

**Incentives, Demographics, and Biases of Ethical Consumption:
Observation of Modern Ethical Consumers**

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Abstract

This paper seeks to offer a better understanding of modern consumers' incentives, intentions and behavior regarding "ethical consumption". Using likelihood treatment models, we find that both the likelihood and increase in ethical consumption is less contingent on income but rather on the amount of entire purchase of consumers. Increase in year of education has significant positive effect on ethical consumption, particularly to female consumers. Racial and regional characteristics are not significant predictors of ethical consumption. Purchase of ethical products are also influenced by internal motivation of consumers defined as 'identifying incentive,' which in turn depends on various factors that influence consumption.

This paper argues that because of the heightened importance of the consumers' decision making, not only should we explore the decision making of the consumers but also enlarge the scope of knowledge of such consumers of their incentives, demographics, and biases regarding altruistic consumption. Engaging with extensive literature on consumer behavior, this paper uses the Nielsen data and datasets from Label Insight to discover pieces of information that helps us identify factors that contribute to someone's ethical purchase.

Keywords: ethical consumption, consumerism, social responsibility, consumer behavior

1. Introduction

The standard economic model essentially suggests that consumers will be consistently rational, utility maximizing, and self-interested upon decision making. Rational and self-interested economic agents from our model is expected to make rational choices that give them the most utility per dollar spent by maximizing their consumption bundles with respect to their budget constraints. Our model also expects these agents to make purchases based on utilities that are solely self-interested, disregarding any contingent impact the purchase entails. The economic agents, or consumers we do observed in reality, however, have portrayed consumption patterns contrary to what the model predicts. We find that consumers have bounded rationality, with which consumers make choices with limited information, risks, and biases that hinder them from making ‘optimal choices.’ Therefore, instead of utility maximization, Herbert A. Simon (1955, 1979) had proposed a model in which people replace their maximizing with satisficing, explaining the dichotomy between optimal choices assumed by the standard economic model and the choices made by real agents. The field of psychology or behavioral economics surfaced in taking a behavioral approach to augment the assumptions made about economic agents (Thaler, 1980), and this new segment of research have integrated behavioral perspective of economic behavior into explaining the various choice heuristics of consumers (Kahneman, 2003) One of the primary areas we find this dichotomy between the model and real economic agents is when consumers purchase ‘ethical goods.’ The standard economic model assumes a self-interested decision-making agent, without any preference towards outcomes of others. However, we see a striking rate of growth of the Fairtrade market in developed countries, a market primary driven by consumers made with inclination towards benefit of the other. (Nicholls & Opal, 2005) The Fairtrade market has become a mainstream market, sales exponentially increasing across the globe at least of about 10% each year since 2004 to 2016. (Statista) To explain this puzzle and particularly that of ethical consumption, behavioral economic research has augmented the consumer decision making model by introducing concepts such as inequity aversion (Fehr & Schmidt, 1999), ‘warm-glow’ model (Andreoni, 1989, 1990), and social preferences. Though critical to the understanding of consumers, recent literature argues that there is a need to move beyond this to create a more holistic approach to developing the field. (Birkmann & Peattie, 2008) In wanting to take a more holistic approach, we find that there are few limitations to the approaches existing research has taken, including:

1. Limited capability of the augmented models in explaining consumption dynamics that encompasses not only the ethical dimensions but also the general purchase patterns.
2. A lack of emphasis of the impact and the interconnectedness (reverse impact) of consumer behavior and the market economy.
3. Outdated data on the market of ethical consumption and the modern consumers.

4. Limited understanding of real consumption behaviors of consumers, due to reliance on survey responses of consumers.

There is power to observing the behavior of consumers that may be contrary to the intention or surveyed, idealized view of themselves through collection of data through surveys.

This paper, therefore, is intended to enlarge the scope of understanding of not only the decision making of consumers but also the impact they have with their choices. This paper then seeks to:

- Propose a holistic model of consumer behavior that not only applies to ethical purchase dynamics but also extends to general consumption patterns;
- depict the 'modern consumer' as a collective being by observing from the purchases economic agents have made in the past;
- challenge industries and policy makers to orient their business based on the observed preferences of the consumers they face today.

Results show that ethical consumers are less price elastic. Choice of ethical consumption is significantly influenced by increase in sum of entire purchase on a given trip, rather than increase in income. Older generation is more engaged in ethical consumption, and female consumers are more likely to purchase ethical goods than male consumers. Though racial identifiers are not a significant predictor of ethical consumption, our dataset finds that asians are more likely to purchase ethically than caucasians, contrary to previous findings. 'Identifying incentive' plays a statistically significant role in motivating ethical consumption, which in turn is positively determined by amount of entire purchase and years of education.

We divide this effort into a few sections of this paper. The first three sections will provide a brief overview into behavioral economics and how the study of ethical consumption has emerged, introducing how the industry itself has grown throughout time. The fourth section will pull together various literature that will help understand the consumers and their demand for social good. It will present an extensive description of how much we know of the modern consumers - who, what and how a modern altruistic individual behaves and consumes. The fifth and sixth section will illustrate the data and provide descriptive findings. Through married data of Nielsen consumer data and Label Insight data, we will examine the common characteristics of consumers who choose a socially responsible good over the other. The sixth section we provide econometric findings, attempting to show significant relationships between certain characteristics and the likelihood of ethical purchases. The final section concludes.

2. Conceptual Background

Identity economics by George A. Akerlof and Rachel E. Kranton put forth the hypothesis of consumer identity, in which they claim that much of economic decisions are made not simply for economic needs and personal utility, but also in large part to enforce an identity of whom one wants to be. Under this hypothesis, consumption patterns must give us answers to the question of who people are, how they think of themselves, and perhaps who they want to identify themselves

as through the decisions they make. The matter of personal identity of consumers is therefore less motivated by standard economics factors like price and income, but are heavily influenced by behavioral factors associated with purchases such as societal norms, peer pressure, and personal preferences. For example, purchase of a purse may not simply be motivated by the need for a purse but from various societal factors and preferences. One may buy a purse from Chanel rather than Coach because they consider themselves to be wealthy or would like to identify themselves as a wealthy person, or possibly because the societal norm has chosen Chanel to be better than Coach.

One main identity people want to identify themselves as is being a 'good citizens.' Particularly modern consumers seek to be a responsible and 'altruistic' consumer. There's a rising societal norm that responsible consumption is preferable, and individual preference to be 'noble' consumers, both in which is a big motive for purchasing socially responsible goods.

Altruistic consumption is an anomaly in consumer purchase dynamics. Under the standard economic model, consumers purchase products to maximize personal payoff, cost-efficiency, and are mostly self-interested. Then, under this model, people would not purchase products with properties that aren't directly beneficial to the personal usage of the product. We would predict that people would definitely not pay more for products that do not have internal properties that increase the usage or efficiency of the usage of the product itself. However, this model fails in many aspects of consumption dynamics. Luxury goods, for example, are priced dramatically higher than regular equivalent type of products. The material may perhaps be distinguishable, but difference in prices is not entirely sourced from its increase in usability or necessity of the product for consumers. Difference in price mostly comes from the name the brand has, the feature of its 'luxuriousness' rather than the internal usage of the product. Then if a luxury good is not cost-efficient, and increase in price does not necessarily increase practical value or usefulness of the product, why would there be demand for these products? That's because there are many behavioral factors involved in purchasing a luxury good. It could be that of wanting to be fancy, wanting to own a nicer product. But with luxury goods, there are potentially and justifiably internal benefits of usage – objectively better product, better customer service, the product perhaps may last longer. However, unlike luxury goods, fair trade goods do not have any increase in internal usage of the good itself. There are no direct benefits to the person purchasing the product for buying a fair-trade coffee rather than regular coffee. Objectively there are no direct benefits, but rather negative trade-off: paying higher price, yet enjoying the same amount or taste of coffee. The coffee isn't any fancier or tastier, and there are no convincing arguments that purchasing fair-trade coffee leads to a direct increase in usability of the product.

Therefore, we know that altruistic economic decisions are heavily influenced by different 'nudge' factors such as peer pressure, marketing, and behavioral motivations rather than financial. When it comes to altruistic purchases, financial concerns may arise, but isn't a factor consumers seek to maximize in purchasing those products. When it comes to altruistic purchases, consumers are relaxed and does not see the necessity to be cost-efficiency-maximizers. Then

these purchases must be motivated by factors unrelated to financial restrictions, but more of behavioral motivations and incentives.

These internal motivations and intentions are not easily observable unless observable through surveys. However, individuals do reveal a lot about his or her preferences and characteristics through what they choose to buy, especially what they choose to purchase consistently and repetitively (Akerlof and Kranton). Their payment patterns, where they shop, and what products they choose to buy tell us pretty extensively about the consumer's income and taste. Though consumers are scrutinized in every way regarding their behavior, not so much research has been done to understand consumer's preferences and internal desires from the consumption choices they have already made.

One of the reasons may be that altruistic behaviors are mostly analyzed through direct engagement in charity through donation. Varadarajan and Menon (1988) argue that true donation behavior involves a 'pointed and deliberate effort to donate,' such that a consumer is consciously aware of exactly how much money is going into donation. In their paper, Varadarajan and Menon (1988) categorize cause-related marketing that internalized donation within a purchase as 'painless giving' rather than donation. However, with this approach, they specifically 'discount the idea that the customer of a cause-marketed product is acting as a donor per se.' (Kang) By choosing a socially responsible good over another that has a similar price and product, a consumer is explicitly choosing to be a donor in the process of purchasing. Not only that, if we can identify repetitive patterns of purchasing a socially responsible product over other products, given they share similar price and quality, we are also able to count that an explicit act of donation. The hypothesis in this paper is that this active act of donation is a sign of individual's internal desire to identify themselves as an ethical consumer. This explicit act of donation, not only is contrary to the prediction of the standard economic model of an economic agent, but also helps us identify what other factors and motivations these consumers are driven by, other than utility maximization. In this paper, therefore, claims that an individual who purchases an ethical product repetitively or periodically is actively portraying his or her internal motivation, or an 'identifying incentive', in which he or she is desiring to identify themselves as an ethical consumer.

3. History of Ethical Consumption

In the past, consumption has been something solely based on need and necessity of the product being purchased. Most people were limited in resources, and only sought to maximize the utility of each dollar they spent, and the product attributes and desires other than personal satisfaction of hunger and need for clothing were out of consideration. The products available for consumers were limited also, and the market did not compete so harshly in trying to convince and attract the consumers to purchase their products over the other. The suppliers had power over the consumers in what was available in the market.

However, as people became more educated and informed of the world around them, people took interest of sources and impact of the products available. Increased transparency of industries exposed stories of exploitation of children and workers by big companies, and consumers were becoming more informed and interested in how the supply chain functions. Along with this increased transparency, market expanded and companies started competing with each other. The companies competed and started attending to the needs, interests, and expectations of consumers, and therefore the consumers have gained power over their consumption decisions. People required and expected certain attributes or labels to the products they purchased, and much of market power has shifted to refer to consumers as “the new counterbalancing force to capitalists” (Murphy & Bendell, 2001)

The term ‘ethical consumer’ was popularized in 1989 by the Ethical Consumer magazine and since then have become a term used generically. ("About Ethical Consumer", 2018) The start of consumer activism has started labels that range across various dimensions of ethical concerns such as Fair Trade International, Organic Trade Association, and Product Red. The most prominent and well-known label in the US is the Fair Trade International and Fair trade USA, both in which encourage conscious consumers can empower producers and support equitable trade. These non-profit organizations grant fair trade status to manufacturers and distributors by evaluating them through third-party or self-certified criteria.

Ethical consumption has grown to be a force to reckon with, as global sales of fair trade products are increasing exponentially (Harrison, Shaw, & Newholm, 2010) The fair-trade products available in the market soared from 76 thousand in 1998 to 173 million in 2014 in the coffee industry alone. (Statista) The whole Fairtrade certified market encompasses about 780 million products in the U.S. (Statista)

There are various dimensions of ethical consumption people pay attention to, that ranges from ethical compensation of the corporation for the workers to ethical treatment of nature and animals. There is, however, a subtle distinction between ethical and responsible consumption: while ethical consumption is more linked to the idea of morality and honesty in dealing with people or living creatures, responsible consumption takes on a greater scope and takes into consideration the efficiency and the furthering impact a consumption has in terms of its sustainability. ("Forests for life - Responsible consumption") Responsible consumption is strongly concerned with consumption associated with waste or excessive consumption and therefore responsible consumers may make decisions based on ‘rational’ decision making, questioning the necessity of their purchases in addition to the ethicality of the product itself. Though responsible and ethical consumption initially carry different meanings, we consolidate the meaning in this paper and make no such distinction. Both ethical and responsible consumption is primarily interested in purchasing products that are concerned with the ‘benefit of the other,’ in which the person purchasing is not objectively benefiting anything from the particular choice of product compared to the choice of buying other products available at hand. Making the distinction doesn’t necessarily add to the observation of these consumers and how

they behave, because theoretically they will behave in a similar pattern and scope of concern. We do not, however, specifically include religious and organic categories that may perhaps be considered 'ethical'. We find that the primary intent of purchasing such products would be different from why ethical consumers would like to purchase items with ethical labels. These products, though inherently may carry ethical intent in their production, are not products that are sold in expectation of an ethical response of the consumer purchasing them, and are not necessarily specified as an ethical product category.

In this broad consolidation of meaning of ethical consumption, individuals may consider various other dimensions of product claims and attributes, including its ethical features. This has led to the gradual consolidation of the ethical consumers that express ethical concerns about issues not only concerns with the rights of fellow human beings in the Third World countries but also that of animals and nature. This portrays a high degree of moral intensity of modern consumers.

4. Literature Review

Modern consumers are ever more informed and aware of the impact they make through their purchases. People feel ever more responsible for the choices they make and desire to consume responsibly than not. (O'Rourke, 2012) Plenty of surveys and statistics portray the level of willingness and preference to socially responsible goods (O'Rourke, 2012) and it provides an explanation why we must consider scrutinizing them now than ever before (Harrison, Shaw, & Newholm, 2010).

4.1 Consumer impact

Before further analysis of why and how consumers make altruistic choices, we must ask why consumer choice is important to consider from the first place. How does consumer choice affect the market and how much impact does consumerism and their altruistic purchases make a difference in the market? Why it is so important for us to motivate and scrutinize consumer social purchases now than before, and what impact it will actually bring forth.

Intuitively, consumers have tremendous power in the market because of the choices they make. With their consumption choices, consumers obtain the power to drive firms in and out of the market and determine prices of a product. Statistically consumer purchases hold about two thirds of the entire U.S. economy.(Harrison, Shaw, & Newholm, 2010) The modern consumers have greater power and influence because they are, again, informed, aware, and even feel responsible for their purchases. Responsible consumers now have access to choices that intersect donation and purchase, commodities such as fair trade coffee or shoes that give a pair to those in need. There is power to individual choice and as a society we have given each other such power to influence the society with our choices. Tom Slee, author of "No one makes you shop at Wal-Mart," however, questions our reliance on individual choice. He argues that even though

individual choice has increasingly been presented as an 'instrument of individual power' these choices have failed to give us what we want. By this entrustment of power, trusting in the power of free market and the 'Invisible Hand' and ultimately giving individuals the responsibility over market failures such as poverty and externalities, we have relied on the unchallenged choices despite witnessing its failures exacerbated. Poverty in the developing countries has not improved and wealth inequality has been growing rather than decreasing by year. We have witnessed more ethical debates and labor union fighting against private companies, more violations of wage rights in the modern times. To this market failure corporations have often argued that market discipline will sufficiently keep companies honest and responsible. Corporate spokespersons have argued that 'informed consumers ensure that the corporations behave themselves' (Slee 108) Slee, however, disputes this argument by pointing out the psychological response and consumption pattern of consumers. Though consumers perceive a problem and the necessity of action, the choice of action is 'subject to free-riding.' (Slee 108) This means that though one desires to act upon injustice in the market, it is easy for one to stay complacent and still take advantage of the convenience of injustice in the market when facing the "disadvantages" of paying more, spending more time, or experiencing trouble of fighting for justice. Then it suffices to say that this freedom of choice by the consumers and the corporations must be guided and properly regulated. In fact, what has been keeping markets healthy despite the temptation to free-ride or exploit opportunities has been the 'strong set of institutions to govern the transactions that take place: 'property rights, predictability, safety, nomenclature and so on.' (Slee 111) However, though these institutions and strong set of rules have been and will be the main set of rules that regulate the market, it is through collective action of consumers and the industry in which these rules are put in place. It is therefore necessary for the market players to have a mutual understanding and interest for social good than personal gains to define a consensus on social order and rules.

4.2 Social Awareness and Willingness

In theory, it is ideal for the market economy to have an unregulated free market with responsible consumers like those of now. Even if some not all people chose to consume responsibly and care about the good of those in need, the suppliers will adjust to the ethical demands, and the invisible hand of the market will eventually align everything into place. However even with the awareness of these responsible consumers, the market has failed to maximize the choices and impact individual choices have in the society - people still suffer from poverty and the disparity between the rich and the poor worsened. What are we missing from this ideal case?

There are two underlying assumptions about individuals in the free market that believes in the power of individual choices. First is that people desire to contribute and make choices that are good for the greater good. If it were not so, people would strongly believe that the market should be strictly regulated or simply lose hope in a society full of people wanting to take advantage of

each other. This hypothesis then again assumes that the general public desire to give back to the society through their purchase and desire to consume responsibly. This definitely seems to be more true nowadays, where people check labels and ethical manufacture of products and actively boycott unethical products. This assumption is also confirmed through research done by several research firms. In a study done by the Hartman Group, about 76 percent U.S. consumers indicated that they base their purchasing decisions on ‘concerns for issues such as the environment and social well-being’ at least ‘sometimes.’ (O’Rourke 17) In another survey conducted by market researchers Mintel, 73 percent of respondents asserted that they are willing to pay a premium for green products, 44 percent said they consider the ‘greenness’ of supermarkets, 31 percent of dry cleaners, and etc. (O’Rourke 17) Not only that Datamonitor, another market researcher firm found that ‘67 percent of consumers in the US and Europe claim to have boycotted a food, drinks, or personal care company’s goods on ethical grounds.’” (O’Rourke 17) It seems then believable that consumers are actually willing to consume for the social good and these statistics are a hopeful assurance to the social change we may be able to start and invest in. This leads us to carefully examine and assess what the society, corporations, and the government can best respond to this willingness.

The second assumption is that people know how to contribute and ‘act on their values’ in the marketplace. Believing that consumers are rational decision makers, the market either blindly believes that consumers will wisely choose what will be beneficial as a whole, or trust that even with self-interested efforts the invisible hand will direct them to benefit the society. This assumption is questionable first of all because our first assumption was generally satisfied, and because not much research has been conducted to evaluate whether people have enough access to act on their values and whether the options have been efficient enough to draw consumers into products that match consumer’s ethical needs. It is important, therefore, to find whether consumer participation through their purchases have been efficient. (something connecting this paragraph into purpose of providing information about consumers’ incentives and behaviors surrounding responsible purchases)

4.3 Responsible Consumers Today

One characteristic we want to identify is whether individuals value socially good outcomes equally or more than private benefits. Do people want to buy responsibly for the good of other people, willingly disadvantaging themselves for others? To our surprise survey after survey shows that 30-70 percent of consumers say they want to buy greener, healthier, more socially responsible products. (O’Rourke, 2012, p.6) The Hartman Group, a survey research firm, found that around 76 percent of U.S. consumers base their purchasing decisions on ‘concerns for issues such as environment and social well-being’ at least sometimes. (O’Rourke, 2012, p.17) Another research done by Mintel indicated that 73 percent of respondents asserted that they are ‘willing

to pay a premium for green products, 44 percent said they consider the ‘greenness’ of supermarkets upon purchase. (O’Rourke, 2012, p.17)

Not all the consumers are equal in their desire to pursue socially optimal and responsible goods. According to the study done in the book ‘The Ethical Consumer’ there’s mainly three categories of consumers. The first is group of individuals who are actively pursuing or would like to pursue the common good. Just like the evidence from O’Rourke, there’s a substantial number of individuals who wish to do so. (use evidence and page numbers from the book) Another group of individuals may need a little incentive to do what they desire to do anyway. These are people who desire to make altruistic choices yet doesn’t end up purchasing them. This group is the target group of the nudges of marketing and policy efforts to make responsible purchases more attractive and beneficial to push them to take their preferences into action. Another group is the number of consumers who might be embarrassed to be found ‘manifestly indifferent to the common good.’ (Harrison, Shaw, & Newholm, 2010) For this group, substantial social pressure and publicizing consumer impact, and the idea that consumption choices are manifestly a vote of a consumer citizenship may prompt this group of people to desire responsible consumption. It’s critical to understand the individuals who are willing to donate and participate in responsible purchasing. Understanding the factors that differentiate people who purchase responsible products and don’t will help us understand what are the most useful ways to guide, market, and target consumers to encourage responsible purchasing.

5. The Data

The Nielsen dataset at the Kilts Center for Marketing is a comprehensive and descriptive dataset that allows researchers to study the purchasing behavior of consumers and the specifications of the products purchased in the United States. The consumer panel data that this paper mainly utilizes is a panel dataset of randomly selected consumers who provided information about their purchases, and the specification of the purchases and products are provided since year 2004 with annual updates.

The dataset allows researchers to look at demographic and geographic variables of both the panelists and the products sold across United States. This comprehensive data was the main source of research, because it was comprehensive enough to provide not just selected data of altruistic purchases, but the dynamics surrounding all purchases made, along with altruistic purchases. Such comprehensive dataset has the potential to uncover more behavior patterns of consumers that have the option of purchasing or not purchasing an altruistic good, therefore making the purchase of an ethical good more meaningful signal to people’s altruistic behavior. The initial proposal was to do a comprehensive survey of people’s consumption choices, in which there was a questionnaire for people to answer questions regarding their purchase patterns and their awareness of altruistic goods. The survey would’ve been helpful in understanding habits and demographic data of altruistic consumers, but there were restrictions in conducting a

survey with the limited scope of an undergraduate student's network and ability to carry out a behavioral survey. However, we were able to instead obtain access to a more comprehensive dataset – the Nielsen consumer dataset. In doing so, the research avoided errors and selection biases that would've led to inability to extend the results for external validity.

There was a similar research done by Becchetti and Rosati from University of Rome Tor Vergata, in which they surveyed people with the similar attempt to 'study habits and characterizes of FT consumers.' They identify two different selection biases they had to allow in their research due to how their data was collected – bias of excluding consumers not purchasing FT products, and that the answer to their survey was 'positively correlated with individuals' praise for FT initiatives.' (Becchetti, Rosati) By using a more comprehensive dataset, not only this particular research avoided the bias of surveying selected group of close networks, but also the bias of surveying people who are intentionally and consciously engaged in responsible consumption.

The dataset from Label Insight expands Nielsen's dataset by increasing food composition transparency of about 400,000 products, which consists of about 87% products in the food and beverage industry in the United States. Label Insight launched the Open Data initiative in 2017 and since have provided unrestricted access to specific attributes of all listed ingredients and claims on the packaging of products, such as certified organic, gluten-free, ethically sourced, and etc. The database is updated daily, and can be married with the Nielsen dataset to provide extensive information about panelists and products sold.

6. Descriptive Findings

6.1 Product Statistics

About 15,841 ethical claims were identified by Label Insight, which includes marketing attributes categories such as 'Certified_Fair_Trade_Claim,' 'Ethical Claim,' 'Responsibly_Caught_Claim,' and more. These categories encompass various claims that are written in variations of its main categories. The largest of the smaller variations of identified ethical claims and products were 'Not tested on Animals,' at 67 percent of the data followed by 'Environmental' at 46 percent. These claims are not mutually exclusive, meaning that many of ethical claims such as 'Fair Trade' (19 percent) can be labeled along with the 'Environmental' (46 percent) claim. Figure 1 shows the range of most common marketing claim of the selected products.

When sorted according to product categories, the largest category is 'Body Creams and Lotions' (6 percent) followed by 'Shampoos' (4 percent). While the third largest product category is 'Coffee- Ground Coffee' (4 percent), six categories out of the nine identified top product categories are from the cosmetics aisle. (Figure 2) Not surprisingly, if sorted by aisles, 'Cosmetics' aisle consist of 67 percent of the identified ethical products, followed by 'Drinks' (13 percent). (Figure 3)

One significant finding is the concentration of ethical products in the beauty and personal care departments. It seems that people are increasingly concerned with the ethical attributes of products that come in direct contact with their bodies, whether it be through direct contact on their skin or digestion of the product. Beauty and personal care products in particular come in contact with consumers most regularly in people's daily routines, which may lead consumers to be concerned with the ethicality of the products they use most often. Beauty products are also prone to wasteful consumption most by females, because wasteful and excessive nature of purchase dynamics of beauty products. For beauty and personal care industry, excessive consumption is common therefore many of the products sold are destined to landfill. (England, 2010) Beauty industry is also focused on adorning the products as a marketing strategy which leads to a lot of waste just from the product itself. Beauty products noticeably create waste both from the producers and the consumers, which may have made the consumers more conscious of the products they purchase and may have started considering the sustainability and the environmental factors of these products.

The most frequently purchased product category is 'Coffee- Ground Coffee,' consisting about 23.6 percent of the purchases from 2004 to 2016. If we include other variations of coffee categories such as 'Coffee- Whole Coffee Beans', 'Coffee - Decaffeinated' and 'Coffee - Flavored Whole Coffee Beans' the whole Coffee category encompasses 34.1 percent of the products purchased by the panelists. This is not particularly surprising, since coffee is widely associated with Fair Trade. Coffee industry has benefited from successful mainstreaming of Fair Trade, in which the public increased awareness of unsustainable practices of conventional trade. Coffee became the most prominent fair trade products especially after the documentary "Black Gold." The movie discusses how multinational coffee companies that have dominated the industry worth over \$80 billion, and has made coffee the second most valuable trading commodity in the world after oil, but with a cost. ("Black Gold") The movie exposed the exploitation of power in the higher level trading market that contrasts the farms suffering in Ethiopia from low and unfair wages of farmers. This documentary had a big impact on media and consumer demand, in which multinational companies were questioned and they correspondingly responded by replacing their pricing policies and products to Fair Trade. ("Black Gold") This is a good example in portraying how much success in the Fair Trade industry can be largely attributed to media portrayal of the products, rather than simply the supply of products. Even though beauty care products are the most supplied Fair Trade products, the publicity of Fair Trade issues in the coffee industry subdued the impact. The second largest category is the beauty and hair care products in 'Shampoos' and 'Hair Conditioners,' consisting about 15 percent of the purchases. This dataset unfortunately doesn't include produce which is a common product category.¹

¹ The dataset from Label Insight does not include produce data because produce does not have upc codes.

The most expensive ethical product purchased was in the category of 'Green Supplements – Green Formulas' highest average price at 37.955 dollars. The next most expensive ethical product people purchased were 'Eye Serums and Treatments,' priced on average at 34 dollars. A notable thing about the top five most expensive product categories are related to supplements, childcare, or beauty treatment categories, and they consist of very minor percentage of the entire purchase of ethical goods (0.08 percent)

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Demographic findings are summarized in Table 1. Consumers engaged in ethical consumption were on average 45 years old for female population and about 41 years old for male population. The population in this data is mostly in the age range of 55-64 years old, taking up about 40 percent of the ethical purchase data including the '65+ years' range. This is again consistent with our knowledge of older people having stronger moral responsibility, therefore being a significant group of consumers in the FairTrade market (Carrigan, Samigin, & Wright, 2004). On the contrary the data shows that young people are not as engaged in ethical purchases, where categories ranging from under 25 to 34 years old only are 8 percent for female and 5.5 percent for male. Older population are generally more engaged with ethical consumption, given that ethical purchases involve the knowledge and the bandwidth to purchase more expensive things. However, given the publicity and social movements younger generations are involved in, this motivates more research on how to motivate the modern consumers to practically engage in these consumption on a regular basis.

The average female ethical consumer head have had 13.8 years of education, and the average male have graduated high school, having 12.5 years of education in average. A comparison group for the ethical consumers are the regular consumers. From the full consumer dataset, group of households were randomly selected to create a comparison group.² In Table 1, the regular population data doesn't show a difference in average years of education - both male and female group had about 13.5 years of education on average. Figure 4 shows that the male population in the ethical consumer group has a wider spread of education levels than the female group.

There are male and female differences in occupation of the ethical consumers also. (Table 2) The largest group of female ethical consumers were 'Retired, Unemployed' (36.6 percent) followed by 'Professional' (23 percent) and 'Prop, Managers, Officials' (11.8 percent). The smallest group represented in female ethical consumers 'Military' (0.07 percent). The male side of the

²From each year's consumer data, I generated n uniform random numbers by taking $\text{rnorm}(n, 1)$, therefore randomly extracting 10% of each year's data. These samples were merged together to create a complete dataset of random sample of households and their purchases each year. We, therefore, do not have the same group of panelists in each year's sampled dataset, therefore use repeated cross sections assuming that the randomly selected group of individuals carry a similar trend each year.

demographic data showed a similar pattern, 'Retired, Unemployed' (20.5 percent) followed by 'Professional' (18 percent) and 'Prop, Managers, Officials' (12.3 percent). However, the leading percentage of male occupation statistics was that there was no male head of the household at 21.2 percent and the smallest group was 'Students (employed < 30 hrs)' at 0.3 percent. An important finding is that no male head of the household population is highly concentrated in the ethical consumer group. Table 2 displays the population distribution of occupation, where 'No male / female head' is estimated about 21.2 percent for the ethical consumer group. Assuming homoskedastic nature of the random sampling for the regular population, it's surprising that while regular population does not have a 'No male /female head' group the ethical consumer group shows a very significant portion of the sample being 'No male /female head' group. Both tables display information that implies ethical consumption may be largely driven by female head of the household, and perhaps generally driven by the female population more than the male. Literature is very divided in concluding whether gender has any significant influence on fair trade consumption, and many have reached the consensus the non-directional nature of gender identification in fairtrade consumption, concluding that 'there is no difference between fair trade consumers and non-consumers in terms of gender.' (Doran, C.J., 554) The finding in this particular data seems consistent with the observation that women are more inclined than men to utilize moral philosophies upon consumption and have 'higher intention to behave ethically' (Bateman & Valentine, 2010). Although there are suggestions to why there may be a higher concentration of female ethical consumers, it's hard to explain why there is a particular concentration of single or widowed (no male head of the household) female consumers in the ethical consumer group. This may be worth exploring in the future.

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The average household income of the sample that purchased ethical products is in the range of '50,000-59,000.' As income increases, there is an increase in frequency of ethical purchase. (Figure 5) There is a noticeably big jump in the range of 23 to 27 which is in the income range of \$60,000-124,999 and a dramatic drop from the range of 28 and above, which is the range of \$125,000 and above. One hypothesis could be that the highest income group in this group of ethical consumers are the oldest in the age group, unable to consume or purchase actively. We see from the trend of the regular household income that the highest income group generally has a decrease in consumption even with non-ethical products.

Each year the number of ethical products purchased increased consistently. (Figure 6) Interesting finding is that sales of ethical goods and services still increased during time of recession in 2008 and post-recession. Even though Harvard Business Review in 2009 predicted that ethical consumption will take a backseat in the recession while consumers are dropping altruistic spending on their list of priorities (Willmott, 2009), the Ethical Consumer Markets Report

revealed that even at the start of the recession in 2008 the total value of ethical markets have grown in U.K. (“Ethical Consumer Markets Report 2012”) This is an evidence towards recession-resiliency of ethical consumption even in the U.S. According to study done by Arnot et al.’s in 2006, we find that ethical consumers are less price-responsive – particularly the purchasers of Fairtrade coffee are ‘significantly less price responsive’ than drinkers of conventional coffee. (Arnot, Boxall, & Cash, 2006) Particularly with ethical consumers, they are already purchasing not based on price efficiency or cost-effectiveness but purchasing on their values, which seems to explain why they are less price-responsive than conventional consumers.

7. Geqqo gtlk' Hlpf lpi u

In order to get a comprehensive understanding of ethical purchase dynamics, this paper presents three different categories of regressions. These regressions are intended to evaluate the statistical and economic significance of the variables that help us understand and estimate the trend in ethical consumption for modern consumers.

9B' Nkgrlj qqf 'qhlGyj kcdEqpuwo r vkqp

The first category of regressions estimate the likelihood of an ethical purchase with observable characteristics and controls.

$$1\{GE\} = \alpha_0 + \alpha_1 nqi\ gprwt\ grwt\ ej\ cug + \alpha_2 nqi\ kpeqo\ g + \alpha_3 h_{gf\ wcvkqp} + \alpha_4 o_{gf\ wcvkqp} + \alpha_5 h_{qeewrcvkqp} + \alpha_6 o_{qeewrcvkqp} + \alpha_7 t\ ceg + \alpha_8 t\ gi\ kqp$$

(1.1)

In our dataset, from year 2004 to 2016, randomly sampled group of individuals were extracted as a comparison group to the ethical consumers.³ EC indicates the household that has consumed one or more ethical consumption within this time frame. Regression results from different variations of the model above are displayed in Table 4.

Most observable characteristics in this dataset seem to have a positive effect on the likelihood of purchasing an ethical product. The regressor with the highest positive effect with statistical significance is ‘log_entirepurchase,’ increasing likelihood of ethical purchase by 7 percent when the amount of entire purchase amount doubles at a given trip by a single household. Increase in ‘f_education’ into the next education level category increases the likelihood by 5.1 percent with high statistical significance. Most regressors are statistically significant at 0.1 percent, except for the regressor ‘f_age,’ ‘f_occupation.’ Unfortunately, it is unclear why these variables are not statistically insignificant, even though they have a positive effect on likelihood of ethical purchase.

³ Refer to footnote 1

There are few important findings in this regression output. The only regressor that has a negative effect on the likelihood of purchase is ‘m_occupation,’ decreasing the likelihood by 2.4% with a marginal category jump the occupation indicator.⁴ Table 5 extends the specifications for both ‘f_occupation’ and ‘m_occupation.’ In Table 5 we are able to compare effect of occupation of female and male head of the households on ethical consumption. Unlike the female occupation coefficients, male occupation indicators have negative effect on ethical consumption. Three most statistically significant indicators are ‘5.m_occupation,’ ‘6.m_occupation,’ and ‘12.m_occupation’ which indicate ‘Craftsman/Foreman(Skilled),’ ‘Operative(Semi-Skilled),’ and ‘Retired, Unemployed’ respectively,⁵ decreasing the likelihood of ethical purchases decreases by 2-4%.

Table 6 expands race and region indicators. The statistically significant regressor for race indicators is ‘2.race’ which indicates ‘Asian,’ increasing likelihood of ethical purchase by 2.9 percent if a consumer is asian.⁶ In literature, previous findings have shown that Caucasian consumers were more prone to partake in ethical consumption. (Doran, C.J., 554) However in our regression (2), ‘1.race’ which indicates ‘White/Caucasian’ has a statistically significant negative impact on the likelihood of ethical purchase, decreasing about 2.1 percent. The indicator ‘2.race’ is still significant even with the adjustment of indicators. Regions that have a positive correlation with likelihood of ethical consumption are ‘8.region’ and ‘9.region,’ increasing the likelihood by 2.2 percent and 2.7 percent with high statistical significance.⁷

90'Fgvtgto kpcpw'qhhkpetgcug'kp'Gij lecnEqpwo r vkpp '''

In our dataset, we are also able to observe whether households have chosen to consume ethical products multiple times over years between 2004 and 2016. Among the consumers who have chosen to purchase these products, whether by simple interest or preference, the number of ethical products purchased may be affected by various observable characteristics. Difference between purchasing an ethical product due to simple and short-lived interest and purchasing products consistently may be crucial to understanding modern consumers. (Table 7)

$$\begin{aligned}
 \eta_i p_{gijlecn} &= \delta_0 + \delta_1 \eta_i gpvktgrwtejcug + \delta_2 \eta_i kpeqog + \delta_3 h_{gfweckap} + \delta_4 o_{gfweckap} + \delta_5 h_{qeewrckap} + \delta_6 o_{qeewrckap} \\
 &+ \delta_7 tceg + \delta_8 tgi kqp
 \end{aligned}
 \tag{1.2}$$

⁴ Marginal category jump means moving up to the next category of ‘m_occupation’ indicator.

⁵ Occupation indicators: 1(Profession) 2(Prop, Managers, Officials) 3(Clerical), 4(Sales), 5(Craftsman/Foreman(Skilled)), 6(Operative(Semi-Skilled)), 7(Military), 8(Service Workers & Private HH Workers), 9(Farm Owners, managers, Foreman & Laborers), 10(students Employed <30 hours), 11(Laborers), 12(Retired, Unemployed)

⁶ Race indicators: 1(White/Caucasian) 2(Black/African) 3(Asian) 4(Other)

⁷ Region indicators: 1(New England) 2(Middle Atlantic) 3(East North Central) 4(West North Central) 5(South Atlantic) 6(East South Central) 7(West South Central) 8(Mountain) 9(Pacific)

Inclusion of observable variables add to the significance of each regressors, validating the assumption additional regressors are crucial. Doubling the amount of entire purchase on a given trip increases the number of ethical consumption by 14 percent. This is intuitive, that the more you purchase you are more likely to purchase ethical products. A further intuition behind consumer behavior is the anchoring and adjustment heuristic (Tversky & Kahneman 1974). Based on this heuristic, consumers anchor their judgement to purchase an additional good based on what they've already put in their basket. The number and types of items in their cart may either impel or repel consumers to purchase another product. When consumers have a lot in their basket, people are more willing to spend add cheap 'add-on' items by the cashier. Similarly, when people have added enough items to their basket, they are more inclined or neutral about purchasing an extra good and if there's an ethical choice given to them, people may be more inclined to purchase the ethical product, therefore the amount the basket adds up to contributing to the increase in ethical purchase.

Doubling income of the household, on the other hand, increases number of ethical purchase by 2.6 percent only. It is an interesting observation that even though increase in income may be correlated with household income (Figure 5) the most significant factor is increase in the 'anchor' amount upon purchase.

Race and region have the smallest, though statistically significant, effect on number of ethical purchases. Table 8 shows that the a consumer being asian is the only statistically significant indicator for increase ethical purchase. In terms of regional ethical purchase, person in the Pacific Coast is more likely to increase ethical consumption. Along with the increase in non profit organizations and social movements that are often initiated in the west coast, it seems reasonable that consumers who live in the Pacific Coast are more likely to be engaged in ethical consumption.

96'Fvgto lpcwu'hhGzrgpfkwtg'qp'Gj kcnEqpuwo r vqp '''
''

The third category of regressions is intended to test the significance of the 'identifying incentive' as a variable that affects the likelihood of purchasing an ethical product. My hypothesis here is that the 'identifying incentive' is a big motivator for ethical consumption, therefore having significant effect on the purchase and the price paid for an ethical product. This incentive is a broad estimate of internal incentives consumers might have particularly regarding ethical consumption. Not only that, such incentive may also be affected by various observable characteristics. Therefore we take the maximum likelihood model to show and prove this relationship. The regressions below were largely inspired and derived from the regressions from Becchetti and Rosati, 2007.

$$Nqi Rwt ej\ cug = \beta_0 + \beta_1 nqi\ gpwt\ grwt\ ej\ cug + \beta_2 nqi\ lpeqo\ g + \beta_3 h_{ci\ g} + \beta_4 o_{ci\ g} + \beta_5 h_{gf\ wcvkqp} + \beta_6 o_{gf\ wcvkqp} + \beta_7 h_{qewrcv kqp} + \beta_8 o_{qewrcv kqp} + \beta_9 t\ ceg + \beta_{10} Tgi\ kqp + \beta_{11} Kf\ gpvkh\ lpi\ Kpegpvkxgg_k$$

(1.3)

$$Kf\ gpv\ k\ i\ k\ p\ e\ g\ v\ k\ g\ g\ k = \beta_0 + \beta_1 r\ i\ g\ p\ v\ k\ g\ r\ w\ t\ e\ j\ c\ u\ g + \beta_2 r\ i\ k\ p\ e\ q\ o\ g + \beta_3 h\ c\ i\ g + \beta_4 o\ c\ i\ g + \beta_5 h\ g\ f\ w\ e\ c\ v\ k\ q\ p + \beta_6 o\ g\ f\ w\ e\ c\ v\ k\ q\ p + \beta_7 h\ q\ e\ e\ w\ r\ c\ v\ k\ q\ p + \beta_8 o\ q\ e\ e\ w\ r\ c\ v\ k\ q\ p + \beta_9 t\ c\ e\ g + \beta_{10} T\ g\ i\ k\ q\ p$$

(1.4)

As mentioned before, this paper claims that given the anomalous nature of ethical purchases, repetitive and multiple purchases of ethical product indicate not only the consumer's external behavioral traits of preference towards ethical products but also of internal incentives, which we call the 'identifying incentive.' This identifying incentive captures people's desire to identify themselves as a responsible or ethical consumer, therefore actively engaging in responsible consumption. These purchases may happen independently or weakly correlated with 'nudge' factors such as peer pressure because it's an internal identification that drives them to be ethical consumers.

Table 9 observes the expenditure dynamics of ethical consumers. The dependent variable 'log_purchase' indicates the price of ethical products people buy at a given trip at a store. The last regression (6) shows that all the regressors are significant in estimating the price of ethical purchase. Similar to previous trends, 'log_entirepurchase' has the highest and statistically significant positive effect on price of ethical purchase: doubling the sum of purchased goods increases price of ethical purchase by 26 percent. For male consumers, only education positively affects increase in price of ethical purchase.

'Identifying Incentive' is also positively statistically significant, showing that internal incentives affect ethical consumption dynamics. Furthermore, (1.3) attempts to understand the determinants of such identification factor. (Table 11) Increase in years of education increases the incentive to identify as ethical consumer for both men and women. For older ethical consumers, however, incentive to identify themselves as 'ethical' does not seem to be a big motivator.

The regressors that negatively influence the incentive are 'f_occupation' and 'm_occupation,' with the occupation of male being the only statistically significant regressor among the two. A probable explanation behind this is that given the occupation and having already identified themselves strongly as manager or officials, consumers may be less driven by another 'identifying' incentive to purchase an ethical product but rather driven by other incentives possibly related to their occupation. Education also seems to have statistically significant positive effect on the identifying incentive, particularly to female ethical consumers. Race has a statistically significant positive effect on the identifying incentive, again mostly from asian population (Table 12). Though regional regressor is not statistically significant estimator for identifying incentive, consumers in East and West South Central are less prone to having motivating ethical incentives.⁸

¹ Refer to footnote 7 for regional indicators.

8. *Eqperwudqp''*

In this paper we provide more recent observations of consumer dynamics regarding ethical products. Previous research in the field of behavioral economics attempted at explaining consumer's desire and determinants of ethical consumption based on surveys conducted about how consumers will or presumably have consumed in the past. This paper takes a crucial step further into understanding consumers by validating or disclosing their ethical purchase dynamics through the purchases they have actually made.

Our dataset has shown that ethical consumers are more likely to be old and retired. Most consumers have some years of college education, but often male ethical consumers are less educated than female consumers. Large group of ethical consumers are female, whom are head of their households with no male counterpart. The estimates from this dataset adds to the discussion in literature that women are more inclined to responsible consumption.

Likelihood of ethical demand were estimated through identifiable characteristics of consumers. The likelihood of purchase and the price of ethical purchase increases more with the increase in sum of entire purchase at a given trip than increase in income. Years of education has a significant effect in the likelihood of ethical purchase, especially for women. Unlike observations made previously, asians are more likely to purchase ethical products than caucasians - in fact, caucasians are statistically less likely to purchase ethical products according to this dataset.

Race and regional characteristics are mostly insignificant in estimating ethical purchase, but data shows that consumers in the pacific states are more likely to consume ethically.

Price and number of ethical purchase increases also with the increase in sum of goods in entire purchase of a consumer. Identifying incentive to purchase ethical goods is stronger amongst educated individuals for both men and women. This incentive, however, does not seem to be a strong motivator for older generations and does not seem to be affected by individual's occupation.

Results in this paper motivate further applicational research to i) expand the scope ethical consumer demographics by investing in the knowledge of ethical consumption dynamics ii) construct a more formal extensive 'identifying incentive' with external exposures to marketing and media that motivates ethical consumers.

Tglgt gpegu'

All of the Calculated (or Derived) based on data from The Nielsen Company (US), LLC and provided by the Marketing Data Center at The University of Chicago Booth School of Business.

Data for this study are from the largest publicly available branded food composition database in the US. Label Insight, who provide data solutions that allow transparency between consumer packaged goods brands, retailers and consumers, launched the Open Data initiative in 2017.

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Figure 1: Top Marketing Claims Attributes by percentage of products



Source: Label Insight

*These claims are top marketing claims attributes of the products under the holistic attribute categories of ethical claims. These attributes are not the categories in which the products in this data were chosen.

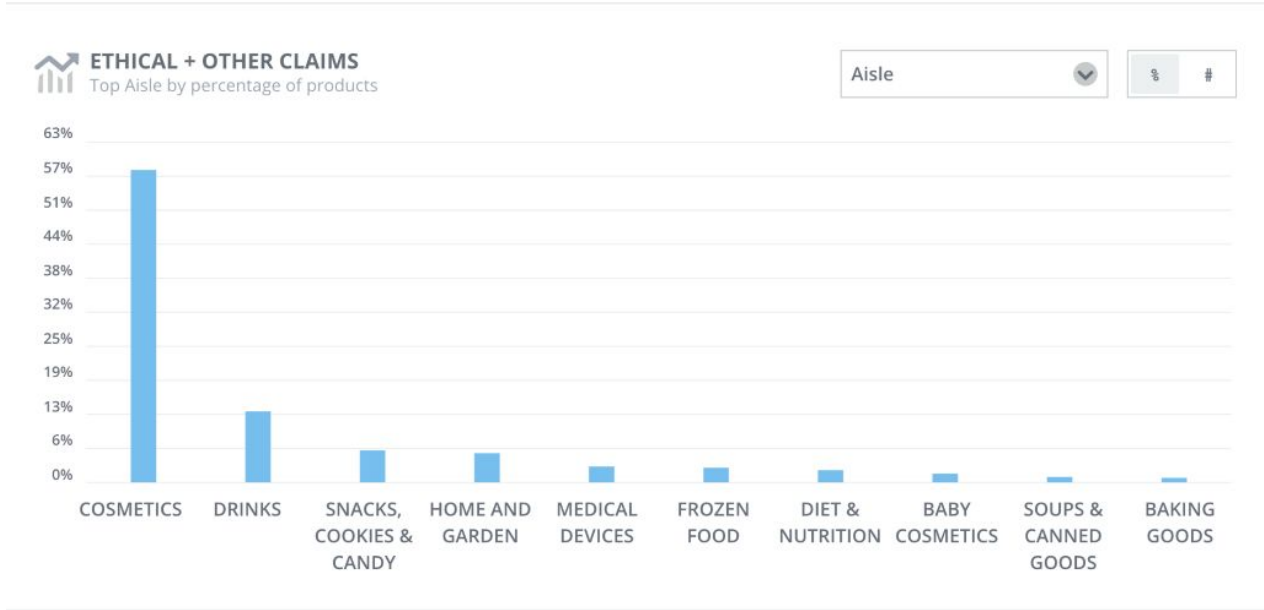
FIGURE 2: Top Product Category by percentage of products



Source: Label Insight

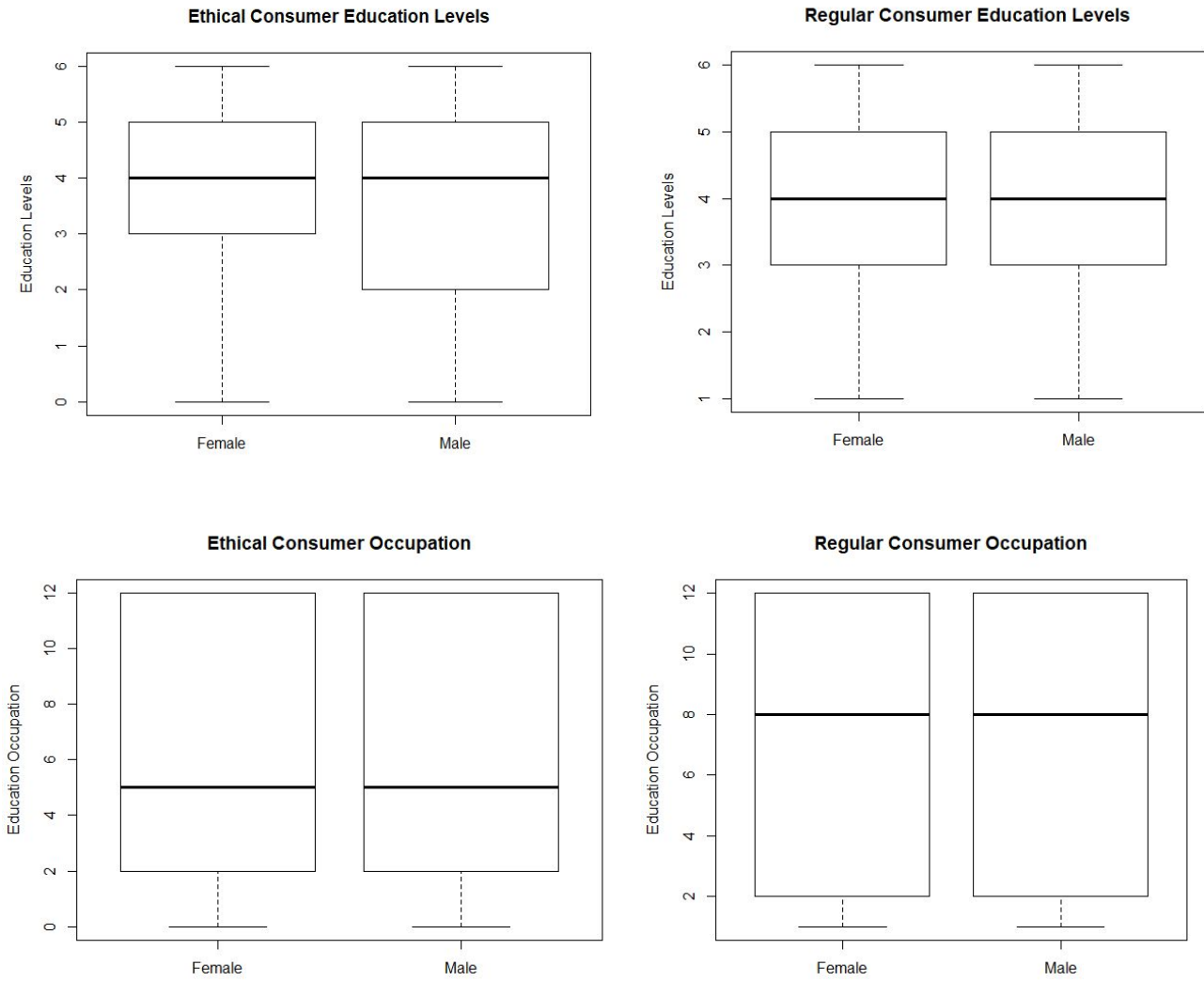
* See footnote

FIGURE 3: Top Aisle by percentage of products



Source: Label Insight

FIGURE 4: Comparison of Education and Occupation Levels⁹



⁹ For occupation indicators, refer to footnote 5

FIGURE 5: Distribution of Household Income

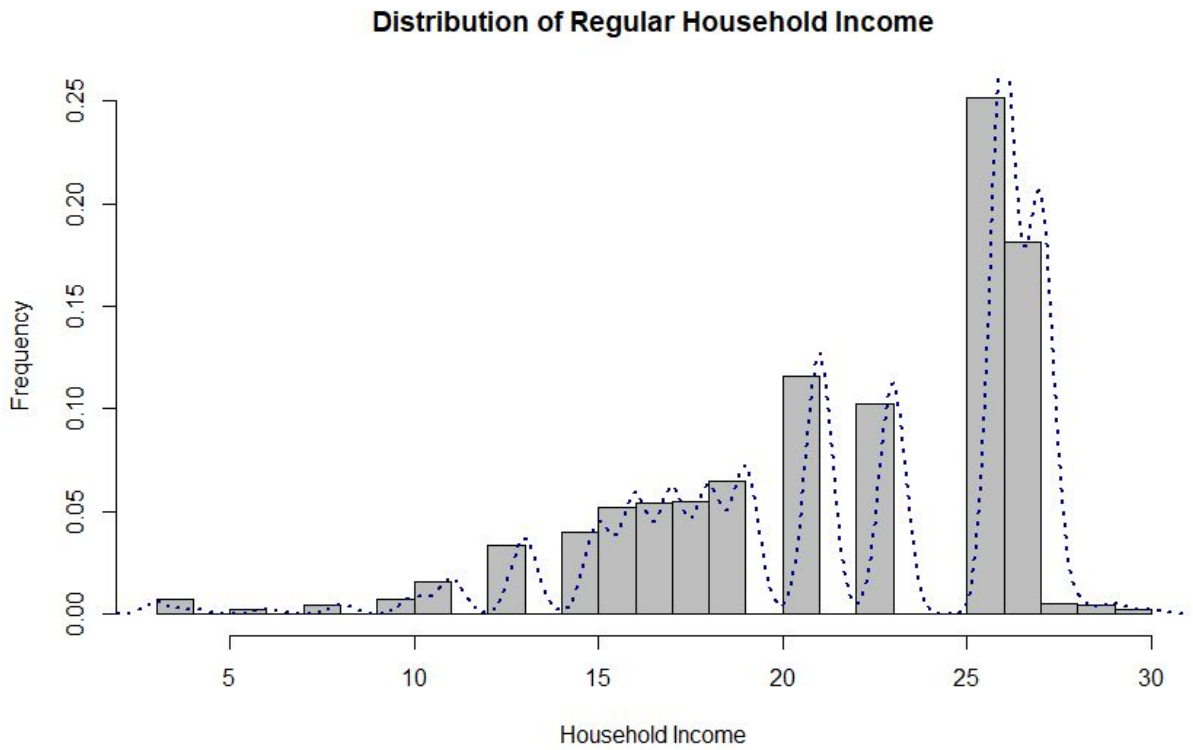
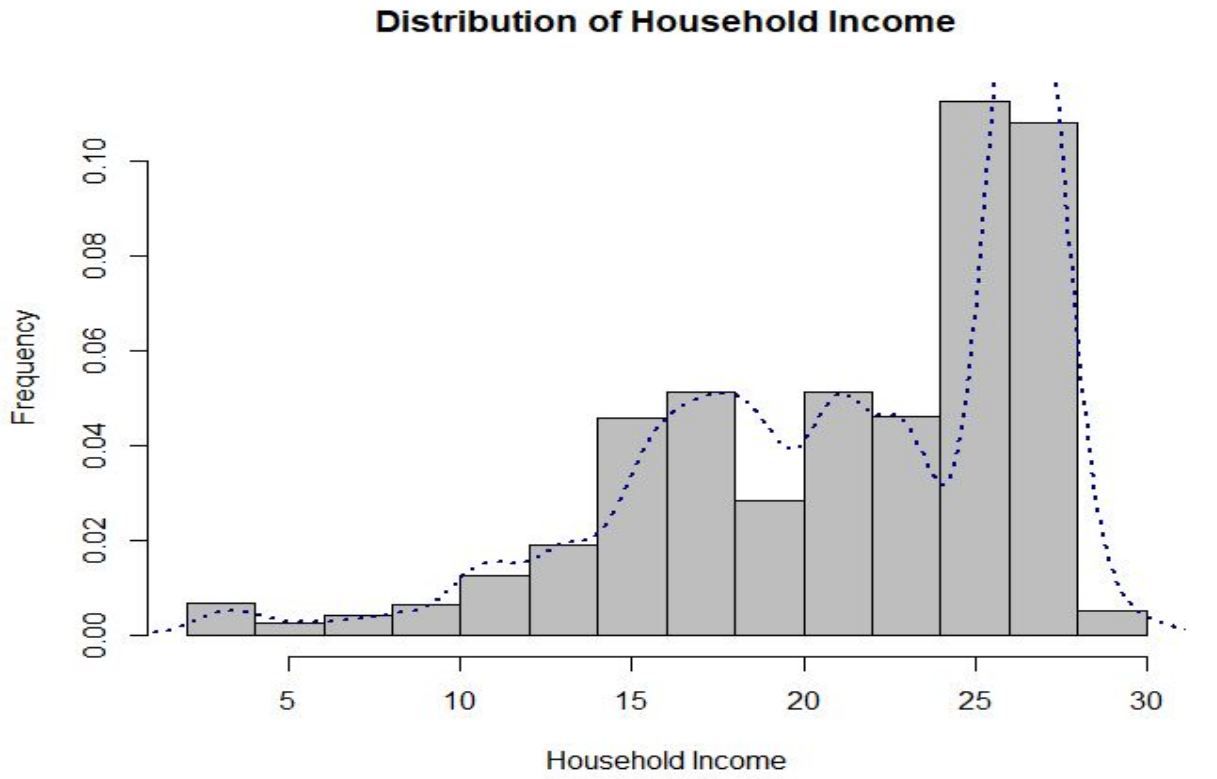
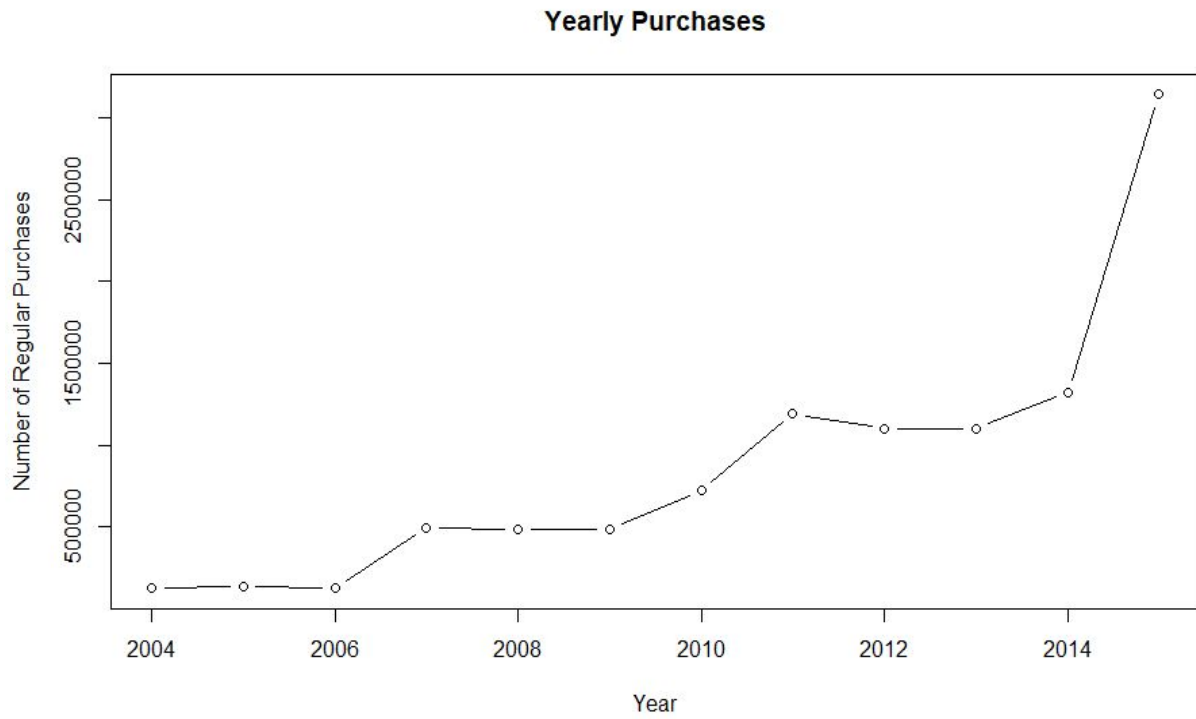
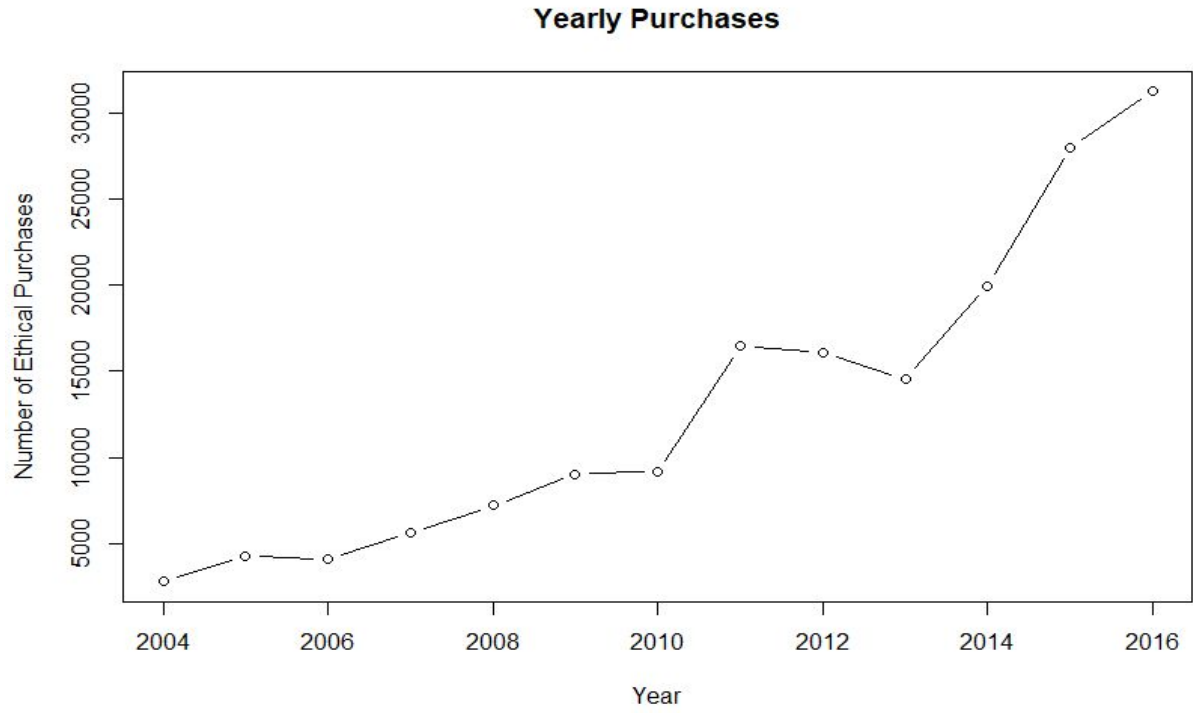


FIGURE 6: Yearly Purchases

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	(1)		(2)	
	EthicalCon~n		EthicalCon~n	
log_entire~e	0.068***	(14.89)	0.068***	(14.90)
log_income	0.051***	(10.40)	0.047***	(9.18)
f_age	0.015	(1.59)	0.018	(1.95)
m_age	0.035***	(3.78)	0.044***	(4.69)
f_education	0.051***	(9.65)	0.050***	(9.62)
m_education	0.035***	(6.87)	0.023***	(4.14)
1.f_occupa~n	0.000	(.)		
2.f_occupa~n	0.005	(0.94)		
3.f_occupa~n	0.001	(0.23)		
4.f_occupa~n	-0.002	(-0.42)		
5.f_occupa~n	0.001	(0.21)		
6.f_occupa~n	0.008	(1.65)		
7.f_occupa~n	0.008	(1.84)		
8.f_occupa~n	0.006	(1.11)		
9.f_occupa~n	0.004	(0.99)		
10.f_occup~n	0.001	(0.17)		
11.f_occup~n	0.002	(0.49)		
12.f_occup~n	0.012	(1.81)		
f_occupation			0.011*	(2.36)
1.m_occupa~n			0.000	(.)
2.m_occupa~n			-0.013*	(-2.37)
3.m_occupa~n			-0.003	(-0.59)
4.m_occupa~n			-0.012*	(-2.39)
5.m_occupa~n			-0.029***	(-4.74)
6.m_occupa~n			-0.030***	(-5.22)
7.m_occupa~n			0.005	(1.01)
8.m_occupa~n			-0.000	(-0.06)
9.m_occupa~n			-0.004	(-0.82)
10.m_occup~n			0.000	(0.01)
11.m_occup~n			-0.004	(-0.80)
12.m_occup~n			-0.043***	(-6.02)
N	49189		49189	

Standardized beta coefficients; t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

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	(1)		(2)	
	EthicalCon~n		EthicalCon~n	
log_entire~e	0.071***	(15.49)	0.071***	(15.53)
log_income	0.046***	(9.09)	0.045***	(8.87)
f_age	0.021*	(2.25)	0.020*	(2.17)
m_age	0.041***	(4.39)	0.041***	(4.41)
f_education	0.050***	(9.59)	0.050***	(9.69)
m_education	0.028***	(5.44)	0.028***	(5.31)
f_occupation	0.012*	(2.40)	0.010*	(2.17)
m_occupation	-0.023***	(-4.37)	-0.025***	(-4.65)
1.race	0.000	(.)		
2.race	0.010*	(2.15)		
3.race	0.029***	(6.34)		
4.race	0.013**	(2.79)		
race			0.019***	(4.10)
1.region			0.000	(.)
2.region			0.007	(0.85)
3.region			-0.014	(-1.55)
4.region			-0.007	(-0.99)
5.region			-0.008	(-0.85)
6.region			-0.011	(-1.61)
7.region			-0.001	(-0.07)
8.region			0.022**	(3.17)
9.region			0.027***	(3.39)
N	49189		49189	

Standardized beta coefficients; t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

HU'Y+. '8 Yh'fa]bUbh'cZ-bWYUgY]b'9H]WJ'7 cbgi a d]cb''

	(1)	(2)	(3)	(4)	(5)
	log_n_ethi~1	log_n_ethi~1	log_n_ethi~1	log_n_ethi~1	log_n_ethi~1
log_entire~e	0.146*** (29.18)	0.146*** (29.24)	0.143*** (28.49)	0.147*** (28.62)	0.147*** (28.73)
log_income	0.055*** (10.99)	0.056*** (10.75)	0.041*** (7.49)	0.026*** (4.33)	0.026*** (4.34)
f_age		0.011* (2.19)	0.022*** (3.34)	0.044*** (6.76)	0.046*** (6.98)
m_age		-0.002 (-0.48)	-0.040*** (-4.36)	-0.014 (-1.30)	-0.013 (-1.18)
f_education			0.014* (2.21)	0.033*** (5.88)	0.032*** (5.70)
m_education			0.057*** (6.19)	0.056*** (5.65)	0.055*** (5.52)
f_occupation				-0.016** (-2.91)	-0.017** (-3.02)
m_occupation				-0.045*** (-6.87)	-0.045*** (-6.93)
race					0.014** (2.76)
region					0.019*** (3.70)
N	40210	40210	40210	38259	38259

Standardized beta coefficients; t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

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HUV'Y, . 'G][b]Z'WUbW'cZF UW'UbX'FY[]cb']b'Bi a VYf'cZ9H]WU'7 cbgi a dHjcb'

	(1)		(2)	
	log_n_ethi~1		log_n_ethi~1	
log_entire~e	0.148***	(28.71)	0.148***	(28.95)
log_income	0.026***	(4.31)	0.024***	(4.00)
f_age	0.046***	(6.98)	0.045***	(6.82)
m_age	-0.013	(-1.16)	-0.012	(-1.06)
f_education	0.032***	(5.64)	0.032***	(5.66)
m_education	0.054***	(5.44)	0.055***	(5.55)
f_occupation	-0.017**	(-3.03)	-0.016**	(-2.94)
m_occupation	-0.045***	(-6.89)	-0.046***	(-7.02)
1.race	0.000	(.)		
2.race	0.005	(1.03)		
3.race	0.011*	(2.20)		
4.race	0.010	(1.94)		
race			0.012*	(2.28)
region	0.019***	(3.65)		
1.region			0.000	(.)
2.region			0.002	(0.18)
3.region			-0.020*	(-2.07)
4.region			-0.010	(-1.35)
5.region			-0.015	(-1.50)
6.region			-0.026***	(-3.57)
7.region			-0.028**	(-3.28)
8.region			0.010	(1.28)
9.region			0.027**	(2.86)
N	38259		38259	

Standardized beta coefficients; t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

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HUV'Y'\$. 'G][b]Z]W]b]W]'c]Z]F]U]W]'U]b]X]'F]Y]']c]b]'c]b]'9]I] d]Y]b]X]h]i] f]Y]'c]b]'9]H]]W]'7]c]b]g]i] a] d]h]c]b]Á

	(1)		(2)	
	log_purchase		log_purchase	
log_entire~e	0.269***	(54.40)	0.267***	(54.00)
log_income	0.080***	(14.08)	0.083***	(14.54)
f_age	0.054***	(8.65)	0.053***	(8.41)
m_age	-0.071***	(-6.73)	-0.071***	(-6.71)
f_education	0.040***	(7.44)	0.044***	(8.17)
m_education	0.079***	(8.26)	0.070***	(7.39)
f_occupation	-0.032***	(-6.00)	-0.033***	(-6.18)
m_occupation	-0.024***	(-3.76)	-0.024***	(-3.78)
1.race	0.000	(.)		
2.race	0.078***	(15.81)		
3.race	0.032***	(6.41)		
4.race	0.005	(1.03)		
race			0.041***	(8.26)
region	0.085***	(17.46)		
1.region			0.000	(.)
2.region			-0.069***	(-7.94)
3.region			-0.018	(-1.87)
4.region			0.019*	(2.52)
5.region			0.026**	(2.63)
6.region			-0.010	(-1.38)
7.region			-0.005	(-0.57)
8.region			0.024**	(3.16)
9.region			0.063***	(7.00)
N	37985		37985	

Standardized beta coefficients; t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

