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Understanding Urban Consumers' Food Choice Behavior in Ethiopia

Promoting demand for healthy foods

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ABSTRACT

Using survey data collected from 996 representative households in Addis Ababa, Ethiopia, this paper documents several insights to help understand urban consumer food purchasing and consumption choices. The findings can be summarized as follows.

- We find that households face important dietary gaps; a large proportion eats insufficient amounts of nutrient-dense vegetables, animal-source foods, and fruits.
- The consumption of ultra-processed foods increases with income and may become a pressing health concern as incomes rise.
- From a purchasing perspective, we find that consumers buy foods for different purposes at different outlets. Nearby kiosks and informal street markets are frequented for small food items and for fruits and vegetables, while formal open markets and consumer cooperatives are used for bulky food items.
- Respondents make food and food outlet choices based on their health and food safety concerns, but few consider the nutritional value of food when purchasing it. Concurrently, the availability of a wide variety of healthy and safe foods is highly valued by most respondents for outlet choice. Among consumers in lower income categories, they tend to make food and food outlet choices based on prices and location convenience.
- Although nutrition is not a primary concern when making choices about food, consumers appear to have reasonable nutritional knowledge. Most respondents considered a healthy diet to be primarily plant-based. Most people are aware that they should eat more fruits and vegetables and less sugary, fatty, and salty foods, but they have limited knowledge on the nutrient content of specific foods and the causes of obesity.
- Labelling would not be an effective way to increase nutritional knowledge; most respondents have limited understanding of the information that labels provide. Rather, most respondents trust the information provided by health professionals over other sources.

In sum, these results are potentially relevant for policy and the design of future programs for improving nutritional outcomes through enhanced diets.

1. INTRODUCTION

Malnutrition in its various forms – undernutrition, micronutrient deficiencies, and overnutrition – is a global challenge with huge social and economic costs (Lim et al. 2013; Gillespie and van den Bold 2017). This challenge is more pronounced in developing countries, where chronic undernutrition is widespread (FAO 2014). After a long focus on the supply of food, attention has recently switched to consumer perspectives (McDermott et al. 2015). Nutritional deficiencies are not simply the result of low food availability, but also of poor consumer food behaviors and eating practices, which are in turn shaped by many marketing, psychosocial, and other behavioral factors (Webb and Sheeran 2006; Geaney et al. 2015; Segal and Opie 2015). This suggests that improving nutrition outcomes is possible through influencing consumers' dietary choices towards healthier and more nutritious diets, even when resources are limited. Promoting healthy dietary behaviors requires better understanding of consumers' food choices to identify credible methods and interventions to stimulate demand for healthier food.

The objective of this paper is to improve our understanding on consumer choices about food purchasing and consumption in the context of urban Ethiopia. We loosely follow a knowledge, attitude, and behavior framework, although in reverse order: We investigate the 'what', 'how', and 'why' of consumers' food choices. The 'what' and the 'how' sections cover behavior: what do people eat, and how –and where – do they get their food. The "why" section covers both attitudes and knowledge. We seek to identify the relative importance of several food choice drivers, including price, nutrition, taste, and safety. In particular, our focus is on understanding the extent to which food safety, health, and nutrition issues affect consumers' food purchase decisions. We assess the nutrition knowledge of survey respondents using a large set of questions and compare this objective measure with the respondent's own assessment of their knowledge. Finally, we assess the level of trust consumers have in various sources of information at their disposal.

While our focus lies primarily on consumers, we also interviewed food processors and retailers to understand their perspectives on what consumers want. These interviews provide insights on the extent of alignment of the perspectives of food processors and retailers with those of consumers. The results are relevant for informing policy and the design of programs and interventions to improve dietary outcomes.

The paper is organized as follows. Section 2 presents the data and the strategy we used to select a representative sample of 996 consumers in Addis Ababa and samples of retailers and processors relevant to these consumers. Sections 3, 4, and 5 detail the key insights from the data: what do people eat, how do they get their food, and why do they eat what they eat. Section 6 summarizes the main results and concludes.

2. DATA

2.1. Sampling strategy and data collection

Data collection took place in Addis Ababa in the third quarter of 2017. We interviewed food processors, food retailers, and consumers. We purposely selected 32 food processors to cover various types of foods. In selecting the processors, different types of food processing were taken into account. Most processors are located on the outskirts of Addis Ababa, as factories are generally designated to be located in these areas. Retailers and consumers were selected in a multi-stage sampling process.

At the first stage of the consumer sampling, the city map was used to purposively grouped the 10 sub-cities of Addis Ababa into six strata based on food expenditures per capita and total calorie (gross) intake per individual per day (CSA 2007). Four of the strata each consisted of two similar and neighboring sub-cities. The other two strata consisted of one sub-city each—Bole and Akaki-Kaliti sub-cities. We then

randomly selected one sub-city from the four strata made up of two sub-cities. These, together with Bole and Akaki-Kaliti, gave a total of six sub-cities as our first stage survey clusters.

At the second stage, all the *woredas* (districts) in each of the study sub-cities were clustered into one of three development strata – high, medium, and low – based on a qualitative assessment by local experts of the general welfare level of households resident in each. In four of the study sub-cities which had three or four woredas within each development stratum, we randomly chose one woreda from each stratum. For the two study sub-cities with a relatively large number of woredas, Bole and Yeka, we randomly chose one woreda in each stratum, plus one additional random woreda from the development stratum with the highest number of woredas. This process resulted in a total of 20 woredas for our second stage survey clusters.

At the third stage, two *ketanas*, which are further sub-divisions of the woredas, were randomly chosen in each woreda, giving us 40 ketanas as our primary sampling units. In each ketana, we interviewed either two or three retailers. This procedure resulted in a sample of 110 retailers. A variety of retailers appear in the sample, ranging from supermarkets to informal street sellers.

For the household survey, we randomly selected 25 households from a list provided by the local administration in each selected ketana. All selected households were interviewed at their homes. Within each selected household, we interviewed the person who was mainly responsible for household food choice decisions (food purchase and/or preparation). Participation in the survey was completely voluntarily. Replacements for households originally chosen but that could not participate in the survey were randomly drawn from the same list. In total, 996 households were interviewed.

We used structured questionnaires for data collection. The consumer questionnaire consisted of several modules, including modules on demographic characteristics, food consumption, food shopping, food safety, food and health related risks, food taboos, and nutrition knowledge. Nutrition knowledge was measured through a series of diet and nutrition related questions, as explained in more detail below. Questions were also included about food choice drivers, such as price and taste, and whether consumers pay attention to nutrition labels. The questionnaires administered to food processors and retailers mainly covered perceptions on consumers' food choice motives.

Ethical approval for research protocols, process, data management, and risks related to participation in the research was obtained from the Social Sciences Ethics Committee at Wageningen University. Addis Ababa sub-city administrations also granted permission to conduct the study. All participants provided written informed consent before participation.

2.2. Descriptive statistics of consumers surveyed

Table 2.1 contains descriptive information about the characteristics of respondents in the consumer survey. Most respondents were female (82 percent), Orthodox Christians (80 percent) and had at least some formal education (74 percent). The average respondent was aged about 44 years and came from a household of about five individuals. The average household has resided for 25 years in its current residence and about 40 percent of the households had moved to Addis from places more than 20 km away. About 40 percent of households earned less than 3,000 Birr per month. The income sources of respondents were not diversified. The primary economic activity for 90 percent of the respondents was non-public employment, and few households had access to a garden or a farm. Around 20 percent of the respondents had received remittance income from someone who was either elsewhere in Ethiopia or abroad. About 10 percent of the respondents reported having a health or nutrition related qualification. About half of the households owned a refrigerator. Most (90 percent) do not own a car.

Table 2.1. Summary statistics from consumer survey

Variable	Mean	Std. Dev.	Min	Max
Female, 0/1	0.82	0.40	0	1
Age, years	43.5	15.4	12	90
Married, 0/1	0.60	0.50	0	1
No formal education, 0/1	0.26	0.44	0	1
Primary or secondary education, 0/1	0.61	0.49	0	1
Above secondary education, 0/1	0.13	0.34	0	1
Household size, number	4.60	2.00	1	13
Orthodox Christian, 0/1	0.80	0.40	0	1
Years in current residence	25	17.1	0	85
Immigrant from place more than 20 km distant, 0/1	0.40	0.50	0	1
Monthly income of less than ETB 3,000, 0/1	0.41	0.49	0	1
Monthly income between ETB 3,000 and ETB 5,000, 0/1	0.25	0.44	0	1
Monthly income of more than ETB 5,000, 0/1	0.34	0.47	0	1
Household receives remittance income, 0/1	0.20	0.40	0	1
Public employee, 0/1	0.10	0.30	0	1
Household owns a home garden, 0/1	0.10	0.30	0	1
Has health or nutrition qualification. 0/1	0.10	0.32	0	1
Household owns a refrigerator, 0/1	0.50	0.50	0	1
Household owns a car, 0/1	0.10	0.20	0	1
Observations	996			

Source: Consumer survey

When appropriate, we carry out sub-sample analysis based on the sex of the respondent, education, and income. As expected, income and education are positively associated (Table 2.2). However, this association is far from perfect, which justifies separate sub-sample analysis. The male and female sub-samples represent respondents with different roles in food consumption (Table 2.3). While the female respondents are almost all responsible for both food purchases and food preparation, most of the male respondents are only responsible for purchases and not for preparation. In addition, more women are uneducated and from the lowest income group.

Table 2.2. Cross-tabulation between education level and monthly income of consumer survey respondents, row percentages

	Income category			
Education level	Less than ETB 3,000	ETB 3,000 - 4,999	More than ETB 5,000	Total
No formal education (N=255)	56	21	23	100
Primary and secondary education (N=611)	40	27	33	100
Above secondary education (N=130)	16	27	57	100
Total	41	25	34	100
Observations	407	253	336	996

Source: Consumer survey

Table 2.3. Key characteristics by sex of consumer survey respondent, percent

	Female	Male
Role in food consumption decision		
Respondent is primary food purchase decision maker	92	98
Respondent is primary food preparation decision maker	97	30
Education		
No formal education	29	11
Primary and secondary education	60	67
Above secondary education	11	22
Income		
Less than 3,000 birr/month	43	33
3,000 - 4,999 birr/month	24	28
More than 5,000 birr/month	33	39
Observations	815	181

Source: Consumer survey

2.3. Descriptive statistics of retailers and food processors surveyed

The size of the business of most retailers interviewed was relatively small with, on average, four employees, average daily sales of almost 3,000 Birr, and sole proprietorship (Table 2.4). Few of the retailers thought they had a large market share relative to similar retailers in the same area. Most owned kiosks or cereal shops, but convenience stores, supermarkets, consumer cooperatives, readymade food shops, and informal street markets are also represented among the Retailer surveyed.

Table 2.4. Characteristics of retailers surveyed

Ownership structure of the retailer, %	
Sole proprietorship	87
Partnership	6
Limited liability	4
Consumer cooperative	3
Type of retailer, %	
Kiosk/regular shop	64
Cereal shop (mills and other cereal sellers)	12
Convenient store/Minimart	8
Supermarket	5
Consumer cooperative	5
Baltena shop (shop selling ready-made local foods)	3
Fruits and vegetable shops	3
Informal street market	1
Perceived market share compared to others with similar activity, %	
Small	39
Average	53
Large	8
Size of business, mean	
Employees, number	4
Daily sales, ETB	2,912
Observations	110

Source: Retailer survey

The size of the businesses of the food processors interviewed was much larger with 80 employees on average (Table 2.5). The ownership structures for the processors' firms are either joint venture or limited

liability. Most processors interviewed considered their company to have an average or large market share compared to others in the same industry. The largest category of processors in our sample produce cereal foods and flour or beverages.

Table 2.5. Characteristics of processors surveyed

Ownership structure of the retailer, %	
Joint venture	34
Limited liability	66
Type, %	
Bakery	9
Beverage (Alcohol, soft drinks and mineral water bottling)	22
Confectionary	3
Dairy products	6
Cereal foods and flour	49
Fruit and vegetable	3
Meat and fish	3
Oils and fats	6
Perceived market share compared to others with similar activity, %	
Small	16
Average	41
Large	41
Employees, number	80
Observations	32

Source: Processor survey

3. WHAT DO PEOPLE EAT?

Surveyed households reported spending an average of 603 Ethiopian Birr per week on food (Table 3.1). Not surprisingly, food expenditures are higher for households in higher income categories. Expenditures also increase with education; however, this correlation is not as strong as for income and could be related to the partial correlation between income and education. There is no relationship between sex of the respondent and average food expenditures.

As an indicator of diet quality, we calculated the Household Dietary Diversity Score (HDDS). Following FAO guidelines, we used 12 food groups: cereals; white roots and tubers; vegetables; fruits; meat; eggs; fish and fish products; legumes, nuts and seeds; milk and milk products; oils and fats; sweets and sugars; and spices, condiments and beverages (FAO 2010). To avoid biases due to the Ethiopian Orthodox fasting days of Wednesday and Friday, we used a recall period of one week instead of the standard one day. On average, respondents indicated their household had consumed food from 8.5 out of the 12 groups. Food groups consumed by less than 60 percent of households are fruits, meat and poultry, fish and other seafood, eggs, and milk and milk products. Like food expenditures, the HDDS increased with income and education. The likelihood of consumption of individual food groups increased with income and education for all food groups, but especially for the less commonly consumed categories of fruits and animal products. Interestingly, the relation seems to be stronger rather than weaker for education than for income in the case of fruits, eggs, and milk. As for food expenditures, differences in HDDS by the sex of the survey respondent are small and not statistically significant.

Table 3.1. Food expenditures and dietary diversity for the different sub-samples of consumer survey

		Income per month			Sex		Educational attainment		
	All	< ETB 3,000	ETB 3,000-5,000	> ETB 5,000	Female	Male	No formal educa-tion	Primary or second-ary	Above second-ary
Households consuming specific food group in past 7 days, %									
Cereals	99.5	99.0	99.6	100.0	99.6	99.0	99.6	99.4	100.0
Roots and tubers	85.2	77.9	86.6	93.2	86.3	80.6	79.6	87.1	87.7
Vegetables	98.6	97.1	100.0	99.4	98.8	97.9	96.9	99.0	100.0
Fruits	55.1	45.0	53.4	69.1	54.0	59.7	34.5	60.4	70.8
Meat and poultry	53.9	39.8	60.5	66.1	52.3	60.7	38.0	57.9	66.2
Eggs	52.0	37.4	59.3	64.3	51.2	55.5	35.3	55.7	67.7
Fish and other seafood	3.1	0.7	2.8	6.3	3.2	2.6	0.8	3.8	4.6
Legumes, nuts & seeds	97.3	94.6	98.4	99.7	97.4	96.9	94.9	97.9	99.2
Milk and milk products	53.3	37.4	63.2	65.2	51.7	60.2	35.3	57.6	68.5
Oils and fats	64.5	48.9	65.6	82.4	63.9	67.0	58.4	64.3	76.9
Sweets (sugar & honey)	90.5	85.3	91.7	95.8	91.4	86.4	84.7	92.6	91.5
Spices, condiments, & beverages	99.8	98.5	98.4	99.4	98.8	99.0	98.0	99.2	98.5
Aggregate indicators									
Household Dietary Diversity Score (HDDS)	8.5	7.6	8.8	9.4	8.5	8.7	7.6	8.7	9.3
Food expenditures (Birr/week)	603	406	594	851	601	616	488	620	755

Source: Consumer survey

Table 3.2 provides information about the consumption of processed and ultra-processed foods. Frequently consumed processed foods include salt, sugar and other sweeteners, pasta, vegetable oils, and animal fats. Frequently consumed ultra-processed foods include breads, soft drinks, and biscuits. Generally, the likelihood of consuming (ultra-)processed foods increases with income and education. The trend seems lower for education, which could imply that this variable picks up the effect of income, while education itself does not affect processed-food consumption. The sex of the respondent has no clear relation with the consumption of processed foods.

Table 3.2. Consumption of processed foods for the different sub-samples of consumer survey

		Income per month			Sex		Educational attainment		
	All	< ETB 3,000	ETB 3,000-5,000	> ETB 5,000	Female	Male	No formal educa-tion	Primary or second-ary	Above second-ary
Processed food products [1]									
Salt	98	97	98	99	98	99	96	99	99
Sugar and sweeteners	86	81	89	93	88	83	82	89	88
Pasta and macaroni	68	63	75	85	74	73	61	77	82
Vegetable oils	66	49	63	81	63	64	57	63	74
Wheat flour, factory milled	45	42	52	61	52	46	42	52	62
Animal fats	38	29	5	57	43	44	3	47	54
Vegetable fats	8	2	9	12	7	6	5	7	10
Manioc flour	6	7	6	6	6	6	4	7	8
Corn flour	4	5	5	4	5	3	2	6	5
Coconut milk	4	2	4	5	4	4	1	5	5
Ultra-processed food products [2]									
Breads (bakery)	88	87	90	95	90	90	87	91	94
Soft drinks	58	39	52	61	48	57	33	53	65
Biscuits (cookies)	34	27	28	38	32	29	23	34	33
Sweets, candies	16	18	18	30	22	25	11	26	28
Infant formula, baby food	15	9	9	19	12	13	5	12	28
Sausages	11	7	12	12	10	9	4	12	14
Instant noodles	11	10	6	11	10	8	6	10	12
Cakes and pastries	8	4	9	8	6	8	4	7	10
Cheese, not traditional Ethiopian	6	2	4	10	6	3	4	6	7
Sugared milk beverages	6	3	4	9	5	8	1	7	5
Jams, preserves	5	3	4	6	5	3	2	4	11
Other processed meat	4	2	3	5	3	3	2	3	6
Frozen pasta, pizza	3	1	3	5	3	3	2	3	6
Sugared breakfast cereals	3	2	3	4	3	4	2	3	4
Salted, cured, smoked meats	2	1	2	2	1	2	1	2	2
Salted/dried or oil-preserved meat or fish	2	1	3	3	2	3	2	3	2
Canned vegetables, fruits	2	1	2	3	2	1	1	2	4
Canned or dehydrated soups or stews	2	1	1	4	2	1	1	3	2

Source: Consumer survey; Observations: 996.
[1] Processed foods includes foods extracted and purified from unprocessed or minimally processed foods in order to produce culinary or food industry ingredients. Both physical and chemical processes are used to radically change the nature of the original foods, such as pressure, milling, refining, hydrogenation and hydrolysis, and use of enzymes and additives (Monteiro et al 2010).
[2] Ultra-processed food products consist of ready to eat, to drink or to heat with little or no further preparation. Processes used include salting, sugaring, baking, deep frying, curing, smoking, pickling, canning, and also frequently the use of preservatives and cosmetic additives, the addition of synthetic vitamins and of minerals, and sophisticated types of packaging (Monteiro et al 2010).

To get more insight on individual food consumption, we requested respondents to indicate what they had for breakfast, lunch, and dinner on the day prior to the survey using a list of ten food types common in Ethiopia: injera (white flatbread made from teff flour), bread, *shiro* (bean stew), meat, eggs, milk, vegetables, fruits, soft drinks, and crisps. As the interviews were spread evenly throughout the week, the effects of regular fasting days for Orthodox Christians, Wednesday and Friday, are averaged out. People

who comply with the fasting rules skip breakfast and abstain from the consumption of animal products (Table 3.3). Lunch was the largest meal of the day, breakfast the smallest. Overall, the amounts consumed are low. Possible explanations are that most respondents are women, and fasting habits may depress total consumption. Yet, there may also be some underreporting. About 50 percent of the respondents combined eating with other activities, such as working, driving, watching TV and interacting with the internet or phone, which might cause them not to pay attention to the amount of food they actually consume. That said, the amount of vegetables, animal-source foods and, especially, fruits consumed are very low. The low consumption of vegetables is confirmed by the fact that only about 20 percent of the respondents reported that they ate at least three portions of fruits or vegetables daily. On the positive side, the reported consumption of low-nutrient, energy-dense soft drinks and crisps was also very low.

Table 3.3. Normal plate amounts, averages of consumption for day prior to survey, by meal

Food	Unit	Breakfast	Lunch	Dinner	Total
Injera	Number	0.2	0.59	0.5	1.28
Bread	Slice	0.51	0.09	0.13	0.73
Shiro	Spoonful	0.34	1.51	1.15	3.01
Meat	Gram	6.2	21.1	12.6	39.9
Eggs	Number	0.13	0.02	0.02	0.17
Milk	Cup	0.06	0.01	0.04	0.11
Vegetables	Spoonful	0.14	0.78	0.68	1.60
Fruits	Number	0.02	0.12	0.08	0.23
Soft drinks	Bottle[1]	0.02	0.05	0.04	0.11
Crisps	Bag	0.01	0.01	0.02	0.04

Source: Consumer survey; Observations: 996.
[1] Bottles for soft drinks are 330ml. Generally, no other bottle sizes are in the market.

4. HOW DO PEOPLE GET THEIR FOOD?

Most meals are prepared and consumed in the home. The survey households estimated that they spent about 2.3 hours cooking per day on average. Only 34 percent of the respondents reported that at least one member of their household ate a regular meal outside home in the seven days prior to the survey; the main reason for eating away from home was that their work was far away (73 percent of those eating away from home). Only 7 percent bought food at fast food outlets frequently, while 57 percent never purchased fast foods. Below, we describe behavior related to food shopping for home preparation.

4.1. Choice of outlets

The respondents bought food at several different food retail outlets at least once a week (Table 4.1). Nearby kiosks/shops and informal street markets (*gulet*) were the most commonly visited outlets. Kiosks are often used to buy small food items, like bread and spaghetti, while informal street markets are the main outlets for vegetables and fruits that are often bought on more of a daily basis. For bulk shopping, people go to formal open markets and consumer cooperatives, which provide the largest quantity of food for most respondents (Table 4.2). A disaggregated analysis indicates that more educated, higher income consumers make somewhat more use of supermarkets and convenience stores, while informal street markets are more frequented by poor and less educated consumers. Nearby kiosks are uniformly used across different categories of consumers.

Table 4.1. Retail outlets where households bought food at least once a week for the different sub-samples of consumer survey, percent of households

		Income per month			Sex		Educational attainment		
	All	< ETB 3,000	ETB 3,000-5,000	> ETB 5,000	Female	Male	No formal educa-tion	Primary or second-ary	Above second-ary
Supermarkets	4	1	3	9	4	8	1	4	12
Convenient store/ Minimart	7	4	4	14	7	9	2	7	21
Nearby kiosks/shops	85	83	84	88	84	88	85	84	88
Formal open markets	40	42	36	39	39	43	44	38	36
Consumer cooperatives	5	5	6	5	5	8	5	6	5
Informal street market (Gulet)	63	70	62	57	64	60	69	62	59

Source: Consumer survey; Observations: 996.

Table 4.2. Retail outlets where households buy most food for a typical week for the different sub-samples of consumer survey, percent of households

		Income per month			Sex		Educational attainment		
	All	< ETB 3,000	ETB 3,000-5,000	> ETB 5,000	Female	Male	No formal educa-tion	Primary or second-ary	Above second-ary
Supermarkets	1	0	1	2	1	2	0	1	2
Convenient store/ Minimart	2	1	2	1	1	2	1	2	2
Nearby kiosks/shops	15	15	17	14	15	17	15	16	14
Formal open markets	37	36	34	39	37	34	34	37	39
Consumer cooperatives	35	31	39	38	35	36	36	34	38
Informal street market (Gulet)	10	16	8	5	10	9	15	9	5

Source: Consumer survey; Observations: 996.

When asked about factors shaping their choice of food retail outlet, consumers rated many factors as either important or very important (Table 4.3). More than 70 percent rated the availability of healthy foods, food safety, and a wide variety of foods as important. Low prices and convenience factors (close to home, convenient location) were considered as important by more than 50 percent of respondents. Personal relationships with the vendor, habit, enjoyment, and the possibility to buy on credit were less often considered important. Not surprisingly, more respondents from lower income categories valued lower prices and convenience, relative to consumers from the high-income category, who put a higher value on health and safety.

Table 4.3. Factors shaping consumers' choice of food retail outlets for the different sub-samples of consumer survey, percent of households

		Income per month			Sex		Educational attainment		
	All	< ETB 3,000	ETB 3,000-5,000	> ETB 5,000	Female	Male	No formal educa-tion	Primary or second-ary	Above second-ary
Healthy foods in store	83	78	83	88	83	80	78	85	80
Food safety in store	80	74	83	85	81	76	73	82	85
Wide assortment offered	80	75	79	87	81	75	75	82	83
Lowest selling price	66	72	64	60	67	62	73	65	56
Close to my home	65	68	65	59	64	65	70	64	54
Conveniently located	56	61	55	51	56	58	56	56	56
Personal relationship	48	45	51	49	47	50	46	48	48
Habit	47	53	38	47	46	51	49	48	36
Enjoy shopping at store	34	32	32	36	32	40	26	36	32
Credit purchase	24	24	29	20	24	23	28	25	12

Source: Consumer survey; Observations: 996.

We also asked retailers how important they considered a slightly different list of factors were in determining consumers' choices of food retail outlets (Figure 4.1). Most retailers thought all factors listed were important or very important for consumers. However, congruent with the ratings of consumers themselves, fewer retailers considered social relationships, consumer service, and reputation as important. In contrast, they consider food quality, the perception of whether or not food was healthy, and cleanliness and layout as important factors.

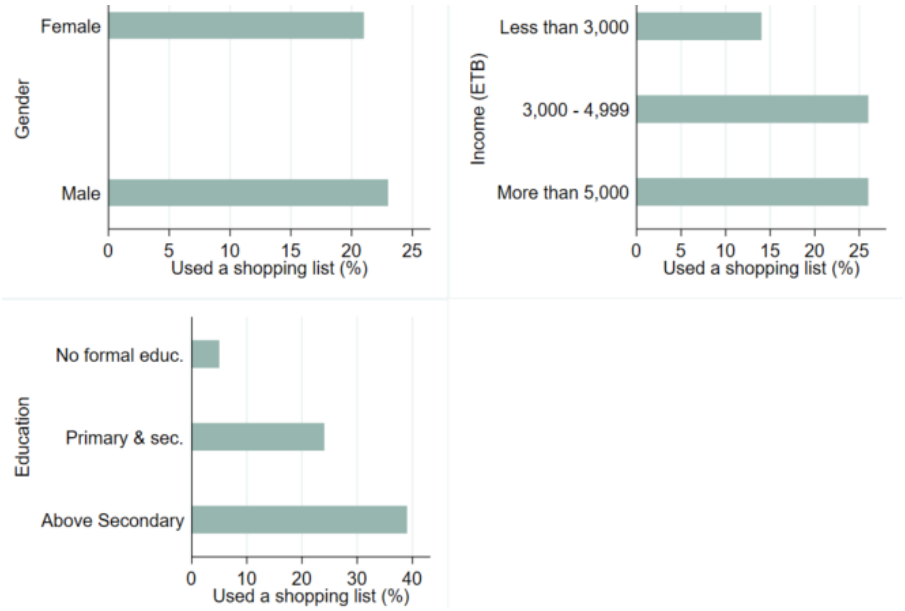
Figure 4.1. Factors shaping consumers' choice of food retail outlets, according to retailers

Source: Retailer survey

4.2. Shopping behavior

Only 21 percent of respondents used a shopping list for their food purchases. The use of a list was more prominent among less poor, better educated, and male respondents (Figure 4.2). Perhaps households with higher incomes had a lower frequency of shopping and thus more need for planning. As noted, a substantial share of male respondents was responsible for food shopping but not for food preparation. It therefore seems likely that these men get a shopping list from the primary female household member responsible for cooking.

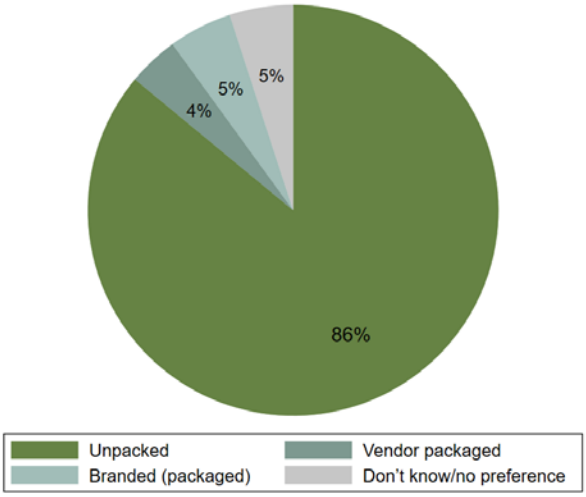
Figure 4.2. Share of consumers that use shopping lists across different sub-samples of consumers



Source: Consumer survey

Fifty percent of the respondents usually went shopping for food in the morning, while about 37 percent did not shop at a regular time. Walking (48 percent) and public transport (50 percent) are the main means of transport for food shopping. Only about 2 percent used their own car, although about 10 percent reported car ownership. Eighty-eight percent of the respondents never took their children when they went for food shopping. The majority of respondents had a general preference for unpacked foods in their food purchase choices (Figure 4.3).

Figure 4.3. Consumers' general preferences for packaging



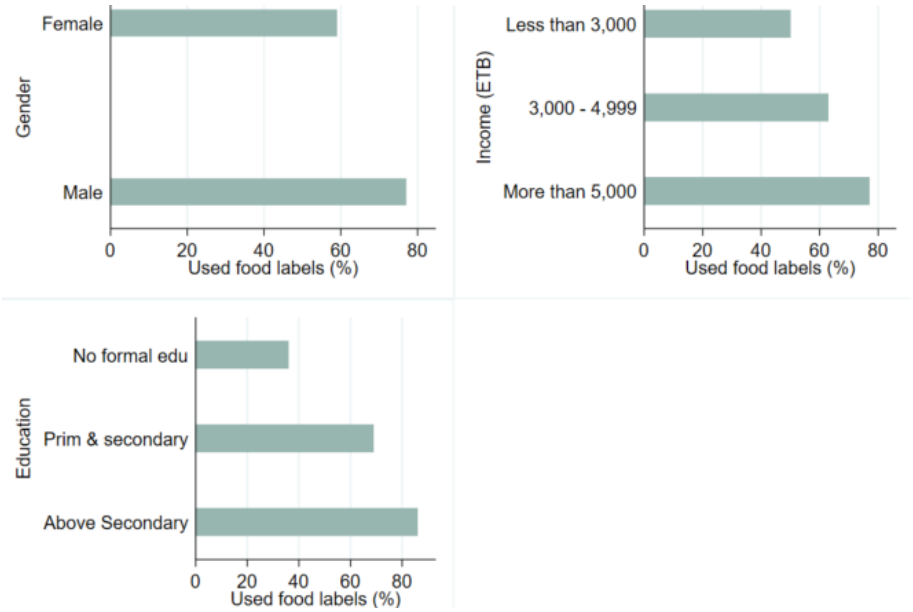
Source: Consumer survey

4.3. Use of food labels

Food labels can be an integral part of consumers' decision-making processes, as they provide nutritional information that can assist consumers in making healthy food choices (Jacobs et al. 2010). If effective, food labels are an inexpensive method of communicating nutrition information to consumers because the information appears at the point of sale for most packaged foods (Miller and Cassady 2015). In Ethiopia, the use of food labels may be limited for three reasons: 1) consumption of packaged foods is quite low; 2) consumers may not understand the labels; and 3) consumers may not trust the information provided.

When asked, about 60 percent of the consumer respondents indicated that they used food labels to some degree: 30 percent, 10 percent, and 20 percent used food labels 'sometimes', 'most of the time', and 'always', respectively. Figure 4.4 displays distributions of food label users across different demographic characteristics of participants. Male respondents use food labels more often than female respondents; use of food labels tends to increase with both income and education.

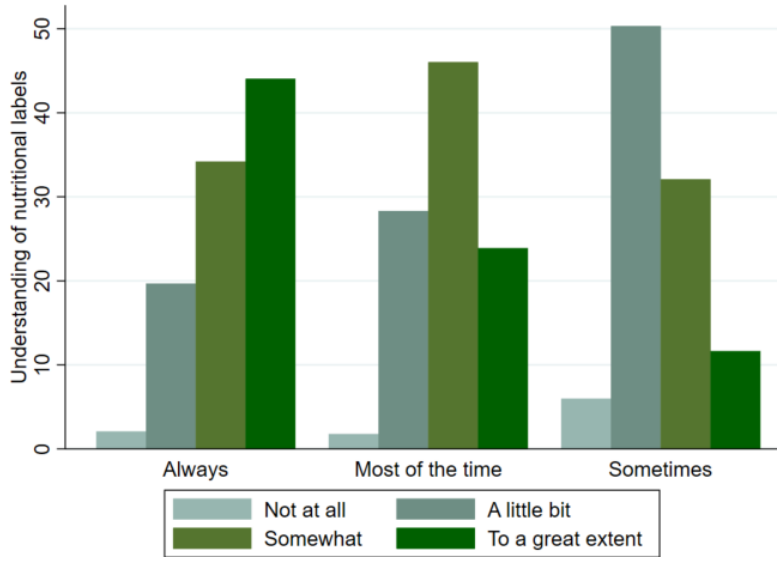
Figure 4.4. Share of food label users across different sub-samples



Source: Consumer survey

For effective use, consumers need to understand the information on food labels properly. Many respondents, even some who indicate they always use food labels, have little understanding of the information presented on the labels (Figure 4.5). But, as expected, those who use nutrition labels more frequently are more likely to understand the information.

Figure 4.5. Association between the use of food labels and understanding the information on labels for label users



Source: Consumer survey

To gain further insight into the use of food labels, we asked consumers to assess the importance of specific information on food labels on a five-point scale, ranging from 'not at all important' to 'very important' (Table 4.4). Consumers are most interested in information on the expiry date. This information is important in relation to consumers' search for products with the longest shelf life (Jacobs et al. 2010). Information on ingredients, nutrition, and health were all considered somewhat less important.

Table 4.4. Consumers' assessment of importance of information types on food labels, percent of consumers

Information on food labels	Not at all important	Slightly important	Neutral	Fairly important	Very important
Expiry date	0	4	1	13	81
List of ingredients	8	20	6	33	33
Nutritional information (energy, fat, protein, vitamins, and minerals	8	19	5	36	31
Nutrient content and health claims (low in cholesterol, low in fat, low in sugar)	8	16	6	36	35
Brand (producer)	14	22	7	30	28

Source: Consumer survey.

We asked the 40 percent of consumers not using food labels to list the three main reasons for not doing so by order of importance. Table 4.5 displays the four top rated reasons in each category. The main reasons are difficulties in understanding the language and terms on food labels. Other reasons for not using food labels are that people find the information confusing and that they lack trust in the provided information. These results are consistent with what has been reported elsewhere in the literature. Several studies find that food labels do not always live up to their potential to communicate effectively, as they contain too much information and use relatively complex terms in the wording of the labels. These problems have been shown to make labels difficult for consumers to understand (Jones and Richardson 2007; Drichoutis et al. 2009; Jacobs et al. 2010; Hieke and Taylor 2012; Miller and Cassady 2015). Food labels are also sometimes viewed as mere marketing ploys rather than a means to communicate relevant nutritional information (Coveney 2007).

Table 4.5. Top three reasons for not using food labels, percent of consumers not using food labels that gave reasons for not doing so

First order reasons	
Do not understand the language	51.6
Do not understand the terms on food labels	11.8
Cannot read or write	7.8
Do not believe the information	7.0
Second order reasons	
Do not understand the terms on food labels	38.6
Do not understand the language	21.5
The information is confusing	16.5
Do not believe the information	10.1
Third order reasons	
Do not understand the terms on food labels	24.7
The information is confusing	23.5
Do not believe the information	16.1
Do not understand the language	16.1

Source: Consumer survey.
Note: The entries in each category do not add up to 100 percent, as only the four most highly rated reasons are presented.

5. WHY DO PEOPLE EAT WHAT THEY EAT?

What people eat depends not only on prices and income. It also depends upon inherent preferences, other underlying motivations of their food choices, and the knowledge they have about nutrition and health. Below, we discuss each of these aspects of what respondents eat within the context of our survey responses.

5.1. Food preferences

To assess food preferences, we asked respondents to prepare a hypothetical eating plan without restriction, based on the list of food items used for reporting the previous day's actual consumption. Before completing the exercise, they were told that there were no restrictions due to budget, religion, or culture and that they could plan to eat as much as they liked. Table 5.1 shows the quantities planned for consumption of each item across breakfast, lunch, and dinner. Compared with actual consumption of a typical day, the average eating plans of both the unrestricted and the healthy plates involve substantially larger quantities for all listed food items except injera (significant but small increase) and shiro (insignificant increase). Some of these increases would make the diet healthier, notably the increase in consumption of fruits and vegetables and some animal-source foods. On the other hand, the increase in meat is close to an order of magnitude, and neither soft drinks nor crisps contribute to a healthy diet.

Table 5.1. Components of hypothetical meals desired versus components of an actual meal, by food type amount and meal

		Components of unrestricted plate of food				Normal		
Food	Unit	Breakfast	Lunch	Dinner	Total	plate	T-value	probability
Injera	Number	0.2	0.7	0.5	1.4	1.3	4.85	0.00
Bread	Slice	1.0	0.2	0.3	1.5	0.7	16.59	0.00
Shiro	Spoonful	0.2	1.3	1.8	3.3	3.0	0.25	0.81
Meat	Gram	69	166	100	335	40	28.29	0.00
Eggs	Number	1.7	0.5	0.2	2.4	0.2	16.53	0.00
Milk	Cup	1.0	0.3	0.3	1.6	0.1	5.87	0.00
Vegetables	Spoonful	0.7	1.5	1.5	3.7	1.6	17.67	0.00
Fruits	Number	0.6	1.1	0.9	2.7	0.2	28.08	0.00
Soft drinks	Bottle	0.2	0.5	0.4	1.1	0.1	27.24	0.00
Crisps	Bag	0.2	0.3	0.2	0.6	0.0	7.22	0.00

Source: Consumer survey. Observations: 996.

Interestingly, unrestricted consumption levels are lowest for the high education category, except for crisps (Table 5.2). Men generally want to eat more, especially meat. Women would like to eat more shiro than men do. While higher income individuals would hypothetically demand fewer soft drinks, it is not clear that this finding is due to more awareness that they are not healthy. Otherwise, there is no regular pattern between the income categories.

Table 5.2. Components of hypothetical meal desired for the different sub-samples of consumer survey, by food type amount

		Income			Sex		Educational attainment		
Food	Unit	< ETB 3,000	ETB 3,000-5,000	> ETB 5,000	Female	Male	No formal educa-tion	Primary or second-ary	Above second-ary
Injera	Number	1.47	1.41	1.39	1.38	1.65	1.49	1.42	1.35
Bread	Slice	1.41	1.58	1.61	1.43	1.90	1.46	1.54	1.54
Shiro	Spoonful	2.37	1.87	5.50	3.64	1.83	6.81	2.19	1.59
Meat	Gram	351	351	303	308	447	357	336	284
Eggs	Number	2.62	2.21	2.37	2.38	2.65	2.34	2.56	2.00
Milk	Cup	1.23	1.39	2.20	1.60	1.59	1.41	1.74	1.28
Vegetables	Spoonful	3.29	3.69	4.12	3.69	3.58	3.32	3.89	3.32
Fruits	Number	2.45	2.82	2.82	2.64	2.79	2.74	2.70	2.41
Soft drinks	Bottle	1.13	1.21	0.91	1.06	1.14	1.20	1.08	0.78
Crisps	Bag	0.49	0.71	0.63	0.59	0.59	0.41	0.68	0.53

Source: Consumer survey. Observations: 996.

We also asked respondents which food categories they would buy more of if their food budget increased. They were requested to make three choices, in order of importance, for spending the additional budget (Table 5.3). Fruits and vegetables, meat, and cereals were listed as the preferred food categories, in that order. Cereals may take on a relatively lower prominence in this list because of their low price compared with most other foodstuffs.

Table 5.3. Foods that consumers would like to increase if their budget increases, percent of respondents

First choice food category	
Fruits and vegetables	32
Meat (including chicken)	30
Cereals, rice, and starch products	23
Second choice food category	
Fruits and vegetables	26
Meat (including chicken)	19
Cereals, rice and starch products	15
Third choice food category	
Fruits and vegetables	19
Dairy products	18
Cereals, rice and starch products	15

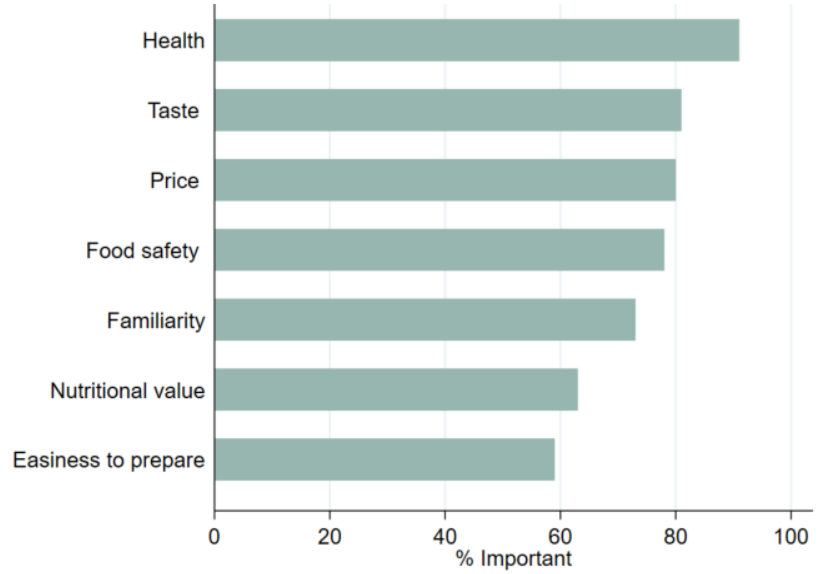
Source: Consumer survey.
Note: The entries in each category do not add up to 100 percent, as only the three foods most chosen are presented.

5.2. Motives for food choices

We asked consumers directly how important they rated health, taste, price, food safety, nutritional value, and ease of preparation (Figure 5.1). We also asked which of these factors they considered most important (Figure 5.2). Strikingly, health was considered important by the largest share of people (90 percent) and was most frequently mentioned as the most important factor (38 percent). Taste, price, and food safety are considered important by around 80 percent of respondents. Only a small group (7 percent) considered taste the most important factor. Healthfulness of food can mean many different things, and we asked specifically for the importance of food safety and nutrition. Safety was a much more prominent concern, which is not surprising given the relatively high levels of food fraud and adulteration in the country

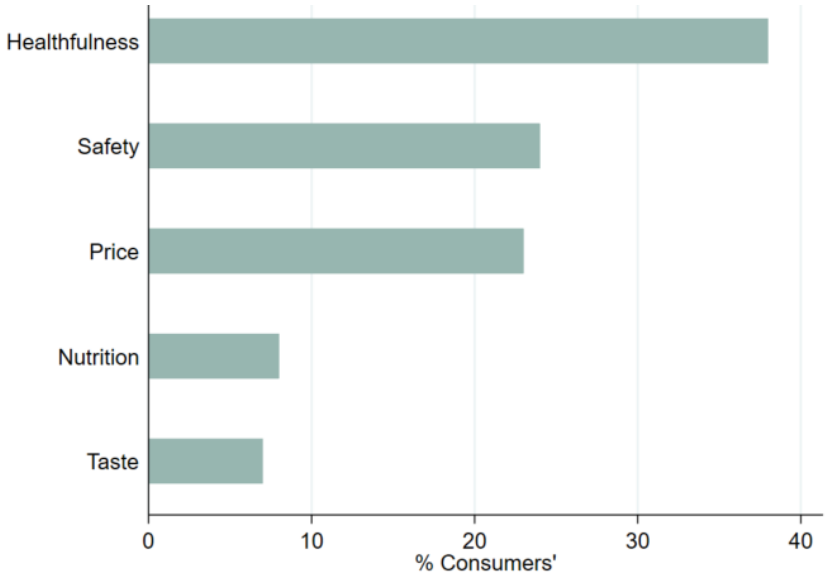
(Woldemariam and Abera 2014). Nutritional value (and easiness to prepare) were considered of importance by the smallest share of respondents, implying a disconnect between health and nutrition in the minds of many consumers.

Figure 5.1. Share of consumers that deemed a specific aspect of food important or very important



Source: Consumer survey

Figure 5.2. Most important factors reported as accounting for consumers' food choices



Source: Consumer survey

We also asked food retailers and processors what they thought consumers would look for in their food choices. Positively, the perspectives of food retailers and processors match well with those of consumers (Figure 5.3). Food quality, health and safety, and price are particularly important factors, while ease of preparation, nutritional value, and packaging are not considered as important by retailers and processors.

Figure 5.3. Factors affecting consumers' food choices according to retailers and food processors

Source: Retailer and processor surveys

To gain more detailed insight in food choice motives, we used an adjusted version of the food choice questionnaire (FCQ) developed by Steptoe et al. (1995). The original FCQ consists of 36 items to assess nine distinct food choice motives: health, mood, convenience, sensory appeal, natural content, price, weight control, familiarity, and ethical concerns. We have added one item on agro-chemical use under the natural content motive and two items to the ethical concerns motive, which are believed to be underrepresented in the original FCQ (Lindeman and Väänänen 2000). We also included two further items to assess the influence of media advertising and recommendations of other people of importance to the respondent. Respondents were asked to rate the statement ''it is important to me that the food I eat on a typical day …'' for each of the 41 items by choosing among four responses: *not at all important; slightly important*; *moderately important*; and *very important*.

Table 5.4. Consumer food choice motives – factor items and ratings, percent of consumers

It is important to me that the food I eat on a typical day:	Not at all important	Slightly important	Moderately important	Very important
Health				
Is high in fiber and roughage	22.7	22.9	32.9	21.5
Is nutritious	9.2	19.6	40.3	30.9
Contains a lot of vitamins and minerals	12.1	21.2	38.2	28.6
Is high in protein	14.1	22.0	38.6	25.4
Keeps me healthy	4.8	9.2	33.1	52.8
Is good for my skin, teeth, hair, nails, etc.	32.5	16.0	28.3	23.2
Price				
Is not expensive	5.5	19.6	24.9	50.0
Is good value for money	4.5	13.9	30.2	51.4
Is cheap	9.4	26.7	26.7	37.2
Mood				
Cheers me up	28.0	29.6	22.7	19.7
Helps me cope with stress	26.9	29.5	24.6	19.0
Keeps me awake and alert	25.9	25.1	27.3	21.7
Helps me relax	23.5	29.5	26.0	21.0
Makes me feel good	16.1	27.1	29.3	27.5
Helps me to cope with life	19.0	27.0	32.0	22.0
Convenience				
Is easy to prepare	13.4	33.8	22.4	30.4
Is easily available in shops and supermarkets	12.9	29.3	30.3	27.5
Can be cooked very simply	11.2	31.1	27.4	30.2
Takes no time to prepare	11.9	28.4	28.1	31.6
Can be bought in shops close to where I live or work	10.2	27.7	35.8	26.2
Sensory Appeal				
Tastes good	2.9	13.3	39.7	44.2
Smells nice	12.6	27.6	33.6	26.2
Has a pleasant texture	19.8	25.5	33.5	21.2
Looks nice	12.3	23.6	36.7	27.5
Natural Content				
Contains no additives	24.6	21.2	27.9	26.3
Contains natural ingredients	9.9	15.3	33.2	41.6
Contains no artificial ingredients	20.1	17.5	30.6	31.8
Is produced without chemicals, e.g., pesticides *	34.0	17.1	22.7	26.2
Weight Control				
Is low in calories	27.4	29.8	26.5	16.3
Is low in fat	12.4	26.2	27.5	33.9
Helps me control my weight	27.7	24.5	24.9	22.9
Familiarity				
Is familiar	3.6	19.8	37.8	38.9
Is like the food I ate when I was a child	39.4	29.4	21.0	10.2
Is what I usually eat	6.8	24.8	39.7	28.7
Ethical Concerns				
Is packaged in an environmentally friendly way	43.1	23.5	18.4	15.1
Comes from countries I approve of politically	67.6	17.0	6.7	8.7
Has the country of origin clearly marked	45.9	23.5	15.6	15.1
Produced in a humane way *	19.4	18.6	31.2	30.8
Is not forbidden in my religion *	4.1	10.4	15.7	69.8
Influence *				
Is advertised in media, e.g., television, radio, internet *	45.4	33.9	15.8	4.9
Is recommended by friends or other people who are important to me *	24.2	38.2	30.7	6.9

Source: Consumer survey. Questionnaire module modified from food choice questionnaire developed by Steptoe et al. (1995).
*Indicates new scale or item added as modification to Steptoe questionnaire.

Consumers do not consider all domains of food choice motives equally important (Table 5.4). Conforming to the results presented earlier, questions related to health, price, and sensory appeal (e.g., taste) have more indicators with higher importance ratings. Also scoring high among consumers are natural content and familiarity with foods. On the other hand, the influence from mass media and friends are not considered very important. The same holds for ethical concerns, other than religious considerations, humane production methods, and weight control. Looking at individual indicators, “Keeps me healthy”, “Is not forbidden in my religion”, “Tastes good”, and “Is familiar” are the factors considered important by over 75 percent of respondents. On the other hand, country of origin, media advertising, food eaten as a child, environmentally friendly packaging, and recommendations from friends are infrequently considered important with less than 40 percent of respondents mentioning them as important.

5.3. Attitudes and beliefs

Next, we examine responses to detailed questions asked of survey respondents related to their attitudes and beliefs about the health aspects of foods. First, respondents were asked to rate the healthiness of their eating behavior on a scale from one (very unhealthy) to ten (very healthy). The average score was about five, with more than 75 percent of respondents scoring the healthiness of their eating behavior less than six.

Another set of questions asked about food attitudes and beliefs. To learn about healthy eating, we asked respondents to state their agreement on a number of statements using a five-point Likert scale ranging from “completely disagree” to “completely agree”. To learn about attitudes towards food safety, we asked their level of concern for different food safety risks on a five-point scale ranging from “completely unconcerned” to “completely concerned”. Finally, to test for inaccurate beliefs on which foods are acceptable for consumption, the survey included true or false questions on three well-known Ethiopian food taboos. In Ethiopia, children and pregnant and lactating women are most vulnerable to food taboos (Alemayehu and Tesema 2015; Zepro 2015). For instance, some mothers do not feed young children meat or other animal-source foods, as they believe that children cannot digest them (Alive and Thrive 2010).

Table 5.5 summarizes the responses to the healthy eating statements, listing the percentage of respondents that “agree”’ or “completely agree” with each individual statement. Most respondents claim to try to limit their intake of salt and saturated fats. They consider a healthy diet to be primarily plant-based. Yet a substantial share of respondents found a healthy diet too expensive (65 percent) and were not willing to pay a premium for what they considered healthy food (56 percent). In addition, just over half of respondents indicated that they regularly replace conventional foods with healthier versions and that they avoid calorie-dense products with low nutritional value. Only twenty percent believed that eating fried foods is a symbol of modern living and wealth.

Most respondents do not actively look for information on food and health and do not use recipes for cooking. Still, about 60 percent like to learn new cooking techniques and discuss healthy eating habits with their family members. Almost half of the respondents claimed that they are aware of the nutritional balance of their daily diet, but similar shares indicate that information about healthy food changes over time, that they get confused over what is healthy and what not, and that they do not know which foods to avoid in order to reduce sugar and fat consumption.

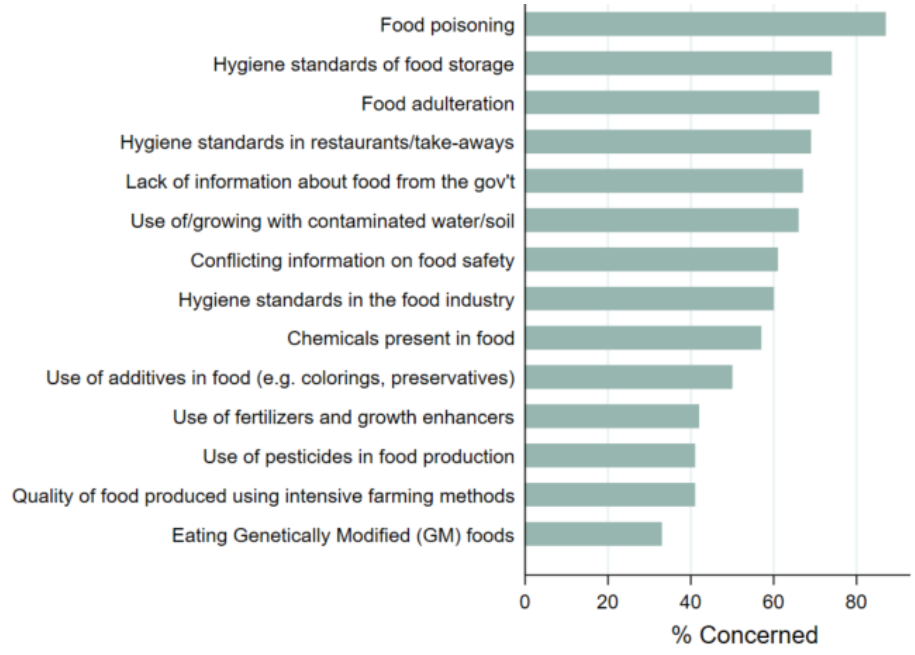
Table 5.5. Attitudes and beliefs of consumers on healthy eating, percent agreeing with statement

Statement	In agreement
Attitudes and beliefs on healthy eating in general	
I try to limit the amount of salt added to my food	91
I try to limit my intake of saturated fats	81
A healthy diet is one that is based mainly on plant foods	81
I find that a healthy diet is too expensive	65
I am willing to pay a premium for healthy foods	56
I regularly replace conventional food with a healthier version (e.g. low calorie, no sugar)	55
I try to avoid consuming high calorie products with poor nutritional quality (e.g. sweets, snacks)	52
I am worried about becoming ill in the future because of my diet	44
Eating fried foods is a symbol of modern living and wealth.	20
Effort and efficacy	
I like to learn new cooking techniques	60
I discuss healthy eating habits with my families	59
Information about what foods are good changes over time	58
I am aware of the nutritional balance of my diet that I eat daily	49
I often get confused over what is supposed to be healthy and what is not in making food choices	41
I do not know which foods to avoid in order to reduce sugar and fat	38
I actively read and learn about food through cookbooks, food blogs, TV shows, etc.	32
I use recipes for cooking	14
I use the internet to get information about food, health and handling of food	11

Source: Consumer survey.

Figure 5.4 illustrates the respondents' level of concern with the various sources of food safety risks. About 17 percent of respondents reported that at least one family member had been sick due to the consumption of unsafe food. Not surprisingly, then, most respondents are concerned about several potential sources of risk. Food poisoning, hygiene (both at home and in restaurants), and food adulteration were mentioned as primary concerns by most respondents.

Figure 5.4. Consumer concerns with various sources of food safety risks



Source: Consumer survey.

A considerable proportion of respondents endorse the harmful food taboos (Table 5.6). Specifically, many people believe that young children should not eat meat (47 percent) and pregnant women should avoid meat and milk products (31 percent). Both of these findings are somewhat concerning, as we expected the population of Addis Ababa to be relatively well exposed to information about good dietary practices for pregnant women and children.

Table 5.6. Attitudes and beliefs of consumers on food taboos, percent of consumers

Statement	True	False	Not sure
Pregnant women should avoid the consumption of green leafy vegetables for these can be plastered on the body of the fetus	17	73	9
Pregnant women should avoid fatty foods, like meat, milk and yoghurt, to avoid a fat baby and difficulties during delivery	31	62	8
Young children, aged 6 to 24 months, should not be given meat and meat products as their stomach cannot digest these foods	47	49	4

Source: Consumer survey.

5.4. Knowledge and information

To examine consumers' understanding of a healthy diet, we asked them to prepare a healthy eating plan similar to the actual and unrestricted plan discussed above. The respondents had to assume that they could eat as much of each food item as they wanted, but at the same time eat the healthiest food mix possible. Compared to the unrestricted plate, respondents chose smaller quantities of meat, soft drinks, and crisps, and larger amounts of vegetables (Table 5.7). Although the amounts do not necessarily reflect the healthiest diets possible, the changes go somewhat in the right direction, indicating that people at least have some understanding of what a healthy diet means. However, one concern is that the amounts of food largely increase relative to what people report normally eating; as overweight and obesity is a rising concern in urban populations in Ethiopia, moderation is not apparent in the diets considered healthy by the sample. When comparing sub-groups, the most striking result is that men and people that are more educated consider a relatively large amount of eggs to be required for a healthy diet (Table 5.8).

Table 5.7. Components of hypothetical healthy meals versus components of an unrestricted desired meal, by food type amount and meal

		Components of healthy plate of food				Unrestricted desired		
Food	Unit	Breakfast	Lunch	Dinner	Total	plate	T-value	probability
Injera	Number	0.2	0.6	0.8	1.6	1.4	-0.48	0.63
Bread	Slice	1.0	0.2	0.4	1.6	1.5	-0.56	0.57
Shiro	Spoonful	0.3	2.5	1.2	4.0	3.3	-0.49	0.62
Meat	Gram	49	127	70	246	335	**7.16**	**0.00**
Eggs	Number	1.8	0.7	0.3	2.9	2.4	-0.92	0.36
Milk	Cup	0.8	0.3	0.4	1.4	1.6	0.63	0.53
Vegetables	Spoonful	0.8	1.5	1.6	3.9	3.7	**-1.75**	**0.08**
Fruits	Number	0.7	1.1	1.0	2.7	2.7	0.12	0.91
Soft drinks	Bottle	0.2	0.5	0.3	0.9	1.1	**2.73**	**0.01**
Crisps	Bag	0.2	0.1	0.1	0.4	0.6	**2.02**	**0.04**

Source: Consumer survey.

Table 5.8. Components of hypothetical healthy meal for the different sub-samples of consumer survey, by food type amount

		Income			Sex		Educational attainment		
Food	Unit	< ETB 3,000	ETB 3,000-5,000	> ETB 5,000	Female	Male	No formal educa-tion	Primary or second-ary	Above second-ary
Injera	Number	1.98	1.26	1.26	1.25	2.83	2.33	1.30	1.20
Bread	Slice	1.47	1.58	1.63	1.46	1.95	1.43	1.59	1.66
Shiro	Spoonful	3.32	6.45	2.97	3.02	8.10	4.08	4.48	1.55
Meat	Gram	258	247	231	223	343	251	247	230
Eggs	Number	3.51	2.10	2.77	2.16	6.04	1.99	2.94	4.52
Milk	Cup	1.40	1.36	1.53	1.41	1.55	1.44	1.46	1.29
Vegetables	Spoonful	3.57	3.70	4.45	3.94	3.74	3.65	4.08	3.52
Fruits	Number	2.50	2.49	2.99	2.63	2.79	2.73	2.66	2.51
Soft drinks	Bottle	1.04	0.97	0.81	0.94	0.94	1.12	0.92	0.72
Crisps	Bag	0.41	0.47	0.36	0.41	0.37	0.37	0.43	0.35

Source: Consumer survey.

We also asked direct questions about nutrition and health. Most of these questions are derived from a validated general nutrition knowledge questionnaire (Parmenter and Wardle 1999; Anderson et al. 2002), as efforts to validate multidimensional measures of nutrition knowledge in the context of developing countries have been limited (Bukenya et al. 2017). We made two amendments to the standardized and validated domains of the questionnaire. First, we excluded a few irrelevant questions. Second, some questions were modified either to reflect recent knowledge or to reflect the local context, e.g., altering food items, to enhance the understanding of respondents. Our final instrument contains 43 questions that capture three domains: (1) advice from health experts (12 items), (2) food groups and nutrient sources (23 items), and (3) diet - disease relationships (8 items).

Most people are aware that health experts advise higher consumption of fruits and vegetables and lower consumption of sugary, fatty, and salty foods (Table 5.9). The need to eat more fiber is somewhat less known (51 percent). The scores for meat and starchy foods, with 42 and 25 percent of respondents answering correctly, are much lower. There are no well-known Ethiopia-specific messages for these foods and the international advice –similar amounts of starchy foods and less meat – may not apply to many of the respondents. Most people do know at which age to introduce solid food, but they do not know the proper consistency of the porridge that they give their young children. Further, most people do not appear to regularly purify water.

Table 5.9. Nutrition knowledge and advice from health experts for the different sub-samples of consumer survey, percent of consumers giving correct responses

		Income			Sex		Educational attainment		
	All	< ETB 3,000	ETB 3,000-5,000	> ETB 5,000	Female	Male	No formal educa-tion	Primary or second-ary	Above second-ary
Health experts often give people advice about diets. Do you think health experts recommend that people should be eating more, the same amount, or less of these foods?									
Vegetables	78	74	79	80	78	75	77	76	85
Sugary foods	78	79	79	76	78	78	74	79	83
Meat	42	47	41	38	42	43	38	45	40
Starchy foods	25	26	26	23	24	29	23	25	31
Fatty foods	91	90	89	95	91	93	85	92	97
High fiber foods	51	42	54	58	49	57	39	52	68
Fruit	82	78	86	83	82	80	78	82	90
Salty foods	91	89	94	91	91	94	89	92	92
Does your household have the habit of treating or purifying (e.g., boiling, using agar) water before drinking?	30	23	30	40	31	29	19	32	46
At what age should solid foods be introduced to children? 1. After six months; 2. After one year; 3. After 1.5 years; 4. After 2 years; 5. Not sure	83	81	85	85	84	81	80	85	85
Which consistency of porridge do you think children should eat? 1. Thick porridge, 2. Watery porridge, 3. Not sure	18	11	16	27	17	20	22	16	15
Which of these foods is fortified with iodine? 1. Vegetable oil, 2. Powdered milk, 3. Table salt, 4. Wheat flour, 5. Not sure	67	57	70	78	65	76	49	72	82

Source: Consumer survey.

Strikingly, the share of people with a correct answer on a specific food group question is high when the correct answer is either ‘high’ or ‘true’, but low when the correct answer is either ‘low’ or ‘false’ (Table 5.10). This could imply that people have very limited knowledge on nutrients and the nutritional content of foods and just answer affirmative to hide their ignorance. On the other hand, out of four options, about two-thirds know that bread, cereals, rice, and pasta are a good source of carbohydrates, which contradicts assumptions as to their ignorance. In any case, few people knew that chicken is low in carbohydrates, that fruits are low in proteins, and that proteins and vitamins are not good sources of energy. Also, a large majority falsely claim that sunlight is an important source of vitamin C and that table salt has a lot of vitamins and minerals.

Table 5.10. Nutrition knowledge of food groups and nutrient sources for the different sub-samples of consumer survey, percent of consumers giving correct responses

		Income			Sex		Educational attainment		
	All	< ETB 3,000	ETB 3,000-5,000	> ETB 5,000	Female	Male	No formal educa-tion	Primary or second-ary	Above second-ary
In general, are these foods high or low in carbohydrates?									
Beef	27	24	30	28	27	28	24	26	35
Pasta	58	51	58	66	56	65	49	58	75
Cabbage	29	23	32	33	27	34	23	29	38
Bread	73	66	73	82	71	81	63	74	88
Rice	55	49	57	61	54	59	48	56	65
Chicken	22	16	24	27	21	24	16	21	36
Honey	89	84	90	95	88	91	81	92	91
Are the following foods high or low in protein?									
Chicken	81	75	83	86	79	87	78	82	81
Peanut	77	69	76	86	75	82	66	80	83
Beans	88	85	88	93	88	90	80	91	91
Fruit	25	16	28	34	23	34	19	24	45
Potato	56	60	51	54	57	52	58	59	38
Egg	94								
Evaluate the following statements. 1. True; 2. False; 3. Not sure?									
Table salt has a lot of vitamins and minerals.	20	19	22	21	20	20	16	20	28
Eating more bread helps to increase protein in the diet.	33	26	31	42	33	34	21	35	47
Protein is the best and most efficient source of energy.	12	10	12	16	11	17	9	11	25
Soya beans are a good source of protein.	74	68	79	76	72	79	65	76	78
Vitamins are a good source of energy.	16	9	16	25	15	24	13	14	34
Cereal, bread, and pasta are good sources of carbohydrates.	84	78	83	91	83	90	77	85	95
Saturated fats are usually found in animal products, like meat and dairy.	87	84	87	91	86	90	81	90	88
Sunlight is an important source of vitamin C.	32	18	33	47	30	41	16	32	65
Multiple choice									
Which food group is our body's best source of energy? 1. Meat; 2. Fats, oils and sweets; 3. Breads and cereals; 4. Milk and cheese; 5. Not sure	39	34	41	44	39	40	35	39	48
Bread, cereals, rice and pasta are a good source of 1. Carbohydrates, 2. Vitamin C; 3. Protein; 4. Vitamin D; 5. Not sure	69	56	72	83	67	81	56	71	87

Source: Consumer survey.

The percentage of correct answers is relatively low for the multiple-choice questions on diet-health relationships, ranging from 30 percent for causes of obesity to 71 percent for dietary cause of high blood pressure (Table 5.11). Interestingly, as many as 92 percent of respondents evaluate the statement that a

high intake of salt may increase blood pressure as true. In addition, most respondents gave the correct answer to the other true-false questions, which is all cases was “true”. Again, we do not know whether this reflects true knowledge or a tendency for considering all statements posed to be true.

Table 5.11. Nutrition knowledge of health-disease relationships for the different sub-samples of consumer survey, percent of consumers giving correct responses

		Income			Sex		Educational attainment		
	All	< ETB 3,000	ETB 3,000-5,000	> ETB 5,000	Female	Male	No formal educa-tion	Primary or second-ary	Above second-ary
Evaluate the following statements. 1. True; 2. False; 3. Not sure?									
What one eats can affect the risk of getting a disease.	83	78	85	86	81	88	81	82	88
Milk is important for the development and strength of our bones.	96	94	96	99	96	100	93	97	98
A high intake of salt may increase blood pressure.	92	91	91	95	92	94	88	93	95
Food leftovers should be kept in a cool place because higher temperatures make germs grow faster.	84	82	83	87	84	83	82	86	82
Multiple choice									
Which one of the following would not be a likely cause of obesity? 1. Overeating of carbohydrates and fats; 2. Excess calories in the body; 3. Lack of physical activity; 4. Overeating of fruits and vegetables; 5. Not Sure	30	23	25	42	30	30	27	31	32
Which of these serious health problems has been linked to obesity? 1. Type 2 diabetes; 2. Heart disease; 3. High blood pressure; 4. Stroke; 5. All of the above; 6. Not sure	56	61	55	49	55	57	40	59	67
Risk of high blood pressure is most likely to be reduced by eating a diet with 1. Less sugar; 2. More fiber; 3. More iron; 4. Less salt; 5. Not sure	71	71	68	75	72	69	64	73	77
Goiter is a disorder related to which nutrient? 1. Calcium; 2. Iodine; 3. Iron; 4. Vitamin C; 5. Not sure	60	45	67	74	58	70	32	67	84

Source: Consumer survey.

About half of people assessed their nutrition knowledge as average relative to the general population (Table 5.12). Interestingly, this was also the case for those who objectively scored in the lowest tercile for the knowledge questions. Of this group, 18 percent considered themselves to be more knowledgeable than average. Of those who were in the top tercile, 59 percent indeed considered their knowledge to be above average, while only 5 percent considered it to be below average. This indicates that there is some overlap between the objective scores and people’s self-assessment, but that correlation is far from perfect.

Table 5.12. Number of correct answers in the knowledge questions compared to self-assessed nutrition knowledge level

	Self-assessed knowledge level, % of respondents	Knowledge questions correctly answered, percent of 43 questions asked			
		Overall	Lowest third of respondents	Middle third of respondents	Highest third of respondents
Less than average	15	20.6	29	11	5
Average	48	24.4	53	51	36
More than average	37	27.4	18	39	59

Source: Consumer survey.

Health professionals are by far the most trusted source of information about food and health: 88 percent of people indicate they trust them (Table 5.13). The internet (10 percent) and grocery stores (14 percent) are least often considered trustworthy sources of information. Still, 26 percent trust food safety claims by the food industry and retailers. Nutrient and health claims on packages and labels are trusted by 41 percent of respondents. This number increases with income and education.

Table 5.13. Trust in claims and sources of food and health information for the different sub-samples of consumer survey, percent of consumers reporting

	All	< ETB 3,000	ETB 3,000-5,000	> ETB 5,000	Female	Male	No formal educa-tion	Primary or second-ary	Above second-ary
Trust in food and health information claims									
Nutrient/health claims on packages and labels	41	28	40	58	40	49	24	44	61
Food safety claims by food industries and retailers	26	22	24	33	25	30	25	25	31
Trust in sources of food and health information									
Health professionals	88	88	86	89	88	88	80	91	89
Friends and neighbors	42	43	40	43	43	41	42	42	45
TV and radio	34	33	30	39	33	38	27	35	45
Food industries	33	32	33	35	33	33	34	33	32
NGOs	33	25	34	42	31	41	33	31	44
Food advertisements	25	21	23	30	25	24	24	23	32
Newspapers	20	18	18	24	19	22	13	20	33
Grocery stores	14	14	17	12	13	17	14	14	15
Internet	10	6	8	15	10	11	2	9	26

Source: Consumer survey.

6. CONCLUSION

This paper found several concerns related to the diets of members of urban households in Ethiopia. Using a unique sample of urban households in Addis Ababa, it finds that a large proportion of the sample eats insufficient amounts of vegetables, animal-source foods, and fruits. Furthermore, while the overall consumption of ultra-processed foods might not be considered high, it rises with both income and education, so if incomes continue to rise in Addis Ababa this consumption may become an increasing concern.

The paper also studies food purchasing and preparation. Meal components are purchased at a variety of outlets, with nearby kiosks and informal street markets frequented for small food items, vegetables, and fruits, and formal open markets and consumer cooperatives for bulk food shopping. Consumers with higher

income and education make somewhat more use of supermarkets and convenient stores, while poor people with less education go to informal street markets more often. For choice of outlet, most people especially value the availability of a wide variety of healthy and safe foods. Most meals are consumed and prepared at home; the few people who eat away from home in the sample tend to do so because their jobs are far from their homes.

When purchasing food, we find that consumers in lower income categories considered low prices and a convenient location as being more important considerations than they are for wealthier consumers. To go to the shops, people walk or use public transport. About 60 percent uses food labels to some extent, but many have limited understanding of the information the labels provide. The expiration (Best by) date on the label is the information consumers are most interested in.

When unrestricted by budget and religion, people would choose to eat substantially more of everything, except shiro and injera. With additional money, they would first buy more vegetables and fruits, meat, and cereals. Ninety percent of respondents considered health an important factor for food choice. They considered a healthy diet to be primarily plant-based and indicated that they tried to limit their intake of salt and saturated fats. Yet, there appears to be a differentiation between “healthy” and nutritious foods; in general, food safety was much more prominent in peoples’ decisions than nutritional value. Most people are aware that they should eat more fruits and vegetables and less sugary, fatty, and salty foods. However, they have limited knowledge on the nutrient content of foods and the causes of obesity. Lastly, it is important to realize that most people trust the information provided by health professionals, but not information from internet, television, and grocery stores.

Clearly one concern as incomes continue to rise in Addis Ababa and Ethiopia as a whole is the potential for a rise in overweight and obesity status. More education is needed on what constitutes a nutritious diet and more congruence between the concept of a nutritious and a healthy diet. With more education in general about healthier diets, one would hope to see a rise in the consumption of more nutritious foods, such as fruits and vegetables.

REFERENCES

Alemayehu, M.S., and E.M. Tesema. 2015. "Dietary Practice and Associated Factors among Pregnant Women in Gondar Town North West, Ethiopia." *International Journal of Nutrition and Food Sciences* 4 (6): 707-712.

Alive and Thrive. 2010. *IYCF Practices, Beliefs and Influences in Tigray Region, Ethiopia*. Addis Ababa: Alive and Thrive.

Bukenya, R., A. Ahmed, J.M. Andrade, D.S. Grigsby-Toussaint, J. Muyonga, and J.E. Andrade. 2017. "Validity and Reliability of General Nutrition Knowledge Questionnaire for Adults in Uganda." *Nutrients* 9 (172): 1-11.

Central Statistical Agency (CSA) of Ethiopia. 2007. *Statistical Report, Household Income, Consumption and Expenditure (HICE) Survey 2004/05.* Volume II, Number 394, Addis Ababa: CSA.

Coveney, J. 2007. "Food and trust in Australia: Building a picture." *Public Health Nutrition* 11 (3): 237-245.

Drichoutis, A.C., J.R.M. Nayga, and P. Lazaridis. 2009. "Can nutritional label use influence body weight outcomes?" *Kyklos 62* (4): 500-525.

Food and Agriculture Organization of the United Nations (FAO). 2010. *Guidelines for Measuring Household and Individual Dietary Diversity*. Rome: FAO.

Food and Agriculture Organization of the United Nations (FAO). 2014. *State of Food Insecurity in the World: Economic Growth Is Necessary but Not Sufficient to Accelerate Reduction of Hunger and Malnutrition*. Rome: FAO.

Geaney, F., S. Fitzgerald, J.M. Harrington, C. Kelly, B.A. Greiner, and I.J. Perry. 2015. "Nutrition knowledge, diet quality and hypertension in a working population." *Preventive Medicine Reports* 2: 105-113.

Gillespie, S. and M. van den Bold. 2017. *Agriculture, Food Systems, and Nutrition: Meeting the Challenge*. *Global Challenges* 1 (3): 1600002.

Hieke, S., and C. R. Taylor. 2012. "A critical review of the literature on nutritional labeling." *Journal of Consumer Affairs 46* (1): 120-156.

Jacobs, S.A., H. de Beer, and M. Larney. 2010. "Adult Consumers' Understanding and Use of Information on Food Labels: A Study among Consumers Living in the Potchefstroom and Klerksdorp Regions, South Africa." *Public Health Nutrition* 14 (3): 510-522.

Jones, G., and M. Richardson. 2007. "An objective examination of consumer perception of nutrition information based on healthiness ratings and eye movements." *Public Health Nutrition* 10 (3): 238-244.

Lim, S., T. Vos, A. D. Flaxman, G. Danaei, K. Shibuya, H. Adair-Rohani, and A. Davis. 2013. "A Comparative Risk Assessment of Burden of Disease and Injury Attributable to 67 Risk Factors and Risk Factor Clusters in 21 regions, 1990–2010: A Systematic Analysis for the Global Burden of Disease Study 2010." *The Lancet* 380 (9859): 2224-2260.

Lindeman, M., and M. Väänänen. 2000. "Measurement of ethical food choice motives." *Appetite* 34 (1): 55-59.

McDermott, J., N. Johnson, S. Kadiyala, G. Kennedy, and A.J. Wyatt. 2015. "Agricultural Research for Nutrition Outcomes: Rethinking the Agenda." *Food Security* 7 (3): 593-607.

Miller, L. M., and D. L. Cassady. 2015. "The Effects of Nutrition Knowledge on Food Label Use: A Review of the Literature." *Appetite* 92: 207-216.

Monteiro, C.A., R.B. Levy, R.M. Claro, I.R.R. de Castro, and G. Cannon. 2010. "A new classification of foods based on the extent and purpose of their processing." *Cad. Saúde Pública, Rio de Janeiro* 26(11):2039-2049.

Parmenter, K., and J. Wardle. 1999. "Development of a general nutrition knowledge questionnaire for adults." *European Journal of Clinical Nutrition* 53 298-308.

Segal, L., and R.S. Opie. 2015. "A nutrition strategy to reduce the burden of diet related disease: access to dietician services must complement population health approaches." *Frontiers in Pharmacology* 6 (160).

Steptoe, A., T. M. Pollard, and J. Wardle. 1995. "Development of a measure of the motives underlying the selection of food: the food choice questionnaire." *Appetite* 25 (3): 267-84.

Webb, T.L., and P. Sheeran. 2006. "Does changing behavioral intentions engender behavior change? A meta-analysis of the experimental evidence." *Psychological Bulletin* 132 (2): 249-268.

Woldemariam, H.W., and Abera, B.D. 2014. "The extent of adulteration of selected foods at Bahir Dar, Ethiopia." *International Journal of Interdisciplinary Research* 1 (6): 1-6.

Zepro, N.B. 2015. "Food taboos and misconceptions among pregnant women of Shashemene District, Ethiopia." *Science Journal of Public Health* 3 (3): 410-416.

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