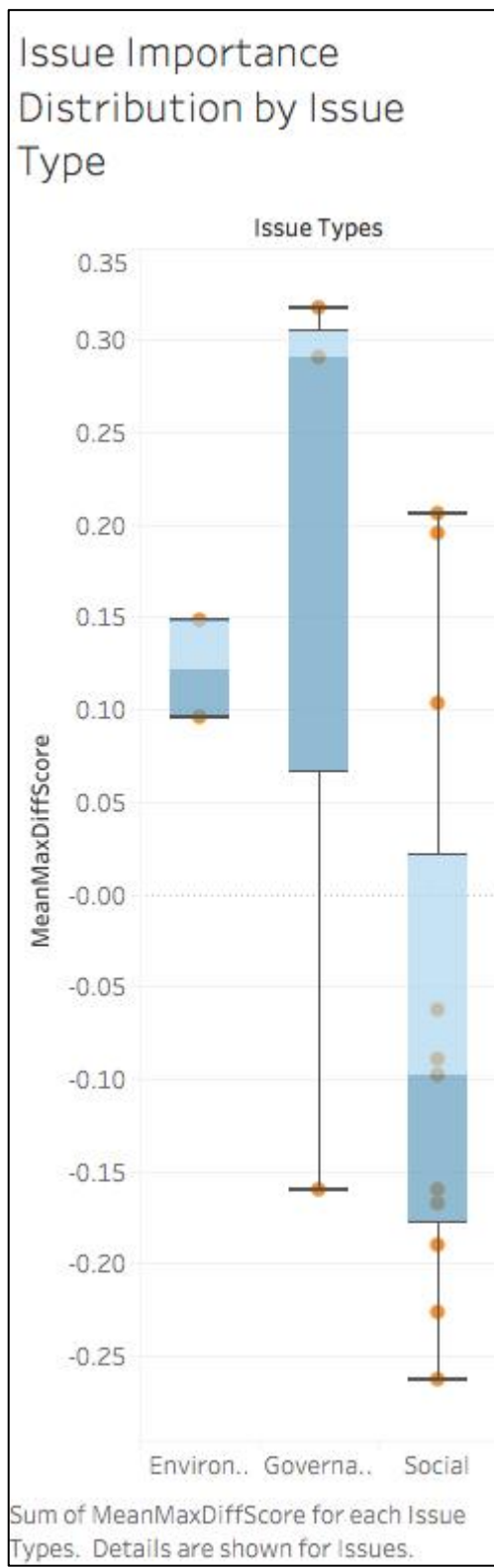
Figure 4

Rank	Issue Type	Rank	Issue Type
1	Social	9	Social
2	Social	10	Environmental
3	Social	12	Social
4	Social	13	Environmental
5	Social	14	Social
6	Governance	15	Governance
7	Social	16	Governance
8	Social		

Figure 5

Preference Strength by Issue Type

Not only are individual social issues the most preferred, but median preference is

Issue Importance Distribution by Issue Type

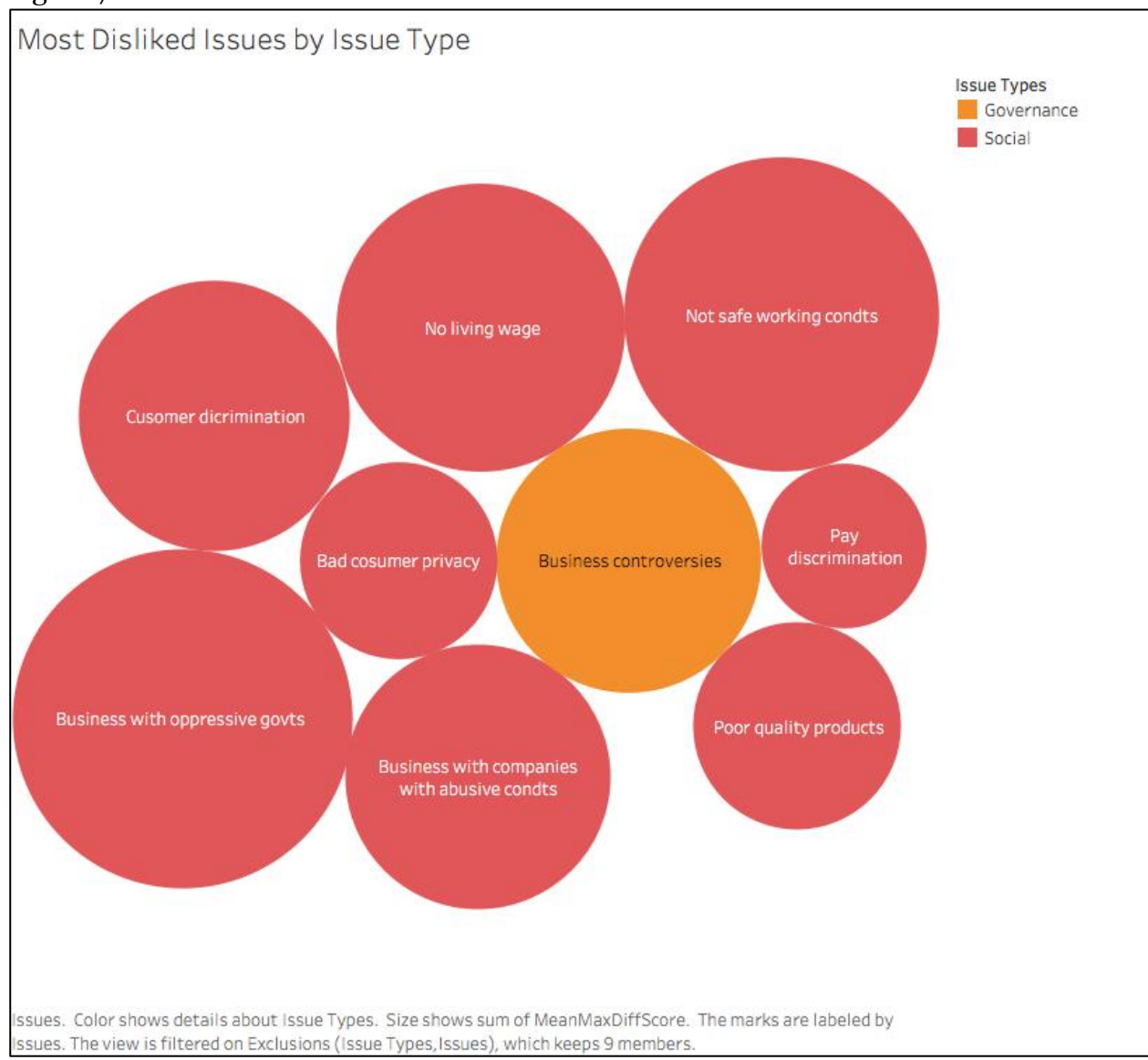Sum of MeanMaxDiffScore for each Issue Types. Details are shown for Issues.

much stronger than the preferences for environmental and governance issues. The difference between the average social issue and the average environmental issue is 0.18. People's preferences between environmental and governance issues were much more similar, with a difference of about 0.02.

The range of MaxDiff scores for each ESG issue type shows an additional story. Social issues have a huge *range* of scores. It appears like governance issues also have a large range, but when the outlier of 'business controversies' is taken out, the spread is even smaller than the range for environmental issues. Of course, the ranges would probably get bigger if more environmental or governance issues were added to the study. There are also two social issues that rank lower than the lowest environmental issue: 'poor US job creation' and 'no health insurance.' They differ from a different social issue, like doing business with governments that violate human rights because domestic political debates may have a greater range of opinions than

an oppressive government. Still, 8 out of 10 social issues were ranked most disliked the majority of the time.

The most disliked issues (the issues that people cared about most) were dominated by social issues, but also included a governance issue.
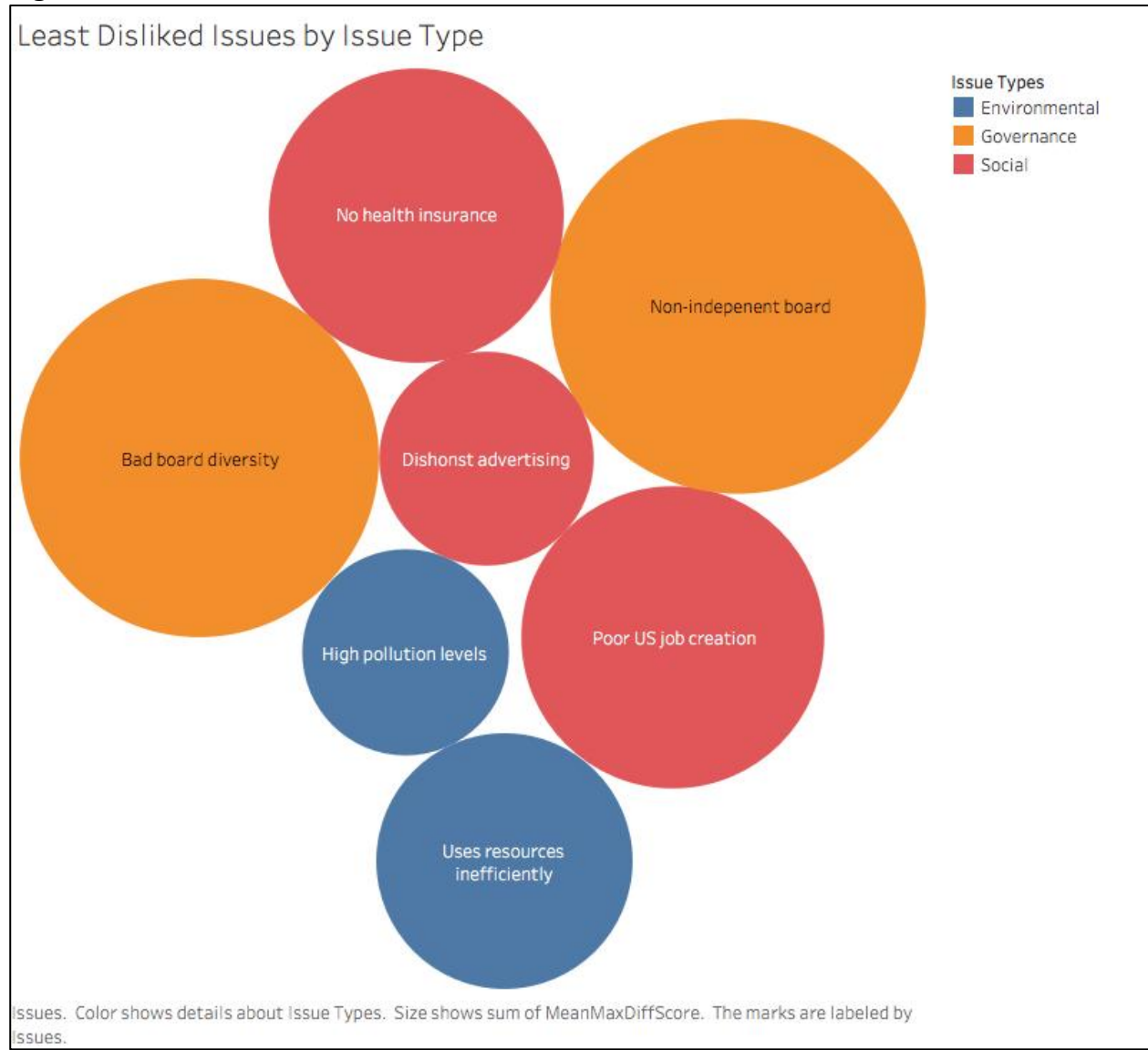
Figure 7

Most Disliked Issues by Issue Type

Issue Types
- Governance
- Social

No living wage

Not safe working condts

Cusomer dicrimination

Bad cosumer privacy

Business controversies

Pay discrimination

Business with oppressive govts

Business with companies with abusive condts

Poor quality products

Issues. Color shows details about Issue Types. Size shows sum of MeanMaxDiffScore. The marks are labeled by Issues. The view is filtered on Exclusions (Issue Types,Issues), which keeps 9 members.

The larger circles represent the issues that people cared about more strongly. As was shown in previous graphs, 'doing business with repressive governments' and 'not safe working conditions' were the issues that respondents cared about most.

The least disliked issues (the issues that people cared about least) were a mix of social, environmental, and governance issues. Overall, people cared the least about governance issues (they held the bottom two positions in the rank). The smaller circles indicate that respondents cared *more* about the issue, specifically 'high pollution levels' and 'dishonest advertising.'

Figure 8

Least Disliked Issues by Issue Type

Issue Types
- Environmental
- Governance
- Social

No health insurance

Non-indepenent board

Bad board diversity

Dishonst advertising

High pollution levels

Poor US job creation

Uses resources inefficiently

Issues. Color shows details about Issue Types. Size shows sum of MeanMaxDiffScore. The marks are labeled by Issues.

The analysis of the mean scores are important because they give a birds-eye-view of which issues were important to respondents collectively. It showed that the population generally cared about social issues and cared much less about governance issues. The distribution of MaxDiff scores for each issue by number of respondents is also important to consider, because it shows us whether an issue was always ranked in the same way or whether it varied significantly across the population.

Generally, issues that people ranked as having a higher importance to them will have a greater distribution of scores to the left of zero. For example, the issues of doing 'business with oppressive governments' was the highest-ranking issue, and there are a large number of respondents who had a maxdiff score of -1 for the issue. Conversely, 'board diversity' was ranked in 15th place and has a large number of respondents with a score of 1 and other scores to the right of zero.

Figure 9
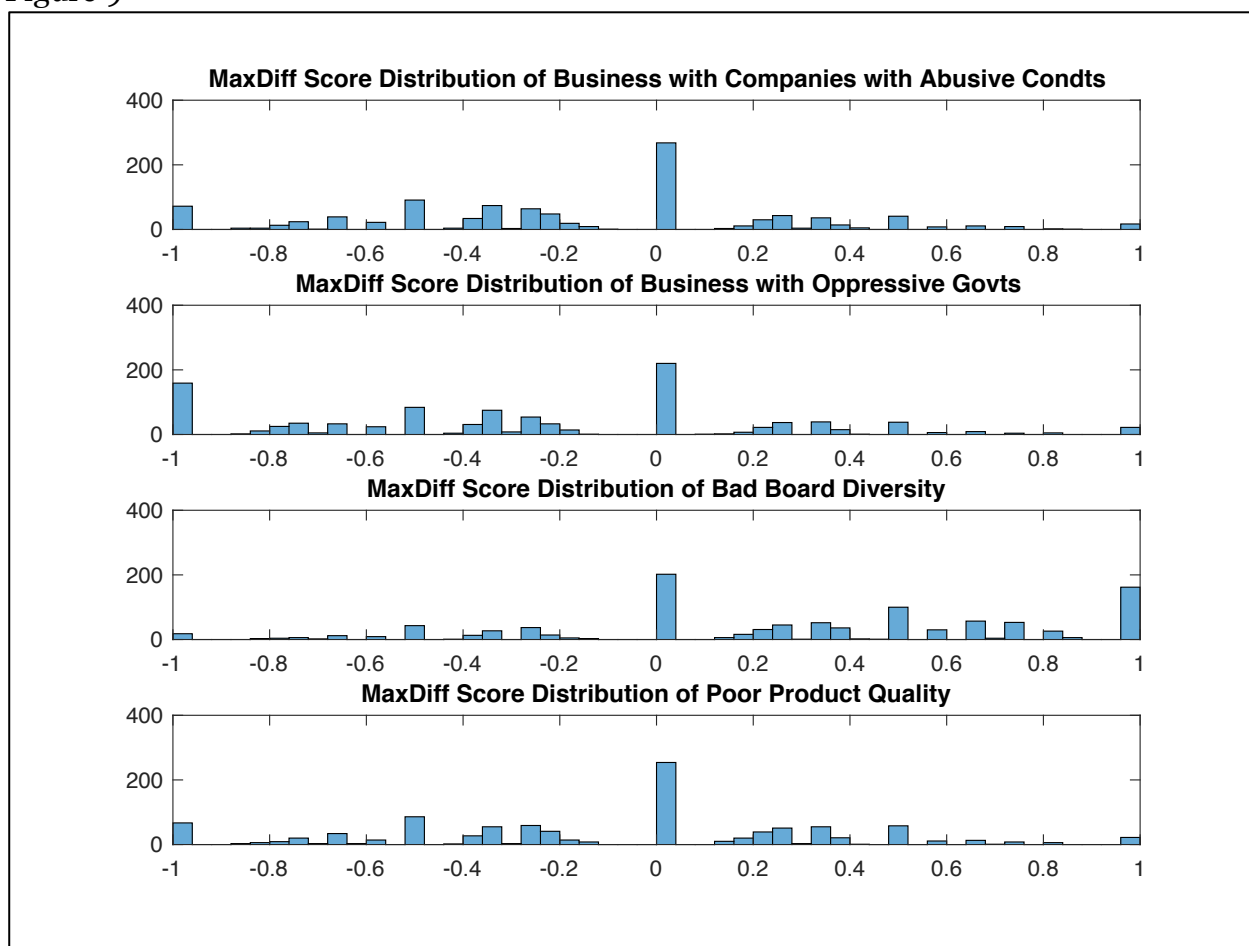
Some compelling distributions include those that are similar on either side of zero. 'High pollution levels' and 'bad consumer privacy' are both examples of this. These distributions represent issues that some people disliked most and some people disliked least. This bifurcation, with two instances of strong opinions (to be indifferent is to

select neither least nor most dislike for a particular issue), is not captured in the maxdiff score. Pollution is ranked number 10 and consumer privacy is ranked number 8. Perhaps people with strong opinions one way or the other on these issues have similar demographic characteristics. Future research could isolate preference rankings by demographics to unearth more patterns of ESG issue preference clustering.
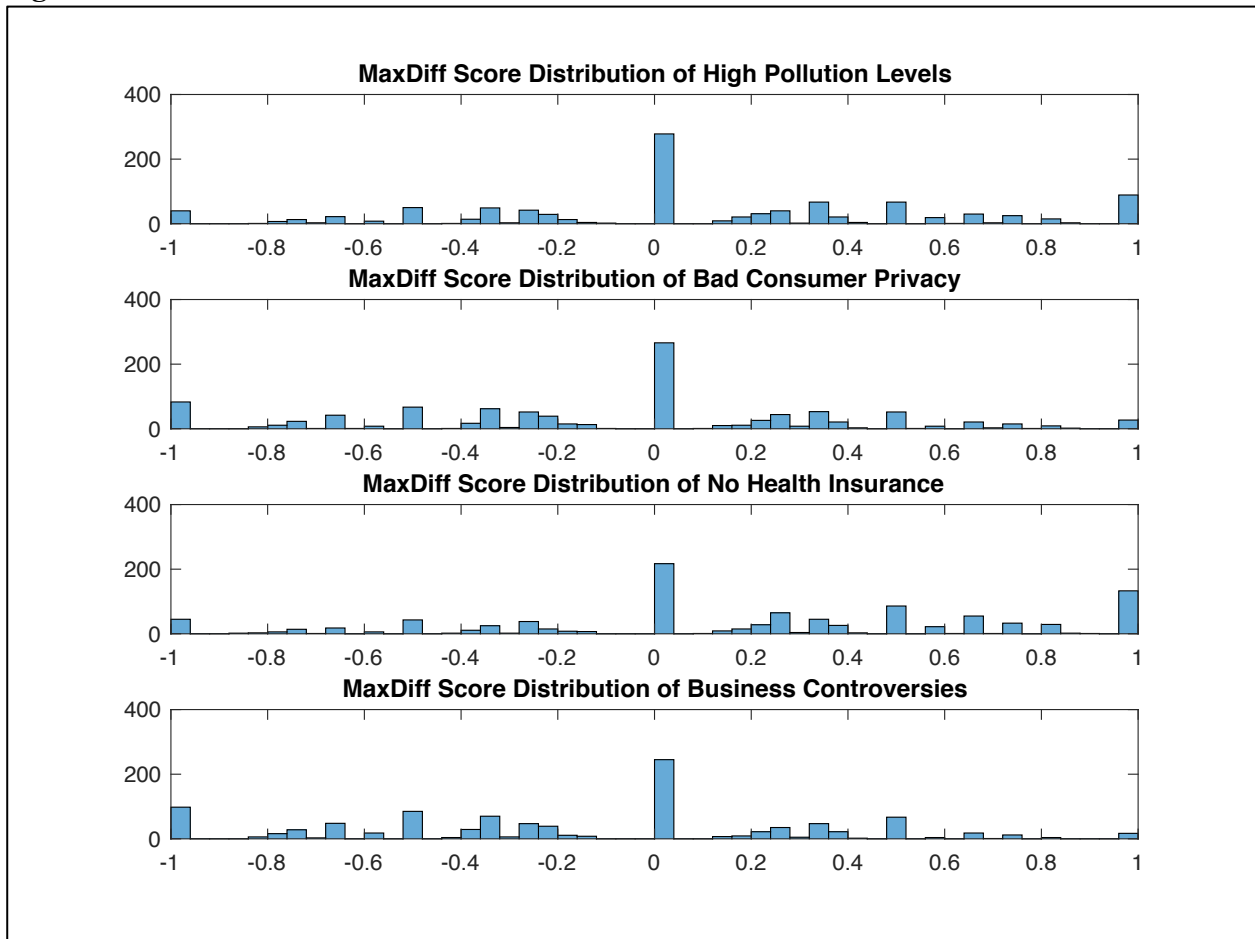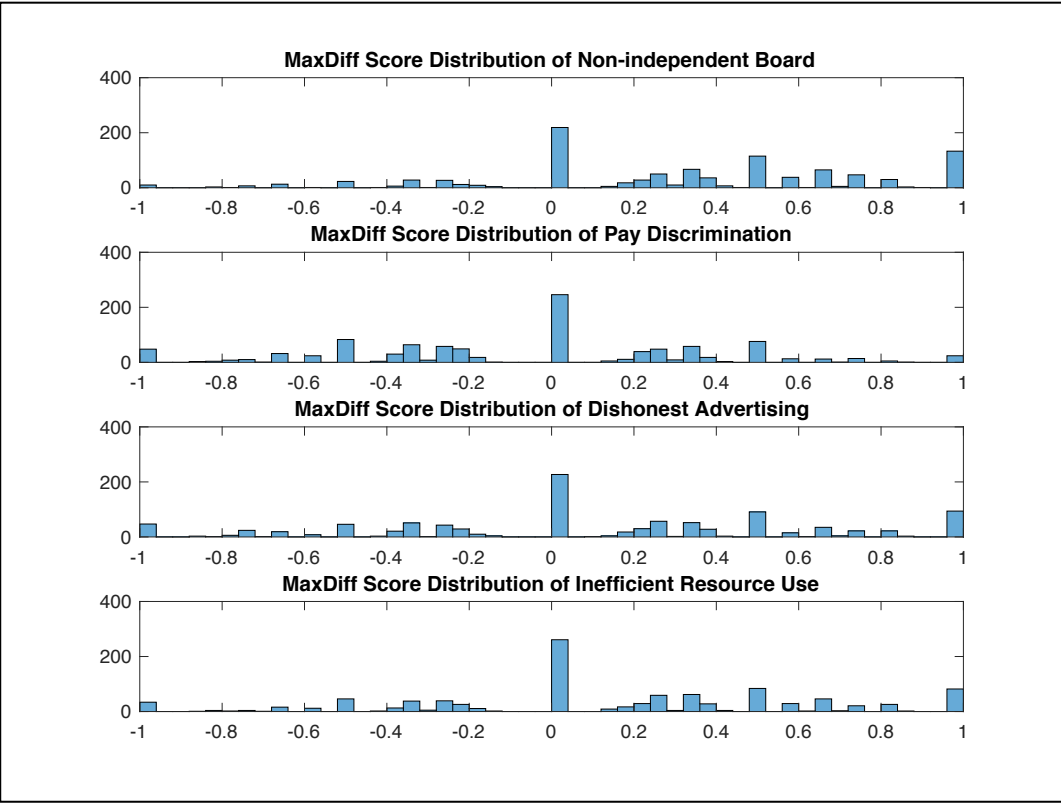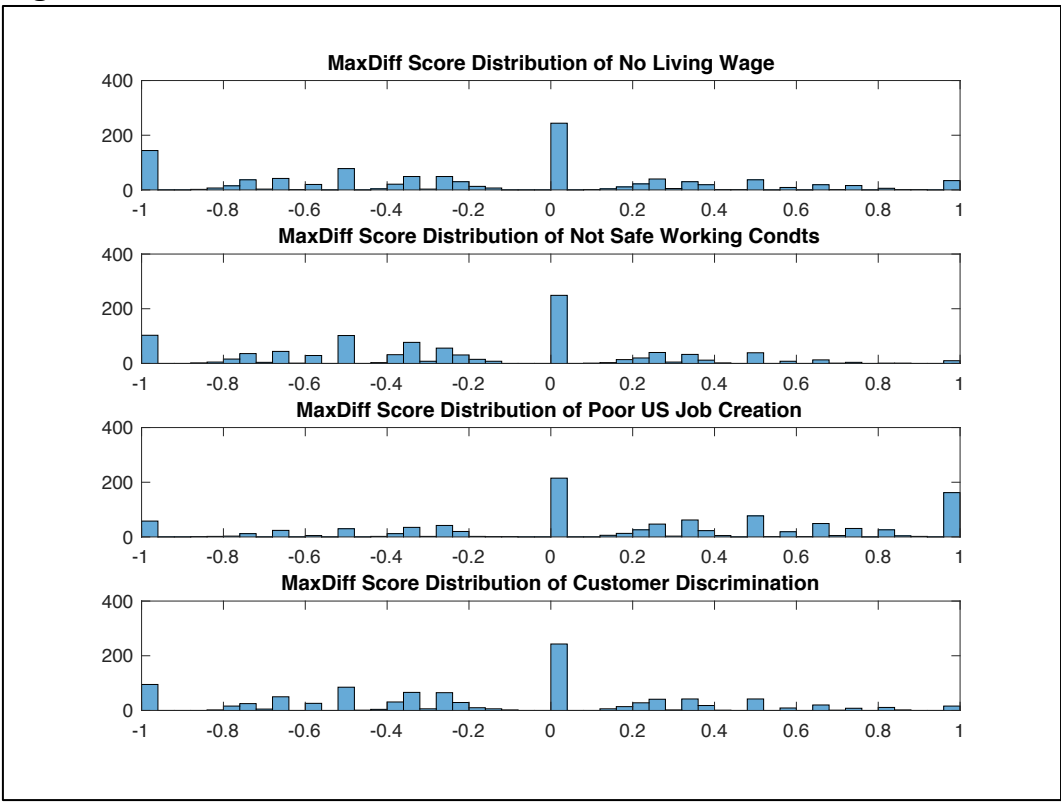
Figure 10

Figure 11 & 12

Conclusion

The author is not making any particular theoretical contributions, nor testing particular theories. This work is rather the product of taking the idea of revealed preferences seriously and developing a method to elicit different individual's preferences for varying non-pecuniary values. The author does this by using MaxDiff methodology to analyze consumer trade-offs. The hypothesis was that different people will have different preference structures for different non-pecuniary values, and the author ultimately found this to be true. Investors tend to dislike social issues the most strongly, and have a wide array of varying preference strengths for different issues. The project also illustrates how these preferences are well-structured, measurable, and useful to help respondents make choices as consumers in the investment marketplace.

Preference structures for social issues should be taken into account when ESG investment vehicles are being created. Currently, ESG products pay relatively equal attention to all issue types. The MaxDiff ranking shows that people do not care about all ESG issues equally, nor all issue *types* equally. Furthermore, the ranking shows that environmental and governance issues do not rank highly on the list. Therefore, creating ESG vehicles to address social issues may be more appropriate for the majority of consumer values. Environmental- or governance-focused funds may be more appropriately focused towards small niches of investors. This information should not only be used to design new ESG products for individuals, but should be used by firms in their management of retirement funds and pensions.

Additionally, companies can use these data to implement strategic sustainability plans. Companies could have much more targeted efforts to adhere to ESG values if they

could identify which issues their particular customer base cared about most. This work also identifies a *ranking* in which companies can prioritize subsequent phases of sustainability efforts.

In general, corporate responsibility and sustainability projects range from vaguely defined to just-for-show. This work contributes to the effort to better define and execute targeted and effective projects in this realm. The responsibility of the private sector and private individuals is especially vital given the current political climate denying global warming and implementing socially regressive policy. ESG investing is one way consumers and corporations can align their values to make progress on issues they care about when government is not. Preference structures are useful because they act as a detailed priority list – a way to communicate lots of information about values very quickly. With data in hand, consumers and firms alike can start to outline and execute more productive uses of capital towards responsible and sustainable projects.

Appendix

Spotlight on Charitable Giving Figures
Figure 1

Table III. Generosity (United States) vs. altruism (United Kingdom)

GENEROSITY (United States) "Charity Begins at Home"

Giving is heavily interlaced with self-interest (with social approval)

Giving is more a public than a private activity

Giving is an expression of personal and social identity and goals

Giving and volunteering are significant components of civic involvement

Giving modes are intentional "planned" and yield high average gifts

Predominant Focus: "particular" causes in which donor is directly involved

Predominant Moral motivation: individual initiative and reciprocity

ALTRUISM (United Kingdom) "Charity for All"

Suspicion and rejection of mixed motives for giving

Giving is more a private than a public activity

Giving is generally peripheral to social identity and goals

Giving is generally peripheral to civic responsibility

"Spare change" is the dominant mode of giving, yielding lower average gifts

Predominant Focus: "universal" causes in which the donor is not directly involved

Predominant Moral motivation: social (collective) duty

Figure 2

Table I. Giving Patterns, United States and United Kingdom Compared[a]

	United States	United Kingdom
Levels	2.0+ % of GDP 1.7% of avg. household income Avg. annual household gift, $754	<1% of GDP 0.63% of avg. household income Avg. annual household gift, £108 Median annual gift, £24
Participation	68–75% of households contribute (1991–98)	65–81% of households contribute (1992–2000)
Modes	Church collection ($15.00/week) Payroll deduction ($170/year) Direct mail solicitation Telephone solicitation	Collecting tin (50p/gift) Door-to-door collection (£1/gift) Raffles
Donors	High: men, retirees, high perceived generosity	High: women, disabled, high perceived generosity Low: retirees
Causes	Religion, human services, health, youth	International aid, medical research, welfare, religion, animals

[a] £1 equals $1.45–1.65.
Sources: Passey and Hems (1997); Salamon et al. (1996); AAFRC (1999); Saxon-Harrold (1999);
Johns Hopkins Comparative Nonprofit Sector Project.

Additional Information on Mechanical Turk

To accrue enough accurate data, and have participants take the survey earnestly, this author purchased survey results from 1,000 representative respondents.[9] The survey was estimated take about 8-12 minutes, and the price was fair compared to pricing structures generally used for Mechanical Turk.

The author was approved by the Bard College Institutional Review Board to run this test online. There were several areas that were important for approval. The first was recent literature that suggested Amazon's use of Turkers' survey response data. This author did not find data use policies for Turkers explicitly mentioned in Amazon's Privacy Policy statement of documentation on Data Use. Nevertheless, the author provided a link

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[9] A survey respondent was give $0.25 compensation for completing the task. This price was well about the "market rate" for surveys of this length on Mechanical Turk.

to the Privacy Policy on the consent page of the survey. The Board also requested information about pay rates on Mechanical Turk and was satisfied with a rate that was slightly above market-rate as the compensation amount. The Board asked that the pay be "proportionate to participants commitment" and "designed to ensure a representative sample," which the Board and this author agreed could be achieved with $0.25 cents per survey. Lastly, the first draft of the survey had a debriefing statement that was too technical, and which the Board asked this author to simplify. It had referenced previous ESG investing research and illustrated how the survey would contribute to the evolution of research in the field. The final survey-debrief described how the survey would be used in this author's project and why the project was important. To see the product of these changes, refer to the full survey included at the end of the project.

After first posting the survey to Mechanical Turk, the author was getting very few responses. Four days after posting had only generated 2% of the total respondents they had requested. The author had selected a "Masters Qualification" for the respondents, which was a Turker who had had a strong history of completing surveys and being approved for them. After troubleshooting the data collection problem, the author decided to remove the Masters Qualification from the requirements. Instead, they specified three other requirements.

The **first**: was that the Turker must be in the United States.

The **second**: that they should have completed at least 50 tasks on Mechanical Turk.

The **third**: that they had an 80% approval rating for the tasks they had completed.

After reposting the survey with these new qualifications, this author was able to collect all the data they needed within less than 24 hours.

It took respondents about 19 minutes to complete the task, which was well over the amount of time that the author suggested the survey would take (8-12), however, this number may not capture outliers who may have started the survey, stopped midway through to attend to something else, and then returned later to complete the task. The author received one email from a Turker saying that they should have reward of at least 80 cents instead of 25, because they had estimated and published that the survey would take people eight minutes.

Full Survey

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WELCOME TO A STUDY ON SUSTAINABLE INVESTMENT!

WHAT THIS RESEARCH IS ABOUT

Different people care about different things when they choose investments. Some people are focused mostly on returns, whereas others are concerned with different social/environmental/governance issues. This research is designed to better understand your preferences around all the different facets of investing.

HOW WE ARE CONDUCTING THE STUDY

The research works by having you highlight different attributes you <u>don't</u> like. The study has 16 questions and each question has the same structure. For each question, four different attributes are described and you are asked to indicate which one you dislike least and which one you dislike most. Understanding what you avoid helps us better understand what motivates people when making investing decisions.

WHY THIS MATTERS

Open markets allow people to reveal their values and beliefs through how they spend their money. Increasingly more investors are insisting on investing according to their values. Markets can tailor and match people to products based on their preferences. However, there are no good methods to measure investment preferences and values, meaning that this tailoring and matching is not occuring. This research tries to fill that gap and develop better ways to understand what people are driven by as they make investment choices.

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BACKGROUND & CONSENT

I am a student at Bard College conducting online surveys for my Senior Project.

Potential risks: of participation include Amazon's use of the data you provide during the survey. Mechanical Turk's Use of Information; Publicity and Confidentiality disclaimer is as follows:

> *Our Use of Information: By visiting or registering for the Site, you authorize the collection, use, and disclosure of information in accordance with the Privacy Notice. In addition, we may share certain information about you to other Site participants to facilitate the service relationship and improve the Site, including, for example, account numbers, feedback, ratings, and other attributes related to your use of the Site.*

Please note that the privacy policies for Mechanical Turk are the same as those for general Amazon users. All data will be kept confidential by the researcher (me).

Benefits: to participation include compensation through Mechanical Turk and indirect benefits such as learning about the research process as well as about the background motivating the present work. In addition, you will be making a contribution to the development of new methodology that better measures people's preferences.

◉ I consent to participate in this research.

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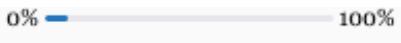
EXAMPLE QUESTION

During this study, I will ask you to choose the issue you <u>dislike least</u> and the issue you <u>dislike most</u> out of four options. This format for ranking your preferences will be repeated 16 times. There are a wide variety of issues presented in the survey. Each issue is intentionally presented 4 times. The survey is designed to last approximately 10 - 15 minutes.

The following is an example question.

- Choose which issue you <u>dislike least</u> and select the corresponding ticker from the left-hand column
- Choose which issue you <u>dislike most</u> and select the corresponding ticker from the right-hand column

When you consider investing in a particular company, which attribute do you dislike least and which do you dislike most?

Dislike Least		Dislike Most
●	Issue A	○
○	Issue B	○
○	Issue C	●
○	Issue D	○

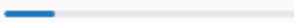←   →

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You will go through the question this many number of times:

16

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When you consider investing in a particular company, which attribute do you dislike least and which do you dislike most? This company...

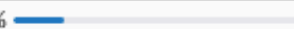| Dislike least		Dislike most
◉	...does business with governments who oppress their people or violate international human rights	◯
◯	...does not provide health insurance	◯
◯	...has leadership and business practice controversies or routinely violates laws and regulations	◉
◯	...makes decisions about product quality that negatively affect durability or safety	◯

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When you consider investing in a particular company, which attribute do you dislike least and which do you dislike most? This company...

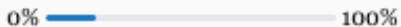| Dislike least		Dislike most
○	...does not minimize pollution	◉
○	...does business with governments who oppress their people or violate international human rights	○
○	...does business with companies with abusive conditions	○
◉	...does not have independent board leadership, risks conflicts of interest	○

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When you consider investing in a particular company, which attribute do you dislike least and which do you dislike most? This company...
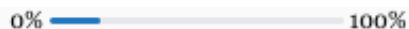
Dislike least		Dislike most
○	...does not pay a living wage	○
○	...does not use environmental resources efficiently	◉
◉	...is not truthful in advertising or labeling	○
○	...discriminates against certain groups of customers or potential customers	○

← →

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When you consider investing in a particular company, which attribute do you dislike least and which do you dislike most? This company...

Dislike least		Dislike most
◉	...does not provide health insurance	○
○	...does not provide a safe workplace or take injury prevention precautions	○
○	...does not create jobs in the US	◉
○	...does not protect customer/consumer privacy	○
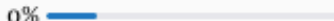
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When you consider investing in a particular company, which attribute do you dislike least and which do you dislike most? This company...
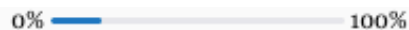
Dislike least		Dislike most
⦿	...does not have a board with diversity based on age, gender, nationality, race, socioeconomic background, and tenure	○
○	...discriminates against certain groups of customers or potential customers	○
○	...has leadership and business practice controversies or routinely violates laws and regulations	○
○	...discriminates in pay based on irrelevant characteristics	⦿

← →

0% ──── 100%

When you consider investing in a particular company, which attribute do you dislike least and which do you dislike most? This company...

Dislike least		Dislike most
○	...does not protect customer/consumer privacy	◉
○	...is not truthful in advertising or labeling	○
◉	...does not provide health insurance	○
○	...does not use environmental resources efficiently	○
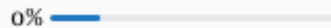
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When you consider investing in a particular company, which attribute do you dislike least and which do you dislike most? This company...

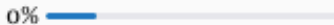| Dislike least		Dislike most
○	...does business with governments who oppress their people or violate international human rights	◉
○	...does not provide a safe workplace or take injury prevention precautions	○
○	...does not have a board with diversity based on age, gender, nationality, race, socioeconomic background, and tenure	○
◉	...does not minimize pollution	○

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When you consider investing in a particular company, which attribute do you dislike least and which do you dislike most? This company...

Dislike least   Dislike most

○   ...makes decisions about product quality that negatively affect durability or safety   ○

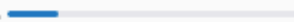○   ...discriminates in pay based on irrelevant characteristics   ◉

◉   ...does business with companies with abusive conditions   ○

○   ...does not have independent board leadership, risks conflicts of interest   ○

←   →

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When you consider investing in a particular company, which attribute do you dislike least and which do you dislike most? This company...

Dislike least		Dislike most
●	...does not pay a living wage	○
○	...is not truthful in advertising or labeling	○
○	...discriminates against certain groups of customers or potential customers	○
○	...does not create jobs in the US	●

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When you consider investing in a particular company, which attribute do you dislike least and which do you dislike most? This company...

Dislike least		Dislike most
○	...makes decisions about product quality that negatively affect durability or safety	○
○	...has leadership and business practice controversies or routinely violates laws and regulations	○
⦿	...does not use environmental resources efficiently	○
○	...discriminates in pay based on irrelevant characteristics	⦿

← →

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When you consider investing in a particular company, which attribute do you dislike least and which do you dislike most? This company...

Dislike least		Dislike most
○	...does not provide health insurance	◉
○	...does not protect customer/consumer privacy	○
○	...does business with companies with abusive conditions	○
◉	...does not provide a safe workplace or take injury prevention precautions	○

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When you consider investing in a particular company, which attribute do you dislike least and which do you dislike most? This company...
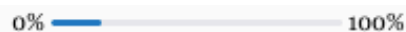
Dislike least		Dislike most
○	...does not minimize pollution	○
○	...does not have a board with diversity based on age, gender, nationality, race, socioeconomic background, and tenure	○
◉	...does business with governments who oppress their people or violate international human rights	○
○	...does not have independent board leadership, risks conflicts of interest	◉

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When you consider investing in a particular company, which attribute do you dislike least and which do you dislike most? This company...
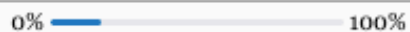
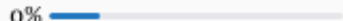| Dislike least		Dislike most
○	...does business with companies with abusive conditions	○
◉	...has leadership and business practice controversies or routinely violates laws and regulations	○
○	...does not pay a living wage	◉
○	...does not create jobs in the US	○

← →

0% ▬▬▬ 100%

When you consider investing in a particular company, which attribute do you dislike least and which do you dislike most? This company...

Dislike least		Dislike most
○	...makes decisions about product quality that negatively affect durability or safety	○
⦿	...does not have independent board leadership, risks conflicts of interest	○
○	...discriminates against certain groups of customers or potential customers	⦿
○	...does not provide a safe workplace or take injury prevention precautions	○

← →

0% —— 100%

When you consider investing in a particular company, which attribute do you dislike least and which do you dislike most? This company...

Dislike least   Dislike most
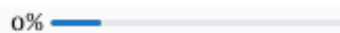
○   ...does not pay a living wage   ◉

○   ...does not provide health
                           insurance   ○

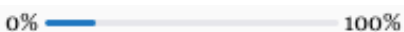○   ...discriminates in pay based
                           on irrelevant characteristics   ○

◉   ...does not create jobs in the
                           US   ○

←   →

0% ———— 100%

When you consider investing in a particular company, which attribute do you dislike least and which do you dislike most? This company...

Dislike least		Dislike most
○	...is not truthful in advertising or labeling	○
○	...does not have a board with diversity based on age, gender, nationality, race, socioeconomic background, and tenure	○
◉	...does not use environmental resources efficiently	○
○	...does not minimize pollution	◉

← →

What is your sex?

○ Male

◉ Female

What is your age?

40

What is the highest degree or level of school that you have completed?

○ Less than a high school diploma

○ High school degree or equivalent (e.g., GED)

○ Some college, no degree

○ Associate degree (e.g., AA, AS)

○ Bachelor's degree (e.g., BA, BS)

◉ Master's degree (e.g., MA, MS, MEd)

○ Professional degree (e.g., MD, DDS, DVM)

○ Doctorate (e.g., PhD, EdD)

What is your zipcode?

12504

←   →

0% ——— 100%

Which of the following religions do you most closely identify with?

- ◉ Protestant
- ○ Roman Catholic
- ○ Mormon
- ○ Orthodox such as Greek or Russian Orthodox
- ○ Jewish
- ○ Muslim
- ○ Buddhist
- ○ Hindu
- ○ Atheist
- ○ Agnostic
- ○ Something else (please specify)

- ○ Nothing in particular

← →

0% ●━━━━━━ 100%

How important is religion in your life?

- ○ Very important
- ○ Somewhat important
- ○ Not too important
- ○ Not at all important
- ○ Don't Know

← →

0% ——————— 100%

How many people live in your household?

○ 1 (you)

○ 2

○ 3

○ 4

○ 5

○ 6 +

What is your current marital status?

○ Now married

○ Widowed

○ Divorced

○ Separated

○ Never married

What was the total income for all members of your household in the past year?

○ $0 - $24,999

○ $25,000 - $49,999

○ $50,000 - $74,999

○ $75,000 - $99,999

○ $100,000 - $124,999

○ $125,000 - $149,999

○ $150,000+

Are you the primary income earner?

○ Yes

○ No

Which of the following financial investments do you own? (check all that apply)

☐ Employer-provided accounts (e.g., 401k, 403(b), pension plan etc.)

☐ Individual retirement account not provided by an employer (e.g., IRA, Keogh etc.)

☐ Directly held investments that are not part of your employer or an individual retirement account (e.g., mutual funds, stocks, bonds, annuities, certificates of deposits etc.)

☐ I have no financial investments

☐ Other (please specify)

←   →

0% ———————— 100%

Which term best captures your political views?

○ Republican

○ Democrat

○ Independent

In politics, people sometimes talk about liberal and conservative. Where would you place yourself on a scale where 0 is very liberal, 5 is moderate and 10 is very conservative?

Very Liberal					Moderate				Very Conservative	
0	1	2	3	4	5	6	7	8	9	10

My political leaning:

←   →

0% ———————— 100%

Here is your ID: 32116

Copy this value to paste into MTurk.

When you have copied this ID, please click the submit button to make sure your survey responses are saved.

←   Submit

0% ———————————— 100%

We thank you for your time spent taking this survey.
Your response has been recorded.

Matlab Code

by Professor Gautam Sethi
Associate Professor of Economics and Econometrics, Bard Center for Environmental Policy

```
% Clear the workspace of existing variables.
```

```matlab
clearvars
% _____

% _____
% READ DATA IN.
% Read in the raw data.
Raw_Data  = xlsread('maxdiff.xlsx');

% Specify the issues using a character array.
Issues = ['Does not pay a living wage';
          'Does not provide a safe workplace or take injury prevention precautions';
          'Does not create jobs in the US';
          'Discriminates against certain groups of customers or potential customers';
          'Does not have independent board leadership, risks conflicts of interest';
          'Discriminates in pay based on irrelevant characteristics';
          'Is not truthful in advertising or labeling';
          'Does not use environmental resources efficiently';
          'Does not minimize pollution';
          'Does not protect customer/consumer privacy';
          'Does not provide health insurance';
          'Has leadership and business practice controversies or routinely violates laws and
regulations';
          'Does business with companies with abusive conditions';
          'Does business with governments who oppress their people or violate international human
rights';
          'Does not have a board with diversity based on age, gender, nationality, race, socioeconomic
background, and tenure';
          'Makes decisions about product quality that negatively affect durability or safety'];
% _____

% _____
% CLEAN DATA
% Calculate the number of respondents
num_respondents = size(Raw_Data,1);

% Some of the respondents did not answer any of the questions.
% First identify them.
Non_respondents = zeros(num_respondents,1);
for i = 1:num_respondents
    if all(isnan(Raw_Data(i,:)) == 1) == 1
        Non_respondents(i) = 1;
    end
end
Non_respondents = logical(Non_respondents);
%
% Now drop the non-respondents.
Raw_Data(Non_respondents,:) = [];

% Recalculate number of respondents.
num_respondents = size(Raw_Data,1);

% Some of the respondents did not answer some of the questions.
% For each question, there should be exactly one "least disliked" and one "most disliked" response.
% If this is the case, do nothing (keep the respondent in the sample).
% If not, identify these respondents.
%
% Begin with initialization.
Partial_non_respondents = zeros(num_respondents,1);
%
% Now identify them.
for i = 1:num_respondents
    for j = 1:16
     if sum(Raw_Data(i,(j-1)*32+1:(2*j-1)*16) == 1) || sum(Raw_Data(i,(j-1)*32+1:(2*j-1)*16) == 2) == 1
     else
            Partial_non_respondents(i) = 1;
     end
    end
end
%
% Convert the array to logical.
Partial_non_respondents = logical(Partial_non_respondents);
%
% Make a copy of the raw data for conversion to clean data.
Clean_Data = Raw_Data;
%
% Drop the raw data.
clear Raw_Data
```

```matlab
%
% Now drop the partial non-respondents from the clean data.
Clean_Data(Partial_non_respondents,:) = [];
% _____

% _____
% COMPRESS DATA
% Many of the columns in the original data are blank. Compress the clean data.
%
% Recalculate number of respondents.
num_respondents = size(Clean_Data,1);

% Specify the number of questions.
num_questions = 16;

Compressed_Data = zeros(num_respondents,6*num_questions);

for i=1:num_respondents
    for j = 1:num_questions
 Compressed_Data(i,(j-1)*6+1) = find(Clean_Data(i,(j-1)*2*num_questions+1:(2*j-1)*num_questions) == 1);
 Compressed_Data(i,(j-1)*6+2) = find(Clean_Data(i,(j-1)*2*num_questions+1:(2*j-1)*num_questions) == 2);
 Compressed_Data(i,(j-1)*6+3) = find(Clean_Data(i,(2*j-1)*num_questions+1:2*num_questions*j) == 1);
 Compressed_Data(i,(j-1)*6+4) = find(Clean_Data(i,(2*j-1)*num_questions+1:2*num_questions*j) == 2);
 Compressed_Data(i,(j-1)*6+5) = find(Clean_Data(i,(2*j-1)*num_questions+1:2*num_questions*j) == 3);
 Compressed_Data(i,(j-1)*6+6) = find(Clean_Data(i,(2*j-1)*num_questions+1:2*num_questions*j) == 4);
    end
end
% _____

% _____
% SCORING
%
% Now construct the scores for each issue.
num_issues = size(Issues,1);

% Initialize the Like matrix, which shows the number of times a respondent likes an issue.
Like = zeros(num_respondents,num_issues);

% Initialize the Dislike matrix, which shows the number of times a respondent dislikes an issue.
Dislike = zeros(num_respondents,num_issues);

Pref_Matrix = zeros(num_issues,6,num_respondents);
% Make the Like and Dislike matrices for all respondents.
for i = 1:num_respondents
    Pref_Matrix(:,:,i) = reshape(Compressed_Data(i,:)',6,num_questions)';
    for k = 1:num_issues
        Like(i,k) = sum(Pref_Matrix(:,1,i) == k);
        Dislike(i,k) = sum(Pref_Matrix(:,2,i) == k);
    end
end

% Count the number of times each issue appears for each repondent
Count = zeros(num_respondents, num_issues);
for i = 1:num_respondents
    for k = 1:num_issues
        Count(i,k) = sum(sum(Pref_Matrix(:,3:6,i)==k));
    end
end

% Calculate the maxdiff score.
Score = (Like-Dislike)./Count;
% _____

% _____
% SUMMARY STATISTICS AND RESULTS
% Compute the mean score for each issue.
Mean_Score = mean(Score,'omitnan');

[a, b] = sort(Mean_Score,'descend');

% Convert the character array into a cell array.
Issues = cellstr(Issues);

% Sort the issues in decreasing order of importance.
Importance = Issues(b)
% _____
```

Bibliography

(AAFRC), A. A. (1999). *Giving USA.* Indianapolis: American Association of Fund-Raising Counsel.

Afriat, S. (1967). The construction of a utility function from expenditure data. *International Economic Review , 8*, 67-77.

Ariely, D. (2008). *Preditably irrational .* United States: HarperCollins .

Ariely, D. (2012). *The (honest) truth about dishonesty.* HarperCollins Publishers.

Arnot, C., Boxall , P. C., & Cash , S. B. (2006). Do ethical consumers care about price? A revealed preference analysis of fair trade coffee purchases. *Canadian Journal of Agricultural Economics/Revue canadienne d'agroeconomie, 54*(4), 555-565.

Arrow , K. J., & Hurwicz , L. (1972). Decision making under ignorance. In C. F. Carter , & J. L. Ford, *Uncertainty and expectations in economics: essays in honour of G.L.S. Shackle.* Oxford/New York: Basil Blackwell/Augustus M. Kelley .

Arrow, K. (1950). *A difficulty in the concept of social welfare .* Journal of political economy .

Arrow, K. (1967). Values of collective decision-making . *Philosophy, politics and society* , 215-232.

Arrow, K. J. (1950). A difficulty in the concept of social welfare. *Journal of Political Economy , 58*(4), 328-346.

Barsky, R. B. (1997). Preference parameters and behavioral heterogeneity: an experimental approach in the health and retirement study . *Quarterly Journal of Economics , 112*(2), 537-579.

Bask, A. e. (2013). Consumer preferences for sustainability and their impact on supply chain management: the case of mobile phones. *International Journal of Physical Distribution & Logistics Management , 43.5*(6), 380-406.

Batson , C. D., Shoenrade, P., & Ventis, W. L. (1993). *Religion and the individual: A social psychological perspective.* New York : Oxford University Press .

Becker, G. (1981). *A treatise on the family.* Cambridge, Massachusetts , United States: Harvard University Press .

Becker, G. S. (1985). Human Capital, Effort, and the Sexual Division of Labor. *Journal of Labor Economics , 3*(1), S33-S58.

Bentham, J. (1789). *An introduction to the principles of morals and legislation .*

Berinksy, A. J., Huber , G. A., & Gabriel , L. S. (2012). Evaluating Online Labor Markets for Experimental Research: Amazon.com's Mechanical Turk. *Political Analysis , 20* (3), 351-368.

Berry , M. D. (2013). *History of Socially Responsible Investing in the U.S. .* Thomas Reuters.

Bidoggia , M., Gordon, M., & Guo, Y. (2016). *SRI ESG Investments.* SIPA/Columbia University , New York.

Boulding, K. E. (1978). *Ecodynamics: A new theory of social evolution.* Sage Publications .

Bowley, A. L. (1924). *Mathematical groundwork of economics* . California Press, Oxford .

Broome, J. (1987). Should a rational agent maximize expected utility? *University of Bristol, Department of Economics* .

Broome, J. (1989). Should social preferences be consistent . *Economics and Philosophy, 5*(1), 7-18.

Buhrmester , M. D., Kwang , T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? . *Perspectives on Psychological Science* , 3-5.

Cohen, S. H., & Markowitz, P. (2002). *Renewing market segmentation: Some new tools to correct old problems.* Amsterdam , The Netherlands : ESOMAR 2002 Congress Proceeedings .

Cohen, S., & Bryan , O. (2004). What's Your Preference? *Marketing Research , 16*, 32-37.

Collard, D. (1978). *Altruism and Economy: A Study in Non-Selfish Economics.* Oxford: Cambridge University Press .

de Tocqueville, A. (1840). *Democracy in America* . (H. Reeve, Trans.) London : Saunders and Otley .

Dickens, C. (1853). *Bleak House.* London: Penguin Books .

Edgeworth, F. Y. (1881). *Mathematical physics: an essay on the application of matehmatics to the moral sciences* (Vol. 10). (K. Paul, Ed.)

Eldad , D., Peter , S., & Shalom , S. H. (2008). Bringing Values Back in: The Adequacy of the European Social Survey to Measure Values in 20 Countries . *The Public Opinion Quarterly , 72*(3), 420-445 .

Fechner, G. T. (1860). *Elemente der Psychophysik.* Leipzig: Breitkopf and Hartel.

Fehr, E., & Schmidt, K. M. (1999). A theory of fairness, competition, and cooperation . *The quarterly journal of economics , 114*(3), 817-868.

Finn, A., & Louviere, J. J. (1992). Determining the Appropriate Response to Evidence of Public Concern: The Case of Food Safety. *Journal of Public Policy and Marketing, 11*(1), 12-25.

Gosling, S. D., Vazire , S., Srivastava, S., & John , O. P. (2004). Should we trust web-based studies? *American Psychologist*, 93-104.

Grable , J. E., & Lytton , R. H. (1999). Financial risk tolerance revisited: the development of a risk assessment instrument . *Financial Services Review , 8*, 163-181.

Gunnar , F., Busch , T., & Bassen, A. (2015). ESG and financial performance: aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance and Investment, 5*(4), 210-233.

Hanna , S. D., Gutter , M. S., & Fan , J. (2001). A measure of risk tolerance based on economic theory. *Journal of Financial Counseling and Planning , 12*(2).

Hausman , D., McPherson , M., & Satz, D. (2016). *Economic analysis, moral philosophy, and public policy* . Cambridge University Press .

Hicks, J. R., & Allen , R. G. (1934). A reconsideration of the theory of value. Part I. *Economica , 1*(1), 52-76.

Hobbes, T. (1651). *Leviathan* . England .

Hojman , D. A., & Miranda, Á. (2018). Agency, Human Dignity, and Subjective Well-being . *World Development , 101* (C), 1-15.

Horst , J. T., Zhang , C., & Renneboog , L. (2007). Socially Responsible Investments: Methodology, Risk Exposure and Performance. *ECGI Finance Working Paper* (175).

Horton , J. J., Rand , D. G., & Zeckhauser, R. J. (2010). The online laboratory: Conducting experiments in a real labor market . *Available at SSRN: http://ssrn.com/abstract= 1*.

Howard, C. (1997). *The Hidden Welfare State: Tax Expenditures and Social Policy in the United States.* Princeton: Princeton University Press.

Jevons, S. W. (1871). The power of numerical discrimination . 281 .

Jevons, W. S. (1866). Brief account of a general mathematical theory of mathematical economy . *The Journal of the Royal Statistical Society, XXIX*, 282-7.

Kahneman, D. (2011). *Thinking fast and slow* . New York : Farrar, Straus and Giroux.

Kant, I. (1785). *Groundwork of the metaphysic of morals* .

Kell, G. (2018, July 11). *The remarkable rise of ESG* . Retrieved from Forbes : https://www.forbes.com/sites/georgkell/2018/07/11/the-remarkable-rise-of-esg/#231ca83c1695

Knoepfel, I. (2005). *Who Cares Wins: Connection Financial Markets to a Changing World* . United Nations; Swiss Federal Department of Foreign Affairs.

Konish, L. (2019 , April 23). It's not just millennials who have socially responsible investing in their game plan: Study. *Impact Investing* .

Löschel, A., Sturm , B., & Uehleke , R. (2013). Revealed Preferences for Climate Protection when the Purely Individual Perspective is Relaxed - Evidence from a Framed Field Experiment . *ZEW - Center for European Economic Research , 13*(006), 1-50 .

Locke, J. (1690). *Two treatises of government* . England : Awnsham Churchill .

Loureiro , M., & Lotade , J. (2005). Do fair trade and eco-labels in coffee wake up the consuer conscience . *Ecological Economics , 53*(1), 129-138 .

Louviere , J. J. (1993). The Best-Worst or Maximum Difference Measurement Model: Applications to Behavioral Research in Marketing. *The American Marketing Association's 1993 Behavioral Research Conference.* Phoenix, Arizona.

Louviere, J. J. (1991). Best-Worst Scaling: A Model for the Largest Difference Judgments. *Working Paper, University of Alberta.*

Louviere, J. J. (1995). Best/Worst Conjoint: A New Preference Elicitation Method to Simultaneously Identify Overall Attribute Importance and Attribute Level Partworths. *Unpublished working paper, University of Sydney.*

Louviere, J. J. (2005). Personal Correspondence with Bryan Orme via Email.

Luchs, M. G. (2010). The sustainability liability: potential negative effects of ethicality on product preference . *Journal of Marketing , 74*(5), 18-31.

Lutz, M. A. (1999). *Economics for the Common Good: Two Centuries of Social Economic Thought in the Humanist Tradition.* London, England: Routledge.

Menger, C. (1871). *Principles of Economics* . Austria : Braumüller.

Mill, J. S. (1863). *Utilitarianism* . London : Parker, son, and Bourn.

Mill, J. S. (1972). *Utilitarianism, on liberty, consideration on representative government* (First published 1910 ed.). (H. B. Acton, Ed.) London : J.M. Dent & Sons Ltd.

Mill, J. S. (1998). *Utilitarianism* . (R. Crisp, Ed.) New York : Oxford University Press.

Mittra , S. (1995). *Practicing financial planning: a complete guide for professionals.* Michigan : Mittra & Associates.

Murphy , R. O., & Ackermann , K. A. (2014). Social Value Orientation: Theoretical and Measurement Issues in the Study of Social Preferences. *Personality and social psychology review , 18*(1), 13-41.

Nordhaus, T., & Shellenberger, M. (2007). *Break Through: Why we can't leave saving the planet to environmentalists.* New York: Houghton Mifflin Harcourt.

Orme, B. (2018). *How Good is Best-Worst Scaling? .* Provo : Sawtooth Software.

Owens, D. (1965). *English Philanthropy 1660-1960 .* London and Cambridge, Massachusetts : Oxford Univeristy Press and Harvard University Press .

Prochaska, F. K. (1988). *The Voluntary Impulse: Philanthropy in Modern Britain .* London: Faber.

Prochaska, F. K. (1990). Philanthropy. In F. M. Thompson, *The Cambridge Social History of Britain 1750-1950.* Cambridge: Cambridge University Press .

Regenwetter, M., Dana , J., & Davis-Stober, C. P. (2011). Transitivity of Preferences . *Psychological Review , 118*(1), 42-56.

Regenwetter, M., Davis-Stober , C. P., & Dana , J. (2011). Transivitity of Preferences. *Psychological Review, 118*(1), 42-56.

Revealed preference theory . (n.d.). Retrieved from Polinomics: Economics made simple : https://policonomics.com/revealed-preferences/

Rousseau, J. J. (1762). *The social contract.* Frace .

Saaty , T. L. (2008). Decision making with the analytic heirarchy process. *International Journal of Services Sciences , 1*(1), 83-96.

Samuelson , P. A. (1948 , November). Consumption Theory in Terms of Revealed Preferences . *Economica , 15*(60), 243-253 .

Samuelson, P. (1938). A Note on the Pure Theory of Consumer's Behaviour. *Economica , 5*(17), 61-71 .

Sen, A. (1986). Social choice theory. *Handbook of mathematical economics*, 1073-1181.

Sen, A. (1999). *Of ethics and economics.* OUP Catalogue.

Sidgwick, H. (1883). *Principles of Political Economy* (3rd ed. 1901 ed.). London.

Slutsky, E. (1915). Sulla teoria del bilancio del consumatore. *Giornale degli economisti e rivista di statistica*, 1-26.

Smith, A. (1759). *The theory of moral sentiments.* Edinburgh.

Smith, A. (1776). *An Inquiry into the nature and causes of the wealth of nations .* London : W. Strahan and T. Cadell .

Tanner , C., & Kast , S. W. (2003). Promoting sustainable consumption: determinants of green purchases by Swiss consumers. *Psychology and Marketing ,* 883-902.

(2013). *The MaxDiff System Technical Paper.* Sawtooth Software, Inc. .

Thurstone, L. L. (1927). A Law of Comparitive Judgement . *Psychological Review, 4*, 273-286.

Tversky , A., & Kahneman , D. (1981). The framing of decisions and the psychology of choice . *Science , 211*(4481), 453-458.

Varian, H. R. (2006). Revealed Preference . *Samuelsonian economics and the twenty-first century ,* 99-115.

Walras, L. (1874). *Elements d'Economique Politique Pure.*

Watson, J. (1913). Psychology as the behviorist views it. *Pyschological Review , 20*, 158-177.

Wright, K. (2001). Generosity vs. altruism: Philanthropy and charity in the United States and United Kingdom. *Voluntas: International Journal of Voluntary and Nonprofit Organizations, 12*(4), 399-416.

Zin, D. M., & Rober , J. E. (2013, December 30). *Revealed preference theory .* Retrieved November 28, 2018 , from Britannica : https://www.britannica.com/topic/revealed-preference-theory