UIS BUSINESS SCHOOL

Food Waste or Wasted Food

An empirical investigation of the determinants of food waste

Maaike Helene van Graas
June, 2014

Norsk tittel: Matavfall eller bortkastet mat
En empirisk undersøkelse av determinantene for matavfall

Universitetet i Stavanger

DET SAMFUNNSVITENSKAPELIGE FAKULTET
HANDELSHØGSKOLEN VED UIS

MASTEROPPGAVE

STUDIEPROGRAM:	OPPGAVEN ER SKREVET INNEN FØLGENDE SPESIALISERINGSRETNING:
Master i økonomi og administrasjon	Økonomisk Analyse ER OPPGAVEN KONFIDENSIELL? Nei (**NB**! Bruk rødt skjema ved konfidensiell oppgave)

TITTEL:

Matavfall eller bortkastet mat

ENGELSK TITTEL:

Food Waste or Wasted Food

FORFATTER(E)		VEILEDER:
Studentnummer: 207338 ……	Navn: Maaike H. van Graas …….	Gorm Kipperberg

OPPGAVEN ER MOTTATT I TO – 2 – INNBUNDNE EKSEMPLARER

Stavanger, ……/…… 2014 Underskrift administrasjon:……

Abstract

In the industrialized world large amounts of food are daily disposed of. A significant share of this waste could be avoided if different choices were made by individual households. Each day, every household makes decisions to maximize their happiness while balancing restricted amounts of time and money. Thinking of the food waste issue in terms of the consumer choice problem where households can control the amount of wasted food, we can model how households can make the best decisions.

In this thesis, the food waste issue has been investigated through empirical research. A preliminary survey mapped the respondents' habits on the topics of planning, shopping, and wasting food in addition to their background and lifestyle. Secondly, a weight form recording the amount of food waste, both edible and inedible, was filled out each day for 13 weeks. Together, this information formed a panel data set with 1400 observations.

The results from an extensive series of regressions show that the main variables affecting the amount of food waste are various planning variables, the level of education and income, household size, immigrants and diet. The frequency at which households eat leftovers before cooking new food is a behavioral variable which is significant. the amount of edible food waste is affected the number of days that households shop for, as it is shown that shopping for multiple days leads to lower amounts of edible food waste. These findings are consistent with the hypothesis. With regard to total food waste the regressions revealed that households with less fruit and vegetable waste after consumption have higher amounts of food disposal, which contradicts the hypothesis about that planning leads to less food being wasted. The education is consistent with the expectation that higher education leads to less food waste, however, the squared variable show a turning point around a level of education at a bachelor's degree. The income variable tells the same story as education, but here the turning points lies at a yearly income of $ 67,500. The expectation that increased income leads to increased amounts of food waste is not exactly as the result.

List of Tables

List of Figures

Acknowledgements

This thesis represents the completion of a Master's degree in Business Administration at the University of Stavanger Business School. During the course of this semester I have to the best of my ability used the skills that I have learned and applied this knowledge to an independent study.

I would like to take this opportunity to thank my supervisor throughout this research, Gorm Kipperberg, Ph.D. who has shown great interest and enthusiasm on the topic of this research and has given excellent advice. I was fortunate enough to receive the results from the questionnaire and weight form data from Seattle Public Utilities. I would especially like to thank Jenny Bagby at Seattle Public Utilities for giving me access to the data set and allowing me analyze it without any restrictions. The opinions stated here, however, are solely mine.

Lastly, a special thanks to my family, friends and fellow students, without your support this thesis would not have been possible.

Table of Contents

1. Introduction

It is well known that people throw away too much food, and that a part of this waste could have been avoided. Hence it is of interest to study the determinants of food waste behavior and how does it vary in the population? That is the objective of this project.

This research paper is based on data from Seattle Public Utilities in Seattle (SPU), Washington, USA in the beginning of 2013 they conducted a project were households were asked to fill out a questionnaire and then were asked to weigh their food waste for 13 consecutive weeks. The goal of SPU's project was to develop a community food waste prevention pilot program, which should motivate the households of Seattle to reduce their food waste. For internal reasons SPU has not been able to analyze the data yet. The current project was designed to investigate how lifestyle and self-assessed behavior towards planning, shopping, and wasting food affect the amount of food waste, both edible and non-edible. This study will also look at the differences between total food waste, food waste adjusted for both the number of meals consumed and household size.

There are a number of dimensions to food waste; not only is it preferable for each household to reduce its food waste as they can save money on using all of their edible food before buying new groceries. Some people can also save on their utility bill if they are paying for the amount of waste discarded and live in a city that does provide garbage cans for organic waste. If every consumer is able to reduce especially their edible food waste significantly, this will lead to a smaller amount of food demanded in the market. The repercussions of a diminished total demand for food will lead to lower transportation costs, less strain on the agricultural industry that are not always able to produce the amount of the demand, which lead to food being imported from other countries, often from developing countries. This food has an opportunity cost in that the food could have been consumed domestically, but since these countries need the revenue they get by exporting the food, this option is often chosen. Thus, it is arguable that reducing food waste in the industrialized countries could lead to better food security in developing countries. Less local food waste will give the public waste disposal service less issues when it comes to handling waste. This will benefit the community economically as well, since there will be less funding needed for waste disposal.

When analyzing the data set, there are a few things that I am particularly interested in, which have made up the research questions. The research questions aimed to be answered based on the data are:

1) How does planning and attitude towards food shopping and wasting affect the amount of food wasted?

2) Are the determinants for total food waste different from the edible food waste disposal?

Chapter 2 presents some background information on the issue, while chapter 3 provides the theoretical framework of the consumer choice problem and more specifically utility maximization with a time and a budget constraint. Chapter 4 offers the outline of the survey and the econometric framework used in the various regressions conducted on the data collected. The results of these regressions are presented in chapter 5, whereas the results and other project details are discussed in chapter 6. Chapter 7 offers the final conclusions and some suggestions to further research on this topic.

2. Food Waste

The amount of edible food waste is estimated to be one third of the food produced for human consumption (Gustavsson et.al, 2011). The food supply chain (FSC) of vegetable and animal products is divided into five stages, and the food losses and wastes associated with each of these stages are (Gustavsson et.al, 2011):

- Agricultural production: Losses in regards to animal sickness or death, mechanical damage or spillage during harvest
- Postharvest handling and storage: Death during transportation to and condemnation at slaughterhouse, spillage and degradation during handling, storage, and transportation
- Processing: Spillage and degradation during industrial (incl. Slaughter) or domestic processing
- Distribution: Losses and wastes in the market system, e.g. supermarket
- Consumption: Losses and wastes during consumption in the household

This is the complete food supply chain, in this paper however, the focus will be on the last section of the chain, food waste in relation to consumption.

Food waste in this paper refers to food items intended for human consumption which have been discarded by the consumer, while edible food waste is defined as the amount of discarded food and drink that could have been consumed, but was discarded. Food waste is thus the sum of edible and non-edible food waste. It is also important to point out that food products intended for other use, for example for animals, biofuels and biomaterial, are not included in this definition (Parfitt, 2010).

The subject of food waste is a multidimensional issue with social, economic, and environmental aspects. The economic impact of food waste on households is that food cost money, and by consuming a larger portion of the food bought, families can save money. In the U.K it has been estimated that the average family could save about £680 a year (Waste and Resource Action Programme [WRAP], 2011). The social perspective roots in the reality that food is a scarce resource and like other scarce resources it can be reallocated to the parts of the world that have food shortages (Stuart, 2009). The environmental cost of food waste is divided into three parts; increasing food waste leads to a increase in the demand of

agricultural land; agriculture uses 70% of global freshwater resources and an increase in production will lead to an increase in the water use; the use of fossil-fuel energy will increase with the increase in food production for example through transportation (FAO, 2013). In the UK it is estimated that food which could have been eaten at some point prior to being thrown away, is responsible for about 3% of the domestic greenhouse gas emissions (WRAP-WWF, 2011).

Others have studied the issue of food waste in an economic context. Graham-Rowe, Jessop and Sparks (2013) interviewed their participants about thoughts and feelings concerning purchasing food, food choices and preparation in the home, throwing away food and reducing food waste to elicit motivations and barriers to reduce food waste. Their findings were that the main motivations for reducing food waste were to save money and that it was a waste of good food (Graham-Rowe et.al, 2013, Brook Lyndhurst, 2007). Important barriers to reduce food waste were that people would buy large amounts of healthy food to establish an identity as a 'good' provider, buying in bulk to avoid multiple trips to the store, and little knowledge of the importance of minimizing for waste (Graham-Rowe et al, 2013).

Packaging does also have an impact on food waste (Williams et al, 2011). A study in Sweden divided their participants into two groups and gave one group some education on the matter, while the other group received no treatment. During the 7 days of the study the participants were to answer questions about the household and shopping habits, keep a diary on food waste both in relation to meals and not and lastly answer questions on packaging. The study reveals that 20-25% of the food waste can be related to issues emptying food containers and the purchase of very large packages. When looking at the differences between the groups, the group that received the treatment in the form of education wasted half the amount of prepared food compared to the group without the treatment.

An American study points particularly to a number of economic incentives that could reduce food waste (Kantor et al, 1997). This study investigate food losses throughout the whole food supply chain, but the part related to food wasted by consumers focuses on preventing food waste and reducing solid waste. One economic incentive that the authors discuss in relation to preventing food waste is requiring the households to pay for the amount of waste that they generate. Education is a factor that will reduce food waste

according to the authors, who believe that a program teaching for example about portion sizes to reduce leftover food waste will lead to less food waste.

In 2006, 1862 interviews were conducted in the UK asking questions to explore household food behavior (Brook Lyndhurst, 2007). The main purpose was to collect information about how much is wasted, which groups waste more than others, the factors that lead to food being wasted, and which measures that could reduce the amount of food wasted. A second objective was to develop a "baseline", which future studies can use for comparison. The key findings were that consumers buy too much food when tempted by special offers, which lead to the food reaching its use by date and being disposed. Also the preparation f too much food for meals, will often lead to more food being disposed. They also found that young professionals, young families and social renters are the groups with the largest amounts of food waste.

In 2006, ten discussion groups were held in London were participants discussed their views and habits on the topics of food shopping, planning, preparation and disposal (Corrado, 2007). In principal they agreed that food waste was to be avoided because of financial and social reasons, where the social reasons included that they viewed food waste negatively and associated it with greed. Reasons for food waste included buying too much and thereby not being able to consume it before the expiration date. .

3. The Consumer Choice Problem

The consumer choice problem is a central topic of consumer theory, which is a part of microeconomics. Decisions made by individual single consumers or households on which goods and how much of each good to buy are not always conscious. These decisions are nevertheless made with the goal of maximizing one's own happiness, and of course cover basic needs such as housing, food and clothing. When maximizing utility for the consumer, scarce resources as income and time need to be taken into account as well. Thus the consumer choice problem is about maximizing utility given a fixed amount of time and/or a set budget reflecting total income.

3.1 Utility Maximization with One Constraint

The basic consumer choice problem ignores time constraints and states that the consumer has to choose quantities of consumption goods 1, 2,…, n (x_1, x_2,…,x_n) to maximize utility U(x_1, x_2,…,x_n) subject to money income (I) and fixed prices (P_1, P_2,…,P_n), all else equal. The problem can be stated formally as:

$$Max\ U = U(x_1, x_2, \dots, x_n)$$
$$s.t. P_1x_1 + P_2x_2 + \cdots + P_nx_n \leq I \qquad (1)$$

By introducing a new variable lambda, λ, in a Lagrangian framework we can find the functions of x's that maximize utility, U, and stay within the money income, I. The new function will look like this:

$$L(x_1, x_2, \dots, x_n, \lambda) = U(x_1, x_2, \dots, x_n) + \lambda[I - P_1x_1 - P_2x_2 - \cdots - P_nX_n] \qquad (2)$$

This function assumes that all of the income is used. To solve this equation, each of the variables in the Lagrangian framework needs to be partially derived. These derivatives are called the first-order conditions. The derivatives indicate whether the variable that the function is partially derived on is increasing if positive, decreasing if negative, or stable if equal to zero.

First-Order conditions for interior solutions:

1) $X_1: \frac{\partial L}{\partial X_1} = U_1 - \lambda P_1 = 0 \rightarrow U_1 = \lambda P_1 \rightarrow \lambda = \frac{U_1}{P_1}$ (3)

2) $X_2: \frac{\partial L}{\partial X_2} = U_2 - \lambda P_2 = 0 \rightarrow U_2 = \lambda P_2 \rightarrow \lambda = \frac{U_2}{P_2}$ (4)

⋮

n) $X_n: \frac{\partial L}{\partial X_n} = U_n - \lambda P_n = 0 \rightarrow U_n = \lambda P_n \rightarrow \lambda = \frac{U_n}{P_n}$ (5)

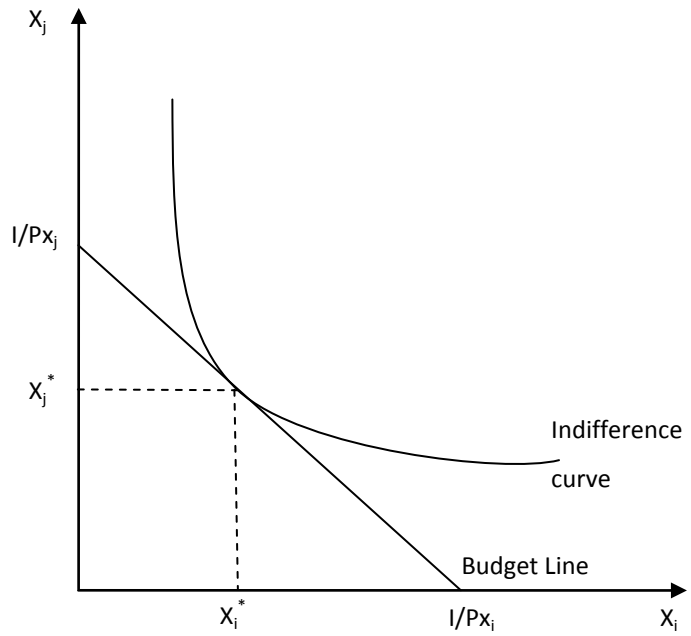
n+1) $\lambda: \frac{\partial L}{\partial \lambda} = I - P_1 x_1 + P_2 x_2 + \cdots + P_n x_n = 0$ (6)

Equation 1-5 gives: $\lambda = \frac{U_1}{P_1} = \frac{U_2}{P_2} = \frac{U_3}{P_3} = \cdots = \frac{U_n}{P_n}$ (7)

The utility, U_1, U_2,…, U_n, is the marginal "benefit" that the consumer gets from consuming one more unit of x_1, x_2,…, x_n. The price of each good, P_1, P_2,…, P_n, is the marginal cost for one more unit of x_1, x_2,…, x_n. Therefore, we can say that lambda, λ, is a "benefit"-to-cost ratio for each good x_1, x_2,…, x_n.

One advantage with this model is that it identifies the amount of each good that yields the highest amount of happiness (utility) possible for the consumer while staying within the consumer's budget. There are a number of possibilities applications to this model and as will be shown later, it can be used with multiple constraints.

Figure 3.1: Utility Maximization with Two Goods



In order to show a graphic example we use a two-goods case, with x_i and x_j. In figure 3.1 it is shown how the optimal amount of each good, x_i* and x_j^*, is determined by the indifference curve, and the budget line. An indifference curve is a graphical way to showing the combination of goods that yield the same amount of utility at each point along the curve. The end points on the budget line are the points that show the amount the consumer would get if he/she would only buy one of the goods. If the above system of equations (1-6) is solved with prices and income kept as unspecified parameters, it would yield Marshallian demand for each good: $x_j^* = x_i(P_i, P_n, I), j = 1,2, \dots, n.$

3.2 Utility Maximization with Two Constraints

In 1965, Gary S. Becker explained that in a society where consumers are working fewer hours per week than ever, there is a necessity for time to become a part of the utility maximization model. Becker introduced time as a part of the utility maximization model in order to be able to analyze, for example, the consumer's choice between going to the movies and going to a restaurant.

Watching a movie might take up more time than going to a restaurant but yields a different amount of utility. The choice between these options could still favor the movies, given that it is within the consumer's budget and time constraints. Becker extended the modeling with the utility maximizing function and a resource constraint as the previous example. What Becker did next, was to identify a number of activities that yield an amount of utility, subject to the consumer's own preferences. These activities require both money and time, for example going to a restaurant or to the movies. Becker (1965) noted such commodities as:

$$Z_i = f_i(x_i, T_i) \quad (8)$$

$i = 1,2, \dots I$ goods

Where Z_i is a commodity that requires time and market goods and f_i is a production function that uses x_i, a vector of market goods, and T_i, a vector of time inputs, to produce the commodity.

A compact modern conceptualization of Becker's framework that bypasses the production function complexity is the following (Snyder & Nicholson, 2012):

$$U = U(x_1, x_2, \dots, x_n) \quad (9)$$

Subject to:

$$I = p_1x_1 + p_2x_2 + \cdots + p_nx_n \quad (10)$$

$$T = t_1x_1 + t_2x_2 + \cdots + t_nx_n \quad (11)$$

Where, $x_1, x_2, \dots, x_n$ are activities, $p_1, p_2, \dots, p_n$ are money prices, $t_1, t_2, \dots, t_n$ are time prices, I is exogenous income, and T is exogenous time. The consumer choice problem is formally written as:

$$Max\ U(x_1, x_2, \dots, x_n) \text{ s.t. } I \geq p_1x_1 + p_2x_2 + \cdots + p_nx_n = \sum_{i=1}^{n} p_ix_i$$

$$T \geq t_1x_1 + t_2x_2 + \cdots + t_nx_n = \sum_{i=1}^{n} t_ix_i$$

(12)Lagrangian function:

$$L(x_1, x_2, \dots, x_n, \lambda, \mu) = U(x_1, x_2, \dots, x_n) + \lambda[I - \sum_{i=1}^{n} p_ix_i] + \mu[\sum_{i=1}^{n} t_ix_i] \quad (13)$$

Where λ is the Lagrange multiplier for the money constraint, and μ is the Lagrange multiplier for the time constraint.

First-order conditions assuming interior solutions:

1) x_1: $\frac{\partial L}{\partial x_1} = U_1 - \lambda p_1 - \mu t_1 = 0$ (14)

2) x_2: $\frac{\partial L}{\partial x_2} = U_2 - \lambda p_2 - \mu t_2 = 0$ (15)

……..

N) x_n: $\frac{\partial L}{\partial x_n} = U_n - \lambda p_n - \mu t_n = 0$ (16)

N+1) λ: $\frac{\partial L}{\partial \lambda} = I - \sum_{i=1}^{n} p_ix_i = 0$ (17)

N+2) μ: $\frac{\partial L}{\partial \mu} = \sum_{i=1}^{n} t_ix_i = 0$ (18)

The willingness to reduce the amount of one good for an extra unit of another good can be illustrated by combining equations (14) and (15):

$$1: \frac{U_1}{\lambda} = p_1 + \frac{\mu}{\lambda} t_1 \quad (19)$$

$$2: \frac{U_2}{\lambda} = p_2 + \frac{\mu}{\lambda} t_2 \quad (20)$$

Dividing (19) on (20) yields: $\frac{\frac{U_1}{\lambda}}{\frac{U_2}{\lambda}} = \frac{p_1 + \frac{\mu}{\lambda} t_1}{p_2 + \frac{\mu}{\lambda} t_2} \rightarrow \frac{MB_1}{MB_2} = \frac{MC_1}{MC_2}$ (21)

The Marshallian demand functions for a given activity, i, is a function of the money prices for all of the goods, the time prices for all of the goods, the total amount of money available, and the total amount of time available:

$$x_i^* = x(p_1, p_2, \dots, p_n, t_1, t_2, \dots, t_n, I, T), \forall_i = 1,2, \dots, n \quad (22)$$

3.3 Utility Maximization and Household Waste Management

The issue of how to dispose the waste that occurs when using the groceries bought at the supermarket to make a meal that is consumed by the household. Another way of viewing the issue of food waste and modeling how individual households make decisions related to food waste disposal is by studying the models of household waste management. Morris and Holthausen (1994) in their paper "The Economics of Household Solid Waste Generation and Disposal" modeled how household waste management can be viewed. By extending the utility maximization model, Morris and Holthausen (1994) have derived the Lagrangian equation for constrained optimization. To begin with let's see how the utility maximizing model would look like with three constraints; a production function, a time constraint and a budget constraint:

$$\max_{\mathrm{Y,H,L}} U(X, L, R) \quad (23)$$

Subject to:

$$Q(Y, H, X, W, R) = 0 \quad (24)$$

$$T = B + H + L \quad (25)$$

$$\omega B = pY + C(W - R) - sR + F \quad (26)$$

We assume that:

$\frac{\partial U}{\partial x} > 0$, $\frac{\partial U}{\partial L} > 0$, and $\frac{\partial U}{\partial R} \geq 0$

Where:

X	vector of goods produced and consumed, $X = (x_1, \dots, x_n)$
Y	vector of goods purchased, $Y = (y_1, \dots, y_k)$
T	total time available
L	amount of leisure time
H	amount of time spent in household production
B	amount of time spent in market activities, earning a paycheck
ω	wage per hour
W	amount of waste material produced as a by-product of household production
R	amount of recycled material
Q	the household's production function in which Y and H are inputs, and X, W and R are the joint outputs
p	a vector of prices for the purchased goods, $p = (p_1, \dots, p_k)$
c	cost per unit of waste collection
s	the credit (price) of recycled waste produced
F	a fixed fee for waste collection

Equation (23) is the utility maximizing function where the variables that the model aims to maximize are the amount of goods produced and consumed, leisure time and amount of recycled material. To find the optimal amounts of these variables, the household can choose

the amounts of goods purchased, time in household production, and leisure time. This function is maximized subject to three constraints; production (24), time (25) and budget (26). Equation (24) is the production constraint, which is a function of amount of goods purchased, produced and consumed, amount of time spent in household production, amount of waste material and amount of recycled material. Equation (25) is the time constraint that states that total time available equals the sum of the amount of time spent in market activities earning a wage, the amount of time spent in household production and amount of leisure time. Equation (26) is the budget constraint which implies that the time spent working in the market, yields a wage which has to pay for all of the goods purchased, the cost of waste minus the credit yielded by recycling waste and a fixed waste collection fee.

The author's go on to solve this model for a fixed-input production technology. The key insights for the analysis are that households have an incentive to reduce waste when there is a cost associated with waste and that an increase in the cost of waste collection will increase the amount of recycled material by the households.

3.4 Simple Model of Food Handling

Household waste management aims to decrease the amount of food waste that is disposed in the general garbage and recycle it by throwing it in the garbage for organic waste or by composting. Although this is good for reducing the amount of general waste, it does not reduce the amount of food waste. In a simple model based on chapter 3.1-3.3, a simple model of food handling could look like the modeling shown in equations (26) though (38). To start with, preparing a meal is a production, thus the production function for household meal production is:

$$m = m(Y, R, T_m, F) \qquad (26)$$

Where m is the household meal production, Y is the market goods for $m(\cdot)$, R is the re-used "food waste", T_m is the time use to produce meals, and F is the food waste generated in the meal production process.

Assumptions:

The market good, y, requires both money and time; $p_y > 0,\ t_y > 0$

Reusing "food waste" does not have a money price, but a time price; $p_y = 0,\ t_y > 0$

All partial derivatives are non-negative: $m_y \geq 0, m_R \geq 0, m_{T_m} \geq 0$, and $m_F \geq 0$

The concept of reusing "food waste", R, is that the consumer can choose between using leftovers of the items of Y that they already have bought, and buying a new item. If the consumer used half of a cucumber for a previous meal, then for the next meal, he/she can choose between using the other half of the cucumber that is in the fridge, or go to the supermarket and buy a new one. The preferences of the consumer on whether to choose the item in the fridge can be positive or zero, depending on their feelings towards using an item that will not be as fresh as a new item would be. Consumer preferences are modeled as:

$$U = U(X, m(Y, R, T_m, F), T_L, R) \tag{27}$$

Where, X is all of the consumption, except for the food consumed in the home, through m(·), with $p_x = 1$, and $t_x > 1$, and T_L is the hours of leisure. We assume that $U_x > 0$, $U_m > 0$, $U_{T_L} > 0$, and $U_R \geq 0$. There is thus an assumption that the utility of reusing food can be equal to zero.

In this model, there are two budgets, a money budget and a time budget:

Money budget: $I + wT_W - x - P_y Y - C(F - R) = 0$ (28)

Time budget: $T - T_L - T_W - t_y Y - t_R R - T_m = 0$ (29)

Where, w is the wage, C is the food disposal cost, and T_w is the amount of time spent working. We can merge the two constraints by solving the time budget for T_w, and insert this into the money budget, which gives:

$$I + w\left(T - T_L - t_y Y - t_R R - T_m\right) - X - P_y Y - C(F - R) = 0 \tag{30}$$

The consumer choice problem is formally written as:

$$Max\ U(X, m(Y, R, T_m, F), T_L, R)$$
$$s.t.\ I \geq w\left(T - T_L - t_y Y - t_R R - T_m\right) - X - P_y Y - C(F - R) \quad (31)$$

The Lagrangian function:

$$L(X, Y, R, T_m, F, T_L, \lambda) = U(X, m(Y, R, T_m, F), T_L, R) + \lambda[I + w\left(T - T_L - t_y Y - t_R R - T_m\right) - X - P_y Y - C(F - R)] \quad (32)$$

First order conditions, assuming interior solutions:

1) X: $\frac{\partial L}{\partial X} = U_x - \lambda = 0 \ \rightarrow \lambda = U_x$ (32)

2) Y: $\frac{\partial L}{\partial Y} = \ \frac{\partial L}{\partial m}\frac{\partial m}{\partial Y} = U_m m_y - \lambda w t_y - \lambda P_y = 0$ (33)

3) R: $\frac{\partial L}{\partial R} = \frac{\partial L}{\partial m}\frac{\partial m}{\partial R} = U_m m_R - \lambda w t_R + U_R + \lambda C = 0$ (34)

4) T_m: $\frac{\partial L}{\partial T_m} = \frac{\partial L}{\partial m}\frac{\partial m}{\partial T_m} = U_m m_{T_m} - \lambda w = 0$ (35)

5) F: $\frac{\partial L}{\partial F} = \frac{\partial L}{\partial m}\frac{\partial m}{\partial R} = U_m m_F - \lambda C = 0$ (36)

6) T_L: $\frac{\partial L}{\partial T_L} = U_{T_L} - \ \lambda w = 0$ (37)

7) λ: $\frac{\partial L}{\partial \lambda} = I + w(T - T_L - t_Y Y - t_R R - T_m) - X - P_y Y - C(F - R) = 0$ (38)

From equation (16) we can get the marginal benefit-marginal cost ratio of reusing "food waste": $U_m m_r + U_R + \lambda C = \lambda w t_R \rightarrow \frac{U_m m_R + U_R}{\lambda} + c = w t_R$. Since λ is the marginal utility of money, then by dividing non-monetary terms on the marginal utility of money, we get the monetary value. This implies that the monetary value of the marginal utility that the consumer gets from reusing "food waste" both in meals and as a concept in general plus the decreased cost associated with less disposal is the marginal benefit of reusing "food waste". The value of the time spent reusing "food waste" is the wage rate, thus the marginal cost is wage multiplied with the time spent.

If people have or perceive to have a relatively high time cost for getting meal inputs (y) and or a low marginal productivity of time as inputs into meal production, then household meal production, m, will be relatively low, all else held equal. People who have or

perceive to have high marginal utility for new-purchased food relative to the marginal utility of reused food, will use more new-purchased and less reused food in meal preparation, all else equal. This is also the case if the marginal utility for food waste is high relative to the marginal utility of reused food.

If the cost of disposal increases, then the amount of food waste will decrease and thus the amount of reused food will increase. On the other hand, if there is no cost for wasting food, which is the case in many cities, then the amount of reused food will be determined by the utility of reusing food in relation to the price of buying new food. Cities that do not charge the population for food waste, could use that as an incentive for getting the households to dispose less food, as food waste has an extra cost associated with the disposal of food.

The first condition implies that the marginal utility of money is equal to the marginal utility of the consumption of good X. The underlying assumption of decreasing marginal utility of X, $U_{xx} < 0$, this implies that the marginal utility of money, λ, will decrease. As an effect of this, an increase in the money budget will decrease the marginal utility of money. This will lead to a decrease in the amount of reused food as the marginal cost of reusing food will decrease. Thus, we can assume that higher income will lead to a more wasteful behavior, all else equal.

4. The Seattle Data & Empirical Framework

During the period January to March 2013, Seattle Public Utilities (SPU) in Seattle, Washington conducted a project wherein a number of their residential subscribers voluntarily weighed their food waste every day for 13 weeks. A preliminary questionnaire was used to get the respondents' personal information and habits related to food planning, shopping and waste. The goal of the project was to get information about the inhabitants' perceived and actual actions, and in particular how much food waste they produce per week. In order to get volunteers to participate in the project, an article about the project was written in SPU's newsletter that goes out to primarily single family residential customers with the residential bill that gets sent out every other month. Initially 170 customers volunteered after receiving detailed information about what the project entailed and what was expected of them. In the end 132 customers picked up the complementary kitchen scale to weigh their food waste, 125 participants answered the preliminary survey, and 123 participants weighed their food waste during all or some of the weeks. Both the preliminary survey and later, the weight forms, were answered in SurveyMonkey.

As mentioned above, the project was divided into two parts, starting with a preliminary questionnaire, which was followed by a diary survey where the respondent filled out information about how much food waste they had discarded that week, every day for 13 weeks. The preliminary questionnaire started by asking a number of questions related to food, followed by a number of questions on demographics and the living conditions of the respondents, e.g. how many lived in the household and their ages. In the weekly weighing form, the respondents were asked to fill out the weight of their food waste, both edible and inedible, in pounds and ounces, and the number of meals they had prepared. These needed to be filled out for each day. In addition they were asked to distribute the shares of where they had discarded the waste, and types of food waste. For instance, if they threw away the food waste in the curbside organics bin or in the kitchen sink disposal and if the food waste was fruit and vegetables or meat.

Not all the information that was collected was used in the regressions, for example information about whether the respondent owns or rents the home they live in, or primary

language spoken in the home. There are always considerations that need to be made on what to include in the regressions and what not. The reason for this is that including all of the variables could lead to high correlations among the independent variables or they might not be relevant in terms of what one wants to analyze. A complete statistical summary from the preliminary background survey is provided in appendix 1.

The demographic data collected from the preliminary questionnaire that is used in the various regressions are age, gender, education, income, household size, race, and whether one had immigrated to the United States or not. The questionnaire also asked about diet, if the household ate meat or not, and zip code. The distribution of these qualities was compared with the Seattle census were the information about gender, age, household size, and race is from the 2010 census, while the information about education, income, and immigrants is taken from the 2012 census. The reason for this is that in the US, a large census is done every five years, while information about education level and income distributions are provided more frequently and not at the same time as the general census. The distribution of the data collected and the Seattle census is shown in table 4.1.

The distribution of demographic traits of the respondents is quite different from the Seattle census. We have a large imbalance of women, ages between 35 and 64 years, higher educated, white people in 2-person households. Gender has a large bias with almost 74% of the respondent being women. Age is skewed towards older people compared with the census. The distribution of the education sample is skewed towards a higher level of education compared to the census. According to the Seattle census, 22.8% of the population has postgraduate work or degree, while this number is 47.6% in the sample. The income distribution is fairly equal among the sample and the census. In the sample there is a slight clustering around $50,000 to $100,000. For household size, the sample has too few 1-person households, too many 2-person households, while the number of households consisting of 3 people or more is similar to the census. There is a larger amount of Caucasian people in the sample than the census, while there are too few African American and native Alaskan compared to the census. The immigrant sample distribution is relatively equal to the census. The distribution of zip codes was divided into two groups, the affluent north and the industrial south.

Table 4.1: Demographic data

Variable		Sample	Seattle census
Gender (N=119)	Male (n= 30)	26,1 %	50,0 %
	Female (n=88)	73,9 %	50,1 %
Respondent's Age (N=123)	18-34 years (n=12)	9,8 %	38,6 %
	35-54 years (n=60)	48,8 %	35,0 %
	55-64 years (n=30)	24,4 %	13,7 %
	65+ years (n=21)	17,1 %	12,7 %
Education (N=122)	Less than high school or GED (n=0)	0,0 %	7,1 %
	High school graduate or GED (n=1)	0,8 %	11,9 %
	Some college or Associates degree (n=20)	16,4 %	24,6 %
	4 year college degree (n=43)	35,2 %	33,7 %
	Post graduate work or degree (n=68)	47,6 %	22,8 %
Income (N=100)	$0- $49,999	25,0 %	40,2 %
	$50,000 -$74,999	27,0 %	17,0 %
	$75,000 - $99,999	19,0 %	12,2 %
	$ 100,000 or more	29,0 %	30,5 %
Household Size (N=122)	1-person household (n=25)	20,5 %	41,3 %
	2-person household (n=57)	46,7 %	33,3 %
	3-person household (n=23)	18,9 %	12,2 %
	4-or-more-person household (n=17)	13,9 %	13,2 %
Race (N=115)	Caucasian (n=96)	83,5 %	69,5 %
	Black or African American (n=1)	0,9 %	7,9 %
	Asian (n=16)	13,9 %	13,8 %
	Native Alaskan (n=1)	0,9 %	13,8 %
	Combination (n=1)	0,9 %	0,8 %
Immigrant (N=117)	Yes (n=17)	14,5 %	17,3 %
	No (n=100)	85,5 %	82,7 %
Area (N=123)	North (n=73)	59,3 %	
	South (n=50)	40,7 %	
Diet (N=126)	Vegetarian (n=18)	14,3 %	
	Non-vegetarian (n=108)	85,7 %	

In the descriptive data set, the main focus of the regressions is to study the effect of the descriptive information, such as, age, education, income etc, on the various habit-variables, noted as questions 3 through 11, refer to table 4.2, in the preliminary questionnaire. Each of the behavioral y-variables has been recoded in SPSS. Examples of this are questions 3 through 5, which in the preliminary questionnaire the respondent could be answered as “Always”, “Often”, “Occasionally”, and “Never”. Here “Always” was given the value 1 in the data set; “Often” was given the value 2 and so forth. In the regressions the

alternatives “Occasionally” and “Never” were merged and given the value 0, while the answer alternatives “Always” and “Often” were merged and given the value 1.

There is a huge advantage to using the output from the questionnaire this way. Asking answers with many possible answer alternatives often provides more accurate answers than if one had less alternatives to choose from and maybe none of the alternatives fitted. One can always choose to change a question with four answer alternatives into a question with two alternatives during the statistical processing.

The self-assessed behavioral questions (3 through 11) were regressed on the descriptive data, age, education, income, gender, household size, zip code and race. Table 4.2 shows how the behavioral questions have been coded.

Table 4.2: Self-assessed behavioral questions

Variable		Description	Scale
Q3	Pre-Shopping Indicator	Do you plan meals before you go shopping?	0: Occasionally/Never 1: Often/Always
Q4	Home-Prepared Meals Indicator	Do you make a shopping list based on how many meals you expect to eat at home before your next shopping trip?	0: Occasionally/Never 1: Often/Always
Q5	Shopping List Indicator	Does you shopping list note quantities of food to buy?	0: Occasionally/Never 1: Often/Always
Q6	Shopping Rate Indicator	When you buy food, how many days do you usually shop for?	0: For up to three days 1: For four or more days
Q7	Preparation Indicator	How often do you peel, cut up, or otherwise prepare fruit and vegetables ahead of time to use as snacks and in meals?	0: Less than 75% of the time 1: More than 75% of the time
Q8	Fruit Waste Indicator	About how muh of your fresh fruit and vegetables spoil before you can eat them?	0: More than 5% 1: Less than 5%
Q9	Leftovers Indicator	Do you use older food items before cooking newer food?	0: Less than 75% of the time 1: More than 75% of the time
Q10	"Sell by" Date Indicator	Do you compost or throw away food when they are past their "Sell By" date?	0: Sometimes/Always 1: Never
Q11	"Use by" Date Indicator	Do you compost or throw away food when they are past their "Use By" date?	0: Sometimes/Always 1: Never

For the weight form survey, a diary survey was used. Each respondent was asked to answer the same questions about how much food waste they had that week, where they had discarded the waste, and how much of different types of food (i.e. edible food waste, fruit and vegetables, etc.) had been discarded. Don Dillman (2000) described diary survey as a type of survey that “[…] share the need to truncate the implementation process in order to preserve data quality, maintain customer relations, and/or meet essential reporting deadlines.” He goes on by explaining why a quick answer is needed in some cases and mentions people’s forgetfulness as a main reason, which is the main reason in this survey

that the form of diary survey was chosen in order to collect the accurate information on how much food waste the participating households had each week.

A concern regarding diary surveys and this particular project is that the respondent realizes how much he or she throws away and actively reduces his or her waste during the length of the project, and as soon as the project is ended, goes back to the behavior form before the project start. The issue with this is that the reporting of the amounts of food waste becomes artificially low and does not reflect how much is normally wasted. The sample of respondents is supposed to reflect the general population of Seattle, Washington, as well as possible. If the respondents keep their reporting artificially low, these numbers do not really reflect the population.

When the descriptive analysis was finalized the data set with the weight form data was merged with the descriptive data. This was done by replicating the data from the descriptive survey with each of the respondent's food waste data for each of the weeks. Thus, each descriptive variable which used to have a total number of observations of 125 now had a total number of observations of 1400. The implications of this include that the distribution of answers of some of the questions asked in the preliminary survey is slightly different. The reason for this is that not everyone answered the weight form survey all of the 13 weeks. In fact, on average, each respondent completed 11.2 of the 13 weeks, which leads to a total number of observations for the complete data set at 1,400 instead of 1,625 which would have been the number of observations had every one of the respondents of the preliminary questionnaire filled out the information about their food waste all of the 13 weeks that the project was going on.

4.1 The Econometric Framework

4.1.1. The preliminary questionnaire

For the preliminary questionnaire the primary focus was to investigate if a correlation between the self-assessed behavioral data and the descriptive data exist. This is a cross-section type of data set. The nine questions concerning food habits regarding planning, shopping, and wasting were the dependent variables in the regressions, while the questions related to income, gender, education, etc, were the independent variables. These

regressions were run as linear OLS regressions. The OLS estimator is the smallest sum of squared errors possible when drawing a regression line. The multiple OLS regression is:

$$Y_i = \boldsymbol{\beta} \boldsymbol{X_i} + u_i$$

Where, Y_i is the dependent variable that are being regressed on the independent variables, $\boldsymbol{X_i}$, given their coefficients $\boldsymbol{\beta}$. u_i is the error term, which contains everything that affects the dependent variable, but is not explained by the independent variables.

Some of the variables are so-called dummy variables; these variables are binary variables which yield the value 1 if the variable comes through and 0 if not. For example the gender variable, instead of having one value for male and another for female, the variable is given a value of 1 if female and 0 if not female, thus male. The variables for the descriptive data set are female, south, white, two-people household, three-people household, and minimum four-people household. The base group for the descriptive data is the group against which the comparisons are made; male, north, not white, and a one-person household. The general equation for the regression is:

$$Y = \beta_o + \beta_1 Age + \beta_2 Age^2 + \beta_3 Education + \beta_4 Education^2 + \beta_5 Income + \beta_6 Income^2 + \beta_7 DumFemale + \beta_8 Dum2peopleHhld + \beta_9 Dum3peopleHhld + \beta_{10} Dum4peopleHhld + \beta_{11} DumSouth + \beta_{12} DumWhite + u$$

This is the equation for all of the nine regressions that were done on the self-assessed behavioral questions in the preliminary survey. For a specific regression, with one of the question as the dependent, Y-variable the equation will be as follows:

$$\widehat{Y_i} = \widehat{\beta_0} + \widehat{\beta_1} Age + \widehat{\beta_2} Age^2 + \widehat{\beta_3} Education + \widehat{\beta_4} Education^2 + \widehat{\beta_5} Income + \widehat{\beta_6} Income^2 + \widehat{\beta_7} DumFemale + \widehat{\beta_8} Dum2peopleHhld + \widehat{\beta_9} Dum3pplHhld + \widehat{\beta_{10}} Dum4peopleHhld + \widehat{\beta_{11}} DumSouth + \widehat{\beta_{12}} DumWhite$$

Note that the base line for this equation is the same as for the general equation, and that (beta hat) are the specific beta variables for each independent, x-variable. The regressions

done for the preliminary questionnaire could maximum have 100 observations. The reason for this is that not everyone answered all of the questions in the survey.

4.1.2. Panel Data

Following the same households over a period of time, in this case 13 weeks, gives a time series dimension to the cross-section data set that we already have, and together the data set is a panel data set. Here, the dependent variables in the previous section have now become independent variables that affect the amount of food waste in each household. The new dependent variables are shown in table 4.4.

Table 4.3: Dependent variables for the combined data set

Y-variable	Description	Scale
Y_1 Total Food Waste	The amount of food waste discarded by one household during one week, measured in ounces.	0 - 1 770
Y_2 Total Food Waste/Meals	The amount of food waste discarded by one household during one week adjusted for the number of meals consumed that week, measured in ounces.	0 - 55
Y_3 Total Food Waste/Household Size	The amount of food waste discarded by one household during one week adjusted for the number of people living in the household, measured in ounces.	0 - 885
Y_4 Total Edible Food Waste	The amount of edible food waste discarded by one household during one week, measured in ounces.	0 - 1 760
Y_5 Total Edible Food Waste/Meals	The amount of edible food waste discarded by one household during one week adjusted for the numer of meals consumed that week, measured in ounces.	0 - 55
Y_6 Total Edible Food Waste/Household Size	The amount of edible food waste discarded by one household during one week adjusted for the number of people living in the household, measured in ounces.	0 - 880

One ounce is 28.35 grams to be exact. The independent variables which these dependent variables are regressed on in STATA are shown in table 4.4.

Table 4.4: Independent variables for the combined data set

X-variables		Description	Coding
X_1	Question 3	Pre-Shopping Indicator	0: Occasionally/Never 1: Often/Always
X_2	Question 4	Number of Meals Indicator	0: Occasionally/Never 1: Often/Always
X_3	Question 5	Food Quantities Indicator	0: Occasionally/Never 1: Often/Always
X_4	Question 6	Shopping Rate Indicator	0: For up to three days 1: For four or more days
X_5	Question 7	Preparation Indicator	0: Less than 75% of the time 1: More than 75% of the time
X_6	Question 8	Fruit Waste Indicator	0: More than 5% 1: Less than 5%
X_7	Question 9	Leftovers Indicator	0: Less than 75% of the time 1: More than 75% of the time
X_8	Question 10	"Sell by" Date Indicator	0: Sometimes/Always 1: Never
X_9	Question 11	"Use by" Date Indicator	0: Sometimes/Always 1: Never
X_{10}	Age	Age of the respondent	
X_{11}	Age^2	Age squared	
X_{12}	Education	Respondent's number of years of education	
X_{13}	$Education^2$	Education squared	
X_{14}	Income	Respondent's annual income	US $
X_{15}	$Income^2$	Income squared	US $
X_{16}	Dummy Female	Respondent is female	If 1, else 0
X_{17}	Dummy SouthernZipCode	Respondent lives in the southern part of Seattle, WA	If 1, else 0
X_{18}	Dummy White	Respondent is white	If 1, else 0
X_{19}	Dummy Immigration	Respondent is an immigrant	If 1, else 0
X_{20}	Dummy Vegetarian	Respondent is vegetarian, pescetarian or vegan	If 1, else 0
X_{21}	Dummy Two PeopleHousehold	Respondent lives in a household consisting of two people	If 1, else 0
X_{22}	Dummy Three PeopleHousehold	Respondent lives in a household consisting of three people	If 1, else 0
X_{23}	Dummy MinFour PeopleHousehold	Respondent lives in a household consisting of four or more people	If 1, else 0

The economic model of total food waste is: $Y_1 = f(X_1, X_2, \dots, X_{23})$, which tells us that total food waste is a function of the x-variables, X_1 through X_{23} The econometric model of total food waste is: $Y_1 = \beta_o + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_{23} X_{23} + \varepsilon$. Here β_o is the constant and β_1 through β_{23} are the effect on Y_1 given a unit change of its related X. Thus, if there is a unit change in X_1, there is a corresponding change in Y_1 equal to β_1. The estimated model of total food waste is $\widehat{Y_1} = \widehat{\beta_0} + \widehat{\beta_1} X_1 + \widehat{\beta_2} X_2 + \cdots + \widehat{\beta_{23}} X_{23}$. Here, the "^" indicates an estimate for each β and the dependent variable, Y_1. This is also the OLS model which was modeled in the preliminary survey.

In this combined data set, however, a few other methods were also applied for the regressions. The regular OLS regression assumes that all of the observations are individually and independently distributed (i.i.d.). The issue with this is that the current data set is not independently distributed as each household has up to thirteen observations. In order to take the household factor into account, we use a pooled OLS regression. The function for the pooled OLS estimator is:

$y_{it} = \boldsymbol{x}'_{it}\beta + a_i + u_{it}$, Household no: $i = 1, \dots, N$, Week no: $t = 1, \dots, T$.

Where α_i is the unobserved effect (Wooldridge, 2006). This model does not acknowledge that there are 125 households with up to 13 observations per household. Using a cluster OLS model where the household no, i, is identified.

One of the assumptions of a multiple regression, which is a regression with more than one independent variable, is that the variance of the error term is constant. If this is not the case, we have something called heteroskedasticity. Instead of testing all of the regressions, Y1 through Y6, for heteroskedasticity, we can adjust the standard errors for heteroskedasticity. When adjusted by the inverse of the variance of the standard error, we have the weighted least squares (WLS) estimator. The model for panel data where the error term contains an unobserved effect is precisely that; an unobserved effects model:

$y_{it} = \beta_o + \beta_1 x_{it1} + \beta_2 x_{it2} + \cdots + \beta_{23} x_{it23} + \alpha_i + u_{it}$, $t = 1,2, \dots, T$.

Where there is an assumption that the unobserved variable, α_i, has zero mean. This model is used further to model random effects (Cameron & Trivedi, 2010).

If we assume that the unobserved effect α_i is uncorrelated with the independent variables, then the unobserved effects model becomes a random effects model:

$Cov(x_{itj}, \alpha_i) = 0,$ t = 1,2,…,T; j = 1,2,…,k.

Because α_i is an error term in the random effects model, this model i viewed as a specialization of the pooled OLS model (Cameron & Trivedi, 2005). The random effects model should be used if there is reason to believe that differences between households affect the dependent variable. Since we have reason to believe that this is the case with this model, the random effects model is used both regular and robust, which increases the standard error in the case that there would be heteroskedasticity. Note that the random effects model has two errors terms, α_i and u_i. These errors have the potential to be serially correlated and heteroskedastic. By increasing the standard error for each coefficient, both of these issues will be controlled for.

4.2 Hypotheses

Based on the data that is going to be tested in SPSS and STATA and the research questions in the introduction, a number of hypotheses have been formulated. The hypotheses that form the base of the work in the software programs SPSS for the preliminary data set and STATA for the combined preliminary and food waste data are:

Table 4.5: Hypotheses

Hypothesis:	Description:
I	Food and meal planning lead to a decrease in the amount of food waste
II	An increase in household size leads to an increase in the amount of food waste
III	The standard demographics affect food waste
IV	Vegetarians throw away less food waste than non-vegetarians
V	Immigrants throw away less food waste than non-immigrants

To begin with hypothesis I, the behavioral questions have as mentioned earlier been recoded so that the behavior which indicates the largest amount of planning required, yield the value 1.

Thus, it is natural to think that people who plan their meals and shopping list before going shopping, people who shop for multiple days at a time, people who think that they throw away less food before consumption, and who do not look at the expiration date when throwing away food, have less food waste compared to people who are less concerned about these things.

The second hypothesis which states that each coefficient for household size dummy variable is positive and increasing in size is only applicable to the dependent variables total food waste, Y1 and ln(Y1), and total edible food waste, Y4 and ln(Y4), as the other dependent variables already are corrected for the number of people or number of meals. The logic behind this is that larger households throw away more food than smaller households.

The third hypothesis suggests that the standard demographics, age, education and income affect the amount of food wasted. For age it would be expected that older people waste less food than younger people, as wasting food used to be relatively more expensive and some food items were difficult to get. People with a higher level of education generally know more about the importance of not throwing away food, thus the assumption is that education affects food waste negatively, as a higher level of education leads to lower amounts of food waste. A higher income is usually associated with a higher level of wastefulness, as people with more means tend to buy more things and thus have larger amounts of waste. This should also apply to food waste, and thus it seems reasonable that income affects food waste positively.

A reason for why a lot of people become vegetarians is of concern of the environment and the way animals are treated. Thus it is logical that vegetarians are also concerned with other measures to improve the environment and thus consciously waste as little food as possible. The third hypothesis implies that vegetarians, vegans and pescetarians (vegetarians who eat fish and other seafood) throw away less food than non-vegetarians.

The fifth and last hypothesis which states that immigrants throw away less food than non-immigrants is based on the reality that a most of them immigrate to the US and other industrialized countries from a culture where food is a scare resource and should therefore not be wasted. Thus it seems sensible that first-generation immigrant households have lower amounts of food waste than non-immigrants.

5. Econometric Estimation Results

In this section the results of the regressions that were conducted as explained in the previous chapter will be presented. In addition, some descriptive and summarized data will be shown. For each dependent variable related to food waste amounts (Y1 through Y6) there are four different regressions. This was done for the direct input and the functional form log-level. Regression analysis was also used to test for learning variables, i.e. if there is a significant decrease in the amount of food waste over time. All together there are 54 regressions for the combined preliminary and weight form data set, and there are also nine regressions for the preliminary data set itself.

Table 5.1: Descriptive statistics for the preliminary data set

Variable	Mean	Std. Dev.	Min	Max
Pre-Shopping Indicator	0,568	0,497	0	1
Home-Prepared Meals Indicator	0,480	0,502	0	1
Shopping List Indicator	0,504	0,502	0	1
Shopping Rate Indicator	0,752	0,434	0	1
Preparation Indicator	0,144	0,353	0	1
Fruit Waste Indicator	0,397	0,491	0	1
Leftovers Indicator	0,464	0,501	0	1
"Sell by" Date Indicator	0,492	0,502	0	1
"Use by" Date Indicator	0,144	0,353	0	1
Age	51,927	14,049	26	75
Age^2	2 892	1504	676	5625
Education	16,569	1,548	12	18
$Education^2$	276,911	49,799	144	324
Income	74 851	28 631	25 000	110 000
$Income^2$	6,4e+09	4,2e+09	6,25e+08	1,2e+10
Female	0,740	0,441	0	1
Two-people Household	0,467	0,501	0	1
Three-people Household	0,189	0,393	0	1
minFour-people Household	0,139	0,348	0	1
Southern zip code	0,407	0,493	0	1
White race	0,762	0,428	0	1

This chapter begins with an overview of the preliminary survey regressions and comments to these, followed by the regressions that were conducted for the combined data set with explanations. Lastly, the regressions done to explore the possibility of learning variables will

be presented and commented. The descriptive data for the independent and dependent variables in the preliminary data set are shown in table 5.1.

The descriptive data for both the dependent and independent variables used in the regressions for the combined preliminary data set and the weight form data are shown in table 5.2.

Table 5.2: Descriptive data for the combined data set

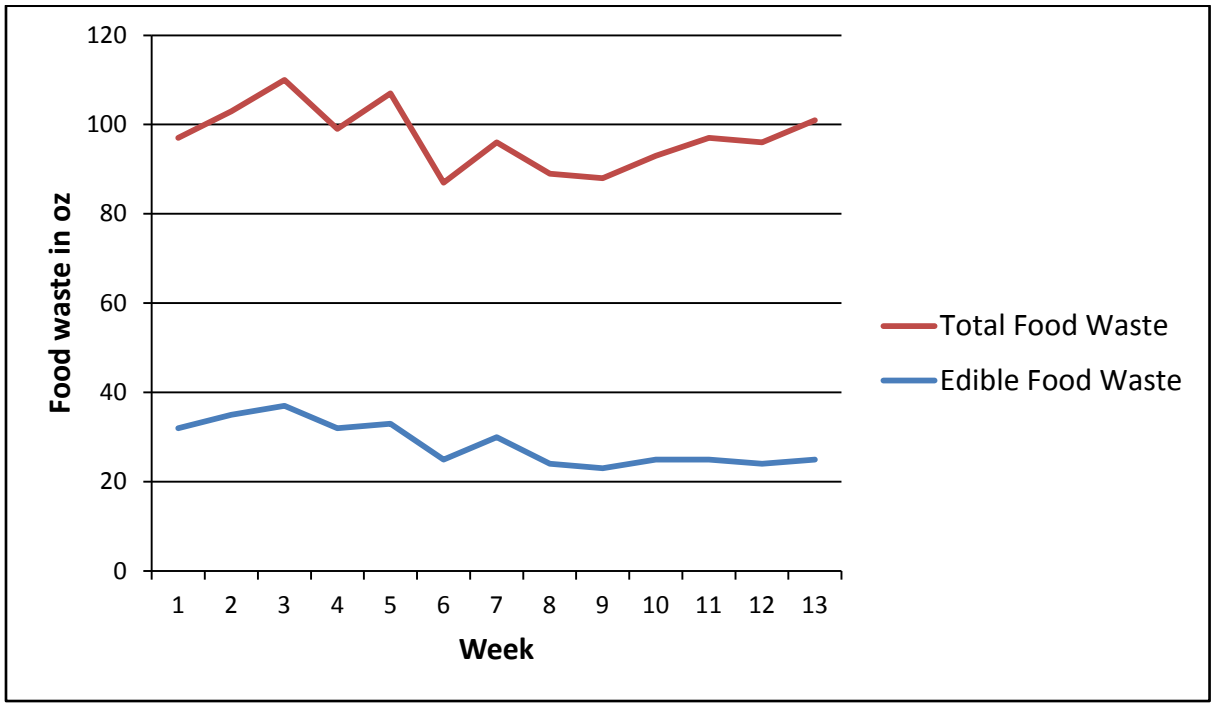
Variable	Mean	Std. Dev.	Min	Max
Total Food Waste	97,011	89,548	0	1770
Ln(Total Food Waste)	4,299	0,843	0	7,479
Total Food Waste per Meal	3,435	3,311	0	55,313
Ln(Total Food Waste per Meal)	0,929	0,803	-2,485	4,013
Total Food Waste per Person	44,798	42,674	0	885
Ln(Total Food Waste per Person)	3,553	0,783	0	6,786
Total Edible Food Waste	30,944	65,996	0	1760,000
Ln(Total Edible Food Waste)	2,995	1,280	0	7,473
Edible Food Waste per Meal	1,125	2,338	0	55
Ln(Edible Food Waste per Meal)	-0,429	1,307	-4,615	4,007
Edible Food Waste per Person	14,197	32,113	0	880,000
Ln(Edible Food Waste per Person)	2,207	1,298	0	6,780
Pre-Shopping Indicator	0,568	0,491	0	1
Home-Prepared Meals Indicator	0,494	0,500	0	1
Shopping List Indicator	0,499	0,500	0	1
Shopping Rate Indicator	0,755	0,430	0	1
Preparation Indicator	0,156	0,363	0	1
Fruit Waste Indicator	0,417	0,493	0	1
Leftovers Indicator	0,501	0,500	0	1
"Sell by" Date Indicator	0,485	0,500	0	1
"Use by" Date Indicator	0,143	0,350	0	1
Age	52,291	14,114	26	75
Age^2	2 933	1 524	676	5 625
Education	16,564	1,556	12	18
$Education^2$	276,775	49,995	144	324
Income	75 020	28 187	25 000	110 000
$Income^2$	6,4e+09	4,2e+09	6,25e+08	1,2e+10
Female	0,729	0,445	0	1
Southern zip code	0,409	0,492	0	1
White race	0,760	0,427	0	1
Immigrant	0,154	0,361	0	1
Vegetarian	0,140	0,347	0	1
Two-person household	0,507	0,500	0	1
Three-person household	0,184	0,387	0	1
minFour-people household	0,132	0,338	0	1

Table 5.2 continued

Variable	Mean	Std. Dev.	Min	Max
Week 2	0,084	0,278	0	1
Week 3	0,083	0,276	0	1
Week 4	0,079	0,270	0	1
Week 5	0,079	0,269	0	1
Week 6	0,079	0,269	0	1
Week 7	0,079	0,269	0	1
Week 8	0,074	0,262	0	1
Week 9	0,074	0,262	0	1
Week 10	0,075	0,263	0	1
Week 11	0,069	0,254	0	1
Week 12	0,068	0,252	0	1
Week 13	0,070	0,255	0	1

Two of the regressions in this analysis are those on total food waste and total edible food waste, graph 5.1 shows the weekly average of these variables over time:

Figure 5.1: Total food waste and edible food waste per week



This graph shows how the amounts weekly average weight of total and edible food wastes in ounces, over time. Total food waste fluctuates, but the average amount of food waste in

week 13 is higher than in week 1. Edible food waste, on the other hand, is decreasing over time.

5.1. The Preliminary data

The regression results for the self-assessed behavioral dependent variables are shown in table 5.3. These regressions do not have a lot of significant independent variables. The regression on the *Pre-Shopping Indicator*, which is question 3 in the preliminary survey, has significant coefficients for the constant, education, education squared, and the dummy variable for Caucasian race. The *Number of Meals Indicator* has significant coefficients for the dummy variable for a Caucasian race, while the *Food Quantities Indicator* has significant coefficients for the constant, education, and education squared. The regression with the *Preparation Indicator* as dependent variable is correlated with income squared. The Fruit Waste Indicator has significant coefficients for age, education, and the dummy variable for a two-person household. The last regression on the *"Use by" Date Indicator* has significant coefficients for education and education squared. There were no significant coefficients in the regressions on the *Shopping Rate Indicator*, the *Leftovers Indicator*, and the *"Sell by" Date Indicator*.

Figure 5.3: Regressions on the preliminary data set

Table: 5.3	Pre-Shopping Indicator		Home-Prepared Meals Indicator		Shopping List Indicator		Shopping Rate Indicator		Preparation Indicator		Fruit Waste Indicator		Leftovers Indicator		"Sell by" Date Indicator		"Use by" Date Indicator	
	β	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t
Constant	4,26***	2,781	2,208	1,426	4,1**	2,750	0,725	0,536	1,204	1,055	1,825	1,259	2,358	1,480	-1,050	-0,668	-1,526	-1,350
Age	-0,275	-0,823	-0,297	-0,879	-0,211	-0,649	-0,108	-0,365	0,077	0,306	0,557*	1,766	-0,019	-0,055	0,140	0,409	-0,239	-0,973
Age^2	0,045	0,714	0,051	0,799	0,043	0,706	0,014	0,262	-0,005	-0,115	-0,092	-1,567	0,001	0,020	-0,008	-0,131	0,057	1,253
Education	-1,69**	-2,392	-0,887	-1,239	-1,66**	-2,410	0,084	0,135	-0,726	-1,377	-1,119*	-1,669	-1,063	-1,441	0,867	1,194	1,129**	2,159
$Education^2$	0,20**	2,308	0,103	1,167	0,19**	2,224	-0,014	-0,185	-0,101	1,541	0,128	1,542	0,132	1,449	-0,117	-1,303	-0,14**	-2,160
Income	-0,021	-0,152	0,076	0,554	-0,069	-0,522	0,058	0,489	0,166	1,640	0,104	0,816	0,020	0,143	-0,127	-0,924	-0,101	-1,017
$Income^2$	0,004	0,239	-0,009	-0,575	0,014	0,931	-0,012	-0,887	-0,023*	-1,957	-0,014	-0,905	-0,004	-0,245	0,017	1,069	0,009	0,813
Dummy Female	-0,083	-0,658	0,091	0,706	-0,043	-0,346	0,023	0,202	-0,116	-1,235	0,051	0,431	-0,082	-0,617	0,017	0,132	-0,098	-1,056
Dummy 2-person hhld	-0,047	-0,327	0,162	1,120	-0,027	-0,194	0,076	0,600	0,006	0,052	0,260*	1,921	0,138	0,934	-0,118	-0,803	0,001	0,006
Dummy 3-person hhld	-0,017	-0,096	0,014	0,078	-0,154	-0,891	0,102	0,648	-0,026	-0,200	-0,032	-0,191	-0,027	-0,148	-0,278	-1,526	0,006	0,049
Dummy 4+ people hhld	-0,117	-0,622	0,307	1,618	-0,080	-0,440	0,148	0,895	0,135	0,961	-0,062	-0,347	0,059	0,301	-0,160	-0,829	0,135	0,970
Dummy South	-0,126	-1,172	-0,121	-1,115	-0,145	-1,389	0,103	1,082	0,043	0,534	-0,135	-1,340	0,005	0,045	-0,095	-0,875	0,004	0,052
Dummy Caucasian	0,30**	2,142	0,283*	1,997	0,292	2,142	0,057	0,643	-0,116	-1,111	0,011	0,086	0,194	1,335	0,072	0,499	-0,042	-0,405
N =		94		94		94		94		94		95		94		95		95
R^2 =		0,146		0,142		0,206		0,083		0,171		0,231		0,085		0,116		0,132

*Significant at 10%-level **Significant at 5%-level ***Significant at 1%-level

5.2. The Food Waste Regressions

There are four tables on regression output, where table 5.4 and 5.5 show the regressions on total food waste, total food waste per meal, and total food waste per person, while table 5.6 and 5.7 show the regressions on total edible food waste, edible food waste per meal, and edible food waste per person. The regressions on the combined data set are all conducted for two types of functional form; level-level, and log-level. A functional form of log-level is when the dependent variable is set in the natural logarithm. This gives the opportunity of getting the beta-variables in percentage change, instead of a number that indicates how the explanatory variables affect the output variable. It is also important to keep in mind that the regressors' variables are the changes in the dependent variable all else held constant (ceteris paribus).

The coefficients of the dummy variables in the log-level regressions need to be readjusted as they do not yield the percentage effects accurately (Halvorsen and Palmquist, 2010). To get the percentage effect of the dummy variables the equation that needs to be calculated is:

$$100 \times g = 100 \times \{\exp(c) - 1\}$$

Where g is the percentage change on Y, and c is the coefficient of the dummy variable. All of the regressions output tables show the coefficient of the dummy variables, however in the analysis & discussion chapter, the relative effect will be addressed.

The types of regressions that are conducted are pooled and cluster OLS regressions, and unadjusted and robust Random Effects regression. The Random Effects regressions will from now on be referred to as unadjusted and robust RE regressions. The output of the various regressions performed on the dependent variables, total food waste, total food waste adjusted for meals and household size, total edible food waste, and edible food waste adjusted for meals and household size are followed in the next regression overviews, table 5.4 to table 5.7.

Table 5.4: Pooled OLS and unadjusted random effects for total food waste disposal

Table 5.4:		Total Food Waste				Total Food Waste Adjusted for Number of Meals				Total Food Waste Adjusted for Household Size			
		Y1		Ln(Y1)		Y2		Ln(Y2)		Y3		Ln(Y3)	
		OLS (pooled)	RE (unadjusted)	OLS (pooled)	RE (unadjusted)	OLS (pooled)	RE (unadjusted)	OLS (pooled)	RE (unadjusted)	OLS (pooled)	RE (unadjusted)	OLS (pooled)	RE (unadjusted)
Constant	β_0	2191,100***	2021,957***	25,309***	24,458***	45,725*	38,125	18,044***	15,773*	966,998***	948,250***	25,448***	24,433***
Pre-Shopping Indicator	β_1	11,655	11,995	0,091	0,089	0,447**	0,445	0,164***	0,139	5,515**	5,012	0,130**	0,121
Home-Prepared Meals Indicator	β_2	-5,609	-6,991	0,033	0,016	-0,177	-0,085	-0,021	-0,042	0,357	-0,628	0,018	-0,040
Shopping List Indicator	β_3	9,883	10,447	0,086	0,096	0,253	0,276	0,075	0,109	1,647	0,735	0,066	0,072
Shopping Rate Indicator	β_4	-14,354**	-16,161	-0,187***	-0,188	-1,119***	-1,199**	-0,341***	-0,347*	-10,974***	-11,982*	-0,184***	-0,185
Preparation Indicator	β_5	-0,042	-0,082	-0,020	0,018	-0,399	0,551	-0,075	-0,083	-9,268***	-8,312	-0,079	-0,018
Fruit Waste Indicator	β_6	35,084***	36,247**	0,318***	0,294*	0,591***	0,685	0,230***	0,201	20,566***	21,142***	0,389***	0,346***
Leftovers Indicator	β_7	-42,528***	-46,065***	-0,385***	-0,405***	-0,765***	-0,638	-0,322***	-0,274*	-15,302***	-15,808**	-0,397***	0,402**
Sell by Date Indicator	β_8	2,675	3,292	0,075	0,104	0,342*	0,234	0,054	0,051	3,948	4,431	0,055	0,093
Use by Date Indicator	β_9	-4,535	-11,414	0,023	-0,026	-0,388	-0,510	-0,059	-0,130	-2,587	-3,804	0,042	-0,013
Age	β_{10}	-0,410	-1,026	0,024**	0,016	-0,106***	-0,174*	-0,011	-0,028	-0,203	-0,727	0,016	0,006
Age^2	β_{11}	0,004	0,010	-0,000*	0,000	0,001***	0,002*	0,000	0,000	0,003	0,008	0,000	0,000
Education	β_{12}	-251,068***	-230,543***	-2,635***	-2,533***	-4,459***	-3,389	-1,943***	-1,640	-107,084***	-103,760***	-2,636***	-2,504***
$Education^2$	β_{13}	7,779***	7,158***	0,082***	0,079***	0,134***	0,101	0,059***	0,049	3,358***	3,245***	0,082***	0,078***
Income	β_{14}	-0,004***	-0,003***	-0,000***	-0,000***	-0,000***	0,000	-0,000***	0,000	-0,002***	-0,002***	-0,000***	0,000***
$Income^2$	β_{15}	0,000***	0,000***	0,000***	0,000***	0,000***	0,000	0,000***	0,000	0,000***	0,000***	0,000***	0,000***
Female Dummy	β_{16}	-14,619***	-10,081	-0,173***	-0,150	0,078	-0,137	0,057	-0,077	-3,314	-2,803	-0,121**	-0,112
South Dummy	β_{17}	1,786	-1,031	0,013	-0,052	0,360**	0,444	0,115**	0,123	0,654	-2,059	-0,008	-0,075
White Dummy	β_{18}	2,044	8,626	-0,012	0,088	-0,382	-0,464	-0,117	-0,114	-0,191	3,928	-0,022	0,087
Immigrant Dummy	β_{19}	6,897	7,802	0,101	0,157	-0,097	-0,086	0,068	0,114	-6,431*	-3,976	-0,021	0,066
Vegetarian Dummy	β_{20}	6,816	4,209	-0,011	0,036	-0,360	-0,506	-0,085	-0,120	-0,915	-1,478	-0,020	0,043
Two-person hhld Dummy	β_{21}	34,993***	35,826*	0,666***	0,654***								
Three-person hhld Dummy	β_{22}	73,044***	70,484***	1,069***	1,052***								
minFour-person hhld Dummy	β_{23}	82,204***	95,995***	1,092***	1,147***								
N		1009	1009	975	975	979	979	975	975	1009	1009	975	975
R^2		0,292	0,284	0,364	0,358	0,151	0,144	0,200	0,192	0,224	0,219	0,238	0,231
δu			55,257		0,547		1,929		0,610		22,861		0,535
δε			50,135		0,505		1,687		0,464		24,151		0,505
ρ			0,548		0,540		0,567		0,633		0,473		0,529

*Significant at the 90%-level, **Significant at the 95%-level, ***Significant at the 99%-level, error terms and t-statistics are available in appendix

Table 5.5: Cluster OLS and robust random effects for total food waste disposal

Table 5.5:		Total Food Waste				Total Food Waste Adjusted for Number of Meals				Total Food Waste Adjusted for Household Size			
		Y1		Ln(Y1)		Y2		Ln(Y2)		Y3		Ln(Y3)	
		OLS (cluster)	RE (robust)	OLS (cluster)	RE (robust)	OLS (cluster)	RE (robust)	OLS (cluster)	RE (robust)	OLS (cluster)	RE (robust)	OLS (cluster)	RE (robust)
Constant	β_0	2191,1***	2021,957***	25,309***	24,458***	45,725*	38,125	18,044**	15,773*	966,998***	948,250***	25,448***	24,433***
Pre-Shopping Indicator	β_1	11,655	11,995	0,091	0,089	0,447	0,445	0,164	0,139	5,515	5,012	0,130	0,121
Home-Prepared Meals Indicator	β_2	-5,609	-6,991	0,033	-0,016	-0,177	-0,085	-0,021	0,042	0,357	-0,628	0,018	-0,040
Shopping List Indicator	β_3	9,883	10,447	0,086	0,096	0,253	0,276	0,075	0,109	1,647	0,735	0,066	0,072
Shopping Rate Indicator	β_4	-14,354	-16,161	-0,187	-0,188	-1,119**	-1,199**	-0,341**	0,347**	-10,974	-11,982*	-0,184	-0,185
Preparation Indicator	β_5	-0,042	-0,082	-0,020	0,018	-0,399	-0,551	-0,075	-0,083	-9,268	-8,312	-0,079	-0,018
Fruit Waste Indicator	β_6	35,084**	36,247**	0,318**	0,294**	0,591	0,685	0,230	0,201	20,566***	21,142***	0,389***	0,346***
Leftovers Indicator	β_7	-42,528***		-0,385***	-0,405***	-0,765	0,638	-0,322**	0,274*	-15,302***	-15,808***	-0,397***	0,402***
Sell by Date Indicator	β_8	2,675	3,292	0,075	0,104	0,342	0,234	0,054	0,051	3,948	4,431	0,055	0,093
Use by Date Indicator	β_9	-4,535	-11,414	0,023	-0,026	-0,388	-0,510	-0,059	-0,130	-2,587	-3,804	0,042	-0,013
Age	β_{10}	-0,410	-1,026	0,024	0,016	-0,106	-0,174	-0,011	-0,028	-0,203	-0,727	0,016	0,006
Age^2	β_{11}	0,004	0,010	0,000	0,000	0,001	0,002	0,000	0,000	0,003	0,008	0,000	0,000
Education	β_{12}	-251,068***	-230,54***	-2,635***	-2,533***	-4,459	-3,389	-1,943***	-1,640	-107,084***	-103,76***	-2,636***	-2,504***
$Education^2$	β_{13}	7,779***	7,158***	0,082***	0,079***	0,134	0,101	0,059***	0,049	3,358***	3,245***	0,082***	0,078***
Income	β_{14}	0,004***	-0,003***	-0,000***	-0,000***	-0,000***	0,000	-0,000***	0,000	-0,002***	-0,002***	0,000***	-0,000***
$Income^2$	β_{15}	0,000***	0,000***	0,000***	0,000***	0,000***	0,000	0,000***	0,000*	0,000***	0,000***	0,000***	0,000***
Female Dummy	β_{16}	-14,619	-10,081	0,173	-0,150	0,078	-0,137	-0,057	-0,077	-3,314	-2,803	-0,121	-0,112
South Dummy	β_{17}	1,786	-1,031	0,013	-0,052	0,360	0,444	0,115	0,123	0,654	-2,059	-0,008	-0,075
White Dummy	β_{18}	2,044	8,626	-0,012	0,088	-0,382	-0,464	-0,117	-0,114	-0,191	3,928	-0,022	0,087
Immigrant Dummy	β_{19}	6,897	7,802	0,101	0,157	-0,097	-0,086	0,068	0,114	-6,431	-3,976	-0,021	0,066
Vegetarian Dummy	β_{20}	6,816	4,209	-0,011	0,036	-0,360	-0,506	-0,085	-0,120	0,915	-1,478	-0,020	-0,043
Two-person hhld Dummy	β_{21}	34,993**	35,826***	0,666***	0,654***								
Three-person hhld Dummy	β_{22}	73,044***	70,484***	1,069***	1,052***								
minFour-person hhld Dummy	β_{23}	82,204***	95,995***	1,092***	1,147***								
N		1008	1009	974	975	978	979	974	975	1008	1009	974	975
R^2		0,292	0,284	0,364	0,358	0,151	0,144	0,200	0,192	0,224	0,219	0,238	0,231
δu			55,26		0,55		1,929		0,609		22,86		0,535
$\delta \varepsilon$			50,14		0,51		1,687		0,464		24,15		0,505
ρ			0,548		0,54		0,567		0,633		0,473		0,529

*Significant at the 90%-level, **Significant at the 95%-level, ***Significant at the 99%-level, error terms and t-statistics are available in appendix

Table 5.6: Pooled OLS and unadjusted random effects for edible food waste disposal

Table 5.6:		Total Edible Food Waste				Total Edible Waste Adjusted for Number of Meals				Total Edible Waste Adjusted for Household Size			
		Y4		Ln(Y4)		Y5		Ln(Y5)		Y6		Ln(Y6)	
		OLS (pooled)	RE (unadjusted)	OLS (pooled)	RE (unadjusted)	OLS (pooled)	RE (unadjusted)	OLS (pooled)	RE (unadjusted)	OLS (pooled)	RE (unadjusted)	OLS (pooled)	RE (unadjusted)
Constant	β_0	1833,941***	1743,096***	52,339***	48,838***	51,133***	49,430***	48,491***	42,547***	683,326***	686,226***	52,585***	48,278***
Pre-Shopping Indicator	β_1	-3,477	-1,947	-0,016	-0,091	0,058	0,092	0,197	0,070	0,200	0,319	0,136	0,336
Home-Prepared Meals Indicator	β_2	-1,689	-2,141	0,035	0,108	-0,002	0,031	-0,085	0,020	1,072	1,102	-0,010	0,059
Shopping List Indicator	β_3	-1,897	-2,623	0,021	0,006	-0,314**	-0,368	-0,092	-0,022	-2,702	-3,605	-0,033	-0,029
Shopping Rate Indicator	β_4	-20,898**'	-22,081**	-0,652***	-0,586**	-0,927***	-1,038***	-0,776***	-0,756**	-11,207***	-12,223***	-0,606***	-0,578*
Preparation Indicator	β_5	-7,513*	-9,658	-0,415***	-0,092	-0,358**	-0,405	-0,479***	-0,170	-6,655***	-7,091	-0,602***	-0,192
Fruit Waste Indicator	β_6	0,741	6,194	0,158	0,138	-0,043	0,155	0,201*	0,144	1,074	3,426	0,311***	0,234
Leftovers Indicator	β_7	-23,243***	-26,901***	-0,753***	-0,789***	-0,739***	-0,821**	-0,839***	-0,816***	-8,671***	-10,058**	-0,785***	-0,825***
Sell by Date Indicator	β_8	0,045	0,517	-0,022	-0,129	0,143	0,136	0,001	-0,169	1,582	1,656	0,005	-0,128
Use by Date Indicator	β_9	2,179	-0,719	0,206	0,324	0,269	0,187	0,337**	0,376	2,252	2,103	0,300*	0,424
Age	β_{10}	-0,906	-1,738	0,008	0,021	-0,033	-0,060	-0,030	-0,015	-0,291	-0,695	-0,020	0,001
Age^2	β_{11}	0,008	0,016	0,000	0,000	0,000	0,001	0,000	0,000	0,003	0,007	0,000	0,000
Education	β_{12}	-214,275***	-203,016***	-5,936***	-5,601***	-5,860***	5,631**	-5,707***	-5,075***	-78,208***	-78,341***	-5,933***	-5,527***
$Education^2$	β_{13}	6,586***	6,271***	0,183***	0,174***	0,180***	0,175**	0,174***	0,156***	2,426***	2,439***	0,183***	0,172***
Income	β_{14}	-0,001***	-0,001	-0,000***	-0,000**	-0,000***	0,000	-0,000***	0,000	-0,001***	-0,001	-0,000***	-0,000**
$Income^2$	β_{15}	0,000***	0,000	0,000***	0,000**	0,000***	0,000	0,000***	0,000	0,000***	0,000	0,000***	0,000**
Female Dummy	β_{16}	-2,873	-1,559	0,128	0,054	0,059	-0,013	0,398***	0,249	-0,843	0,985	0,256**	0,192
South Dummy	β_{17}	4,017	2,505	0,113	-0,042	0,216*	0,213	0,221**	0,183	1,547	0,520	0,146	0,016
White Dummy	β_{18}	1,275	3,917	-0,130	0,156	-0,206	-0,198	-0,267*	-0,156	-0,821	0,985	-0,247	0,015
Immigrant Dummy	β_{19}	-12,349***	-14,332	-0,352**	-0,307	-0,440***	-0,459	-0,625***	-0,603	-7,822***	-7,732	-0,779***	-0,692*
Vegetarian Dummy	β_{20}	7,186*	5,441	0,039	0,142	0,292*	0,060	-0,08	-0,106	1,743	1,539	-0,082	0,020
Two-person hhld Dummy	β_{21}	9,527**	10,440	0,258*	0,031								
Three-person hhld Dummy	β_{22}	24,987***	26,091*	0,503***	0,469								
minFour-person hhld Dummy	β_{23}	27,395***	38,085**	0,506**	0,495								
N		1009	1010	727	728	979	980	728	729	1009	1010	727	728
R^2		0,264	0,253	0,282	0,26	0,181	0,171	0,308	0,292	0,169	0,161	0,286	0,267
δu			34,614		0,903		1,302		0,968		15,692		0,923
$\delta \varepsilon$			30,29		0,889		1,164		0,896		15,761		0,889
ρ			0,566		0,508		0,556		0,539		0,498		0,519

*Significant at the 90%-level, **Significant at the 95%-level, ***Significant at the 99%-level, error terms and t-statistics are available in appendix

Table 5.7: Cluster OLS and robust random effects for edible food waste disposal

Table 5.7:		Total Edible Food Waste				Total Edible Waste Adjusted for Number of Meals				Total Edible Waste Adjusted for Household Size			
		Y4		Ln(Y4)		Y5		Ln(Y5)		Y6		Ln(Y6)	
		OLS (cluster)	RE (robust)	OLS (cluster)	RE (robust)	OLS (cluster)	RE (robust)	OLS (cluster)	RE (robust)	OLS (cluster)	RE (robust)	OLS (cluster)	RE (robust)
Constant	β_0	1833,941***	1743,096***	52,339***	48,838***	51,133***	49,430***	48,491***	42,547***	683,326***	686,226***	52,585***	48,278***
Pre-Shopping Indicator	β_1	-3,477	-1,947	-0,016	-0,091	0,058	0,092	0,197	0,070	0,200	0,319	0,136	0,336
Home-Prepared Meals Indicator	β_2	-1,689	-2,141	0,035	0,108	-0,002	0,031	-0,085	0,020	1,072	1,102	-0,010	0,059
Shopping List Indicator	β_3	-1,897	-2,623	0,021	0,006	-0,314	-0,368	-0,092	-0,022	-2,702	-3,605	-0,033	-0,029
Shopping Rate Indicator	β_4	-20,898**	-22,081*	-0,652***	-0,586**	-0,927**	-1,038**	-0,776***	-0,756***	-11,207**	-12,223**	-0,606***	-0,578**
Preparation Indicator	β_5	-7,513	-9,658	-0,415	-0,092	-0,358	-0,405	-0,479*	-0,170	-6,655*	-7,091*	-0,602**	-0,192
Fruit Waste Indicator	β_6	0,741	6,194	0,158	0,138	-0,043	0,155	0,201	0,144	1,074	3,426	0,311	0,234
Leftovers Indicator	β_7	-23,243***	-26,901***	-0,753***	-0,789***	-0,739**	-0,821**	-0,839***	-0,816***	-8,671**	-10,058**	-0,785***	-0,825***
Sell by Date Indicator	β_8	0,045	0,517	-0,022	-0,129	0,143	0,136	0,001	-0,169	1,582	1,656	0,005	-0,128
Use by Date Indicator	β_9	2,179	-0,719	0,206	0,324	0,269	0,187	0,337	0,376	2,252	2,103	0,300	0,424
Age	β_{10}	-0,906	-1,738	0,008	0,021	-0,033	-0,060	-0,030	-0,015	-0,291	-0,695	-0,020	0,001
Age^2	β_{11}	0,008	0,016	0,000	0,000	0,000	0,001	0,000	0,0001	0,003	0,007	0,000	0,000
Education	β_{12}	-214,275***	-203,016***	-5,936***	-5,601***	-5,860***	5,631***	-5,707***	-5,075***	-78,208***	-78,341***	-5,933***	-5,527***
Education^2	β_{13}	6,586***	6,271***	0,183***	0,174***	0,180***	0,175***	0,174***	0,156***	2,426***	2,439***	0,183***	0,172***
Income	β_{14}	-0,001**	-0,001	-0,000**	-0,000**	0,000	0,000	-0,000*	-0,00003	-0,001**	-0,000*	-0,000**	-0,000**
Income^2	β_{15}	0,000**	0,000	0,000**	0,000**	0,000	0,000	0,000*	0,000	0,000**	0,000	0,000**	0,000**
Female Dummy	β_{16}	-2,873	-1,559	0,128	0,054	0,059	0,013	0,398*	0,249	-0,843	-0,985	0,256	0,192
South Dummy	β_{17}	4,017	2,505	0,113	-0,042	0,216	0,213	0,221	0,183	1,547	0,520	0,146	0,016
White Dummy	β_{18}	1,275	3,917	-0,130	0,156	-0,206	-0,198	-0,267	-0,156	-0,821	0,985	-0,247	0,015
Immigrant Dummy	β_{19}	-12,349*	-14,332	-0,352**	-0,307	-0,44	-0,459	-0,625**	-0,603*	-7,822**	-7,732**	-0,779***	-0,692**
Vegetarian Dummy	β_{20}	7,186*	5,441	0,039	0,142	0,292	0,060	-0,080	-0,106	1,743	1,539	-0,082	0,020
Two-person hhld Dummy	β_{21}	9,527	10,440	0,258	0,031								
Three-person hhld Dummy	β_{22}	24,987**	26,091**	0,503*	0,469								
minFour-person hhld Dummy	β_{23}	27,395**	38,085**	0,506	0,495								
N		1009	1010	727	728	979	980	728	729	1009	1010	727	728
R^2		0,264	0,253	0,282	0,26	0,181	0,171	0,308	0,292	0,169	0,161	0,286	0,267
δu			34,61		0,903		1,302		0,968		15,69		0,923
$\delta \varepsilon$			30,29		0,889		1,164		0,896		15,76		0,889
ρ			0,566		0,508		0,556		0,539		0,498		0,519

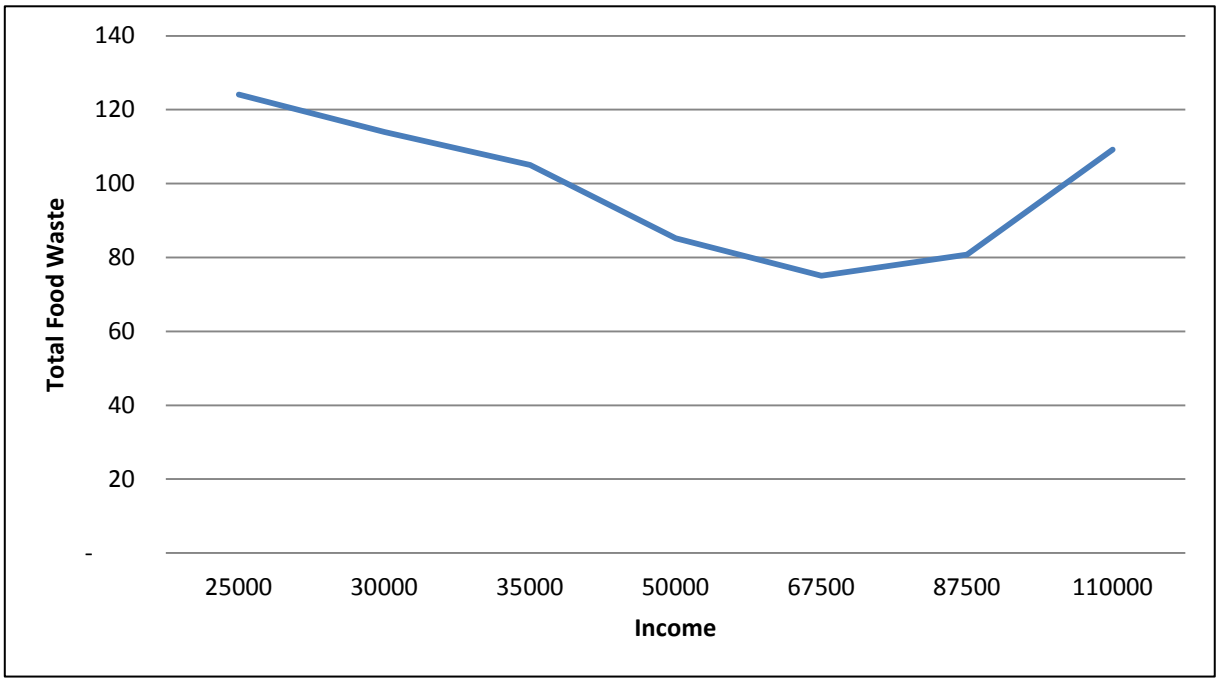
*Significant at the 90%-level, **Significant at the 95%-level, ***Significant at the 99%-level, error terms and t-statistics are available in appendix

5.2.1. Total Food Waste (Y_1)

For all eight regressions, the coefficient of the constant is significant on the 99%-level. The coefficient of the *Leftovers Indicator* is significant and negative for all of these eight regressions, which is consistent with the hypothesis. The coefficient of the Fruit *Waste Indicator* is positive and significant for all of the regressions with total food waste as dependent variable, which is counterintuitive.

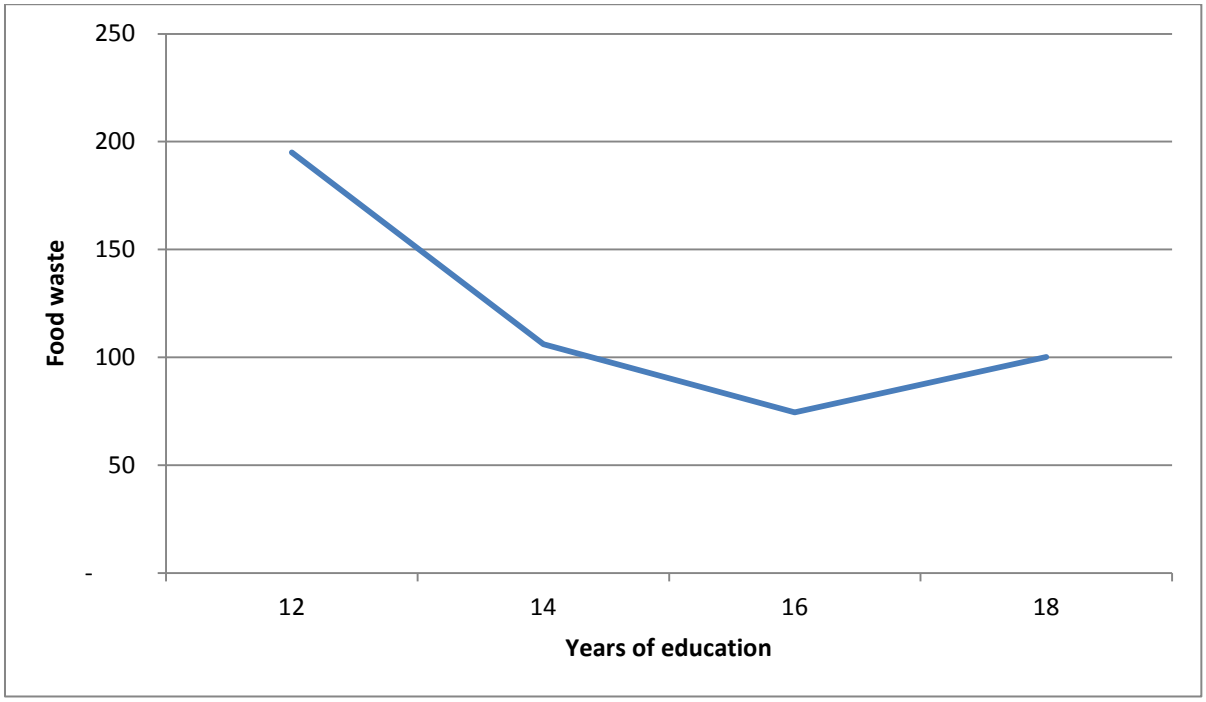
Both the coefficients of the *education* and *income* variables are significant and negative, however, their squared variables are positive. This suggests that respondents with more years of education and higher income throw away less food compared to respondents with low education and low income, but at some point the curve turns and there are higher amounts of food waste associated with higher education and higher income. Solving the partial derivative set equal to zero, will discover the minimum point. This is shown in figures 5.2 through 5.5.

Figure 5.2: Average weekly food waste in terms of income



The point, at which the curve changes direction, lies around a yearly income of $67,500.

Figure 5.3: Average weekly food waste in terms of years of education



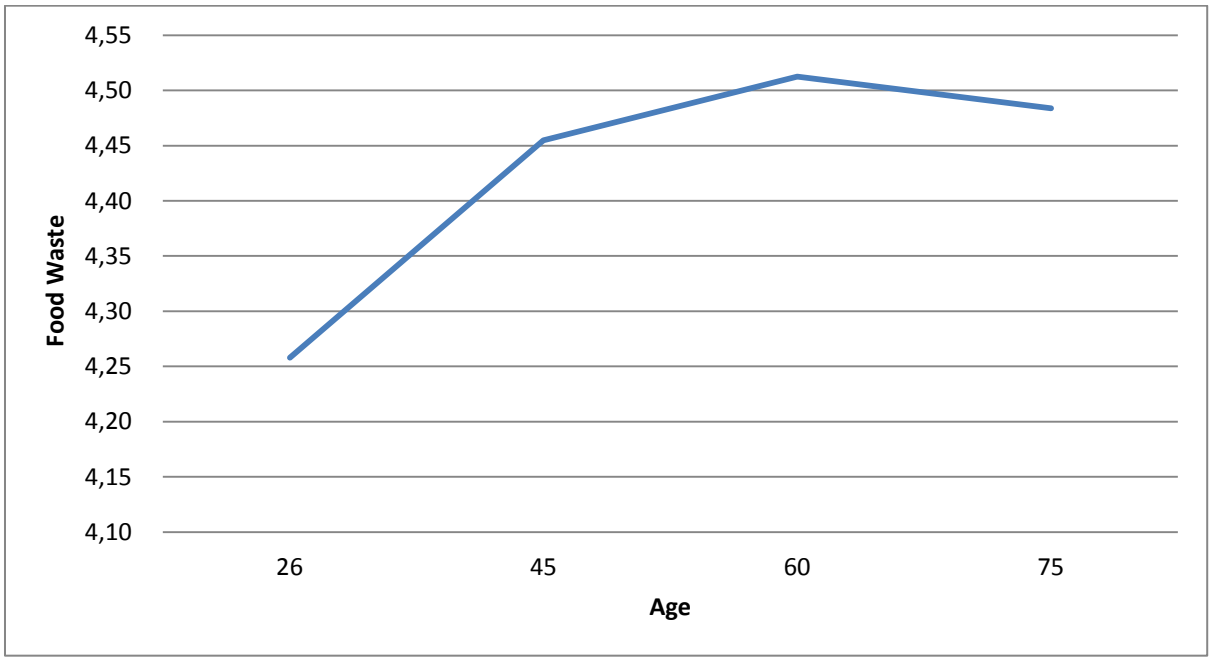
The turning point in figure 5.3 is at 16 years of education. Thus, the people with a bachelor's degree are the respondents that have the lowest amount of food waste.

The final coefficients which are significant for all of the regressions performed with total food waste as the dependent variable are the *household size* dummy variables. They are in accordance with the preconception that they are positive and increasing with household size. This means that the dummy variable for a minimum four people household is larger than the dummy variable for the three people household, which again is higher than the two people household variable.

The cluster OLS and the robust RE regressions are the ones that provide the most accurate estimates here. Even though these are less precise, they are still relevant. There are a few coefficients that are significant only for the pooled OLS and unadjusted RE regressions; the *Pre-Shopping Indicator* is positive for the pooled OLS regression, which is counterintuitive to what was assumed earlier. The *Shopping Rate Indicator* is negative for both the level and log-level pooled OLS. This is consistent with the hypothesis that households that shop for 4 or more days at a time have less food waste than households that shop for less than 4 days at a time. The coefficient for *age squared* is significant and negative for the log-level pooled OLS regression. The coefficient for the dummy variable for

female is negatively significant for the level-level and log-level pooled OLS regressions. This indicates that female respondents have less food waste than male respondents. How the age variables for the OLS regression are graphed is shown in figure 5.4.

Figure 5.4: Average weekly food waste in terms of age



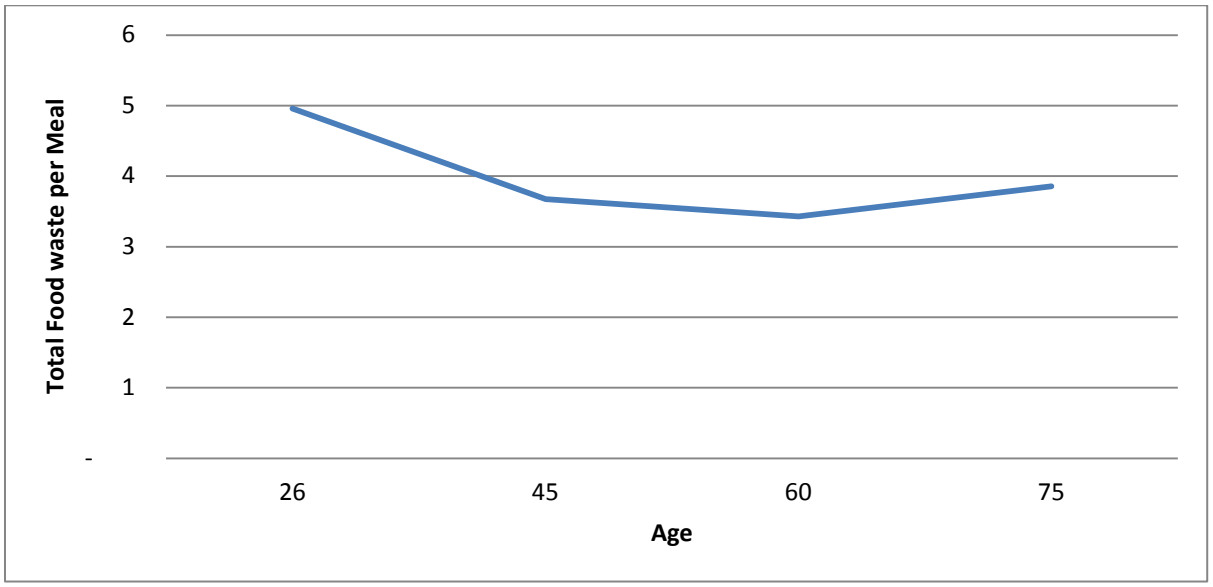
5.2.2. Total Food Waste Adjusted for Meals (Y_2)

The coefficient of the constant is significant for all of the regressions, except for the robust RE regressions. The only independent variable that is significant and negative for all of the regressions on Y_2 is the *Shopping Rate Indicator*. The coefficient of the *Leftovers Indicator* is significant and negative for all of the log-level pooled and cluster OLS and unadjusted and robust RE regressions, and the level-level pooled OLS regression. For these regressions the coefficient of the variable indicate that people who more frequently eat leftovers before cooking new food, have a smaller amount of food waste than people who often cook new food before eating their leftovers.

Income and *income squared* have significant coefficients for the all of the OLS regressions, where *income* is negative and *income squared* is positive. This gives the same effect as in Figure 5.3. *Education* and *education squared* is significant for the pooled OLS regressions, and the log-level cluster OLS regression. The coefficients of the *education* variables are all negative; while the coefficient for the *education squared* variables are

positive, which yield the same convex curve as in Figure 5.4. The coefficients of the *age* and *age squared* variables are significant for the level-level pooled OLS and unadjusted RE regressions, were age is negative and the squared variable is positive. This gives a convex curve as for education and income, which is shown in figure 5.5.

Figure 5.5: Average weekly food waste per meal in terms of age



In addition to this, for the level and log-level pooled OLS regressions, the coefficients of the *Pre-Shopping Indicator* and the *Fruit Waste Indicator* are significant and positive. The fact that these coefficients are positive and therefore counterintuitive which implies that households who plan their shopping more often, and respondents who claim that they spoil less fruit and vegetables before consumption, actually waste more food per meal. The coefficient of the dummy variable for a *southern zip code* is also significant for these two regressions, and the coefficient is positive. The *"Sell by" Date Indicator* has a significant and positive coefficient for the level-level pooled OLS regression. The fact that the coefficient is positive is counterintuitive as it seems logical that a person who report to seldom throwing away food when it is past its "Sell by" date would throw away less food and a person who do this more often. A reason for this could be that people are more concerned with the "Use By" date than the "Sell By" date.

5.2.3. Total Food Waste Adjusted for Household Size (Y_3)

The coefficients of the variables that are significant for all of the regressions on total food waste per person are the constant, which is positive, *education* (positive), *education squared* (negative), *income* (positive), *income squared* (negative), the *Fruit Waste Indicator* (positive), and the *Leftovers Indicator*(negative). The *education* and *income* coefficients are equal to what we have seen in regressions performed on total food waste and total food waste per meal. The indicator for how little fruit and vegetables are spoiled before consumed is positive, which as mentioned before is counterintuitive.

The *Shopping Rate Indicator* is significant and negative for both the log-level and level-level pooled OLS regressions, the level unadjusted RE and level robust RE regressions. This is in accordance with the assumption that people who shop for more days at time, waste less food. The coefficient of the *Pre-Shopping Indicator* is positively significant for the pooled OLS regressions. This implies that respondents who plan ahead of shopping trips, waste more food, which does not correspond with the hypothesis. For the log-level pooled OLS regression, the coefficient of the *female* dummy variable is significant and negative, which implies that women waste less food than men. For the coefficient of the pooled OLS regression the *Preparation Indicator* is significant and negative, which is in accordance with the intuition, and the dummy variable for *immigrant* is negative and significant which implies that an immigrant waste less food than ethnic Americans.

5.2.4. Total Edible Food Waste (Y_4)

For all of these eight regressions, the coefficients of the *Shopping Rate Indicator*, the *Leftovers Indicator* and *education* are negative and significant, while the constant and *education squared* are positive and significant. All of these are consistent with intuition and previous findings.

The coefficients of the income variables, *income* and *income squared* are significant for all of the regressions except for the unadjusted RE regressions; their coefficients are respectively negative and positive. Other variables that have significant coefficients are the *Preparation Indicator*, which is negative and thus in keeping with the intuition, for both of the pooled OLS regressions. The coefficient of the dummy variable for *immigrants* is negatively significant for both of the log-level and level pooled OLS regressions and the level

cluster OLS regression. This implies that *immigrants* throw away less food than non-immigrants. The coefficient of the *vegetarian* dummy variable is significant for the pooled OLS regression, and it has a positive coefficient, which entails that *vegetarians* throw away more food than non-vegetarians. When it comes to the *household size* dummy variables, it varies which regressions have significant coefficients, but they are all positive and increasing in size. All of the coefficients of the *household size* dummy variables are significant for both of the pooled OLS regressions, the coefficients of the three people and minimum four people household dummy variables are significant for the unadjusted RE regressions and the cluster OLS regression, while the coefficient of the three people household dummy variable is significant for the log-level cluster OLS regression.

5.2.5. Edible Food Waste Adjusted for Meals (Y_5)

Similar to the total edible food waste regressions, the coefficients of the *Shopping Rate Indicator*, the *Leftovers Indicator*, the constant, *education* and *education squared* are the variables which are significant for all of the regressions for edible food waste per meal. The two self-assessed behavior variables have negative coefficients and thus consistent with the intuition presented earlier. The coefficients for *education* and *education squared* are respectively negative and positive, which we have seen in the other regressions as well. Other behavioral variables that are significant are; the coefficient of the *Food Quantities Indicator* which is significant for the pooled OLS regression; the coefficient of the Preparation Indicator is significant for both of the pooled OLS regressions and the log-level cluster OLS regression; the coefficient of the *Fruit Waste Indicator* is significant for the log-level pooled OLS regression, and the coefficient of the *"Use by" Date Indicator* which is significant for the log-level pooled OLS regression. The descriptive variables that are significant are; the coefficients of the *income* variables for both of the OLS regressions and the log-level cluster OLS regression; the coefficient of the *female* dummy variable which is significant for the log-level pooled OLS regressions; the coefficient of the dummy variable for *southern zip codes* is significant for the pooled OLS regressions; the coefficient of the *White* dummy variable for the log-level pooled OLS regression; the coefficient of the *immigrant* dummy variable which is significant for the log-level pooled OLS regressions, the log-level

cluster OLS regression, and the log-level unadjusted RE regression; and the coefficient of the *vegetarian* dummy variable which is significant for the pooled OLS regression.

5.2.6. Edible Food Waste Adjusted for Household Size (Y_6)

Consistent with the total edible food waste and the edible food waste per meal dependent variables, all of the regressions with edible food waste per person as dependent variables have significant coefficients for the *Shopping Rate Indicator* (negative), the *Leftovers Indicator* (negative), *education* (negative), *education squared* (positive), and the constant. Other self-assessed coefficients of behavioral variables that are significant are the *Preparation Indicator* which is significant for all of the pooled OLS regressions, and the robust RE regression, while the coefficient of the *Fruit Waste Indicator* is significant for the log-level pooled OLS regression. The income variables, *income* (negative) and *income squared* (positive) have significant coefficients for all of the OLS regressions, and both the log-level unadjusted and robust RE regressions. In addition to this, for the robust RE regression is the coefficient of income negatively significant. The coefficient of the *female* dummy variable is significant for the log-level pooled OLS regression, and the dummy variable for *immigrants* is significant for all of the regressions, except for the unadjusted RE regression.

All of the significant coefficients of the self-assessed behavioral variables are negative, except for the *Fruit Waste Indicator* which is positive. The last variable is as mentioned earlier not consistent with the hypothesis. The coefficients of the *education* and *income* variables in addition to the coefficient of the dummy variable for *immigrants* are consistent with earlier findings. The *female* dummy variable has a positive coefficient, while has in other regressions a negative coefficient.

5.3. Summary

Off all of these regressions, the two most relevant dependent variables are total food waste and edible food waste and the most accurate regressions are the cluster OLS and the robust Random Effects (RE) regressions.

Table 5.8: Summary of significant variables for the regressions on total food waste and edible food waste

Variable	Total Food Waste	Edible Food Waste
Pre-Shopping Indicator		
Number of Meals Indicator		
Food Quantities Indicator		
Shopping Rate Indicator		- - - -
Preparation Indicator		
Fruit Waste Indicator	+ + + +	
Leftovers Indicator	- - - -	- - - -
"Sell by" Date Indicator		
"Use by" Date Indicator		
Age		
Age^2		
Education	- - - -	- - - -
$Education^2$	+ + + +	+ + + +
Income	- - - -	- - -
$Income^2$	+ + + +	+ + +
Female Dummy		
South Dummy		
White Dummy		
Immigrant Dummy		- -
Vegetarian Dummy		
Two-person hhld Dummy	+ + + +	
Three-person hhld Dummy	+ + + +	+ + +
minFour-person hhld Dummy	+ + + +	+ +

Table 5.8 indicates which coefficients were significant, how many of the regressions on each dependent variable, and whether the significant coefficients affect the dependent variable positively or negatively.

The variables that stand out here as having significant coefficients for all of the regressions are the *Leftovers Indicator* which has a decreasing effect on total and edible food waste, which is consistent with the hypothesis. The coefficients of *education* and *income*, where an increase in the level of education or income decreases the amounts of total and edible food waste and their squared variables show that a higher level of education or higher income results in increased amounts of total and edible food waste. The coefficients of the income variables are significant for all of the regressions, while the

coefficients of the education variables are significant for all of the regressions, except for the robust WLS regression.

The regressions on total food waste show that the coefficients on the *Fruit Waste Indicator* affect total food waste positively, thus an increase in the variable results in an increase in total food waste. This is counterintuitive as we expected that people who waste less fruit and vegetables prior to consumption, waste less. The coefficients of the *household size* dummy variables are significant and consistent with the expectation that a larger household waste more than smaller households.

Looking at the regressions for edible food waste in table 5.8, we see that the *Shopping Rate Indicator* has negatively significant coefficients in all of the regressions. This complies with the first hypothesis that the self-assessed behavioral questions affect food waste negatively. The coefficient of the immigrant dummy variable is significant and negative for the cluster OLS regressions, both the level-level and log-level. This implies that immigrants waste less edible food waste than non-immigrants, which fulfils the hypothesis. The coefficient for the *three person household* is significant for three of the regressions on edible food waste, while the coefficient for the *minimum four people household* is significant for the cluster OLS and robust random effects regressions. They are all positive and increasing in size, which meets the terms of the hypothesis.

5.4. Learning Tendencies

Table 5.8 - RE regression with weekly dummy variables:

Table 5.8

		Total Food Waste	Total Food Waste per Meal	Total Food Waste per Person	Total Edible Food Waste	Edible Food Waste per Meal	Edible Food Waste per Person
Constant	β_0	2021,867***	37,798	943,78***	1737,007***	49,196***	683,198***
Pre-Shopping Indicator	β_1	12,148	0,444	5,045	-1,875	0,096	0,096
Number of Meals Indicator	β_2	-6,541	-0,075	-0,314	-1,307	0,049	0,049
Food Quantities Indicator	β_3	10,391	0,286	0,792	-2,707	-0,369	-0,369
Shopping Rate Indicator	β_4	-16,541	-1,198**	-12,150*	-22,446**	-1,037***	-1,037***
Preparation Indicator	β_5	-0,840	-0,544	-8,649	-10,086	-0,408	-0,408
Fruit Waste Indicator	β_6	36,889**	0,692	21,389***	6,690	0,168	0,168
Leftovers Indicator	β_7	-45,319***	-0,692	-15,536***	-26,090***	-0,805**	-0,805**
"Sell by" Date Indicator	β_8	2,922	0,213	4,209	0,037	0,119	0,119
"Use by" Date Indicator	β_9	-11,162	-0,477	-3,720	-0,968	0,203	0,203
Age	β_{10}	-0,997	-0,172*	-0,706	-1,731	-0,060	-0,060
Age^2	β_{11}	0,009		0,008	0,016	0,001	0,001
Education	β_{12}	-230,201***	-3,350	-103,298***	-201,438***	-5,598***	-5,598***
$Education^2$	β_{13}	7,149***	0,100	3,232***	6,222***	0,173***	0,173***
Income	β_{14}	-0,003***	-0,0001	-0,002***	-0,001	-0,00002	-0,00002
$Income^2$	β_{15}	2,32E-08***	4e-10	1,35e-08***	6,44e-09	1,68e-10	1,68e-10
Female Dummy	β_{16}	-11,040	-0,134	-3,135	-2,503	-0,020	0,020
South Dummy	β_{17}	-0,646	0,443	-1,794	2,848	0,223	0,223
White Dummy	β_{18}	7,726	-0,478	3,431	3,275	-0,215	-0,215
Immigrant Dummy	β_{19}	7,577	-0,086	-4,156	-14,069	-0,460	-0,460
Vegetarian Dummy	β_{20}	3,958	-0,536	-1,577	5,329	0,083	0,083
Two-person hhld Dummy	β_{21}	35,634**					
Three-person hhld Dummy	β_{22}	70,700***			25,594*		
minFour-person hhld Dummy	β_{23}	95,702***			36,975**		
Week 2	β_{24}	1,635	-0,110	1,929	0,023	-0,025	1,526
Week 3	β_{25}	10,529	0,642**	8,5**	3,556	0,308*	4,772**
Week 4	β_{26}	-1,245	0,203	1,596	-1,511	0,022	1,476
Week 5	β_{27}	5,920	0,060	3,585	-1,760	-0,114	0,035
Week 6	β_{28}	-10,574	0,162	-2,972	-8,128*	-0,168	-2,257
Week 7	β_{29}	-0,306	-0,187	-0,705	-4,636	-0,179	-2,248
Week 8	β_{30}	-8,895	0,322	-3,105	-7,437	-0,294	-3,086
Week 9	β_{31}	-12,316	-0,317	-3,727	-10,629**	-0,253	-2,765
Week 10	β_{32}	-3,401	0,081	0,913	-6,889	-0,135	-2,569
Week 11	β_{33}	-3,587	0,309	0,883	-11,091**	-0,182	-3,229
Week 12	β_{34}	-2,868	0,119	0,422	-10,224**	-0,195	-3,823
Week 13	β_{35}	2,003	-0,032	2,786	-8,340*	-0,206	-1,487
		N = 1009	N = 979	N = 1009	N = 1010	N = 980	N = 1010
		R2 = 0,293	R2 = 0,156	R2 = 0,230	R2 = 0,268	R2 = 0,182	R2 = 0,176
		∑ui = 49,413	∑ui = 1,674	∑ui = 21,525	∑ui = 33,421	∑ui = 1,153	∑ui = 14,915
		∑et = 50,083	∑et = 1,677	∑et = 24,096	∑et = 30,138	∑et = 1,161	∑et = 15,671
		ρ = 0,593	ρ = 0,499	ρ = 0,444	ρ = 0,552	ρ = 0,496	ρ = 0,475

*Significant at the 90%-level, **Significant at the 95%-level, ***Significant at the 99%-level

These regressions are similar to the RE regressions without weekly dummy variables in the sense that they all have the same significant regressions disregarding the weekly dummy variables. Here, we can see with the exception of total edible food waste (Y4), the weekly dummy variables are not negatively significant indicating that the respondents have not decreased their food waste during the time of the project.

However, the regression with total edible food waste as output variable, have some significant variables that could imply learning. The weekly variables for week 6, 9, 11, 12, and 13 are negative and significant. This is the only one of the six regressions that has this many significant week dummy variables, and this could mean that the participating households intentionally decreased their edible food waste.

6. Analysis & Discussion

6.1 Summary of Results

In this part we will focus on the cluster OLS and robust Random Effects (RE) regressions for all of the output variables as these are the most "conservative" regressions. The dependent variables which will be the focus of this chapter are Total Food Waste, Y1 & ln(Y1), and Edible Food Waste, Y4 & ln(Y4). When looking at the amount of edible food waste relative to total food waste, we see that the share of edible food waste is about a third of total food waste.

Starting with the first hypothesis which states that planning lead to a decrease in the amount of food waste, the variables that stand out as having significant coefficients are the *Shopping Rate Indicator*, *Fruit Waste Indicator*, and the *Leftovers Indicator*. The *Leftovers Indicator* is the only one that has significant coefficients for all of the eight cluster OLS and robust RE regressions on total and edible food waste. The percentage effect for households, who eat leftovers before cooking new food, is a 40% decrease in total food waste and a 79% decrease in edible food waste, ceteris paribus. These numbers are taken from the log-level robust random effects in table 5.5 and 5.7 in the previous chapter. The *Shopping Rate Indicator* has significant coefficients for all of the regression with edible food waste as dependent variable. According to the log-level robust RE regressions in table 5.7, shopping for more than three days at a time, will lead to a 59% decrease in edible food waste, ceteris paribus. The *Fruit Waste Indicator* has significant coefficients for all of the regressions where the dependent variable is total food waste. The log-level robust RE regression shows that households who waste less than 5% of fruit and vegetables prior to consumption actually, waste 29% more food. These three Indicators tell two different stories in terms of the hypothesis. Whereas the Leftovers Indicator and Shopping Rate Indicator, show that planning reduces the amount of food waste, the Fruit Waste Indicator indicate that spoiling less fruit and vegetables, lead to an increase in food waste. One possible explanation for this could be that for this particular question, the respondents have more difficulty perceiving their own fruit and vegetable waste.

The second hypothesis, regarding the *household size* dummy variables, is fulfilled by the cluster OLS and robust random effects regressions. These three variables have significant

coefficients for all of the regressions on total food waste. Using the equation for transforming coefficients for dummy variables into percentage effects in a log-level regression in chapter 5.2, yield that the a household with two people increase total food waste by 92%; a three person household increase total food waste by 186%; while a household with four or more people increase total food waste by 215%. Given that the average food waste for a one person household is 50 ounces per week, then this number is 96 ounces for a two-person household, 143 ounces for a three person household, and 157.5 ounces for the largest households.

Figure 6.1: Total food waste by household size

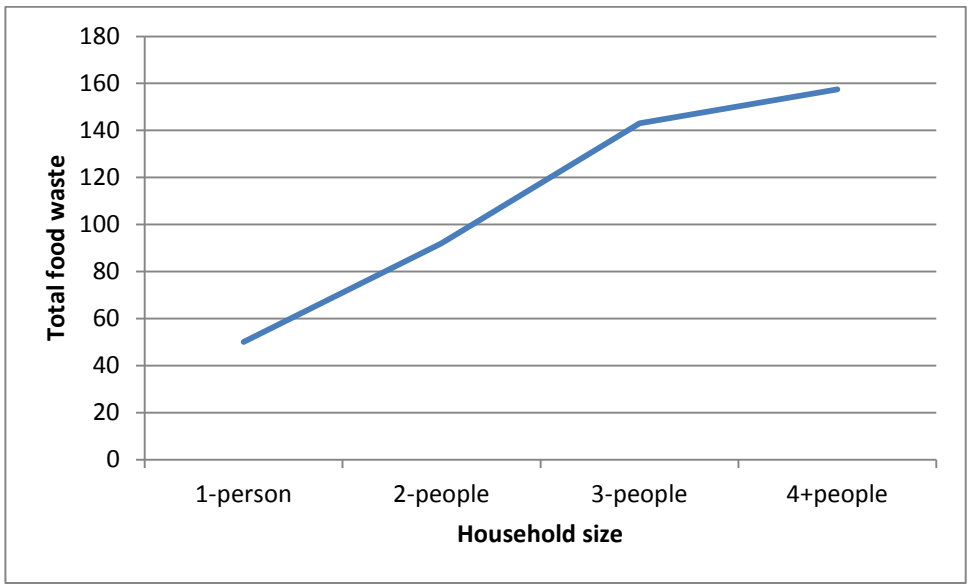


Figure 6.1, which graph the mathematical calculations above, shows how the marginal increase in total food waste is diminishing. The regressions on edible food waste partly supports the findings for total food waste as household size dummy variables have significant coefficients for three persons and minimum four persons households in all of the regressions, except for the log-level robust random effects regression.

The basic demographics that affect total and edible are education and income. Both the basic and squared variables have significant coefficients for all of the regression, with the exception of income and income squared which does not have significant coefficients in the robust random effects regression. The expectation prior to the analysis was that education would have a decreasing effect on food waste, while income would have an increasing effect

on food waste. The results of the regressions show that both education and income affect food waste negatively, as they both have negative coefficients, while their squared variables have positive coefficients, ceteris paribus. The regression results contradict the expectation, but confirm the hypothesis that education and income affect the amounts of total and edible food waste. The age variables was also a part of the hypothesis, but they do not have significant coefficients for any of the cluster OLS and robust random effects regressions on total and edible food waste.

The *vegetarian* dummy variable has one significant coefficient, which is for edible food waste in the cluster OLS regression. This significant coefficient indicates that vegetarians waste more edible food than non-vegetarians, which is not consistent with the hypothesis. A possible explanation for this is that many of the vegetarians live in households where not everyone in the household is a vegetarian, which could make the estimation not good enough to find a relationship between the amounts of food waste and type of diet.

The fifth and last hypothesis states that immigrants have less food waste than non-immigrants. The coefficients for this variable are negatively significant for the cluster OLS regression on edible food waste. Thus, immigrants waste less edible food waste than non-immigrants, and using the equation in chapter 5.2, we can calculate that being an immigrant household decreases the amount of edible food waste by 42%. This does confirm the hypothesis, but there is however a reason to question if the two regressions which are significant, is enough to conclude that the hypothesis is accepted.

The bottom line is that there are a number of significant coefficients that affects the hypotheses. The *Shopping Rate* and *Leftovers Indicators* confirm that planning affects the amount of food waste, whil the *Fruit Waste Indicator* contradicts this hypothesis. Larger *households* increase the amounts of total and edible food being disposed, which back up the hypothesis. The demographics for *education* and *income* fulfills the hypothesis of affecting food waste, but show a different picture than expected.

6.2 Learning variables

The regressions on the weekly dummy variables are not a part of the hyptheses, but it is important to acknowledge that the participants did not purposely reduce the amount of food waste during the course of the project. Even though total edible food waste did have significant and negative coefficients for week 9, 11, 12, and 13, which could imply that the participants reduced their amount of edible food waste intentionally. Here, it is possible to conclude that although the participants did not deliberately reduce their overall food waste, perhaps they got some insight on how much they threw away and tried to reduce the amount of edible food waste. However, since edible food waste per meal and per person are not significant it could might as well just be that the household overall prepared less meals and therby had less edible food waste. The regressions would have been a more accurate representation of the sample if the amount of observations would have been closer to 1,625, which is the number of observations if all of the 125 participants who answered the preliminary questionnaire would have filled out their food waste information for all of the 13 weeks the project lasted. Send out preliminary questionnaire.

7. Conclusion

In the introduction two research questions were presented, the first asking how planning and attitude towards shopping and wasting affect food waste, and the second investigating the differences in the determinants between toal food waste and edible food waste disposal.

The answer to the first question is that eating leftovers, shopping for multiple days at a time and wasting little fruit and vegetables are the behavioral variables which affect the amount of food waste. The second question has a more complex answer as eating leftovers, education level, income and household size are the variable that influence both total and edible food waste. The amount fo fruit and vegetables being disposed and the two person household dummy variable are the variables which are only significant for total food waste. the number of days the household shops for at a time, and whether the household has an immigrant background are the variables that only affect edible food waste significantly.

In regards to the amounts of food beingw asted, one could claim that all edible food waste could have been avoided, and thus is wasteful. If this amount of about 30 ouces of food waste per week could have been avoided, which is equal to about 1 kilogram, then during the course of this projects where the paticipants weighed their food waste, each household could have wasted 24.4 pounds less. This amount is 13 kilos per household, and aggregating it up to all of the 125 participating households, 3047 pounds (or 1625 kilos) of food waste could have been avoided. These numbers may not seem very big when you look at them per week per household, but when multiplying them like this, shows how fast this number becomes a very large amount of food waste.

The survey from Seattle Public Utilities that resulted in the data used to in the analyses in this thesis, was well conducted. Although I could not influence the design of neither the questionnaire nor the weight form, I am happy with the amount of information that was possible to obtain throught the regression analyses performed.

Issues of concern that could possibly have made the regressions more precise would have been to get all of the respondents to answer all of the questions in the preliminary questionnaire, but more importantly, fill out the weight forms every week. The average amount of data that is included in the robust WLS regressions varies from 87 households with 728 observations and a average of each household completing 8.4 out of the 13

available weeks to 90 households with 1009 observations with each household completing 11.2 weeks out of the maximum of 13.

There was also some concern regarding the accuracy of the answers in the preliminary questionnaires. Some irregularities were detected, which might imply that the respondent either misread the question or simply answered it wrongly. Respondents who answered that they had infants or children in the household on part-time basis, were not a included in the household size. This means that for the time the extra family member or if there were visitors in the household this wold only be reflected in the regressions with total food waste per meal and edible food waste per meal as dependent variables.

If the sample a good enough reflection of the general population in Seattle is a concern. The people who would participate in a projects like this, that requires quite a bit of effort to complete, are maybe people that are concerned with the issue of food waste and therefore already waste less than the general population.

Prior to this project, which was conducted in the beginning of 2013, there have to my knowledge not been similar projects were the participants are consumers who have weighed their food waste every day over the course of 13 weeks. There are multiple directions that further research could take.

One interesting project would be to have respondents perform a similar project, where they weigh their food waste over some specific amount of time. However, the group of respondents should be divided into two groups, where one group will not get any specific information concerning this project before the course of the project, while the other group would be informed on the findings here, for example that shopping for multiple days at a time helps reduce the total amount of food waste. They should also get information on the average amount of food waste, both edible and inedible for each household size so that they could continually compare the amount of their food waste with the mean of waste from this project. The possibility of finding differences among the two groups is large here, and the analyst on this data set could use econometric tools such as differences-in-differences. One possibility could be to hand out the preliminary survey at the end of the weighing period to compare with the first one and if the changes among the questionnaires are reflected in the weighting data.

8. References

Becker, G.S. (1965) “A Theory of the Allocation of Time” The Economic Journal. 75: 493-517.

Brook Lyndhurst. (2007) *Food behaviour consumer research: quantitative phase.*

Cameron, A.C., & Trivedi, P.K. (2005) Microeconometrics: *Methods and Applications.* New York City, NY: Cambridge University Press.

Cameron, A.C., & Trivedi, P.K. (2010) *Microeconometrics Using STATA, Revised Edition*. Texas, USA: Stata Press

Corrado, M. (2007) “Understanding Consumer Food Management Behaviour.” Wrap, Banbury, UK.

Dillman, D.A.(2000). *Mail and Internet Surveys: The Tailored Design Method.* United States: John Wiley & Sons, Inc.

Food and Agricultural Organization (FAO). 2013. *Food wastage footprints*: 2013.

Graham-Rowe, E., Jessop, D. C., Sparks, P. (2013) “Identifying motivations and barriers to minimising household food waste.” Resources, Conservation and Recycling. 84: 15-23.

Gustavsson, J., Cederberg, C., & Sonesson, U. 2011. “Global Food Losses and Food Waste: Extent, Causes and Prevention”. Study conducted for the International Congress SAVE FOOD! At Interpack2011, Dusseldorf, Germany.

Halvorsen, R., & Palmquist, R. (1980) “The Interpretation of Dummy Variables in Semilogarithmic Equations.” The American Economic Review. 70:474-475.

Kantor, L., Lipton, K., Manchester, A., Oliveira, V. (1997) “Estimating and addressing America’s food losses” Food Review 20: 2-12

Morris, G.E., and Holthausen, D.E. 1994. “The economics of household solid waste and disposal.” Journal of Environmental Economics and Management. 26: 215-234.

Parfitt, J., Barthel, M., and McNaughton, S. 2010. “Food waste within food supply chains: quantification and potential for change to 2050.” Phil. Trans. R. Soc., 365:3065-3081.

Snyder, C., & Nicholson, W. (2012) *Microeconomic Theory: Basic Principles and Extensions*. Canada: South-Western Cengage Learning.

Stuart, T. (2009) *Waste: uncovering the global food scandal*. London: Penguin Books.

Williams, H., Wikström, F., Otterbring, T., Löfgren, M., Gustafsson, A. (2011) “Reasons for household food waste with special attention to packaging” Journal of Cleaner Production. 24: 141-148.

Wooldridge, J.M. (2009) *Introductory Econometrics.* Canada: South-Western Cengage Learning.

WRAP (Waste & Resource Action Programme). (2011) Sustainable Food – written evidence, House of Commons – Environmental Audit Committee – Publications SF31; 2011b.

WRAP & WWF-UK (World Wide Fund for Nature – UK) (2011) *The Water and Carbon Footprint of Household Food and Drink Waste in the UK*

9. Appendices

Food Waste Weighing Pilot Demographic Questionnaire

1. Please enter the number of people in your household by what they eat.

		Response Average	Response Total	Response Count
Both meat and vegetables		**2.19**	**256**	117
Vegetarian or vegan		0.52	24	46
Other		0.32	12	37
			answered question	**124**
			skipped question	**1**

2. If you chose "Other" for the question above, please briefly describe.

	Response Count
	8
answered question	**8**
skipped question	**117**

3. Do you plan meals before you go shopping?

	Response Percent	Response Count
Always	11.3%	14
Often	**45.2%**	**56**
Occasionally	40.3%	50
Never	3.2%	4
answered question		**124**
skipped question		**1**

4. Do you make a shopping list based on how many meals you expect to eat at home before your next shopping trip?

	Response Percent	Response Count
Always	16.9%	21
Often	**30.6%**	**38**
Occasionally	29.8%	37
Never	22.6%	28
answered question		**124**
skipped question		**1**

5. Does your shopping list note quantities of food to buy?

	Response Percent	Response Count
Always	18.5%	23
Often	31.5%	39
Occasionally	**39.5%**	**49**
Never	10.5%	13
	answered question	**124**
	skipped question	**1**

6. When you buy food, how many days do you usually shop for?

	Response Percent	Response Count
Just for today	2.4%	3
For two to three days	22.6%	28
For four to five days	**33.1%**	**41**
For six to seven days	30.6%	38
For more than a week	11.3%	14
	answered question	**124**
	skipped question	**1**

7. How often do you peel, cut up or otherwise prepare fruits and vegetables ahead of time to use as snacks and in meals?

	Response Percent	Response Count
Almost always (75-100% of the time)	14.5%	18
Most of the time (50-75% of the time)	7.3%	9
Often (25-50% of the time)	26.6%	33
Occasionally (5-25% of the time)	**32.3%**	**40**
Almost never	19.4%	24
	answered question	**124**
	skipped question	**1**

8. About how much of your fresh fruits and vegetables spoil before you can eat them?

	Response Percent	Response Count
Less than 5%	**39.2%**	**49**
5% - 10%	27.2%	34
10% - 15%	17.6%	22
15% - 25%	12.8%	16
25% - 50%	2.4%	3
More than 50%	0.8%	1
	answered question	**125**
	skipped question	**0**

9. Do you use older food items and leftovers before cooking newer food?

	Response Percent	Response Count
Almost always (75% - 100% of the time)	**46.8%**	**58**
Most of the time (50% - 75% of the time)	37.1%	46
Often (25% - 50% of the time)	12.1%	15
Occasionally (5% - 25% of the time)	3.2%	4
Almost never	0.8%	1
answered question		**124**
skipped question		**1**

10. Do you compost or throw away items when they are past their "Sell By" date?

	Response Percent	Response Count
Never	**48.8%**	**61**
Sometimes	40.0%	50
Most of the time	11.2%	14
answered question		**125**
skipped question		**0**

11. Do you compost or throw away items when they are past their "Use By" date?

	Response Percent	Response Count
Never	13.7%	17
Sometimes	**59.7%**	**74**
Most of the time	26.6%	33
	answered question	**124**
	skipped question	**1**

12. Which of the following ranges includes your age?

	Response Percent	Response Count
18-34	9.8%	12
35-54	**48.0%**	**59**
55-64	24.4%	30
65 or older	17.1%	21
Decline to answer	0.8%	1
	answered question	**123**
	skipped question	**2**

13. Please enter the number of people, living in your household, of the following ages.

	Response Average	Response Total	Response Count
Under 2	0.37	7	19
Ages 2-5	0.80	20	25
Ages 6-11	0.81	22	27
Ages 12-17	0.61	14	23
Ages 18-34	0.94	29	31
Ages 35-54	**1.45**	**100**	69
Ages 55-64	1.18	59	50
Ages 65 or greater	0.91	31	34
		answered question	**122**
		skipped question	**3**

14. Are you of Hispanic, Latino, or Spanish origin?

	Response Percent	Response Count
Yes	1.6%	2
No	**92.7%**	**115**
Decline to answer	5.6%	7
	answered question	**124**
	skipped question	**1**

15. What is your race? Check all that apply

	Response Percent	Response Count
White	**80.5%**	**99**
Black or African American	0.8%	1
Chinese	5.7%	7
Filipino	2.4%	3
Vietnamese	0.8%	1
Don’t know	0.0%	0
Decline to answer	8.9%	11
Other (please specify)	6.5%	8
	answered question	**123**
	skipped question	**2**

16. What is the primary language spoken in your home?

	Response Percent	Response Count
English	**91.9%**	**114**
Spanish	0.0%	0
Russian	0.0%	0
Vietnamese	0.8%	1
Chinese, Mandarin, Cantonese	1.6%	2
Aftican Languages (such as Somali, Amharic, Oromo, Tamazight)	0.0%	0
Decline to Answer	2.4%	3
Other (please specify)	3.2%	4
	answered question	**124**
	skipped question	**1**

17. Did you immigrate to the United States?

	Response Percent	Response Count
Yes	13.7%	17
No	**80.6%**	**100**
Decline to answer	5.6%	7
	answered question	**124**
	skipped question	**1**

18. Please enter the number of cats, dogs, chickens or other pets/livestock at your home. If you do not have pets or livestock, please enter the number zero ("0").

	Response Average	Response Total	Response Count
Number of dogs	0.34	31	91
Number of cats	**0.84**	**87**	103
Number of chickens	0.35	25	72
Number of other pets	0.24	19	79
		answered question	**121**
		skipped question	**4**

19. Please identify your annual household income.

	Response Percent	Response Count
Under $30,000	6.5%	8
$30,000 – $39,999	4.9%	6
$40,000 – $49,999	8.9%	11
$50,000 - $59,999	5.7%	7
$60,000 to $74,999	16.3%	20
$75,000 – $99,999	15.4%	19
Over $100,000	**23.6%**	**29**
Decline to answer	18.7%	23
	answered question	**123**
	skipped question	**2**

20. What is your home zip code?

	Response Percent	Response Count
98101	0.0%	0
98102	2.5%	3
98103	9.8%	12
98104	0.0%	0
98105	5.7%	7
98106	2.5%	3
98107	4.1%	5
98108	4.9%	6
98109	1.6%	2
98111	0.0%	0
98112	0.8%	1
98113	0.0%	0
98114	0.0%	0
98115	**16.4%**	**20**
98116	4.9%	6
98117	9.0%	11
98118	5.7%	7
98119	0.0%	0
98121	0.0%	0
98122	2.5%	3
98124	0.0%	0
98125	7.4%	9
98126	3.3%	4

98127		0.0%	0
98129		0.0%	0
98131		0.0%	0
98132		0.8%	1
98133		6.6%	8
98134		0.8%	1
98136		2.5%	3
98138		0.0%	0
98139		0.0%	0
98141		0.0%	0
98144		4.9%	6
98145		0.8%	1
98146		0.8%	1
98148		0.0%	0
98151		0.0%	0
98154		0.0%	0
98155		0.0%	0
98158		0.0%	0
98160		0.0%	0
98161		0.0%	0
98164		0.0%	0
98165		0.0%	0
98166		0.0%	0
98168		0.0%	0
98170		0.0%	0

98171	0.0%	0
98174	0.0%	0
98175	0.0%	0
98177	0.0%	0
98178	0.0%	0
98181	0.0%	0
98184	0.0%	0
98185	0.0%	0
98188	0.0%	0
98190	0.0%	0
98191	0.0%	0
98194	0.0%	0
98195	0.0%	0
98198	0.0%	0
98199	1.6%	2
answered question		**122**
skipped question		**3**

21. Do you own or rent your home?

	Response Percent	Response Count
Own	**88.7%**	**110**
Rent	8.1%	10
Decline to answer	3.2%	4
answered question		**124**
skipped question		**1**

22. Who pays your utility bill from Seattle Public Utilities (water, garbage and sewer services)?

	Response Percent	Response Count
Myself or someone else in my household	**93.5%**	**116**
My landlord	1.6%	2
Some other person	2.4%	3
Prefer not to answer	2.4%	3
answered question		**124**
skipped question		**1**

23. What is your gender?

	Response Percent	Response Count
Male	25.0%	31
Female	**70.2%**	**87**
Decline to answer	4.8%	6
answered question		**124**
skipped question		**1**

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

	Response Percent	Response Count
Less than high school graduate or GED	0.0%	0
High school graduate or GED	0.8%	1
Some college or technical school, or Associate Degree	16.4%	20
4 year college degree	35.2%	43
Post graduate work or degree	**47.5%**	**58**
	answered question	**122**
	skipped question	**3**

Dependent variable: Total Food Waste

```
. regress TotalFoodWaste Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education E
> ducationSquared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate
>  VegetarianDummy Dum2ppl Dum3ppl Dum4ppl
```

Source	SS	df	MS		
Model	1770466.28	23	76976.7946	Number of obs	= 1009
Residual	4300017.8	985	4365.50031	F(23, 985)	= 17.63
				Prob > F	= 0.0000
				R-squared	= 0.2917
				Adj R-squared	= 0.2751
Total	6070484.08	1008	6022.30564	Root MSE	= 66.072

TotalFoodW~e	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Q3	11.65505	5.775192	2.02	0.044	.3219511	22.98814
Q4	-5.608751	5.751743	-0.98	0.330	-16.89583	5.678327
Q5	9.88328	5.89421	1.68	0.094	-1.683372	21.44993
Q6	-14.35415	5.680124	-2.53	0.012	-25.50069	-3.207618
Q7	-.0417777	6.922014	-0.01	0.995	-13.62537	13.54181
Q8	35.08399	5.69812	6.16	0.000	23.90214	46.26584
Q9	-42.52783	5.214886	-8.16	0.000	-52.76139	-32.29427
Q10	2.675199	5.249291	0.51	0.610	-7.62588	12.97628
Q11	-4.534928	7.553574	-0.60	0.548	-19.35787	10.28802
Age	-.4101829	1.040472	-0.39	0.693	-2.451978	1.631613
AgeSquared	.0035916	.0097157	0.37	0.712	-.0154743	.0226575
Education	-251.068	33.87996	-7.41	0.000	-317.5532	-184.5828
EducationS~d	7.779371	1.055833	7.37	0.000	5.70743	9.851311
Income	-.0035399	.0004748	-7.46	0.000	-.0044716	-.0026081
IncomeSqua~d	2.41e-08	3.23e-09	7.46	0.000	1.78e-08	3.05e-08
Female	-14.61894	5.538889	-2.64	0.008	-25.48832	-3.749559
SouthDummy	1.786005	4.928363	0.36	0.717	-7.885293	11.4573
WhiteDummy	2.043576	6.896071	0.30	0.767	-11.4891	15.57626
DumImmigrate	6.896593	7.726761	0.89	0.372	-8.266213	22.0594
Vegetarian~y	6.815998	6.690737	1.02	0.309	-6.31374	19.94574
Dum2ppl	34.99297	6.792993	5.15	0.000	21.66257	48.32337
Dum3ppl	73.0444	8.335733	8.76	0.000	56.68657	89.40224
Dum4ppl	82.2036	9.35157	8.79	0.000	63.85231	100.5549
_cons	2191.1	271.4546	8.07	0.000	1658.404	2723.796

Dependent variable: ln(Total Food Waste)

```
. regress LnY1 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSq
> uared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Vegetaria
> nDummy Dum2ppl Dum3ppl Dum4ppl
```

Source	SS	df	MS		
Model	258.864824	23	11.2549924	Number of obs	= 975
Residual	452.092103	951	.475386017	F(23, 951)	= 23.68
				Prob > F	= 0.0000
				R-squared	= 0.3641
				Adj R-squared	= 0.3487
Total	710.956927	974	.729935243	Root MSE	= .68948

LnY1	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Q3	.0911753	.0615161	1.48	0.139	-.0295478	.2118983
Q4	.0327919	.0609938	0.54	0.591	-.086906	.1524899
Q5	.0862732	.0633757	1.36	0.174	-.0380992	.2106457
Q6	-.1871309	.0607118	-3.08	0.002	-.3062755	-.0679862
Q7	-.0199256	.0738583	-0.27	0.787	-.1648696	.1250185
Q8	.3179823	.0606668	5.24	0.000	.1989261	.4370385
Q9	-.3846575	.0556348	-6.91	0.000	-.4938386	-.2754764
Q10	.0745793	.0559936	1.33	0.183	-.035306	.1844646
Q11	.023189	.0809273	0.29	0.775	-.1356278	.1820057
Age	.0236184	.0113082	2.09	0.037	.0014265	.0458104
AgeSquared	-.0001919	.000105	-1.83	0.068	-.0003979	.0000141
Education	-2.634775	.3606095	-7.31	0.000	-3.342457	-1.927092
EducationS~d	.0822536	.0112485	7.31	0.000	.060179	.1043283
Income	-.0000449	5.05e-06	-8.88	0.000	-.0000548	-.000035
IncomeSqua~d	3.13e-10	3.44e-11	9.09	0.000	2.45e-10	3.80e-10
Female	-.173055	.0590418	-2.93	0.003	-.2889222	-.0571878
SouthDummy	.0130922	.0525898	0.25	0.803	-.0901133	.1162977
WhiteDummy	-.0120024	.0733405	-0.16	0.870	-.1559304	.1319256
DumImmigrate	.101307	.0818142	1.24	0.216	-.0592503	.2618642
Vegetarian~y	-.0113021	.0711599	-0.16	0.874	-.1509508	.1283466
Dum2ppl	.6657095	.0722077	9.22	0.000	.5240046	.8074144
Dum3ppl	1.068722	.0888664	12.03	0.000	.8943248	1.243118
Dum4ppl	1.092431	.0992235	11.01	0.000	.8977091	1.287154
_cons	25.30924	2.888176	8.76	0.000	19.64131	30.97717

Dependent variable: Total Food Waste per Meal

```
. regress TotFoodWasteTotMeals Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Educa
> tion EducationSquared Income IncomeSquared Female SouthDummy WhiteDummy DumImm
> igrate VegetarianDummy
```

Source	SS	df	MS		
Model	916.206737	20	45.8103369	Number of obs	= 979
Residual	5150.86044	958	5.37668105	F(20, 958)	= 8.52
				Prob > F	= 0.0000
Total	6067.06718	978	6.20354517	R-squared	= 0.1510
				Adj R-squared	= 0.1333
				Root MSE	= 2.3188

TotFoodWas~s	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Q3	.4466122	.2026077	2.20	0.028	.0490062	.8442183
Q4	-.1765029	.2027349	-0.87	0.384	-.5743586	.2213528
Q5	.2528899	.2119367	1.19	0.233	-.1630239	.6688037
Q6	-1.119258	.2034606	-5.50	0.000	-1.518538	-.719978
Q7	-.3989057	.2435587	-1.64	0.102	-.8768758	.0790645
Q8	.5909773	.1930625	3.06	0.002	.212103	.9698515
Q9	-.764765	.1849691	-4.13	0.000	-1.127756	-.4017736
Q10	.3415428	.1875871	1.82	0.069	-.0265862	.7096719
Q11	-.3879685	.2694346	-1.44	0.150	-.9167187	.1407818
Age	-.1062312	.0368964	-2.88	0.004	-.1786383	-.0338241
AgeSquared	.0009479	.0003403	2.79	0.005	.0002801	.0016157
Education	-4.459035	1.203211	-3.71	0.000	-6.820268	-2.097803
EducationS~d	.1335028	.0375286	3.56	0.000	.0598549	.2071506
Income	-.0000724	.0000168	-4.31	0.000	-.0001054	-.0000395
IncomeSqua~d	5.44e-10	1.15e-10	4.74	0.000	3.18e-10	7.69e-10
Female	-.0778508	.1933228	-0.40	0.687	-.4572357	.3015342
SouthDummy	.3595503	.1746911	2.06	0.040	.016729	.7023717
WhiteDummy	-.3816459	.2441574	-1.56	0.118	-.860791	.0974992
DumImmigrate	-.0974493	.2521239	-0.39	0.699	-.5922283	.3973296
Vegetarian~y	-.3600383	.2263802	-1.59	0.112	-.8042966	.0842201
_cons	45.72518	9.66513	4.73	0.000	26.75791	64.69245

Dependent variable: ln(Total Food Waste per Meal)

```
. regress LnY2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSq
> uared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Vegetaria
> nDummy
```

Source	SS	df	MS		
Model	116.912118	20	5.84560591	Number of obs	= 975
Residual	469.089534	954	.491708107	F(20, 954)	= 11.89
				Prob > F	= 0.0000
Total	586.001652	974	.601644407	R-squared	= 0.1995
				Adj R-squared	= 0.1827
				Root MSE	= .70122

LnY2	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Q3	.16388	.0615318	2.66	0.008	.0431267	.2846333
Q4	-.0213414	.0614383	-0.35	0.728	-.1419111	.0992284
Q5	.0748485	.0645304	1.16	0.246	-.0517893	.2014864
Q6	-.3410923	.0616761	-5.53	0.000	-.4621288	-.2200558
Q7	-.0745154	.0737102	-1.01	0.312	-.2191681	.0701374
Q8	.2299207	.0584805	3.93	0.000	.1151554	.344686
Q9	-.3221975	.0560557	-5.75	0.000	-.4322042	-.2121907
Q10	.0539475	.0567892	0.95	0.342	-.0574988	.1653938
Q11	-.0592939	.0815207	-0.73	0.467	-.2192745	.1006866
Age	-.0105059	.0112019	-0.94	0.349	-.0324891	.0114773
AgeSquared	.0001018	.0001033	0.99	0.324	-.0001008	.0003045
Education	-1.942506	.3646832	-5.33	0.000	-2.658179	-1.226832
EducationS~d	.0585994	.0113749	5.15	0.000	.0362767	.0809221
Income	-.0000262	5.08e-06	-5.17	0.000	-.0000362	-.0000163
IncomeSqua~d	2.03e-10	3.47e-11	5.84	0.000	1.35e-10	2.71e-10
Female	-.0573138	.0585058	-0.98	0.328	-.1721287	.0575012
SouthDummy	.1153304	.0530119	2.18	0.030	.0112971	.2193637
WhiteDummy	-.1169551	.0738851	-1.58	0.114	-.2619512	.0280411
DumImmigrate	.0683129	.076398	0.89	0.371	-.0816146	.2182403
Vegetarian~y	-.0847642	.0685782	-1.24	0.217	-.2193458	.0498174
_cons	18.04374	2.928312	6.16	0.000	12.29706	23.79042

Dependent variable: Total Food Waste per Person

```
. regress TotFWHHS Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education Educati
> onSquared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Veget
> arianDummy
```

Source	SS	df	MS		
Model	279514.992	20	13975.7496	Number of obs	= 1009
Residual	968227.164	988	979.987008	F(20, 988)	= 14.26
				Prob > F	= 0.0000
				R-squared	= 0.2240
				Adj R-squared	= 0.2083
Total	1247742.16	1008	1237.83944	Root MSE	= 31.305

TotFWHHS	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Q3	5.515233	2.679289	2.06	0.040	.257483	10.77298
Q4	.3568521	2.69626	0.13	0.895	-4.934202	5.647906
Q5	1.646943	2.78996	0.59	0.555	-3.827985	7.121871
Q6	-10.97382	2.683989	-4.09	0.000	-16.24079	-5.706845
Q7	-9.26849	3.223173	-2.88	0.004	-15.59354	-2.94344
Q8	20.56639	2.555673	8.05	0.000	15.55122	25.58156
Q9	-15.30215	2.446629	-6.25	0.000	-20.10334	-10.50097
Q10	3.947529	2.479402	1.59	0.112	-.9179707	8.813028
Q11	-2.586539	3.549837	-0.73	0.466	-9.552626	4.379548
Age	-.2027949	.4761597	-0.43	0.670	-1.137195	.7316056
AgeSquared	.0032399	.0044209	0.73	0.464	-.0054355	.0119152
Education	-107.0842	15.9605	-6.71	0.000	-138.4045	-75.7638
EducationS~d	3.357818	.4973555	6.75	0.000	2.381824	4.333813
Income	-.0022123	.0002227	-9.94	0.000	-.0026492	-.0017753
IncomeSqua~d	1.46e-08	1.52e-09	9.57	0.000	1.16e-08	1.75e-08
Female	-3.314372	2.551373	-1.30	0.194	-8.321104	1.692361
SouthDummy	.6544461	2.306072	0.28	0.777	-3.870916	5.179808
WhiteDummy	-.1913429	3.221188	-0.06	0.953	-6.512498	6.129813
DumImmigrate	-6.431275	3.400321	-1.89	0.059	-13.10396	.2414053
Vegetarian~y	-.915008	3.015036	-0.30	0.762	-6.831618	5.001602
_cons	966.9977	128.2111	7.54	0.000	715.4004	1218.595

Dependent variable: ln(Total Food Waste per Person)

```
. regress LnY3 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSq
> uared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Vegetaria
> nDummy
```

Source	SS	df	MS		
Model	142.024126	20	7.10120629	Number of obs	= 975
Residual	455.895439	954	.477877818	F(20, 954)	= 14.86
				Prob > F	= 0.0000
				R-squared	= 0.2375
				Adj R-squared	= 0.2215
Total	597.919564	974	.613880456	Root MSE	= .69129

LnY3	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Q3	.1295788	.060414	2.14	0.032	.0110192	.2481384
Q4	.0180107	.060449	0.30	0.766	-.1006177	.136639
Q5	.0663779	.0635016	1.05	0.296	-.0582411	.1909969
Q6	-.1844415	.060674	-3.04	0.002	-.3035114	-.0653715
Q7	-.0786321	.0726317	-1.08	0.279	-.2211683	.0639042
Q8	.388653	.0575708	6.75	0.000	.275673	.501633
Q9	-.3967646	.0552349	-7.18	0.000	-.5051605	-.2883687
Q10	.0553151	.0560052	0.99	0.324	-.0545926	.1652228
Q11	.0421264	.0803204	0.52	0.600	-.1154986	.1997515
Age	.0156367	.0110001	1.42	0.155	-.0059505	.037224
AgeSquared	-.0001085	.0001015	-1.07	0.285	-.0003077	.0000907
Education	-2.636097	.3589515	-7.34	0.000	-3.340523	-1.931671
EducationS~d	.0824339	.0111951	7.36	0.000	.0604641	.1044038
Income	-.0000469	5.01e-06	-9.37	0.000	-.0000567	-.0000371
IncomeSqua~d	3.24e-10	3.42e-11	9.47	0.000	2.57e-10	3.91e-10
Female	-.1214979	.057523	-2.11	0.035	-.2343842	-.0086117
SouthDummy	-.0078245	.0521283	-0.15	0.881	-.1101239	.0944749
WhiteDummy	-.022486	.0724782	-0.31	0.756	-.1647211	.119749
DumImmigrate	-.0214667	.0760809	-0.28	0.778	-.1707719	.1278385
Vegetarian~y	-.0199865	.0677	-0.30	0.768	-.1528447	.1128716
_cons	25.44843	2.883361	8.83	0.000	19.78997	31.10689

Dependent variable: Total Edible Food Waste

```
. regress TotEd Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationS
> quared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Vegetari
> anDummy Dum2ppl Dum3ppl Dum4ppl
```

Source	SS	df	MS		
Model	551947.542	23	23997.7192	Number of obs	= 1010
Residual	1535268.68	986	1557.06762	F(23, 986)	= 15.41
				Prob > F	= 0.0000
Total	2087216.22	1009	2068.59883	R-squared	= 0.2644
				Adj R-squared	= 0.2473
				Root MSE	= 39.46

TotEd	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Q3	-3.476907	3.447766	-1.01	0.313	-10.24271	3.288895
Q4	-1.689427	3.434532	-0.49	0.623	-8.42926	5.050406
Q5	-1.89723	3.51984	-0.54	0.590	-8.804469	5.010008
Q6	-20.89843	3.390808	-6.16	0.000	-27.55246	-14.2444
Q7	-7.512699	4.133667	-1.82	0.069	-15.62449	.5990968
Q8	.7410681	3.402096	0.22	0.828	-5.935112	7.417249
Q9	-23.24284	3.112308	-7.47	0.000	-29.35035	-17.13533
Q10	.0454925	3.134516	0.01	0.988	-6.105597	6.196582
Q11	2.178916	4.51117	0.48	0.629	-6.673681	11.03151
Age	-.9060732	.6202277	-1.46	0.144	-2.123191	.3110448
AgeSquared	.0075759	.0057941	1.31	0.191	-.0037943	.0189461
Education	-214.2747	20.22972	-10.59	0.000	-253.9729	-174.5764
EducationS~d	6.585807	.6304422	10.45	0.000	5.348644	7.822969
Income	-.0012017	.0002835	-4.24	0.000	-.0017582	-.0006453
IncomeSqua~d	8.41e-09	1.93e-09	4.36	0.000	4.62e-09	1.22e-08
Female	-2.873395	3.307364	-0.87	0.385	-9.363677	3.616887
SouthDummy	4.016649	2.943296	1.36	0.173	-1.759195	9.792493
WhiteDummy	1.275287	4.11849	0.31	0.757	-6.806727	9.357301
DumImmigrate	-12.34871	4.614568	-2.68	0.008	-21.40421	-3.293208
Vegetarian~y	7.186175	3.995646	1.80	0.072	-.6547725	15.02712
Dum2ppl	9.526698	4.056348	2.35	0.019	1.566631	17.48677
Dum3ppl	24.98666	4.978017	5.02	0.000	15.21793	34.75538
Dum4ppl	27.39458	5.58475	4.91	0.000	16.43522	38.35394
_cons	1833.941	162.0593	11.32	0.000	1515.92	2151.962

Dependent variable: ln(Total Edible Food Waste)

```
. regress LnY4 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSq
> uared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Vegetaria
> nDummy Dum2ppl Dum3ppl Dum4ppl
```

Source	SS	df	MS		
Model	347.225632	23	15.0967666	Number of obs	= 728
Residual	882.398091	704	1.25340638	F(23, 704)	= 12.04
				Prob > F	= 0.0000
Total	1229.62372	727	1.69136688	R-squared	= 0.2824
				Adj R-squared	= 0.2589
				Root MSE	= 1.1196

LnY4	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Q3	-.0163063	.1229261	-0.13	0.895	-.257652	.2250393
Q4	.0349265	.1142953	0.31	0.760	-.189474	.2593271
Q5	.0214427	.1213015	0.18	0.860	-.2167132	.2595986
Q6	-.6515152	.1147298	-5.68	0.000	-.8767687	-.4262617
Q7	-.4149659	.1555893	-2.67	0.008	-.7204405	-.1094914
Q8	.1578062	.1205477	1.31	0.191	-.0788698	.3944822
Q9	-.7528525	.1095066	-6.87	0.000	-.9678512	-.5378538
Q10	-.0221023	.1061714	-0.21	0.835	-.2305528	.1863482
Q11	.2056557	.1667585	1.23	0.218	-.1217478	.5330592
Age	.0075257	.0224632	0.34	0.738	-.0365772	.0516285
AgeSquared	-.0001262	.0002095	-0.60	0.547	-.0005375	.000285
Education	-5.935945	.6528908	-9.09	0.000	-7.217791	-4.654098
EducationS~d	.1830885	.0204254	8.96	0.000	.1429866	.2231904
Income	-.0000433	9.50e-06	-4.55	0.000	-.000062	-.0000246
IncomeSqua~d	3.05e-10	6.59e-11	4.63	0.000	1.76e-10	4.34e-10
Female	.1275699	.1175552	1.09	0.278	-.103231	.3583707
SouthDummy	.1126731	.1051292	1.07	0.284	-.0937313	.3190774
WhiteDummy	-.130293	.153469	-0.85	0.396	-.4316046	.1710187
DumImmigrate	-.3524542	.176926	-1.99	0.047	-.6998199	-.0050884
Vegetarian~y	.0386955	.1335392	0.29	0.772	-.2234873	.3008784
Dum2ppl	.2581085	.1504948	1.72	0.087	-.0373637	.5535808
Dum3ppl	.5032851	.1709266	2.94	0.003	.1676981	.8388721
Dum4ppl	.5058273	.2019514	2.50	0.012	.1093282	.9023264
_cons	52.33887	5.194126	10.08	0.000	42.14103	62.5367

Dependent variable: Edible Food Waste per Meal

```
. regress TotEdTotMeals Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education Ed
> ucationSquared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate
> VegetarianDummy
```

Source	SS	df	MS		
Model	506.438281	20	25.321914	Number of obs	= 980
Residual	2297.80366	959	2.39604136	F(20, 959)	= 10.57
				Prob > F	= 0.0000
Total	2804.24195	979	2.86439422	R-squared	= 0.1806
				Adj R-squared	= 0.1635
				Root MSE	= 1.5479

TotEdTotMe~s	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Q3	.0577181	.1352006	0.43	0.670	-.207605	.3230413
Q4	-.0016577	.1353203	-0.01	0.990	-.2672159	.2639004
Q5	-.3137692	.1414667	-2.22	0.027	-.5913892	-.0361492
Q6	-.9272475	.1357673	-6.83	0.000	-1.193683	-.6608121
Q7	-.3583919	.162581	-2.20	0.028	-.6774475	-.0393363
Q8	-.0429497	.1288682	-0.33	0.739	-.2958458	.2099465
Q9	-.7390395	.123385	-5.99	0.000	-.9811753	-.4969038
Q10	.1432834	.1252157	1.14	0.253	-.102445	.3890117
Q11	.268912	.1798613	1.50	0.135	-.0840552	.6218792
Age	-.0332484	.0245609	-1.35	0.176	-.0814476	.0149508
AgeSquared	.0002984	.0002266	1.32	0.188	-.0001464	.0007431
Education	-5.860365	.8031103	-7.30	0.000	-7.436421	-4.284308
EducationS~d	.1802573	.0250495	7.20	0.000	.1310992	.2294154
Income	-.0000326	.0000112	-2.91	0.004	-.0000546	-.0000106
IncomeSqua~d	2.45e-10	7.66e-11	3.20	0.001	9.50e-11	3.95e-10
Female	.0585453	.1290404	0.45	0.650	-.1946888	.3117794
SouthDummy	.2164423	.1166167	1.86	0.064	-.0124111	.4452956
WhiteDummy	-.2055622	.1629881	-1.26	0.208	-.5254166	.1142922
DumImmigrate	-.4395937	.1683053	-2.61	0.009	-.7698828	-.1093045
Vegetarian~y	.2921314	.151099	1.93	0.053	-.0043914	.5886542
_cons	51.13275	6.450101	7.93	0.000	38.4748	63.79069

Dependent variable: ln(Edible Food Waste per Meal)

```
. regress LnY5 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSq
> uared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Vegetaria
> nDummy
```

Source	SS	df	MS		
Model	431.430779	20	21.5715389	Number of obs	= 729
Residual	970.493849	708	1.37075402	F(20, 708)	= 15.74
				Prob > F	= 0.0000
Total	1401.92463	728	1.92572064	R-squared	= 0.3077
				Adj R-squared	= 0.2882
				Root MSE	= 1.1708

LnY5	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Q3	.197177	.1212266	1.63	0.104	-.0408296	.4351837
Q4	-.0850512	.1174525	-0.72	0.469	-.315648	.1455457
Q5	-.0918075	.1265496	-0.73	0.468	-.3402648	.1566498
Q6	-.775828	.1187909	-6.53	0.000	-1.009053	-.5426034
Q7	-.4785464	.1562749	-3.06	0.002	-.785364	-.1717287
Q8	.2009573	.1197107	1.68	0.094	-.0340731	.4359877
Q9	-.8390194	.1121292	-7.48	0.000	-1.059165	-.6188739
Q10	.0013913	.1100912	0.01	0.990	-.214753	.2175356
Q11	.3374022	.1721093	1.96	0.050	-.0005036	.6753079
Age	-.0300042	.0226472	-1.32	0.186	-.074468	.0144596
AgeSquared	.0002419	.0002083	1.16	0.246	-.0001671	.0006508
Education	-5.706912	.6826883	-8.36	0.000	-7.047247	-4.366576
EducationS~d	.1741307	.0213651	8.15	0.000	.1321842	.2160773
Income	-.0000342	9.82e-06	-3.48	0.001	-.0000535	-.0000149
IncomeSqua~d	2.46e-10	6.84e-11	3.60	0.000	1.12e-10	3.81e-10
Female	.3982649	.1157832	3.44	0.001	.1709453	.6255845
SouthDummy	.2211305	.1091866	2.03	0.043	.0067623	.4354988
WhiteDummy	-.2673937	.1566439	-1.71	0.088	-.574936	.0401485
DumImmigrate	-.6247654	.1598161	-3.91	0.000	-.9385357	-.3109951
Vegetarian~y	-.0803725	.1314991	-0.61	0.541	-.3385473	.1778023
_cons	48.49138	5.43622	8.92	0.000	37.81834	59.16442

Dependent variable: Edible Food Waste per Person

```
. regress TotEdFWHHS Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education Educa
> tionSquared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Veg
> etarianDummy
```

Source	SS	df	MS		
Model	80668.153	20	4033.40765	Number of obs	= 1010
Residual	396326.864	989	400.734949	F(20, 989)	= 10.07
				Prob > F	= 0.0000
Total	476995.017	1009	472.740354	R-squared	= 0.1691
				Adj R-squared	= 0.1523
				Root MSE	= 20.018

TotEdFWHHS	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Q3	.2001902	1.712729	0.12	0.907	-3.16081	3.56119
Q4	1.071519	1.723974	0.62	0.534	-2.311547	4.454586
Q5	-2.702442	1.783892	-1.51	0.130	-6.203091	.7982058
Q6	-11.20748	1.715558	-6.53	0.000	-14.57403	-7.840932
Q7	-6.655316	2.061007	-3.23	0.001	-10.69977	-2.610867
Q8	1.073641	1.634106	0.66	0.511	-2.133073	4.280355
Q9	-8.671065	1.563308	-5.55	0.000	-11.73885	-5.603284
Q10	1.581723	1.585305	1.00	0.319	-1.529225	4.692671
Q11	2.25218	2.269997	0.99	0.321	-2.202384	6.706745
Age	-.2906561	.303684	-0.96	0.339	-.886595	.3052829
AgeSquared	.0027244	.0028209	0.97	0.334	-.0028112	.0082599
Education	-78.20826	10.20479	-7.66	0.000	-98.23378	-58.18274
EducationS~d	2.426257	.3179995	7.63	0.000	1.802226	3.050289
Income	-.0007655	.0001424	-5.38	0.000	-.0010448	-.0004861
IncomeSqua~d	5.06e-09	9.72e-10	5.21	0.000	3.15e-09	6.97e-09
Female	-.8431733	1.631282	-0.52	0.605	-4.044346	2.357999
SouthDummy	1.547363	1.474658	1.05	0.294	-1.346455	4.441182
WhiteDummy	-.8213133	2.059824	-0.40	0.690	-4.86344	3.220814
DumImmigrate	-7.822484	2.174381	-3.60	0.000	-12.08941	-3.555552
Vegetarian~y	1.742589	1.927733	0.90	0.366	-2.040329	5.525506
_cons	683.3264	81.96203	8.34	0.000	522.4869	844.1658

Dependent variable: ln(Edible Food Waste per Person)

```
. regress LnY6 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSq
> uared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Vegetaria
> nDummy
```

Source	SS	df	MS		
Model	364.219158	20	18.2109579	Number of obs	= 728
Residual	908.319186	707	1.28475132	F(20, 707)	= 14.17
				Prob > F	= 0.0000
Total	1272.53834	727	1.75039662	R-squared	= 0.2862
				Adj R-squared	= 0.2660
				Root MSE	= 1.1335

LnY6	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Q3	.1364746	.1168189	1.17	0.243	-.0928788	.365828
Q4	-.0095122	.1133778	-0.08	0.933	-.2321097	.2130852
Q5	-.033353	.1223056	-0.27	0.785	-.2734787	.2067727
Q6	-.605547	.114871	-5.27	0.000	-.8310761	-.3800179
Q7	-.6019198	.1512425	-3.98	0.000	-.8988579	-.3049816
Q8	.3110131	.1157662	2.69	0.007	.0837263	.5382998
Q9	-.7854185	.1086826	-7.23	0.000	-.9987979	-.5720392
Q10	.0047824	.1066818	0.04	0.964	-.2046686	.2142335
Q11	.3001704	.1666416	1.80	0.072	-.0270012	.627342
Age	-.0199489	.0217891	-0.92	0.360	-.0627281	.0228302
AgeSquared	.0001657	.0002006	0.83	0.409	-.0002281	.0005595
Education	-5.932567	.6586579	-9.01	0.000	-7.225726	-4.639407
EducationS~d	.1832552	.0206096	8.89	0.000	.142792	.2237185
Income	-.0000485	9.51e-06	-5.10	0.000	-.0000672	-.0000298
IncomeSqua~d	3.19e-10	6.62e-11	4.81	0.000	1.88e-10	4.49e-10
Female	.2564523	.1116356	2.30	0.022	.0372754	.4756292
SouthDummy	.1461481	.1054885	1.39	0.166	-.0609601	.3532563
WhiteDummy	-.2473253	.1510142	-1.64	0.102	-.5438153	.0491647
DumImmigrate	-.7787965	.1564877	-4.98	0.000	-1.086033	-.4715602
Vegetarian~y	-.0818029	.1275392	-0.64	0.521	-.3322039	.168598
_cons	52.58487	5.250069	10.02	0.000	42.27728	62.89246

Dependent variable: Total Food Waste

```
. regress  TotalFoodWaste Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education Educa
> tionSquared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Vegetari
> anDummy Dum2ppl Dum3ppl Dum4ppl, vce(cluster HouseholdNo)

Linear regression                               Number of obs =    1009
                                                F( 23,    89) =    6.25
                                                Prob > F      =  0.0000
                                                R-squared     =  0.2917
                                                Root MSE      =  66.072

                                  (Std. Err. adjusted for 90 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
TotalFoodW~e |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |    11.65505   12.49991     0.93   0.354    -13.18201    36.4921
          Q4 |   -5.608751   13.47571    -0.42   0.678     -32.3847    21.1672
          Q5 |     9.88328   12.61194     0.78   0.435    -15.17638   34.94294
          Q6 |   -14.35415   12.73354    -1.13   0.263    -39.65543   10.94712
          Q7 |   -.0417777   14.99277    -0.00   0.998    -29.83209   29.74853
          Q8 |    35.08399   13.91051     2.52   0.013     7.444107   62.72388
          Q9 |   -42.52783   11.65735    -3.65   0.000    -65.69073  -19.36493
         Q10 |    2.675199   11.69163     0.23   0.820    -20.55582   25.90622
         Q11 |   -4.534928   15.90921    -0.29   0.776    -36.14619   27.07633
         Age |   -.4101829   1.829439    -0.22   0.823    -4.045239   3.224874
   AgeSquared |    .0035916   .0178077     0.20   0.841    -.0317918   .0389751
   Education |    -251.068   65.53981    -3.83   0.000    -381.2942  -120.8418
EducationS~d |    7.779371   2.055956     3.78   0.000     3.694229   11.86451
      Income |   -.0035399   .0010523    -3.36   0.001    -.0056308  -.0014489
IncomeSqua~d |    2.41e-08   7.06e-09     3.42   0.001     1.01e-08   3.82e-08
      Female |   -14.61894   13.54163    -1.08   0.283    -41.52588     12.288
  SouthDummy |    1.786005   10.71277     0.17   0.868    -19.50004   23.07205
  WhiteDummy |    2.043576    15.4996     0.13   0.895    -28.75381   32.84096
DumImmigrate |    6.896593   17.94977     0.38   0.702    -28.76923   42.56241
Vegetarian~y |    6.815998   14.61662     0.47   0.642    -22.22692   35.85892
     Dum2ppl |    34.99297   13.41254     2.61   0.011     8.342528   61.64341
     Dum3ppl |     73.0444   18.32753     3.99   0.000     36.62798   109.4608
     Dum4ppl |     82.2036   22.67774     3.62   0.000     37.14341   127.2638
       _cons |     2191.1   532.2815     4.12   0.000     1133.468   3248.732
------------------------------------------------------------------------------
```

Dependent variable: ln(Total Food Waste)

```
. regress LnY1 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSquared
>  Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate VegetarianDummy Dum
> 2ppl Dum3ppl Dum4ppl, vce(cluster HouseholdNo)

Linear regression                               Number of obs =     975
                                                F( 22,    89) =       .
                                                Prob > F      =       .
                                                R-squared     =  0.3641
                                                Root MSE      =  .68948

                                  (Std. Err. adjusted for 90 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
        LnY1 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |    .0911753   .1516956     0.60   0.549    -.2102406    .3925911
          Q4 |    .0327919   .1571128     0.21   0.835    -.2793879    .3449717
          Q5 |    .0862732   .1412781     0.61   0.543    -.1944433    .3669898
          Q6 |   -.1871309   .1426979    -1.31   0.193    -.4706685    .0964068
          Q7 |   -.0199256   .1636076    -0.12   0.903    -.3450103    .3051591
          Q8 |    .3179823   .1486063     2.14   0.035     .0227048    .6132598
          Q9 |   -.3846575   .1195504    -3.22   0.002    -.6222015   -.1471134
         Q10 |    .0745793   .1366895     0.55   0.587    -.1970199    .3461784
         Q11 |     .023189   .1911662     0.12   0.904    -.3566542    .4030322
         Age |    .0236184   .0277485     0.85   0.397    -.0315173    .0787542
   AgeSquared |   -.0001919    .000261    -0.74   0.464    -.0007106    .0003268
   Education |   -2.634775   .8137265    -3.24   0.002    -4.251632   -1.017917
EducationS~d |    .0822536   .0255935     3.21   0.002     .0313999    .1331074
      Income |   -.0000449   .0000126    -3.57   0.001    -.0000699   -.0000199
IncomeSqua~d |    3.13e-10   8.13e-11     3.85   0.000     1.51e-10    4.74e-10
      Female |   -.173055   .1381672    -1.25   0.214    -.4475903    .1014803
  SouthDummy |    .0130922   .1263747     0.10   0.918    -.2380117     .264196
  WhiteDummy |   -.0120024   .1431257    -0.08   0.933    -.2963901    .2723853
DumImmigrate |     .101307   .1704774     0.59   0.554     -.237428    .4400419
Vegetarian~y |   -.0113021   .1620827    -0.07   0.945     -.333357    .3107528
     Dum2ppl |    .6657095   .1907402     3.49   0.001     .2867128    1.044706
     Dum3ppl |    1.068722   .2002593     5.34   0.000     .6708106    1.466633
     Dum4ppl |    1.092431   .2595191     4.21   0.000     .5767725     1.60809
       _cons |    25.30924   6.442239     3.93   0.000     12.50865    38.10983
------------------------------------------------------------------------------
```

Dependent variable: Total Food Waste per Meal

```
. regress TotFoodWasteTotMeals Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education
> EducationSquared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Veg
> etarianDummy, vce(cluster HouseholdNo)

Linear regression                                       Number of obs =     979
                                                        F( 19,    88) =       .
                                                        Prob > F      =       .
                                                        R-squared     =  0.1510
                                                        Root MSE      =  2.3188

                                    (Std. Err. adjusted for 89 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
TotFoodWas~s |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |   .4466122   .4413456     1.01   0.314    -.4304695    1.323694
          Q4 |  -.1765029   .4884502    -0.36   0.719    -1.147195    .7941892
          Q5 |   .2528899   .5274637     0.48   0.633    -.7953334    1.301113
          Q6 |  -1.119258   .5257015    -2.13   0.036    -2.163979   -.0745365
          Q7 |  -.3989057   .5381607    -0.74   0.461    -1.468387    .6705757
          Q8 |   .5909773   .4628865     1.28   0.205    -.3289123    1.510867
          Q9 |   -.764765   .5007496    -1.53   0.130      -1.7599    .2303695
         Q10 |   .3415428   .4125924     0.83   0.410    -.4783979    1.161484
         Q11 |  -.3879685   .6727212    -0.58   0.566    -1.724861    .9489236
         Age |  -.1062312   .0980113    -1.08   0.281    -.3010081    .0885457
  AgeSquared |   .0009479   .0008863     1.07   0.288    -.0008134    .0027091
   Education |  -4.459035   3.338473    -1.34   0.185    -11.09355    2.175478
EducationS~d |   .1335028   .1044026     1.28   0.204    -.0739755    .3409811
      Income |  -.0000724    .000042    -1.72   0.088     -.000156    .0000111
IncomeSqua~d |   5.44e-10   2.83e-10     1.92   0.058    -1.87e-11    1.11e-09
      Female |  -.0778508   .4094424    -0.19   0.850    -.8915316      .73583
  SouthDummy |   .3595503   .4568505     0.79   0.433    -.5483441    1.267445
  WhiteDummy |  -.3816459   .5469429    -0.70   0.487     -1.46858    .7052881
DumImmigrate |  -.0974493   .5021239    -0.19   0.847    -1.095315    .9004163
Vegetarian~y |  -.3600383    .604789    -0.60   0.553    -1.561929    .8418528
       _cons |   45.72518   26.35575     1.73   0.086    -6.651329     98.1017
------------------------------------------------------------------------------
```

Dependent variable: ln(Total Food Waste per Meal)

```
. regress LnY2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSquared
>  Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate VegetarianDummy, vc
> e(cluster HouseholdNo)

Linear regression                                       Number of obs =     975
                                                        F( 19,    88) =       .
                                                        Prob > F      =       .
                                                        R-squared     =  0.1995
                                                        Root MSE      =  .70122

                                    (Std. Err. adjusted for 89 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
       LnY2  |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |     .16388   .1787469     0.92   0.362    -.1913418    .5191018
          Q4 |  -.0213414   .1800066    -0.12   0.906    -.3790666    .3363839
          Q5 |   .0748485   .1664566     0.45   0.654    -.2559489    .4056459
          Q6 |  -.3410923   .1500408    -2.27   0.025    -.6392668   -.0429178
          Q7 |  -.0745154   .1713673    -0.43   0.665    -.4150718    .2660411
          Q8 |   .2299207   .1483838     1.55   0.125     -.064961    .5248023
          Q9 |  -.3221975   .1518786    -2.12   0.037    -.6240242   -.0203707
         Q10 |   .0539475   .1476368     0.37   0.716    -.2394495    .3473445
         Q11 |  -.0592939   .2305328    -0.26   0.798    -.5174294    .3988416
         Age |  -.0105059   .0309529    -0.34   0.735    -.0720184    .0510065
  AgeSquared |   .0001018   .0002835     0.36   0.720    -.0004616    .0006652
   Education |  -1.942506   1.074699    -1.81   0.074    -4.078245    .1932336
EducationS~d |   .0585994   .0336014     1.74   0.085    -.0081763    .1253751
      Income |  -.0000262   .0000127    -2.06   0.042    -.0000515   -9.64e-07
IncomeSqua~d |   2.03e-10   8.60e-11     2.36   0.021     3.18e-11    3.73e-10
      Female |  -.0573138   .1524243    -0.38   0.708    -.3602251    .2455976
  SouthDummy |   .1153304   .1524945     0.76   0.451    -.1877204    .4183812
  WhiteDummy |  -.1169551   .1461375    -0.80   0.426    -.4073727    .1734625
DumImmigrate |   .0683129   .1557343     0.44   0.662    -.2411763     .377802
Vegetarian~y |  -.0847642   .2066104    -0.41   0.683    -.4953589    .3258305
       _cons |   18.04374   8.497353     2.12   0.037     1.157036    34.93044
------------------------------------------------------------------------------
```

Dependent variable: Total Food Waste per Person

```
. regress TotFWHHS Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSqu
> ared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate VegetarianDummy
> , vce(cluster HouseholdNo)

Linear regression                                       Number of obs =    1009
                                                        F( 19,    89) =       .
                                                        Prob > F      =       .
                                                        R-squared     =  0.2240
                                                        Root MSE      =  31.305

                                    (Std. Err. adjusted for 90 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
    TotFWHHS |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |   5.515233   5.577173     0.99   0.325    -5.566491    16.59696
          Q4 |    .3568521  6.132142     0.06   0.954    -11.82758    12.54129
          Q5 |   1.646943    6.15916     0.27   0.790    -10.59118    13.88506
          Q6 |  -10.97382   7.130275    -1.54   0.127    -25.14152    3.193885
          Q7 |   -9.26849   7.431386    -1.25   0.216     -24.0345    5.497514
          Q8 |   20.56639   6.514882     3.16   0.002     7.621462    33.51132
          Q9 |  -15.30215   5.444972    -2.81   0.006     -26.1212   -4.483111
         Q10 |   3.947529   5.455183     0.72   0.471    -6.891803    14.78686
         Q11 |  -2.586539   7.716975    -0.34   0.738       -17.92    12.74693
         Age |  -.2027949   .9608697    -0.21   0.833    -2.112023    1.706433
  AgeSquared |   .0032399   .0096081     0.34   0.737    -.0158512    .0223309
   Education |  -107.0842   30.91354    -3.46   0.001    -168.5087   -45.65962
EducationS~d |   3.357818   .9638931     3.48   0.001     1.442583    5.273054
      Income |  -.0022123   .0006668    -3.32   0.001    -.0035372   -.0008874
IncomeSqua~d |   1.46e-08   4.17e-09     3.49   0.001     6.27e-09    2.28e-08
      Female |  -3.314372   5.893197    -0.56   0.575    -15.02403    8.395285
  SouthDummy |   .6544461   5.111592     0.13   0.898    -9.502178    10.81107
  WhiteDummy |  -.1913429   6.650146    -0.03   0.977    -13.40504    13.02236
DumImmigrate |  -6.431275   7.809877    -0.82   0.412    -21.94934    9.086784
Vegetarian~y |   -.915008   6.740147    -0.14   0.892    -14.30754    12.47752
       _cons |   966.9977   258.6539     3.74   0.000      453.058    1480.937
------------------------------------------------------------------------------
```

Dependent variable: ln(Total Food Waste per Person)

```
. regress LnY3 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSquared
>  Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate VegetarianDummy, vc
> e(cluster HouseholdNo)

Linear regression                                       Number of obs =     975
                                                        F( 19,    89) =       .
                                                        Prob > F      =       .
                                                        R-squared     =  0.2375
                                                        Root MSE      =  .69129

                                    (Std. Err. adjusted for 90 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
        LnY3 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |   .1295788   .1591922     0.81   0.418    -.1867326    .4458902
          Q4 |   .0180107   .1588026     0.11   0.910    -.2975267     .333548
          Q5 |   .0663779   .1491561     0.45   0.657    -.2299921    .3627479
          Q6 |  -.1844415   .1412692    -1.31   0.195    -.4651402    .0962573
          Q7 |  -.0786321   .1679563    -0.47   0.641    -.4123576    .2550935
          Q8 |    .388653   .1368957     2.84   0.006     .1166441     .660662
          Q9 |  -.3967646   .1192503    -3.33   0.001    -.6337125   -.1598167
         Q10 |   .0553151   .1349223     0.41   0.683    -.2127726    .3234028
         Q11 |   .0421264   .1911642     0.22   0.826    -.3377127    .4219656
         Age |   .0156367   .0266632     0.59   0.559    -.0373424    .0686159
  AgeSquared |  -.0001085   .0002508    -0.43   0.666    -.0006068    .0003898
   Education |  -2.636097   .8161929    -3.23   0.002    -4.257855   -1.014339
EducationS~d |   .0824339   .0254985     3.23   0.002      .031769    .1330989
      Income |  -.0000469   .0000121    -3.87   0.000     -.000071   -.0000228
IncomeSqua~d |   3.24e-10   7.91e-11     4.10   0.000     1.67e-10    4.81e-10
      Female |  -.1214979   .1464613    -0.83   0.409    -.4125135    .1695176
  SouthDummy |  -.0078245   .1264968    -0.06   0.951    -.2591709    .2435219
  WhiteDummy |   -.022486   .1411012    -0.16   0.874    -.3028511    .2578791
DumImmigrate |  -.0214667   .1476558    -0.15   0.885    -.3148556    .2719221
Vegetarian~y |  -.0199865   .1769947    -0.11   0.910    -.3716713    .3316982
       _cons |   25.44843   6.578254     3.87   0.000     12.37758    38.51928
------------------------------------------------------------------------------
```

Dependent variable: Total Edible Food Waste

```
. regress TotEd Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSquare
> d Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate VegetarianDummy Du
> m2ppl Dum3ppl Dum4ppl, vce(cluster HouseholdNo)

Linear regression                               Number of obs =    1010
                                                F( 22,    89) =       .
                                                Prob > F      =       .
                                                R-squared     =  0.2644
                                                Root MSE      =   39.46

                                  (Std. Err. adjusted for 90 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
       TotEd |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |  -3.476907   6.834318    -0.51   0.612    -17.05655    10.10274
          Q4 |  -1.689427   5.957985    -0.28   0.777    -13.52782    10.14896
          Q5 |   -1.89723   8.668311    -0.22   0.827    -19.12098    15.32652
          Q6 |  -20.89843   8.939212    -2.34   0.022    -38.66045   -3.136407
          Q7 |  -7.512699    7.63098    -0.98   0.328    -22.67529    7.649896
          Q8 |   .7410681   9.092962     0.08   0.935    -17.32645    18.80859
          Q9 |  -23.24284   8.509642    -2.73   0.008    -40.15131   -6.334359
         Q10 |   .0454925   6.690503     0.01   0.995     -13.2484    13.33938
         Q11 |   2.178916   7.478213     0.29   0.771    -12.68013    17.03797
         Age |  -.9060732   1.194991    -0.76   0.450    -3.280495    1.468349
  AgeSquared |   .0075759   .0117401     0.65   0.520    -.0157515    .0309033
   Education |  -214.2747   45.19799    -4.74   0.000    -304.0821   -124.4672
EducationS~d |   6.585807   1.417082     4.65   0.000     3.770095    9.401518
      Income |  -.0012017   .0005578    -2.15   0.034    -.0023101   -.0000934
IncomeSqua~d |   8.41e-09   3.89e-09     2.16   0.033     6.80e-10    1.61e-08
      Female |  -2.873395   5.648269    -0.51   0.612    -14.09639    8.349596
  SouthDummy |   4.016649   5.444841     0.74   0.463    -6.802134    14.83543
  WhiteDummy |   1.275287   8.366002     0.15   0.879    -15.34778    17.89836
DumImmigrate |  -12.34871   7.411502    -1.67   0.099    -27.07521    2.377786
Vegetarian~y |   7.186175   6.645965     1.08   0.282    -6.019215    20.39157
     Dum2ppl |   9.526698   8.873005     1.07   0.286    -8.103773    27.15717
     Dum3ppl |   24.98666   9.881299     2.53   0.013     5.352727    44.62059
     Dum4ppl |   27.39458   13.18578     2.08   0.041     1.194726    53.59444
       _cons |   1833.941   368.2061     4.98   0.000     1102.323    2565.559
------------------------------------------------------------------------------
```

Dependent variable: ln(Total Edible Food Waste)

```
. regress LnY4 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSquared
>  Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate VegetarianDummy Dum
> 2ppl Dum3ppl Dum4ppl, vce(cluster HouseholdNo)

Linear regression                               Number of obs =     728
                                                F( 22,    86) =       .
                                                Prob > F      =       .
                                                R-squared     =  0.2824
                                                Root MSE      =  1.1196

                                  (Std. Err. adjusted for 87 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
        LnY4 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |  -.0163063   .3018612    -0.05   0.957    -.6163864    .5837738
          Q4 |   .0349265   .2349001     0.15   0.882    -.4320394    .5018925
          Q5 |   .0214427   .2877321     0.07   0.941    -.5505497    .5934351
          Q6 |  -.6515152   .2209578    -2.95   0.004    -1.090765   -.2122657
          Q7 |  -.4149659   .3015858    -1.38   0.172    -1.014499    .1845668
          Q8 |   .1578062     .27338     0.58   0.565    -.3856553    .7012677
          Q9 |  -.7528525   .2413434    -3.12   0.002    -1.232627   -.2730777
         Q10 |  -.0221023   .2104795    -0.11   0.917    -.4405216     .396317
         Q11 |   .2056557   .3058893     0.67   0.503    -.4024322    .8137435
         Age |   .0075257   .0378563     0.20   0.843    -.0677302    .0827815
  AgeSquared |  -.0001262   .0003715    -0.34   0.735    -.0008648    .0006124
   Education |  -5.935945   1.011519    -5.87   0.000    -7.946779   -3.925111
EducationS~d |   .1830885   .0320584     5.71   0.000     .1193586    .2468184
      Income |  -.0000433   .0000185    -2.34   0.022    -.0000801   -6.49e-06
IncomeSqua~d |   3.05e-10   1.33e-10     2.30   0.024     4.13e-11    5.68e-10
      Female |   .1275699   .2057347     0.62   0.537    -.2814172    .5365569
  SouthDummy |   .1126731   .1997335     0.56   0.574    -.2843839      .50973
  WhiteDummy |   -.130293   .2685726    -0.49   0.629    -.6641977    .4036118
DumImmigrate |  -.3524542   .3490116    -1.01   0.315    -1.046266    .3413579
Vegetarian~y |   .0386955   .1908843     0.20   0.840      -.34077     .418161
     Dum2ppl |   .2581085   .2990022     0.86   0.390    -.3362881    .8525052
     Dum3ppl |   .5032851   .2975214     1.69   0.094    -.0881678    1.094738
     Dum4ppl |   .5058273   .4501169     1.12   0.264    -.3889754     1.40063
       _cons |   52.33887   8.237014     6.35   0.000     35.96422    68.71351
------------------------------------------------------------------------------
```

Dependent variable: Edible Food Waste per Meal

```
. regress TotEdTotMeals Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education Educati
> onSquared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Vegetarian
> Dummy, vce(cluster HouseholdNo)

Linear regression                               Number of obs =     980
                                                F( 19,    88) =       .
                                                Prob > F      =       .
                                                R-squared     =  0.1806
                                                Root MSE      =  1.5479

                                  (Std. Err. adjusted for 89 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
TotEdTotMe~s |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |   .0577181   .2594578     0.22   0.824    -.4578998    .573336
          Q4 |  -.0016577   .2542349    -0.01   0.995    -.5068961   .5035807
          Q5 |  -.3137692   .3480481    -0.90   0.370    -1.005442   .3779033
          Q6 |  -.9272475   .3830439    -2.42   0.018    -1.688467  -.1660282
          Q7 |  -.3583919    .305203    -1.17   0.243    -.9649188    .248135
          Q8 |  -.0429497   .3545439    -0.12   0.904    -.7475312   .6616319
          Q9 |  -.7390395    .332094    -2.23   0.029    -1.399007  -.0790725
         Q10 |   .1432834   .2744583     0.52   0.603    -.4021449   .6887116
         Q11 |    .268912   .3460711     0.78   0.439    -.4188315   .9566555
         Age |  -.0332484   .0557537    -0.60   0.552    -.1440471   .0775504
  AgeSquared |   .0002984   .0005215     0.57   0.569    -.0007379   .0013347
   Education |  -5.860365   1.608822    -3.64   0.000    -9.057561  -2.663168
EducationS~d |   .1802573   .0504921     3.57   0.001     .0799148   .2805998
      Income |  -.0000326   .0000234    -1.39   0.167     -.000079   .0000139
IncomeSqua~d |   2.45e-10   1.59e-10     1.55   0.125    -6.98e-11   5.60e-10
      Female |   .0585453   .2269289     0.26   0.797    -.3924281   .5095188
  SouthDummy |   .2164423   .2520112     0.86   0.393     -.284377   .7172615
  WhiteDummy |  -.2055622   .3737463    -0.55   0.584    -.9483044     .53718
DumImmigrate |  -.4395937   .2657431    -1.65   0.102    -.9677022   .0885148
Vegetarian~y |   .2921314   .3128525     0.93   0.353    -.3295972   .9138601
       _cons |   51.13275   13.34885     3.83   0.000     24.60471   77.66079
------------------------------------------------------------------------------
```

Dependent variable: ln(Edible Food Waste per Meal)

```
. regress LnY5 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSquared
>  Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate VegetarianDummy, vc
> e(cluster HouseholdNo)

Linear regression                               Number of obs =     729
                                                F( 19,    85) =       .
                                                Prob > F      =       .
                                                R-squared     =  0.3077
                                                Root MSE      =  1.1708

                                  (Std. Err. adjusted for 86 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
       LnY5  |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |    .197177   .3196846     0.62   0.539    -.4384415   .8327956
          Q4 |  -.0850512   .2338589    -0.36   0.717    -.5500252   .3799229
          Q5 |  -.0918075   .2960434    -0.31   0.757    -.6804211   .4968061
          Q6 |   -.775828   .2143499    -3.62   0.001    -1.202013  -.3496431
          Q7 |  -.4785464   .2871687    -1.67   0.099    -1.049515   .0924219
          Q8 |   .2009573   .2709141     0.74   0.460    -.3376925   .7396072
          Q9 |  -.8390194   .2524818    -3.32   0.001    -1.341021  -.337018
         Q10 |   .0013913   .2209755     0.01   0.995    -.4379672   .4407497
         Q11 |   .3374022   .3415665     0.99   0.326    -.3417235   1.016528
         Age |  -.0300042   .0374187    -0.80   0.425    -.1044025   .0443941
  AgeSquared |   .0002419   .0003499     0.69   0.491    -.0004538   .0009375
   Education |  -5.706912   1.136681    -5.02   0.000    -7.966937  -3.446886
EducationS~d |   .1741307   .0358521     4.86   0.000     .1028471   .2454143
      Income |  -.0000342   .0000201    -1.70   0.093    -.0000742   5.81e-06
IncomeSqua~d |   2.46e-10   1.40e-10     1.76   0.082    -3.17e-11   5.24e-10
      Female |   .3982649   .2108075     1.89   0.062     -.020877   .8174067
  SouthDummy |   .2211305   .2265675     0.98   0.332    -.2293464   .6716075
  WhiteDummy |  -.2673937   .2780019    -0.96   0.339     -.820136   .2853485
DumImmigrate |  -.6247654   .3089082    -2.02   0.046    -1.238958  -.0105731
Vegetarian~y |  -.0803725    .233077    -0.34   0.731    -.5437921    .383047
       _cons |   48.49138   9.255143     5.24   0.000     30.08968   66.89309
------------------------------------------------------------------------------
```

Dependent variable: Edible Food Waste per Person

```
. regress TotEdFWHHS Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationS
> quared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate VegetarianDum
> my, vce(cluster HouseholdNo)

Linear regression                               Number of obs =    1010
                                                F( 19,    89) =       .
                                                Prob > F      =       .
                                                R-squared     =  0.1691
                                                Root MSE      =  20.018

                                  (Std. Err. adjusted for 90 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
  TotEdFWHHS |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |   .2001902   3.250788     0.06   0.951    -6.259056    6.659436
          Q4 |   1.071519   3.157324     0.34   0.735    -5.202017    7.345056
          Q5 |  -2.702442   4.284268    -0.63   0.530    -11.21519    5.810307
          Q6 |  -11.20748   4.584243    -2.44   0.016    -20.31628   -2.09869
          Q7 |  -6.655316   3.803159    -1.75   0.084    -14.21211    .9014791
          Q8 |   1.073641   4.617269     0.23   0.817    -8.100774    10.24806
          Q9 |  -8.671065   4.049859    -2.14   0.035    -16.71805   -.6240818
         Q10 |   1.581723   3.376486     0.47   0.641    -5.127283     8.29073
         Q11 |    2.25218   4.089686     0.55   0.583     -5.87394     10.3783
         Age |  -.2906561   .5895137    -0.49   0.623    -1.462007    .8806952
  AgeSquared |   .0027244   .0058472     0.47   0.642    -.0088938    .0143425
   Education |  -78.20826   18.74831    -4.17   0.000    -115.4607   -40.95578
EducationS~d |   2.426257   .5901841     4.11   0.000     1.253574    3.598941
      Income |  -.0007655   .0003195    -2.40   0.019    -.0014003   -.0001307
IncomeSqua~d |   5.06e-09   2.10e-09     2.42   0.018     8.97e-10    9.22e-09
      Female |  -.8431733   2.902062    -0.29   0.772    -6.609508    4.923161
  SouthDummy |   1.547363   2.867437     0.54   0.591    -4.150172    7.244899
  WhiteDummy |  -.8213133   4.506193    -0.18   0.856    -9.775022    8.132396
DumImmigrate |  -7.822484   3.152805    -2.48   0.015    -14.08704   -1.557928
Vegetarian~y |   1.742589   3.369734     0.52   0.606       -4.953    8.438177
       _cons |   683.3264   154.1157     4.43   0.000     377.1019    989.5509
------------------------------------------------------------------------------
```

Dependent variable: ln(Edible Food Waste per Person)

```
. regress LnY6 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSquared
>  Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate VegetarianDummy, vc
> e(cluster HouseholdNo)

Linear regression                               Number of obs =     728
                                                F( 19,    86) =       .
                                                Prob > F      =       .
                                                R-squared     =  0.2862
                                                Root MSE      =  1.1335

                                  (Std. Err. adjusted for 87 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
        LnY6 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |   .1364746   .2948023     0.46   0.645    -.4495731    .7225223
          Q4 |  -.0095122   .2144974    -0.04   0.965     -.435919    .4168945
          Q5 |   -.033353   .2877563    -0.12   0.908    -.6053936    .5386876
          Q6 |   -.605547   .2006797    -3.02   0.003    -1.004485    -.206609
          Q7 |  -.6019198   .2846657    -2.11   0.037    -1.167816   -.0360231
          Q8 |   .3110131   .2610084     1.19   0.237    -.2078544    .8298805
          Q9 |  -.7854185   .2218846    -3.54   0.001    -1.226511   -.3443265
         Q10 |   .0047824   .2150475     0.02   0.982    -.4227178    .4322827
         Q11 |   .3001704   .3082566     0.97   0.333    -.3126235    .9129644
         Age |  -.0199489   .0336109    -0.59   0.554    -.0867651    .0468673
  AgeSquared |   .0001657   .0003259     0.51   0.612    -.0004822    .0008136
   Education |  -5.932567    1.06384    -5.58   0.000    -8.047411   -3.817722
EducationS~d |   .1832552   .0335776     5.46   0.000     .1165052    .2500053
      Income |  -.0000485   .0000186    -2.61   0.011    -.0000854   -.0000116
IncomeSqua~d |   3.19e-10   1.31e-10     2.44   0.017     5.85e-11    5.79e-10
      Female |   .2564523   .2087766     1.23   0.223    -.1585819    .6714864
  SouthDummy |   .1461481   .2051204     0.71   0.478    -.2616177     .553914
  WhiteDummy |  -.2473253   .2775723    -0.89   0.375    -.7991208    .3044701
DumImmigrate |  -.7787965   .2739506    -2.84   0.006    -1.323392   -.2342007
Vegetarian~y |  -.0818029   .2094653    -0.39   0.697    -.4982063    .3346004
       _cons |   52.58487   8.636182     6.09   0.000     35.41671    69.75303
------------------------------------------------------------------------------
```

Dependent variable: Total Food Waste

```
. xtreg TotalFoodWaste Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education E
> ducationSquared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigra
> te VegetarianDummy Dum2ppl Dum3ppl Dum4ppl, re

Random-effects GLS regression                   Number of obs      =      1009
Group variable: HouseholdNo                     Number of groups   =        90

R-sq:  within  = 0.0000                         Obs per group: min =         1
       between = 0.4331                                        avg =      11.2
       overall = 0.2835                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(23)      =     50.27
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0008
```

TotalFoodW~e	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Q3	11.99464	17.24739	0.70	0.487	-21.80962	45.79891
Q4	-6.99125	16.61987	-0.42	0.674	-39.5656	25.5831
Q5	10.44702	17.15447	0.61	0.543	-23.17513	44.06917
Q6	-16.16129	16.61371	-0.97	0.331	-48.72357	16.401
Q7	-.0820637	19.9994	-0.00	0.997	-39.28017	39.11604
Q8	36.24678	16.27754	2.23	0.026	4.343385	68.15017
Q9	-46.06495	15.00537	-3.07	0.002	-75.47495	-16.65496
Q10	3.292427	14.96606	0.22	0.826	-26.04052	32.62537
Q11	-11.41398	21.35286	-0.53	0.593	-53.26481	30.43685
Age	-1.025684	2.979979	-0.34	0.731	-6.866335	4.814967
AgeSquared	.0095362	.0280458	0.34	0.734	-.0454326	.0645051
Education	-230.5431	96.55396	-2.39	0.017	-419.7854	-41.30085
EducationS~d	7.158249	3.003617	2.38	0.017	1.271267	13.04523
Income	-.0032823	.0013792	-2.38	0.017	-.0059855	-.0005791
IncomeSqua~d	2.30e-08	9.40e-09	2.45	0.014	4.63e-09	4.15e-08
Female	-10.0806	16.17446	-0.62	0.533	-41.78196	21.62075
SouthDummy	-1.031201	14.04467	-0.07	0.941	-28.55824	26.49584
WhiteDummy	8.626177	19.76931	0.44	0.663	-30.12096	47.37332
DumImmigrate	7.801767	22.16372	0.35	0.725	-35.63833	51.24187
Vegetarian~y	4.209379	19.55959	0.22	0.830	-34.12672	42.54548
Dum2ppl	35.8264	20.04334	1.79	0.074	-3.45782	75.11062
Dum3ppl	70.48335	24.63254	2.86	0.004	22.20447	118.7622
Dum4ppl	95.99478	26.25328	3.66	0.000	44.5393	147.4503
_cons	2021.957	774.383	2.61	0.009	504.1942	3539.72
sigma_u	55.257002					
sigma_e	50.135301					
rho	.54848204	(fraction of variance due to u_i)				

Dependent variable: ln(Total Food Waste)

```
. xtreg LnY1 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSq
> uared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Vegetar
> ianDummy Dum2ppl Dum3ppl Dum4ppl, re

Random-effects GLS regression                   Number of obs      =       975
Group variable: HouseholdNo                     Number of groups   =        90

R-sq:  within  = 0.0000                         Obs per group: min =         1
       between = 0.5221                                        avg =      10.8
       overall = 0.3581                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(22)      =         .
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =         .
```

LnY1	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Q3	.0886004	.1715255	0.52	0.605	-.2475834	.4247843
Q4	-.0158481	.1651957	-0.10	0.924	-.3396258	.3079296
Q5	.0955791	.1709437	0.56	0.576	-.2394643	.4306225
Q6	-.1880712	.1653459	-1.14	0.255	-.5121432	.1360009
Q7	.0175181	.2007804	0.09	0.930	-.3760042	.4110404
Q8	.2944881	.1624525	1.81	0.070	-.0239129	.6128892
Q9	-.404819	.1493135	-2.71	0.007	-.6974681	-.1121699
Q10	.1038901	.1491081	0.70	0.486	-.1883564	.3961366
Q11	-.0260973	.2135134	-0.12	0.903	-.4445759	.3923812
Age	.0159357	.0296958	0.54	0.592	-.0422669	.0741384
AgeSquared	-.0001217	.0002795	-0.44	0.663	-.0006694	.0004261
Education	-2.532727	.9667197	-2.62	0.009	-4.427463	-.6379915
EducationS~d	.0789605	.0300876	2.62	0.009	.0199899	.137931
Income	-.0000391	.0000138	-2.84	0.004	-.000066	-.0000121
IncomeSqua~d	2.82e-10	9.36e-11	3.02	0.003	9.88e-11	4.66e-10
Female	-.1500372	.1609461	-0.93	0.351	-.4654857	.1654114
SouthDummy	-.0523659	.1401279	-0.37	0.709	-.3270115	.2222798
WhiteDummy	.0877843	.1966297	0.45	0.655	-.2976028	.4731714
DumImmigrate	.1570658	.2207038	0.71	0.477	-.2755057	.5896373
Vegetarian~y	-.0363487	.1945675	-0.19	0.852	-.417694	.3449966
Dum2ppl	.6535885	.200441	3.26	0.001	.2607314	1.046446
Dum3ppl	1.052489	.2458485	4.28	0.000	.5706343	1.534343
Dum4ppl	1.147442	.262145	4.38	0.000	.6336474	1.661237
_cons	24.45796	7.75117	3.16	0.002	9.26595	39.64998
sigma_u	.54728576					
sigma_e	.50498882					
rho	.54013089	(fraction of variance due to u_i)				

Dependent variable: Total Food Waste per Meal

```
. xtreg  TotFoodWasteTotMeals Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Educ
> ation EducationSquared Income IncomeSquared Female SouthDummy WhiteDummy Dum
> Immigrate VegetarianDummy, re

Random-effects GLS regression                   Number of obs      =       979
Group variable: HouseholdNo                     Number of groups   =        89

R-sq:  within  = 0.0001                         Obs per group: min =         1
       between = 0.2282                                        avg =      11.0
       overall = 0.1435                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(19)      =         .
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =         .
```

TotFoodWas~s	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Q3	.4452482	.5909812	0.75	0.451	-.7130537	1.60355
Q4	-.0845735	.5751237	-0.15	0.883	-1.211795	1.042648
Q5	.2756451	.5957721	0.46	0.644	-.8920468	1.443337
Q6	-1.19919	.5823421	-2.06	0.039	-2.34056	-.057821
Q7	-.5507176	.6976846	-0.79	0.430	-1.918154	.8167191
Q8	.6850102	.5472064	1.25	0.211	-.3874946	1.757515
Q9	-.6383611	.5178997	-1.23	0.218	-1.653426	.3767036
Q10	.2336853	.5248619	0.45	0.656	-.7950252	1.262396
Q11	-.5095045	.7447681	-0.68	0.494	-1.969223	.9502141
Age	-.1737452	.1000933	-1.74	0.083	-.3699244	.0224341
AgeSquared	.0015578	.0009352	1.67	0.096	-.0002751	.0033908
Education	-3.388803	3.349705	-1.01	0.312	-9.954104	3.176499
EducationS~d	.1013314	.1042861	0.97	0.331	-.1030657	.3057284
Income	-.0000507	.0000475	-1.07	0.285	-.0001438	.0000423
IncomeSqua~d	3.94e-10	3.24e-10	1.22	0.224	-2.41e-10	1.03e-09
Female	-.1370102	.5587345	-0.25	0.806	-1.23211	.9580893
SouthDummy	.4438545	.487958	0.91	0.363	-.5125256	1.400235
WhiteDummy	-.4641805	.6890199	-0.67	0.501	-1.814635	.8862737
DumImmigrate	-.0862929	.7305257	-0.12	0.906	-1.518097	1.345511
Vegetarian~y	-.5061386	.5486609	-0.92	0.356	-1.581494	.569217
_cons	38.12472	26.96361	1.41	0.157	-14.72299	90.97243
sigma_u	1.9294316					
sigma_e	1.6870462					
rho	.56672279	(fraction of variance due to u_i)				

Dependent variable: ln(Total Food Waste per Meal)

```
. xtreg LnY2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSq
> uared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Vegetar
> ianDummy, re

Random-effects GLS regression                   Number of obs      =       975
Group variable: HouseholdNo                     Number of groups   =        89

R-sq:  within  = 0.0001                         Obs per group: min =         1
       between = 0.2526                                        avg =      11.0
       overall = 0.1920                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(19)      =         .
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =         .
```

LnY2	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Q3	.1385265	.1853981	0.75	0.455	-.2248472	.5019002
Q4	-.0419474	.1802237	-0.23	0.816	-.3951793	.3112845
Q5	.1092138	.1866493	0.59	0.558	-.2566122	.4750398
Q6	-.3472693	.1825062	-1.90	0.057	-.7049749	.0104364
Q7	-.0833075	.2183322	-0.38	0.703	-.5112308	.3446159
Q8	.2011726	.1712848	1.17	0.240	-.1345394	.5368845
Q9	-.2736071	.1620794	-1.69	0.091	-.5912769	.0440627
Q10	.0508233	.1643077	0.31	0.757	-.271214	.3728605
Q11	-.1302425	.232302	-0.56	0.575	-.5855461	.3250611
Age	-.0278235	.0313324	-0.89	0.375	-.0892339	.033587
AgeSquared	.0002569	.0002928	0.88	0.380	-.0003169	.0008307
Education	-1.63959	1.045915	-1.57	0.117	-3.689546	.4103665
EducationS~d	.0494489	.0325615	1.52	0.129	-.0143704	.1132682
Income	-.0000181	.0000149	-1.22	0.224	-.0000472	.000011
IncomeSqua~d	1.51e-10	1.02e-10	1.48	0.138	-4.85e-11	3.50e-10
Female	-.0770751	.175075	-0.44	0.660	-.4202158	.2660656
SouthDummy	.1228416	.1527063	0.80	0.421	-.1764571	.4221404
WhiteDummy	-.1136273	.2157646	-0.53	0.598	-.536518	.3092635
DumImmigrate	.1143165	.2289812	0.50	0.618	-.3344785	.5631115
Vegetarian~y	-.1195285	.1648871	-0.72	0.469	-.4427013	.2036443
_cons	15.77264	8.421546	1.87	0.061	-.7332905	32.27856
sigma_u	.60997539					
sigma_e	.46414859					
rho	.63330641	(fraction of variance due to u_i)				

Dependent variable: Total Food Waste per Person

```
. xtreg TotFWHHS Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education Educati
> onSquared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Veg
> etarianDummy, re

Random-effects GLS regression                   Number of obs      =      1009
Group variable: HouseholdNo                     Number of groups   =        90

R-sq:  within  = 0.0000                         Obs per group: min =         1
       between = 0.3600                                        avg =      11.2
       overall = 0.2191                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(20)      =     40.93
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0038
```

TotFWHHS	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Q3	5.011528	7.083607	0.71	0.479	-8.872087	18.89514
Q4	-.6283708	6.918302	-0.09	0.928	-14.18799	12.93125
Q5	.7349057	7.186327	0.10	0.919	-13.35004	14.81985
Q6	-11.98153	6.953789	-1.72	0.085	-25.61071	1.647646
Q7	-8.31216	8.311569	-1.00	0.317	-24.60254	7.978216
Q8	21.14158	6.564403	3.22	0.001	8.275585	34.00757
Q9	-15.80768	6.257018	-2.53	0.012	-28.07121	-3.544153
Q10	4.430668	6.242398	0.71	0.478	-7.804207	16.66554
Q11	-3.804477	8.907617	-0.43	0.669	-21.26309	13.65413
Age	-.7273026	1.201204	-0.61	0.545	-3.081618	1.627013
AgeSquared	.0079324	.0112267	0.71	0.480	-.0140715	.0299363
Education	-103.7597	40.33709	-2.57	0.010	-182.819	-24.7005
EducationS~d	3.244785	1.255102	2.59	0.010	.7848307	5.704739
Income	-.0020112	.0005703	-3.53	0.000	-.003129	-.0008935
IncomeSqua~d	1.34e-08	3.89e-09	3.45	0.001	5.79e-09	2.10e-08
Female	-2.803111	6.632576	-0.42	0.673	-15.80272	10.1965
SouthDummy	-2.059046	5.801989	-0.35	0.723	-13.43074	9.312643
WhiteDummy	3.928242	8.173439	0.48	0.631	-12.0914	19.94789
DumImmigrate	-3.975758	8.79955	-0.45	0.651	-21.22256	13.27104
Vegetarian~y	-1.477751	7.722685	-0.19	0.848	-16.61394	13.65843
_cons	948.25	324.3782	2.92	0.003	312.4805	1584.02
sigma_u	22.8607					
sigma_e	24.151139					
rho	.47257144	(fraction of variance due to u_i)				

Dependent variable: ln(Total Food Waste per Person)

```
. xtreg LnY3 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSq
> uared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Vegetar
> ianDummy, re

Random-effects GLS regression                   Number of obs      =       975
Group variable: HouseholdNo                     Number of groups   =        90

R-sq:  within  = 0.0000                         Obs per group: min =         1
       between = 0.3476                                        avg =      10.8
       overall = 0.2307                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(19)      =         .
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =         .
```

LnY3	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Q3	.1211084	.1645913	0.74	0.462	-.2014846	.4437014
Q4	-.0400562	.1604116	-0.25	0.803	-.3544571	.2743447
Q5	.0723611	.167167	0.43	0.665	-.2552802	.4000024
Q6	-.1848277	.1613923	-1.15	0.252	-.5011508	.1314954
Q7	-.0180125	.1945454	-0.09	0.926	-.3993145	.3632896
Q8	.3464212	.1527305	2.27	0.023	.047075	.6457675
Q9	-.4018955	.1451687	-2.77	0.006	-.6864209	-.1173701
Q10	.0926971	.1449399	0.64	0.522	-.1913799	.3767741
Q11	-.0133908	.2067495	-0.06	0.948	-.4186124	.3918307
Age	.005922	.0279292	0.21	0.832	-.0488183	.0606623
AgeSquared	-.0000201	.0002611	-0.08	0.939	-.0005319	.0004917
Education	-2.504001	.9407422	-2.66	0.008	-4.347821	-.6601798
EducationS~d	.0780506	.0292827	2.67	0.008	.0206577	.1354436
Income	-.0000406	.0000133	-3.06	0.002	-.0000666	-.0000146
IncomeSqua~d	2.89e-10	9.05e-11	3.20	0.001	1.12e-10	4.67e-10
Female	-.1124548	.1539675	-0.73	0.465	-.4142255	.1893158
SouthDummy	-.0753873	.1350459	-0.56	0.577	-.3400724	.1892978
WhiteDummy	.0869823	.1894189	0.46	0.646	-.284272	.4582366
DumImmigrate	.0662552	.2041954	0.32	0.746	-.3339604	.4664708
Vegetarian~y	-.0427754	.1791554	-0.24	0.811	-.3939134	.3083627
_cons	24.43316	7.565028	3.23	0.001	9.605982	39.26035
sigma_u	.53474392					
sigma_e	.50498882					
rho	.52859461	(fraction of variance due to u_i)				

Dependent variable: Total Edible Food Waste

```
. xtreg TotEd Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationS
> quared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Vegeta
> rianDummy Dum2ppl Dum3ppl Dum4ppl, re

Random-effects GLS regression                   Number of obs      =      1010
Group variable: HouseholdNo                     Number of groups   =        90

R-sq:  within  = 0.0000                         Obs per group: min =         1
       between = 0.3826                                        avg =      11.2
       overall = 0.2533                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(23)      =     40.99
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0119
```

TotEd	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Q3	-1.947137	10.77817	-0.18	0.857	-23.07196	19.17769
Q4	-2.140547	10.38349	-0.21	0.837	-22.49181	18.21071
Q5	-2.622901	10.71882	-0.24	0.807	-23.63139	18.38559
Q6	-22.08096	10.37869	-2.13	0.033	-42.42281	-1.739108
Q7	-9.657653	12.49269	-0.77	0.439	-34.14287	14.82756
Q8	6.193507	10.16531	0.61	0.542	-13.73013	26.11714
Q9	-26.90091	9.372373	-2.87	0.004	-45.27043	-8.531397
Q10	.5174506	9.347361	0.06	0.956	-17.80304	18.83794
Q11	-.7188862	13.32601	-0.05	0.957	-26.83739	25.39961
Age	-1.737984	1.861382	-0.93	0.350	-5.386226	1.910259
AgeSquared	.0158857	.0175197	0.91	0.365	-.0184524	.0502237
Education	-203.0159	60.30252	-3.37	0.001	-321.2067	-84.82516
EducationS~d	6.27101	1.875874	3.34	0.001	2.594364	9.947656
Income	-.0009067	.0008617	-1.05	0.293	-.0025956	.0007822
IncomeSqua~d	6.23e-09	5.87e-09	1.06	0.288	-5.27e-09	1.77e-08
Female	-1.55923	10.10267	-0.15	0.877	-21.3601	18.24164
SouthDummy	2.505111	8.771544	0.29	0.775	-14.6868	19.69702
WhiteDummy	3.916583	12.34601	0.32	0.751	-20.28115	28.11432
DumImmigrate	-14.33232	13.84353	-1.04	0.301	-41.46514	12.80051
Vegetarian~y	5.440694	12.22138	0.45	0.656	-18.51276	29.39415
Dum2ppl	10.43966	12.52357	0.83	0.405	-14.10608	34.9854
Dum3ppl	26.09099	15.3924	1.70	0.090	-4.077558	56.25953
Dum4ppl	38.08528	16.38679	2.32	0.020	5.967758	70.20281
_cons	1743.096	483.6413	3.60	0.000	795.1768	2691.016
sigma_u	34.613522					
sigma_e	30.294148					
rho	.56625304	(fraction of variance due to u_i)				

Dependent variable: ln(Total Edible Food Waste)

```
. xtreg LnY4 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSq
> uared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Vegetar
> ianDummy Dum2ppl Dum3ppl Dum4ppl, re

Random-effects GLS regression                   Number of obs      =       728
Group variable: HouseholdNo                     Number of groups   =        87

R-sq:  within  = 0.0000                         Obs per group: min =         1
       between = 0.3941                                        avg =       8.4
       overall = 0.2597                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(22)      =         .
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =         .
```

LnY4	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Q3	-.0913236	.2964251	-0.31	0.758	-.6723061	.4896588
Q4	.1081666	.2819363	0.38	0.701	-.4444183	.6607516
Q5	.0058519	.2942042	0.02	0.984	-.5707777	.5824815
Q6	-.5863429	.2926105	-2.00	0.045	-1.159849	-.0128368
Q7	-.0919719	.3712426	-0.25	0.804	-.819594	.6356501
Q8	.1378661	.2870558	0.48	0.631	-.4247528	.7004851
Q9	-.7887592	.2637928	-2.99	0.003	-1.305784	-.2717349
Q10	-.1293446	.2572757	-0.50	0.615	-.6335958	.3749066
Q11	.3235488	.3814719	0.85	0.396	-.4241225	1.07122
Age	.0205028	.0524873	0.39	0.696	-.0823705	.1233761
AgeSquared	-.0002205	.0004942	-0.45	0.656	-.0011891	.0007482
Education	-5.600923	1.652024	-3.39	0.001	-8.83883	-2.363016
EducationS~d	.1740185	.0514467	3.38	0.001	.0731848	.2748523
Income	-.0000486	.0000242	-2.01	0.045	-.0000961	-1.17e-06
IncomeSqua~d	3.56e-10	1.65e-10	2.16	0.031	3.27e-11	6.80e-10
Female	.0541103	.282411	0.19	0.848	-.4994052	.6076257
SouthDummy	-.042055	.2488208	-0.17	0.866	-.5297348	.4456248
WhiteDummy	.1559537	.3584242	0.44	0.663	-.5465449	.8584523
DumImmigrate	-.3071591	.4215158	-0.73	0.466	-1.133315	.5189968
Vegetarian~y	.142382	.343884	0.41	0.679	-.5316183	.8163824
Dum2ppl	.0307127	.3598367	0.09	0.932	-.6745542	.7359796
Dum3ppl	.4688345	.4289321	1.09	0.274	-.3718569	1.309526
Dum4ppl	.4954467	.4647051	1.07	0.286	-.4153585	1.406252
_cons	48.83759	13.23747	3.69	0.000	22.89263	74.78256
sigma_u	.90331768					
sigma_e	.88940241					
rho	.50776163	(fraction of variance due to u_i)				

Dependent variable: Edible Food Waste per Meal

```
. xtreg TotEdTotMeals Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education Ed
> ucationSquared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrat
> e VegetarianDummy, re

Random-effects GLS regression                   Number of obs      =       980
Group variable: HouseholdNo                     Number of groups   =        89

R-sq:  within  = 0.0005                         Obs per group: min =         1
       between = 0.2769                                        avg =      11.0
       overall = 0.1708                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(19)      =         .
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =         .
```

TotEdTotMe~s	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Q3	.0915562	.3993958	0.23	0.819	-.6912451	.8743576
Q4	.0314715	.388745	0.08	0.935	-.7304547	.7933978
Q5	-.3682669	.4027442	-0.91	0.361	-1.157631	.4210972
Q6	-1.037574	.3936182	-2.64	0.008	-1.809051	-.2660961
Q7	-.4045721	.4716899	-0.86	0.391	-1.329067	.5199232
Q8	.1554361	.3699469	0.42	0.674	-.5696466	.8805188
Q9	-.8208416	.3501248	-2.34	0.019	-1.507074	-.1346097
Q10	.1362123	.3548297	0.38	0.701	-.5592412	.8316658
Q11	.1865259	.5037964	0.37	0.711	-.8008969	1.173949
Age	-.0601356	.0676609	-0.89	0.374	-.1927486	.0724774
AgeSquared	.0005594	.0006322	0.88	0.376	-.0006797	.0017984
Education	-5.630959	2.265482	-2.49	0.013	-10.07122	-1.190697
EducationS~d	.174534	.0705316	2.47	0.013	.0362946	.3127733
Income	-.0000215	.0000321	-0.67	0.503	-.0000844	.0000414
IncomeSqua~d	1.61e-10	2.19e-10	0.74	0.462	-2.68e-10	5.91e-10
Female	-.0134727	.3776641	-0.04	0.972	-.7536808	.7267354
SouthDummy	.2130549	.3299104	0.65	0.518	-.4335576	.8596675
WhiteDummy	-.1976918	.4657821	-0.42	0.671	-1.110608	.7152244
DumImmigrate	-.4590777	.4937639	-0.93	0.352	-1.426837	.5086818
Vegetarian~y	.0603214	.373089	0.16	0.872	-.6709196	.7915624
_cons	49.4297	18.23505	2.71	0.007	13.68965	85.16975
sigma_u	1.3017934					
sigma_e	1.1639946					
rho	.55571029	(fraction of variance due to u_i)				

Dependent variable: ln(Edible Food Waste per Meal)

```
. xtreg LnY5 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSq
> uared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Vegetar
> ianDummy, re

Random-effects GLS regression                   Number of obs      =       729
Group variable: HouseholdNo                     Number of groups   =        86

R-sq:  within  = 0.0007                         Obs per group: min =         1
       between = 0.3300                                        avg =       8.5
       overall = 0.2923                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(19)      =         .
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =         .
```

LnY5	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Q3	.0698578	.3068152	0.23	0.820	-.5314889	.6712045
Q4	.0200043	.2980148	0.07	0.946	-.5640939	.6041025
Q5	-.021764	.3102161	-0.07	0.944	-.6297763	.5862483
Q6	-.7560215	.3116207	-2.43	0.015	-1.366787	-.1452561
Q7	-.1702408	.3867318	-0.44	0.660	-.9282213	.5877397
Q8	.1437179	.2931921	0.49	0.624	-.430928	.7183638
Q9	-.8160079	.2760518	-2.96	0.003	-1.35706	-.2749563
Q10	-.1690435	.274282	-0.62	0.538	-.7066263	.3685394
Q11	.3761354	.4017844	0.94	0.349	-.4113474	1.163618
Age	-.0149029	.0533214	-0.28	0.780	-.1194109	.0896051
AgeSquared	.0001031	.0004974	0.21	0.836	-.0008717	.0010779
Education	-5.074723	1.740169	-2.92	0.004	-8.485392	-1.664053
EducationS~d	.1562292	.0542098	2.88	0.004	.04998	.2624785
Income	-.000034	.0000253	-1.35	0.178	-.0000835	.0000155
IncomeSqua~d	2.46e-10	1.73e-10	1.42	0.154	-9.27e-11	5.85e-10
Female	.249033	.2928703	0.85	0.395	-.3249821	.8230482
SouthDummy	.1824712	.2605219	0.70	0.484	-.3281423	.6930847
WhiteDummy	-.1555116	.3745168	-0.42	0.678	-.889551	.5785278
DumImmigrate	-.6031674	.4097991	-1.47	0.141	-1.406359	.200024
Vegetarian~y	-.1058246	.2913183	-0.36	0.716	-.676798	.4651487
_cons	42.54663	13.99211	3.04	0.002	15.12259	69.97067
sigma_u	.96817487					
sigma_e	.89558285					
rho	.53889028	(fraction of variance due to u_i)				

Dependent variable: Edible Food Waste per Person

```
. xtreg TotEdFWHHS Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education Educa
> tionSquared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate V
> egetarianDummy, re

Random-effects GLS regression                   Number of obs      =      1010
Group variable: HouseholdNo                     Number of groups   =        90

R-sq:  within  = 0.0000                         Obs per group: min =         1
       between = 0.2785                                        avg =      11.2
       overall = 0.1608                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(20)      =     27.88
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.1122
```

TotEdFWHHS	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Q3	.3188452	4.838737	0.07	0.947	-9.164905	9.802596
Q4	1.102247	4.723536	0.23	0.815	-8.155714	10.36021
Q5	-3.605402	4.907671	-0.73	0.463	-13.22426	6.013456
Q6	-12.22344	4.747273	-2.57	0.010	-21.52792	-2.918954
Q7	-7.090665	5.674561	-1.25	0.211	-18.2126	4.031269
Q8	3.426377	4.480925	0.76	0.444	-5.356074	12.20883
Q9	-10.05826	4.270712	-2.36	0.019	-18.42871	-1.687824
Q10	1.655935	4.259758	0.39	0.697	-6.693038	10.00491
Q11	2.103304	6.071812	0.35	0.729	-9.797229	14.00384
Age	-.6949405	.8197344	-0.85	0.397	-2.30159	.9117094
AgeSquared	.0066164	.0076622	0.86	0.388	-.0084012	.0216339
Education	-78.34118	27.52376	-2.85	0.004	-132.2868	-24.39559
EducationS~d	2.438882	.8563948	2.85	0.004	.7603795	4.117385
Income	-.0005716	.0003894	-1.47	0.142	-.0013347	.0001916
IncomeSqua~d	3.68e-09	2.66e-09	1.38	0.166	-1.53e-09	8.89e-09
Female	-.9852417	4.527454	-0.22	0.828	-9.858889	7.888406
SouthDummy	.5197202	3.958967	0.13	0.896	-7.239713	8.279154
WhiteDummy	.9851179	5.577314	0.18	0.860	-9.946217	11.91645
DumImmigrate	-7.732239	6.008906	-1.29	0.198	-19.50948	4.045001
Vegetarian~y	1.538703	5.27241	0.29	0.770	-8.795031	11.87244
_cons	686.2262	221.3432	3.10	0.002	252.4014	1120.051
sigma_u	15.69156					
sigma_e	15.76148					
rho	.49777702	(fraction of variance due to u_i)				

Dependent variable: ln(Edible Food Waste per Person)

```
. xtreg LnY6 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSq
> uared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Vegetar
> ianDummy, re

Random-effects GLS regression                   Number of obs      =       728
Group variable: HouseholdNo                     Number of groups   =        87

R-sq:  within  = 0.0000                         Obs per group: min =         1
       between = 0.3278                                        avg =       8.4
       overall = 0.2672                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(19)      =         .
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =         .
```

LnY6	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Q3	.033599	.2932918	0.11	0.909	-.5412423	.6084403
Q4	.0589403	.2853059	0.21	0.836	-.500249	.6181296
Q5	-.0292947	.29925	-0.10	0.922	-.6158139	.5572245
Q6	-.5780536	.2966751	-1.95	0.051	-1.159526	.0034188
Q7	-.1918301	.370346	-0.52	0.604	-.9176949	.5340347
Q8	.2335141	.280881	0.83	0.406	-.3170026	.7840307
Q9	-.8249181	.2655351	-3.11	0.002	-1.345357	-.304479
Q10	-.1276346	.2595092	-0.49	0.623	-.6362634	.3809941
Q11	.4235295	.3825102	1.11	0.268	-.3261768	1.173236
Age	.0013801	.0510933	0.03	0.978	-.0987609	.1015212
AgeSquared	-.0000205	.0004767	-0.04	0.966	-.0009548	.0009137
Education	-5.527415	1.673647	-3.30	0.001	-8.807703	-2.247127
EducationS~d	.1718757	.0521312	3.30	0.001	.0697004	.274051
Income	-.0000512	.0000242	-2.11	0.035	-.0000987	-3.67e-06
IncomeSqua~d	3.48e-10	1.66e-10	2.10	0.036	2.31e-11	6.73e-10
Female	.1920761	.2768748	0.69	0.488	-.3505884	.7347407
SouthDummy	.0156835	.2479653	0.06	0.950	-.4703196	.5016867
WhiteDummy	.015438	.3545462	0.04	0.965	-.6794597	.7103357
DumImmigrate	-.6924488	.3927655	-1.76	0.078	-1.462255	.0773574
Vegetarian~y	.0198274	.3256797	0.06	0.951	-.618493	.6581478
_cons	48.27771	13.44093	3.59	0.000	21.93396	74.62145
sigma_u	.92297232					
sigma_e	.88940241					
rho	.51851626	(fraction of variance due to u_i)				

Dependent variable: Total Food Waste

```
. xtreg TotalFoodWaste Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education Edu
> cationSquared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate V
> egetarianDummy Dum2ppl Dum3ppl Dum4ppl, re vce(robust)

Random-effects GLS regression                   Number of obs      =      1009
Group variable: HouseholdNo                     Number of groups   =        90

R-sq:  within  = 0.0000                         Obs per group: min =         1
       between = 0.4331                                        avg =      11.2
       overall = 0.2835                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(23)      =    109.45
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0000

                              (Std. Err. adjusted for 90 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
TotalFoodW~e |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |    11.99464   12.77372     0.94   0.348    -13.04139    37.03067
          Q4 |    -6.99125   13.33469    -0.52   0.600    -33.12676    19.14426
          Q5 |    10.44702    13.6423     0.77   0.444     -16.2914    37.18544
          Q6 |   -16.16129   14.12152    -1.14   0.252    -43.83896    11.51639
          Q7 |   -.0820637   15.60688    -0.01   0.996    -30.67099    30.50686
          Q8 |    36.24678   14.83899     2.44   0.015     7.162881    65.33067
          Q9 |   -46.06495   12.67209    -3.64   0.000    -70.90179   -21.22812
         Q10 |    3.292427   12.91486     0.25   0.799    -22.02023    28.60509
         Q11 |   -11.41398   16.76249    -0.68   0.496    -44.26786    21.43989
         Age |   -1.025684   2.014618    -0.51   0.611    -4.974263    2.922894
  AgeSquared |    .0095362   .0196868     0.48   0.628    -.0290492    .0481216
   Education |   -230.5431    69.5977    -3.31   0.001    -366.9521   -94.13415
EducationS~d |    7.158249   2.179321     3.28   0.001     2.886858    11.42964
      Income |   -.0032823   .0011564    -2.84   0.005    -.0055488   -.0010158
IncomeSqua~d |    2.30e-08   7.72e-09     2.99   0.003     7.92e-09    3.82e-08
      Female |    -10.0806   15.13073    -0.67   0.505    -39.73629    19.57508
  SouthDummy |   -1.031201   10.91557    -0.09   0.925    -22.42532    20.36292
  WhiteDummy |    8.626177   16.10768     0.54   0.592    -22.94429    40.19665
DumImmigrate |    7.801767    19.3939     0.40   0.687    -30.20957    45.81311
Vegetarian~y |    4.209379   15.67253     0.27   0.788    -26.50822    34.92698
     Dum2ppl |     35.8264   13.95183     2.57   0.010     8.481324    63.17147
     Dum3ppl |    70.48335   18.39819     3.83   0.000     34.42356    106.5431
     Dum4ppl |    95.99478   26.87073     3.57   0.000     43.32911    148.6604
       _cons |    2021.957   564.3635     3.58   0.000     915.8248    3128.089
-------------+----------------------------------------------------------------
     sigma_u |   55.257002
     sigma_e |   50.135301
         rho |   .54848204   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Dependent variable: ln(Total Food Waste)

```
. xtreg LnY1 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSqua
> red Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate VegetarianD
> ummy Dum2ppl Dum3ppl Dum4ppl, re vce(robust)

Random-effects GLS regression                   Number of obs      =       975
Group variable: HouseholdNo                     Number of groups   =        90

R-sq:  within  = 0.0000                         Obs per group: min =         1
       between = 0.5221                                        avg =      10.8
       overall = 0.3581                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(22)      =         .
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =         .

                              (Std. Err. adjusted for 90 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
        LnY1 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |    .0886004   .1487057     0.60   0.551    -.2028574    .3800583
          Q4 |   -.0158481   .1499186    -0.11   0.916    -.3096831     .277987
          Q5 |    .0955791   .1368856     0.70   0.485    -.1727117    .3638699
          Q6 |   -.1880712   .1448313    -1.30   0.194    -.4719353    .095793
          Q7 |    .0175181   .1650995     0.11   0.915     -.306071    .3411072
          Q8 |    .2944881    .142438     2.07   0.039     .0153147    .5736616
          Q9 |   -.404819    .1193909    -3.39   0.001     -.638821   -.170817
         Q10 |    .1038901   .1346508     0.77   0.440    -.1600207    .3678009
         Q11 |   -.0260973   .1824031    -0.14   0.886    -.3836008    .3314061
         Age |    .0159357   .0269215     0.59   0.554    -.0368295    .068701
  AgeSquared |   -.0001217   .0002551    -0.48   0.633    -.0006217    .0003784
   Education |   -2.532727   .7822732    -3.24   0.001    -4.065955     -.9995
EducationS~d |    .0789605   .0245518     3.22   0.001     .0308399    .1270811
      Income |   -.0000391    .000013    -3.01   0.003    -.0000645   -.0000137
IncomeSqua~d |    2.82e-10   8.34e-11     3.38   0.001     1.19e-10    4.46e-10
      Female |   -.1500372   .1361065    -1.10   0.270     -.416801    .1167267
  SouthDummy |   -.0523659   .1224969    -0.43   0.669    -.2924553    .1877236
  WhiteDummy |    .0877843    .147753     0.59   0.552    -.2018062    .3773748
DumImmigrate |    .1570658   .1732537     0.91   0.365    -.1825052    .4966368
Vegetarian~y |   -.0363487    .169237    -0.21   0.830    -.3680471    .2953498
     Dum2ppl |    .6535885   .1831787     3.57   0.000     .2945649    1.012612
     Dum3ppl |    1.052489   .1927616     5.46   0.000     .6746827    1.430294
     Dum4ppl |    1.147442   .2512697     4.57   0.000     .6549628    1.639922
       _cons |    24.45796   6.241418     3.92   0.000     12.22501    36.69092
-------------+----------------------------------------------------------------
     sigma_u |   .54728576
     sigma_e |   .50498882
         rho |   .54013089   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Dependent variable: Total Food Waste per Meal

```
. xtreg TotFoodWasteTotMeals Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Educati
> on EducationSquared Income IncomeSquared Female SouthDummy WhiteDummy DumImmig
> rate VegetarianDummy, re vce(robust)

Random-effects GLS regression                   Number of obs      =       979
Group variable: HouseholdNo                     Number of groups   =        89

R-sq:  within  = 0.0001                         Obs per group: min =         1
       between = 0.2282                                        avg =      11.0
       overall = 0.1435                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(19)      =         .
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =         .

                          (Std. Err. adjusted for 89 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
TotFoodWas~s |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |   .4452482   .4347396     1.02   0.306    -.4068257    1.297322
          Q4 |  -.0845735   .4790367    -0.18   0.860    -1.023468    .8543212
          Q5 |   .2756451   .5457925     0.51   0.614    -.7940886    1.345379
          Q6 |  -1.19919    .5838216    -2.05   0.040     -2.34346   -.0549212
          Q7 |  -.5507176   .5424752    -1.02   0.310    -1.613949    .5125141
          Q8 |   .6850102    .536563     1.28   0.202    -.3666339    1.736654
          Q9 |  -.6383611   .5732863    -1.11   0.265    -1.761982    .4852594
         Q10 |   .2336853   .4226522     0.55   0.580    -.5946979    1.062068
         Q11 |  -.5095045   .6752906    -0.75   0.451     -1.83305    .8140408
         Age |  -.1737452   .1119767    -1.55   0.121    -.3932155    .0457252
  AgeSquared |   .0015578   .0010094     1.54   0.123    -.0004206    .0035363
   Education |  -3.388803   3.558816    -0.95   0.341    -10.36395    3.586348
EducationS~d |   .1013314    .111786     0.91   0.365    -.1177652     .320428
      Income |  -.0000507   .0000449    -1.13   0.259    -.0001388    .0000373
IncomeSqua~d |   3.94e-10   3.10e-10     1.27   0.203    -2.13e-10    1.00e-09
      Female |  -.1370102   .3894494    -0.35   0.725     -.900317    .6262967
  SouthDummy |   .4438545   .4722975     0.94   0.347    -.4818316    1.369541
  WhiteDummy |  -.4641805    .586419    -0.79   0.429    -1.613541    .6851796
DumImmigrate |  -.0862929   .5391836    -0.16   0.873    -1.143073    .9704876
Vegetarian~y |  -.5061386   .4657838    -1.09   0.277    -1.419058    .4067809
       _cons |   38.12472   27.53312     1.38   0.166     -15.8392    92.08864
-------------+----------------------------------------------------------------
     sigma_u |  1.9294316
     sigma_e |  1.6870462
         rho |   .56672279   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Dependent variable: ln(Total Food Waste per Meal)

```
. xtreg LnY2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSqua
> red Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate VegetarianD
> ummy, re vce(robust)

Random-effects GLS regression                   Number of obs      =       975
Group variable: HouseholdNo                     Number of groups   =        89

R-sq:  within  = 0.0001                         Obs per group: min =         1
       between = 0.2526                                        avg =      11.0
       overall = 0.1920                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(19)      =         .
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =         .

                          (Std. Err. adjusted for 89 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
        LnY2 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |   .1385265   .1738223     0.80   0.425     -.202159     .479212
          Q4 |  -.0419474   .1706634    -0.25   0.806    -.3764415    .2925467
          Q5 |   .1092138   .1661625     0.66   0.511    -.2164588    .4348864
          Q6 |  -.3472693   .1546902    -2.24   0.025    -.6504565    -.044082
          Q7 |  -.0833075   .1675836    -0.50   0.619    -.4117652    .2451503
          Q8 |   .2011726   .1545393     1.30   0.193    -.1017189    .5040641
          Q9 |  -.2736071    .163219    -1.68   0.094    -.5935106    .0462963
         Q10 |   .0508233   .1397733     0.36   0.716    -.2231273    .3247739
         Q11 |  -.1302425    .226856    -0.57   0.566    -.5748722    .3143871
         Age |  -.0278235   .0319578    -0.87   0.384    -.0904595    .0348126
  AgeSquared |   .0002569   .0002927     0.88   0.380    -.0003168    .0008305
   Education |   -1.63959   1.056621    -1.55   0.121     -3.71053    .4313502
EducationS~d |   .0494489   .0331362     1.49   0.136    -.0154969    .1143947
      Income |  -.0000181   .0000133    -1.36   0.174    -.0000442    8.00e-06
IncomeSqua~d |   1.51e-10   8.98e-11     1.68   0.094    -2.55e-11    3.27e-10
      Female |  -.0770751   .1446258    -0.53   0.594    -.3605364    .2063862
  SouthDummy |   .1228416    .149824     0.82   0.412    -.1708079    .4164912
  WhiteDummy |  -.1136273   .1573557    -0.72   0.470    -.4220388    .1947843
DumImmigrate |   .1143165   .1669537     0.68   0.494    -.2129068    .4415398
Vegetarian~y |  -.1195285   .1418657    -0.84   0.399    -.3975801    .1585232
       _cons |   15.77264   8.271523     1.91   0.057    -.4392509    31.98452
-------------+----------------------------------------------------------------
     sigma_u |  .60997539
     sigma_e |  .46414859
         rho |  .63330641   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Dependent variable: Total Food Waste per Person

```
. xtreg TotFWHHS Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education Education
> Squared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Vegetar
> ianDummy, re vce(robust)

Random-effects GLS regression                   Number of obs      =      1009
Group variable: HouseholdNo                     Number of groups   =        90

R-sq:  within  = 0.0000                         Obs per group: min =         1
       between = 0.3600                                        avg =      11.2
       overall = 0.2191                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(20)      =     59.90
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0000

                                (Std. Err. adjusted for 90 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
    TotFWHHS |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |    5.011528   5.471619     0.92   0.360    -5.712648    15.73571
          Q4 |   -.6283708   5.843719    -0.11   0.914    -12.08185    10.82511
          Q5 |    .7349057   6.100727     0.12   0.904     -11.2223    12.69211
          Q6 |   -11.98153   7.159895    -1.67   0.094    -26.01467    2.051606
          Q7 |   -8.31216    7.443723    -1.12   0.264    -22.90159     6.27727
          Q8 |    21.14158   6.547664     3.23   0.001     8.308393    33.97476
          Q9 |   -15.80768   5.470455    -2.89   0.004    -26.52958    -5.08579
         Q10 |    4.430668   5.323448     0.83   0.405    -6.003099    14.86443
         Q11 |   -3.804477   7.832354    -0.49   0.627    -19.15561    11.54665
         Age |   -.7273026   1.011674    -0.72   0.472    -2.710146    1.255541
  AgeSquared |    .0079324   .0100018     0.79   0.428    -.0116708    .0275356
   Education |   -103.7597   30.11465    -3.45   0.001    -162.7834   -44.73612
EducationS~d |    3.244785   .9407367     3.45   0.001     1.400975    5.088595
      Income |   -.0020112    .000641    -3.14   0.002    -.0032676   -.0007549
IncomeSqua~d |    1.34e-08   4.01e-09     3.34   0.001     5.55e-09    2.13e-08
      Female |   -2.803111   5.777087    -0.49   0.628    -14.12599    8.519773
  SouthDummy |   -2.059046   4.898144    -0.42   0.674    -11.65923    7.541141
  WhiteDummy |    3.928242   6.930992     0.57   0.571    -9.656253    17.51274
DumImmigrate |   -3.975758    7.99758    -0.50   0.619    -19.65073    11.69921
Vegetarian~y |   -1.477751   7.151184    -0.21   0.836    -15.49382    12.53831
       _cons |      948.25   249.5452     3.80   0.000     459.1504     1437.35
-------------+----------------------------------------------------------------
     sigma_u |     22.8607
     sigma_e |   24.151139
         rho |   .47257144   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Dependent variable: ln(Total Food Waste per Person)

```
. xtreg LnY3 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSqua
> red Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate VegetarianD
> ummy, re vce(robust)

Random-effects GLS regression                   Number of obs      =       975
Group variable: HouseholdNo                     Number of groups   =        90

R-sq:  within  = 0.0000                         Obs per group: min =         1
       between = 0.3476                                        avg =      10.8
       overall = 0.2307                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(19)      =         .
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =         .

                                (Std. Err. adjusted for 90 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
        LnY3 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |    .1211084   .1541877     0.79   0.432    -.1810939    .4233107
          Q4 |   -.0400562   .1501457    -0.27   0.790    -.3343363     .254224
          Q5 |    .0723611    .143229     0.51   0.613    -.2083626    .3530848
          Q6 |   -.1848277   .1443755    -1.28   0.200    -.4677985    .0981432
          Q7 |   -.0180125   .1708302    -0.11   0.916    -.3528335    .3168086
          Q8 |    .3464212   .1350319     2.57   0.010     .0817636    .6110789
          Q9 |   -.4018955   .1180138    -3.41   0.001    -.6331983   -.1705927
         Q10 |    .0926971   .1296277     0.72   0.475    -.1613685    .3467626
         Q11 |   -.0133908   .1879651    -0.07   0.943    -.3817956    .3550139
         Age |     .005922   .0255851     0.23   0.817    -.0442239    .0560678
  AgeSquared |   -.0000201   .0002426    -0.08   0.934    -.0004956    .0004554
   Education |   -2.504001   .7788554    -3.21   0.001    -4.030529    -.977472
EducationS~d |    .0780506   .0243739     3.20   0.001     .0302788    .1258225
      Income |   -.0000406   .0000125    -3.24   0.001    -.0000651    -.000016
IncomeSqua~d |    2.89e-10   8.06e-11     3.59   0.000     1.31e-10    4.47e-10
      Female |   -.1124548   .1418973    -0.79   0.428    -.3905684    .1656587
  SouthDummy |   -.0753873   .1216294    -0.62   0.535    -.3137766    .1630019
  WhiteDummy |    .0869823   .1479903     0.59   0.557    -.2030732    .3770379
DumImmigrate |    .0662552   .1568911     0.42   0.673    -.2412456     .373756
Vegetarian~y |   -.0427754   .1866866    -0.23   0.819    -.4086744    .3231237
       _cons |    24.43316   6.294125     3.88   0.000     12.09691    36.76942
-------------+----------------------------------------------------------------
     sigma_u |   .53474392
     sigma_e |   .50498882
         rho |   .52859461   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Dependent variable: Total Edible Food Waste

```
. xtreg TotEd Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSqu
> ared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Vegetarian
> Dummy Dum2ppl Dum3ppl Dum4ppl, re vce(robust)

Random-effects GLS regression                   Number of obs      =      1010
Group variable: HouseholdNo                     Number of groups   =        90

R-sq:  within  = 0.0000                         Obs per group: min =         1
       between = 0.3826                                        avg =      11.2
       overall = 0.2533                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(23)      =    122.12
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0000

                                (Std. Err. adjusted for 90 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
       TotEd |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |  -1.947137   7.964886    -0.24   0.807    -17.55803    13.66375
          Q4 |  -2.140547    6.93286    -0.31   0.758     -15.7287    11.44761
          Q5 |  -2.622901   10.00466    -0.26   0.793    -22.23167    16.98587
          Q6 |  -22.08096   11.90415    -1.85   0.064    -45.41266    1.250742
          Q7 |  -9.657653    8.72018    -1.11   0.268    -26.74889    7.433585
          Q8 |   6.193507   12.04988     0.51   0.607    -17.42382    29.81083
          Q9 |  -26.90091   9.984501    -2.69   0.007    -46.47017   -7.331648
         Q10 |   .5174506   8.082743     0.06   0.949    -15.32443    16.35934
         Q11 |  -.7188862   8.688279    -0.08   0.934     -17.7476    16.30983
         Age |  -1.737984   1.456921    -1.19   0.233    -4.593495    1.117528
  AgeSquared |   .0158857   .0146521     1.08   0.278    -.0128319    .0446032
   Education |  -203.0159   51.60613    -3.93   0.000    -304.1621   -101.8698
EducationS~d |    6.27101   1.619452     3.87   0.000     3.096942    9.445078
      Income |  -.0009067   .0006586    -1.38   0.169    -.0021975    .0003842
IncomeSqua~d |   6.23e-09   4.79e-09     1.30   0.193    -3.15e-09    1.56e-08
      Female |   -1.55923   6.578767    -0.24   0.813    -14.45338    11.33492
  SouthDummy |   2.505111   6.141056     0.41   0.683    -9.531138    14.54136
  WhiteDummy |   3.916583   9.289965     0.42   0.673    -14.29141    22.12458
DumImmigrate |  -14.33232   8.764534    -1.64   0.102    -31.51049    2.845856
Vegetarian~y |   5.440694   7.363328     0.74   0.460    -8.991164    19.87255
     Dum2ppl |   10.43966     10.779     0.97   0.333    -10.68679    31.56611
     Dum3ppl |   26.09099   11.44197     2.28   0.023     3.665135    48.51684
     Dum4ppl |   38.08528   16.72539     2.28   0.023     5.304116    70.86645
       _cons |   1743.096   420.2636     4.15   0.000     919.3949    2566.798
-------------+----------------------------------------------------------------
     sigma_u |  34.613522
     sigma_e |  30.294148
         rho |  .56625304   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Dependent variable: ln(Total Edible Food Waste)

```
. xtreg LnY4 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSqua
> red Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate VegetarianD
> ummy Dum2ppl Dum3ppl Dum4ppl, re vce(robust)

Random-effects GLS regression                   Number of obs      =       728
Group variable: HouseholdNo                     Number of groups   =        87

R-sq:  within  = 0.0000                         Obs per group: min =         1
       between = 0.3941                                        avg =       8.4
       overall = 0.2597                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(22)      =         .
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =         .

                                (Std. Err. adjusted for 87 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
        LnY4 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |  -.0913236   .3123647    -0.29   0.770    -.7035472    .5208999
          Q4 |   .1081666   .2360232     0.46   0.647    -.3544303    .5707635
          Q5 |   .0058519    .292772     0.02   0.984    -.5679707    .5796746
          Q6 |  -.5863429    .278681    -2.10   0.035    -1.132548   -.0401381
          Q7 |  -.0919719   .3168743    -0.29   0.772    -.7130341    .5290903
          Q8 |   .1378661   .2966118     0.46   0.642    -.4434823    .7192146
          Q9 |  -.7887592   .2507668    -3.15   0.002    -1.280253   -.2972654
         Q10 |  -.1293446   .2349491    -0.55   0.582    -.5898363    .3311472
         Q11 |   .3235488   .3032047     1.07   0.286    -.2707215     .917819
         Age |   .0205028   .0434536     0.47   0.637    -.0646647    .1056703
  AgeSquared |  -.0002205   .0004259    -0.52   0.605    -.0010551    .0006142
   Education |  -5.600923   1.149717    -4.87   0.000    -7.854327   -3.347518
EducationS~d |   .1740185   .0362408     4.80   0.000     .1029879    .2450492
      Income |  -.0000486   .0000201    -2.42   0.016     -.000088   -9.24e-06
IncomeSqua~d |   3.56e-10   1.47e-10     2.42   0.015     6.79e-11    6.45e-10
      Female |   .0541103   .2177491     0.25   0.804    -.3726701    .4808907
  SouthDummy |  -.042055   .2304938    -0.18   0.855    -.4938145    .4097045
  WhiteDummy |   .1559537   .3046855     0.51   0.609    -.4412189    .7531263
DumImmigrate |  -.3071591   .3656219    -0.84   0.401    -1.023765    .4094466
Vegetarian~y |    .142382   .2259263     0.63   0.529    -.3004255    .5851895
     Dum2ppl |   .0307127   .3079501     0.10   0.921    -.5728584    .6342838
     Dum3ppl |   .4688345   .3281876     1.43   0.153    -.1744013     1.11207
     Dum4ppl |   .4954467   .4935114     1.00   0.315    -.4718178    1.462711
       _cons |   48.83759   9.303632     5.25   0.000     30.60281    67.07238
-------------+----------------------------------------------------------------
     sigma_u |  .90331768
     sigma_e |  .88940241
         rho |  .50776163   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Dependent variable: Edible Food Waste per Meal

```
. xtreg TotEdTotMeals Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education Educ
> ationSquared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Ve
> getarianDummy, re vce(robust)

Random-effects GLS regression                   Number of obs      =       980
Group variable: HouseholdNo                     Number of groups   =        89

R-sq:  within  = 0.0005                         Obs per group: min =         1
       between = 0.2769                                        avg =      11.0
       overall = 0.1708                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(19)      =         .
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =         .

                          (Std. Err. adjusted for 89 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
TotEdTotMe~s |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |   .0915562   .2872841     0.32   0.750    -.4715102    .6546227
          Q4 |   .0314715   .2650164     0.12   0.905    -.4879511    .5508942
          Q5 |  -.3682669   .3772082    -0.98   0.329    -1.107581    .3710476
          Q6 |  -1.037574   .4938263    -2.10   0.036    -2.005455   -.0696919
          Q7 |  -.4045721   .3414558    -1.18   0.236    -1.073813    .2646689
          Q8 |   .1554361   .4610323     0.34   0.736    -.7481705    1.059043
          Q9 |  -.8208416   .3791918    -2.16   0.030    -1.564044   -.0776393
         Q10 |   .1362123   .3060864     0.45   0.656     -.463706    .7361305
         Q11 |   .1865259   .3782817     0.49   0.622    -.5548926    .9279445
         Age |  -.0601356   .0612782    -0.98   0.326    -.1802387    .0599675
  AgeSquared |   .0005594   .0005863     0.95   0.340    -.0005898    .0017085
   Education |  -5.630959   1.690642    -3.33   0.001    -8.944558   -2.317361
EducationS~d |     .174534   .0536724     3.25   0.001      .069338     .27973
      Income |  -.0000215   .0000259    -0.83   0.406    -.0000722    .0000292
IncomeSqua~d |   1.61e-10   1.83e-10     0.88   0.379    -1.98e-10    5.20e-10
      Female |  -.0134727   .2325884    -0.06   0.954    -.4693376    .4423922
  SouthDummy |   .2130549   .2654421     0.80   0.422     -.307202    .7333119
  WhiteDummy |  -.1976918   .3977155    -0.50   0.619    -.9771999    .5818163
DumImmigrate |  -.4590777   .2945974    -1.56   0.119    -1.036478    .1183226
Vegetarian~y |   .0603214   .2656313     0.23   0.820    -.4603065    .5809492
       _cons |    49.4297   13.98191     3.54   0.000     22.02565    76.83374
-------------+----------------------------------------------------------------
     sigma_u |  1.3017934
     sigma_e |  1.1639946
         rho |  .55571029   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Dependent variable: Edible ln(Food Waste per Meal)

```
. xtreg LnY5 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSqua
> red Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate VegetarianD
> ummy, re vce(robust)

Random-effects GLS regression                   Number of obs      =       729
Group variable: HouseholdNo                     Number of groups   =        86

R-sq:  within  = 0.0007                         Obs per group: min =         1
       between = 0.3300                                        avg =       8.5
       overall = 0.2923                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(19)      =         .
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =         .

                          (Std. Err. adjusted for 86 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
        LnY5 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |   .0698578   .3473218     0.20   0.841    -.6108804    .7505959
          Q4 |   .0200043   .2359333     0.08   0.932    -.4424165    .4824251
          Q5 |   -.021764   .3093261    -0.07   0.944     -.628032     .584504
          Q6 |  -.7560215   .2731578    -2.77   0.006    -1.291401    -.220642
          Q7 |  -.1702408   .3219317    -0.53   0.597    -.8012154    .4607338
          Q8 |   .1437179   .3151966     0.46   0.648    -.4740561    .7614918
          Q9 |  -.8160079   .2650996    -3.08   0.002    -1.335593   -.2964223
         Q10 |  -.1690435   .2471909    -0.68   0.494    -.6535287    .3154417
         Q11 |   .3761354     .35507     1.06   0.289     -.319789     1.07206
         Age |  -.0149029   .0413802    -0.36   0.719    -.0960066    .0662009
  AgeSquared |   .0001031   .000401     0.26   0.797    -.0006828    .000889
   Education |  -5.074723   1.248401    -4.06   0.000    -7.521545   -2.627901
EducationS~d |   .1562292   .039407     3.96   0.000     .0789929    .2334656
      Income |   -.000034   .0000223    -1.52   0.127    -.0000777    9.71e-06
IncomeSqua~d |   2.46e-10   1.57e-10     1.57   0.116    -6.08e-11    5.53e-10
      Female |    .249033   .2183203     1.14   0.254    -.1788669     .676933
  SouthDummy |   .1824712   .251794     0.72   0.469     -.311036    .6759784
  WhiteDummy |  -.1555116   .2960132    -0.53   0.599    -.7356868    .4246636
DumImmigrate |  -.6031674   .340236     -1.77   0.076    -1.270018    .0636829
Vegetarian~y |  -.1058246   .1727486    -0.61   0.540    -.4444056    .2327564
       _cons |   42.54663   10.12609     4.20   0.000     22.69986    62.3934
-------------+----------------------------------------------------------------
     sigma_u |  .96817487
     sigma_e |  .89558285
         rho |  .53889028   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Dependent variable: Edible Food Waste per Person

```
. xtreg TotEdFWHHS Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education Educati
> onSquared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Veget
> arianDummy, re vce(robust)

Random-effects GLS regression                   Number of obs      =      1010
Group variable: HouseholdNo                     Number of groups   =        90

R-sq:  within  = 0.0000                         Obs per group: min =         1
       between = 0.2785                                        avg =      11.2
       overall = 0.1608                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(19)      =         .
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =         .

                                (Std. Err. adjusted for 90 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
  TotEdFWHHS |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |   .3188452    3.58202     0.09   0.929    -6.701784    7.339475
          Q4 |   1.102247   3.356677     0.33   0.743     -5.47672    7.681213
          Q5 |  -3.605402   4.738098    -0.76   0.447     -12.8919    5.681098
          Q6 |  -12.22344   5.800382    -2.11   0.035    -23.59198   -.8548983
          Q7 |  -7.090665   4.243004    -1.67   0.095     -15.4068     1.22547
          Q8 |   3.426377   5.808304     0.59   0.555    -7.957689    14.81044
          Q9 |  -10.05826    4.63155    -2.17   0.030    -19.13594   -.9805939
         Q10 |   1.655935   3.692719     0.45   0.654    -5.581662    8.893533
         Q11 |   2.103304   4.517903     0.47   0.642    -6.751623    10.95823
         Age |  -.6949405   .6992502    -0.99   0.320    -2.065446    .6755647
  AgeSquared |   .0066164   .0069647     0.95   0.342    -.0070343     .020267
   Education |  -78.34118    21.0215    -3.73   0.000    -119.5426   -37.1398
EducationS~d |   2.438882   .6657506     3.66   0.000     1.134035    3.74373
      Income |  -.0005716   .0003354    -1.70   0.088     -.001229    .0000859
IncomeSqua~d |   3.68e-09   2.30e-09     1.60   0.109    -8.25e-10    8.18e-09
      Female |  -.9852417   2.959302    -0.33   0.739    -6.785367    4.814883
  SouthDummy |   .5197202   3.014742     0.17   0.863    -5.389066    6.428507
  WhiteDummy |   .9851179   4.942252     0.20   0.842    -8.701518    10.67175
DumImmigrate |  -7.732239   3.486049    -2.22   0.027    -14.56477   -.8997083
Vegetarian~y |   1.538703   3.548469     0.43   0.665     -5.41617    8.493575
       _cons |   686.2262   172.2583     3.98   0.000     348.6061    1023.846
-------------+----------------------------------------------------------------
     sigma_u |   15.69156
     sigma_e |   15.76148
         rho |   .49777702   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Dependent variable: ln(Edible Food Waste per Person)

```
. xtreg LnY6 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSqua
> red Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate VegetarianD
> ummy, re vce(robust)

Random-effects GLS regression                   Number of obs      =       728
Group variable: HouseholdNo                     Number of groups   =        87

R-sq:  within  = 0.0000                         Obs per group: min =         1
       between = 0.3278                                        avg =       8.4
       overall = 0.2672                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(19)      =         .
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =         .

                                (Std. Err. adjusted for 87 clusters in HouseholdNo)
------------------------------------------------------------------------------
             |               Robust
        LnY6 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          Q3 |    .033599   .3264589     0.10   0.918    -.6062486    .6734466
          Q4 |   .0589403    .227158     0.26   0.795    -.3862812    .5041618
          Q5 |  -.0292947   .3065429    -0.10   0.924    -.6301077    .5715183
          Q6 |  -.5780536   .2596052    -2.23   0.026     -1.08687   -.0692368
          Q7 |  -.1918301   .3206474    -0.60   0.550    -.8202874    .4366272
          Q8 |   .2335141   .3047346     0.77   0.444    -.3637548     .830783
          Q9 |  -.8249181   .2454076    -3.36   0.001    -1.305908   -.3439281
         Q10 |  -.1276346   .2427862    -0.53   0.599    -.6034867    .3482175
         Q11 |   .4235295    .321012     1.32   0.187    -.2056424    1.052701
         Age |   .0013801   .0407865     0.03   0.973      -.07856    .0813203
  AgeSquared |  -.0000205   .0003975    -0.05   0.959    -.0007996    .0007585
   Education |  -5.527415   1.254545    -4.41   0.000    -7.986278   -3.068552
EducationS~d |   .1718757    .03961     4.34   0.000     .0942416    .2495099
      Income |  -.0000512   .0000211    -2.42   0.015    -.0000925   -9.81e-06
IncomeSqua~d |   3.48e-10   1.50e-10     2.33   0.020     5.50e-11    6.41e-10
      Female |   .1920761   .2198576     0.87   0.382    -.2388368    .6229891
  SouthDummy |   .0156835   .2351936     0.07   0.947    -.4452875    .4766546
  WhiteDummy |    .015438   .3021604     0.05   0.959    -.5767856    .6076615
DumImmigrate |  -.6924488   .3097068    -2.24   0.025    -1.299463   -.0854345
Vegetarian~y |   .0198274   .2375268     0.08   0.933    -.4457166    .4853714
       _cons |   48.27771    10.0177     4.82   0.000     28.64338    67.91204
-------------+----------------------------------------------------------------
     sigma_u |   .92297232
     sigma_e |   .88940241
         rho |   .51851626   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Dependent variable: Total Food Waste

```
. xtreg  TotalFoodWaste week2 week3 week4 week5 week6 week7 week8 week9 week10
> week11 week12 week13 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education Ed
> ucationSquared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate
>  VegetarianDummy Dum2ppl Dum3ppl Dum4ppl

Random-effects GLS regression                   Number of obs      =      1009
Group variable: HouseholdNo                     Number of groups   =        90

R-sq:  within  = 0.0151                         Obs per group: min =         1
       between = 0.4428                                        avg =      11.2
       overall = 0.2933                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(35)      =     75.60
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0001
```

TotalFoodW~e	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
week2	1.63501	7.60968	0.21	0.830	-13.27969	16.54971
week3	10.52907	7.638138	1.38	0.168	-4.4414	25.49955
week4	-1.24467	7.750962	-0.16	0.872	-16.43628	13.94694
week5	5.920024	7.869397	0.75	0.452	-9.503711	21.34376
week6	-10.5741	7.859917	-1.35	0.179	-25.97925	4.831056
week7	-.3059145	7.814043	-0.04	0.969	-15.62116	15.00933
week8	-8.894573	7.994725	-1.11	0.266	-24.56395	6.774799
week9	-12.31612	7.994351	-1.54	0.123	-27.98476	3.35252
week10	-3.401068	8.027276	-0.42	0.672	-19.13424	12.3321
week11	-3.587164	8.162033	-0.44	0.660	-19.58445	12.41013
week12	-2.867812	8.235965	-0.35	0.728	-19.01001	13.27438
week13	2.003206	8.090098	0.25	0.804	-13.8531	17.85951
Q3	12.14834	15.65735	0.78	0.438	-18.53951	42.83619
Q4	-6.35838	15.1042	-0.42	0.674	-35.96206	23.2453
Q5	10.39063	15.5802	0.67	0.505	-20.14601	40.92726
Q6	-16.54054	15.09977	-1.10	0.273	-46.13555	13.05447
Q7	-.840004	18.18433	-0.05	0.963	-36.48064	34.80063
Q8	36.88894	14.81141	2.49	0.013	7.85911	65.91877
Q9	-45.31917	13.64799	-3.32	0.001	-72.06874	-18.5696
Q10	2.921479	13.61325	0.21	0.830	-23.75999	29.60295
Q11	-11.16211	19.47014	-0.57	0.566	-49.32288	26.99866
Age	-.9966902	2.708684	-0.37	0.713	-6.305614	4.312234
AgeSquared	.0093591	.0254873	0.37	0.713	-.0405951	.0593134
Education	-230.201	87.83034	-2.62	0.009	-402.3453	-58.05669
EducationS~d	7.149038	2.732383	2.62	0.009	1.793665	12.50441
Income	-.0033144	.0012531	-2.64	0.008	-.0057705	-.0008584
IncomeSqua~d	2.32e-08	8.54e-09	2.71	0.007	6.43e-09	3.99e-08
Female	-11.04033	14.71285	-0.75	0.453	-39.87698	17.79632
SouthDummy	-.6456692	12.7775	-0.05	0.960	-25.6891	24.39776
WhiteDummy	7.725796	17.99267	0.43	0.668	-27.53918	42.99078
DumImmigrate	7.577042	20.15706	0.38	0.707	-31.93007	47.08416
Vegetarian~y	3.958414	17.76597	0.22	0.824	-30.86226	38.77908
Dum2ppl	35.63362	18.20931	1.96	0.050	-.0559709	71.3232
Dum3ppl	70.70045	22.36926	3.16	0.002	26.85751	114.5434
Dum4ppl	95.70156	23.93322	4.00	0.000	48.7933	142.6098
_cons	2021.867	704.3536	2.87	0.004	641.3597	3402.375
sigma_u	49.412973					
sigma_e	50.083206					
rho	.49326403	(fraction of variance due to u_i)				

Dependent variable: Total Food Waste per Meal

```
. xtreg TotFoodWasteTotMeals week2 week3 week4 week5 week6 week7 week8 week9 we
> ek10 week11 week12 week13 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Educati
> on EducationSquared Income IncomeSquared Female SouthDummy WhiteDummy DumImmi
> grate VegetarianDummy

Random-effects GLS regression                   Number of obs      =       979
Group variable: HouseholdNo                     Number of groups   =        89

R-sq:  within  = 0.0252                         Obs per group: min =         1
       between = 0.2331                                        avg =      11.0
       overall = 0.1561                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(31)      =         .
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =         .
```

TotFoodWas~s	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
week2	-.1103133	.2606601	-0.42	0.672	-.6211976	.4005711
week3	.6416015	.2612627	2.46	0.014	.129536	1.153667
week4	.2030649	.2672824	0.76	0.447	-.3207989	.7269287
week5	.0594755	.2685126	0.22	0.825	-.4667996	.5857506
week6	-.1618002	.2725179	-0.59	0.553	-.6959255	.3723251
week7	-.1870905	.2704412	-0.69	0.489	-.7171455	.3429645
week8	-.3223049	.2745397	-1.17	0.240	-.8603929	.215783
week9	-.3170064	.274533	-1.15	0.248	-.8550811	.2210684
week10	.0811061	.2755314	0.29	0.768	-.4589257	.6211378
week11	.3092219	.2817101	1.10	0.272	-.2429198	.8613636
week12	.1188876	.2818126	0.42	0.673	-.433455	.6712301
week13	-.0321459	.2775685	-0.12	0.908	-.5761701	.5118784
Q3	.4437624	.5232178	0.85	0.396	-.5817256	1.46925
Q4	-.0754138	.509776	-0.15	0.882	-1.074556	.9237289
Q5	.2864044	.5283353	0.54	0.588	-.7491136	1.321922
Q6	-1.197875	.5160931	-2.32	0.020	-2.209399	-.1863513
Q7	-.5437486	.6191979	-0.88	0.380	-1.757354	.669857
Q8	.6924178	.4856221	1.43	0.154	-.2593841	1.64422
Q9	-.6268519	.4597414	-1.36	0.173	-1.527928	.2742247
Q10	.212661	.4657386	0.46	0.648	-.7001699	1.125492
Q11	-.4766091	.6632894	-0.72	0.472	-1.776632	.8234142
Age	-.171754	.088834	-1.93	0.053	-.3458655	.0023574
AgeSquared	.0015398	.0008299	1.86	0.064	-.0000867	.0031664
Education	-3.349799	2.979845	-1.12	0.261	-9.190189	2.49059
EducationS~d	.1001118	.0927762	1.08	0.281	-.0817262	.2819497
Income	-.0000521	.0000421	-1.24	0.216	-.0001347	.0000304
IncomeSqua~d	4.00e-10	2.88e-10	1.39	0.164	-1.63e-10	9.64e-10
Female	-.1337169	.4952281	-0.27	0.787	-1.104346	.8369123
SouthDummy	.4433214	.433215	1.02	0.306	-.4057644	1.292407
WhiteDummy	-.4781435	.6112538	-0.78	0.434	-1.676179	.719892
DumImmigrate	-.0862327	.6471801	-0.13	0.894	-1.354682	1.182217
Vegetarian~y	-.5364576	.5036421	-1.07	0.287	-1.523578	.4506627
_cons	37.79794	23.97716	1.58	0.115	-9.196434	84.79231
sigma_u	1.6735155					
sigma_e	1.6770233					
rho	.49895306	(fraction of variance due to u_i)				

Dependent variable: Total Food Waste per Person

```
. xtreg TotFWHHS week2 week3 week4 week5 week6 week7 week8 week9 week10 week11
> week12 week13 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education Education
> Squared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Vegeta
> rianDummy

Random-effects GLS regression                   Number of obs      =      1009
Group variable: HouseholdNo                     Number of groups   =        90

R-sq:  within  = 0.0175                         Obs per group: min =         1
       between = 0.3712                                        avg =      11.2
       overall = 0.2301                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(32)      =     62.53
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0010
```

TotFWHHS	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
week2	1.928832	3.652075	0.53	0.597	-5.229103	9.086768
week3	8.499422	3.665602	2.32	0.020	1.314973	15.68387
week4	1.595899	3.719266	0.43	0.668	-5.693728	8.885526
week5	3.584902	3.775715	0.95	0.342	-3.815363	10.98517
week6	-2.971729	3.771105	-0.79	0.431	-10.36296	4.4195
week7	-.7049177	3.749304	-0.19	0.851	-8.053419	6.643583
week8	-3.105071	3.835721	-0.81	0.418	-10.62295	4.412805
week9	-3.727403	3.835737	-0.97	0.331	-11.24531	3.790502
week10	.91335	3.851527	0.24	0.813	-6.635504	8.462204
week11	.8828092	3.915914	0.23	0.822	-6.792241	8.557859
week12	.4215638	3.951575	0.11	0.915	-7.32338	8.166508
week13	2.786465	3.881095	0.72	0.473	-4.820343	10.39327
Q3	5.045073	6.729944	0.75	0.453	-8.145374	18.23552
Q4	-.3142307	6.578042	-0.05	0.962	-13.20696	12.5785
Q5	.7917327	6.829613	0.12	0.908	-12.59406	14.17753
Q6	-12.14954	6.611568	-1.84	0.066	-25.10798	.8088898
Q7	-8.648589	7.902794	-1.09	0.274	-24.13778	6.840602
Q8	21.3885	6.242888	3.43	0.001	9.152661	33.62433
Q9	-15.53626	5.951794	-2.61	0.009	-27.20156	-3.870953
Q10	4.209296	5.938846	0.71	0.478	-7.430628	15.84922
Q11	-3.720496	8.484769	-0.44	0.661	-20.35034	12.90935
Age	-.7061767	1.142309	-0.62	0.536	-2.945061	1.532708
AgeSquared	.0077748	.0106754	0.73	0.466	-.0131487	.0286983
Education	-103.2976	38.37461	-2.69	0.007	-178.5104	-28.08471
EducationS~d	3.231893	1.194066	2.71	0.007	.8915672	5.57222
Income	-.0020256	.0005422	-3.74	0.000	-.0030883	-.000963
IncomeSqua~d	1.35e-08	3.70e-09	3.64	0.000	6.22e-09	2.07e-08
Female	-3.134766	6.308811	-0.50	0.619	-15.49981	9.230277
SouthDummy	-1.79426	5.520561	-0.33	0.745	-12.61436	9.025841
WhiteDummy	3.430793	7.77845	0.44	0.659	-11.81469	18.67627
DumImmigrate	-4.156234	8.363967	-0.50	0.619	-20.54931	12.23684
Vegetarian~y	-1.576943	7.341746	-0.21	0.830	-15.9665	12.81261
_cons	943.78	308.5671	3.06	0.002	338.9997	1548.56
sigma_u	21.52479					
sigma_e	24.096365					
rho	.4438105	(fraction of variance due to u_i)				

Dependent variable: Total Edible Food Waste

```
. xtreg TotEd week2 week3 week4 week5 week6 week7 week8 week9 week10 week11 week
> 12 week13 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education EducationSquar
> ed Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate VegetarianDu
> mmy Dum2ppl Dum3ppl Dum4ppl

Random-effects GLS regression                   Number of obs      =      1010
Group variable: HouseholdNo                     Number of groups   =        90

R-sq:  within  = 0.0232                         Obs per group: min =         1
       between = 0.3926                                        avg =      11.2
       overall = 0.2679                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(35)      =     66.23
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0011
```

TotEd	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
week2	.0225291	4.55726	0.00	0.996	-8.909536	8.954594
week3	3.566473	4.57451	0.78	0.436	-5.399402	12.53235
week4	-1.511296	4.642493	-0.33	0.745	-10.61041	7.587823
week5	-1.759795	4.713655	-0.37	0.709	-10.99839	7.478799
week6	-8.128071	4.708719	-1.73	0.084	-17.35699	1.100849
week7	-4.636391	4.680376	-0.99	0.322	-13.80976	4.536977
week8	-7.436727	4.788744	-1.55	0.120	-16.82249	1.949038
week9	-10.6285	4.788575	-2.22	0.026	-20.01393	-1.243063
week10	-6.888498	4.789272	-1.44	0.150	-16.2753	2.498303
week11	-11.09111	4.889121	-2.27	0.023	-20.67361	-1.508607
week12	-10.2243	4.933376	-2.07	0.038	-19.89354	-.5550633
week13	-8.340068	4.845794	-1.72	0.085	-17.83765	1.157514
Q3	-1.875096	10.44442	-0.18	0.858	-22.34577	18.59558
Q4	-1.306845	10.06585	-0.13	0.897	-21.03555	18.42186
Q5	-2.7068	10.38804	-0.26	0.794	-23.06698	17.65338
Q6	-22.44598	10.06085	-2.23	0.026	-42.16488	-2.727084
Q7	-10.08607	12.11153	-0.83	0.405	-33.82423	13.6521
Q8	6.690394	9.857023	0.68	0.497	-12.62902	26.0098
Q9	-26.08967	9.088542	-2.87	0.004	-43.90288	-8.276452
Q10	.0366033	9.063058	0.00	0.997	-17.72666	17.79987
Q11	-.9683153	12.92941	-0.07	0.940	-26.30949	24.37286
Age	-1.730924	1.804265	-0.96	0.337	-5.267219	1.80537
AgeSquared	.015952	.0169814	0.94	0.348	-.0173308	.0492349
Education	-201.4381	58.46607	-3.45	0.001	-316.0295	-86.84671
EducationS~d	6.221972	1.818769	3.42	0.001	2.657251	9.786693
Income	-.0009398	.0008352	-1.13	0.260	-.0025768	.0006972
IncomeSqua~d	6.44e-09	5.69e-09	1.13	0.258	-4.71e-09	1.76e-08
Female	-2.502696	9.797391	-0.26	0.798	-21.70523	16.69984
SouthDummy	2.847749	8.505349	0.33	0.738	-13.82243	19.51793
WhiteDummy	3.274871	11.97422	0.27	0.784	-20.19416	26.74391
DumImmigrate	-14.06941	13.42208	-1.05	0.295	-40.3762	12.23738
Vegetarian~y	5.328878	11.84447	0.45	0.653	-17.88585	28.54361
Dum2ppl	9.643772	12.13957	0.79	0.427	-14.14934	33.43688
Dum3ppl	25.59402	14.91783	1.72	0.086	-3.644401	54.83244
Dum4ppl	36.97506	15.89973	2.33	0.020	5.812172	68.13796
_cons	1737.007	468.889	3.70	0.000	818.0015	2656.013
sigma_u	33.42053					
sigma_e	30.13824					
rho	.55150446	(fraction of variance due to u_i)				

Dependent variable: Edible Food Waste per Meal

```
. xtreg TotEdTotMeals week2 week3 week4 week5 week6 week7 week8 week9 week10 we
> ek11 week12 week13 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education Educ
> ationSquared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate V
> egetarianDummy

Random-effects GLS regression                   Number of obs      =       980
Group variable: HouseholdNo                     Number of groups   =        89

R-sq:  within  = 0.0186                         Obs per group: min =         1
       between = 0.2777                                        avg =      11.0
       overall = 0.1819                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(31)      =         .
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =         .
```

TotEdTotMe~s	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
week2	-.0249085	.1801557	-0.14	0.890	-.3780072	.3281902
week3	.3078829	.1805727	1.71	0.088	-.046033	.6617988
week4	.0221207	.1847321	0.12	0.905	-.3399475	.3841889
week5	-.1136478	.1855816	-0.61	0.540	-.477381	.2500855
week6	-.1676309	.18835	-0.89	0.373	-.5367901	.2015283
week7	-.1791502	.186915	-0.96	0.338	-.5454968	.1871964
week8	-.2937323	.1897432	-1.55	0.122	-.6656222	.0781577
week9	-.2527662	.1897428	-1.33	0.183	-.6246553	.119123
week10	-.1348314	.1896647	-0.71	0.477	-.5065673	.2369046
week11	-.1821814	.194703	-0.94	0.349	-.5637923	.1994295
week12	-.1952905	.1947735	-1.00	0.316	-.5770396	.1864586
week13	-.2063423	.1918388	-1.08	0.282	-.5823394	.1696548
Q3	.0956153	.3599887	0.27	0.791	-.6099495	.8011801
Q4	.0491987	.3507594	0.14	0.888	-.6382771	.7366745
Q5	-.3694825	.3635383	-1.02	0.309	-1.082004	.3430395
Q6	-1.037453	.3550996	-2.92	0.003	-1.733436	-.3414709
Q7	-.4079556	.4260717	-0.96	0.338	-1.243041	.4271296
Q8	.1683543	.3341556	0.50	0.614	-.4865786	.8232871
Q9	-.8051727	.3163285	-2.55	0.011	-1.425165	-.1851803
Q10	.1187606	.3204734	0.37	0.711	-.5093558	.7468769
Q11	.2032315	.456469	0.45	0.656	-.6914313	1.097894
Age	-.0596697	.0611158	-0.98	0.329	-.1794546	.0601151
AgeSquared	.0005598	.000571	0.98	0.327	-.0005592	.0016789
Education	-5.598287	2.050589	-2.73	0.006	-9.617368	-1.579207
EducationS~d	.1734385	.0638444	2.72	0.007	.0483059	.2985711
Income	-.0000227	.000029	-0.78	0.434	-.0000795	.0000341
IncomeSqua~d	1.68e-10	1.98e-10	0.85	0.395	-2.20e-10	5.56e-10
Female	-.0198002	.3407479	-0.06	0.954	-.6876538	.6480533
SouthDummy	.2233489	.2981015	0.75	0.454	-.3609193	.8076171
WhiteDummy	-.2145841	.4205982	-0.51	0.610	-1.038941	.6097732
DumImmigrate	-.4600521	.4453004	-1.03	0.302	-1.332825	.4127206
Vegetarian~y	.0826576	.3469119	0.24	0.812	-.5972772	.7625925
_cons	49.296	16.49958	2.99	0.003	16.95742	81.63457
sigma_u	1.1526764					
sigma_e	1.1608045					
rho	.49648667	(fraction of variance due to u_i)				

Dependent variable: Edible Food Waste per Person

```
. xtreg TotEdFWHHS week2 week3 week4 week5 week6 week7 week8 week9 week10 week1
> 1 week12 week13 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Age AgeSquared Education Educati
> onSquared Income IncomeSquared Female SouthDummy WhiteDummy DumImmigrate Vege
> tarianDummy

Random-effects GLS regression                   Number of obs      =      1010
Group variable: HouseholdNo                     Number of groups   =        90

R-sq:  within  = 0.0243                         Obs per group: min =         1
       between = 0.2861                                        avg =      11.2
       overall = 0.1762                                        max =        13

Random effects u_i ~ Gaussian                   Wald chi2(32)      =     53.76
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0094
```

TotEdFWHHS	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
week2	1.526263	2.372907	0.64	0.520	-3.124549	6.177075
week3	4.771717	2.381762	2.00	0.045	.1035496	9.439884
week4	1.47634	2.416772	0.61	0.541	-3.260446	6.213126
week5	.0352548	2.453537	0.01	0.989	-4.77359	4.8441
week6	-2.257459	2.450747	-0.92	0.357	-7.060836	2.545918
week7	-2.248559	2.436334	-0.92	0.356	-7.023686	2.526568
week8	-3.086204	2.492528	-1.24	0.216	-7.971468	1.799061
week9	-2.765528	2.492565	-1.11	0.267	-7.650866	2.11981
week10	-2.568745	2.492919	-1.03	0.303	-7.454776	2.317286
week11	-3.229082	2.544714	-1.27	0.204	-8.21663	1.758466
week12	-3.823521	2.567871	-1.49	0.136	-8.856455	1.209413
week13	-1.486769	2.522037	-0.59	0.556	-6.429871	3.456333
Q3	.4086038	4.630692	0.09	0.930	-8.667387	9.484594
Q4	1.499878	4.523166	0.33	0.740	-7.365365	10.36512
Q5	-3.641998	4.69769	-0.78	0.438	-12.8493	5.565305
Q6	-12.40193	4.545807	-2.73	0.006	-21.31155	-3.492311
Q7	-7.349242	5.433872	-1.35	0.176	-17.99944	3.300952
Q8	3.729908	4.291559	0.87	0.385	-4.681394	12.14121
Q9	-9.73817	4.091071	-2.38	0.017	-17.75652	-1.719819
Q10	1.380198	4.080851	0.34	0.735	-6.618122	9.378518
Q11	2.146241	5.822469	0.37	0.712	-9.265587	13.55807
Age	-.6891207	.7850093	-0.88	0.380	-2.227711	.8494692
AgeSquared	.0066241	.0073372	0.90	0.367	-.0077566	.0210049
Education	-77.78947	26.36688	-2.95	0.003	-129.4676	-26.11134
EducationS~d	2.4222	.8204114	2.95	0.003	.8142227	4.030176
Income	-.0005896	.0003728	-1.58	0.114	-.0013203	.000141
IncomeSqua~d	3.78e-09	2.54e-09	1.48	0.138	-1.21e-09	8.77e-09
Female	-1.320904	4.336983	-0.30	0.761	-9.821234	7.179426
SouthDummy	.734526	3.793102	0.19	0.846	-6.699817	8.168869
WhiteDummy	.5733921	5.344726	0.11	0.915	-9.902079	11.04886
DumImmigrate	-7.856359	5.752553	-1.37	0.172	-19.13116	3.418437
Vegetarian~y	1.485395	5.048016	0.29	0.769	-8.408534	11.37932
_cons	683.1977	212.022	3.22	0.001	267.6422	1098.753
sigma_u	14.914879					
sigma_e	15.671053					
rho	.47529215	(fraction of variance due to u_i)				