

# Statistics Book of HOUSEHOLD SURVEY ON USED COOKING OIL (UCO) 2021

# STATISTICS BOOK OF HOUSEHOLD SURVEY ON USED COOKING OIL

2021

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## STATISTICS BOOK OF HOUSEHOLD

## **SURVEY ON USED COOKING OIL 2021**

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## PREFACE

Currently, the biodiesel policy has become one of Indonesia's priority projects that was motivated to achieve economic, energy security, and environmental goals. However, the policy has raised concerns for its high and long-term environmental and social impacts due to its current feedstock of palm oil which is associated with high GHG emissions caused by deforestation and peat loss from land-use change and fires. Thus, an attractive alternative feedstock for biodiesel production is the Used Cooking Oil (UCO).

Between October – November 2021 Institute for Economic and Social Research, Faculty of Economics and Business, Universitas Indonesia (*Lembaga Penyelidikan Ekonomi dan Masyarakat, Fakultas Ekonomi dan Bisnis, Universitas Indonesia*, LPEM FEB UI), had done a survey regarding household UCO potential of 2,500 respondents spread among all islands in Indonesia. The survey collected information regarding cooking oil and UCO consumption, cooking patterns, UCO production quantity and quality, and UCO collection mechanisms and incentives preference.

Knowing the importance of the result of this survey to be disseminated and utilized by the public, LPEM FEB UI initiated the book entitled "**Statistics Book of Household Survey on Used Cooking Oil (UCO) 2021**". This book contains tabulation results of various variables used collected in the survey. These tabulations are expected to be utilized by many parties to develop extensive studies regarding the UCO.

On behalf of LPEM FEB UI, I would like to thank The David and Lucile Packard Foundation for the support. I hope this book can be beneficial for the public and policymakers to understand the current situation of UCO production and how we can utilize and collect UCO to its fullest potential. This issue has become crucial in discussions regarding the policies of biofuel development and how to mitigate the impacts caused by the policy. I hope this also ignites studies regarding the policy in the future.

Head of LPEM FEB UI

Riatu Mariatul Qibthiyyah, PhD

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# 1. SURVEY BACKGROUND

## **CHAPTER 1**

## SURVEY BACKGROUND

The demand for alternative sources of energy has increased due to the diminishing oil reserves and increasing energy dependency. In the 1970s, the oil crisis had become the catalyst for the development of fossil fuel alternatives (Janda et al., 2012; Yui & Yeh, 2013). Moreover, there was an increase in the awareness of climate change during the 1980s and the 1990s, which has become a driver of global interest in biofuel (Janda et al., 2012). This has led to the development of alternative energy from renewable sources, such as bioenergy. Bioenergy can be sourced from agricultural crops, animal and plant wastes, algae, wood and organic waste.

One of the bioenergy products is biofuel (biodiesel and bioethanol), which is mainly sourced from vegetable oils, such as soybean, rapeseed and palm oil. Biofuels sourced from vegetable oils are appealing for several reasons. First, vegetable oil-based biofuel generates environmentally friendly combustion compared to petroleum-derived fuel to high lubricity and cetane ignition levels. Second, vegetable oils are versatile as they can be used for both edible and non-edible usages. This has led many countries including Brazil, Malaysia, and Indonesia to issue mandates for blending fossil fuels with biofuels. Between the feedstocks of biofuel, palm oil is considered a popular choice due to the highest yield and lowest cost it provides (Fitzherbert et al., 2008; Vijay et al., 2016).

Currently, Indonesia has made its biodiesel policy as one of the priority projects which is crucial to support the targets of the renewable energy mix, national energy security, and Nationally Determined Contribution (NDC) by 2030. However, the policy has raised concerns for its high and long-term environmental and social impacts. The current feedstock, palm oil, is at odds with the climate goals as palm oil has been associated with high GHG emissions caused by deforestation and peat loss from land-use change and fires. In addition, Halimatussadiah et al. (2021) has shown that the biodiesel program potentially creates CPO deficits of up to 152.69 million tons by 2030 which would lead to land expansion of up to 76% of the current palm oil land. This scenario has considered the Biodiesel 30 (B30) program in 2020 and the assumption of implementing the Biodiesel 40 (B40) program in 2021 and the Biodiesel 50 (B50) program in 2022.

Thus, an attractive alternative feedstock for biodiesel production is the Used Cooking Oil (UCO) due to several reasons. First, the utilization of UCO leads to reduced land expansion activities. The usage of UCO for biodiesel feedstock is able to reduce palm usage by palm oil by 1.16 million tons per year and reduce the need for palm oil land expansion (ICCT, 2020). Second, it reduces waste produced in

Indonesia. So far, 60 - 70% of UCO is considered waste, thus the utilization of UCO will help waste management. Lastly, the usage of UCO as a feedstock is more cost-efficient as it is cheaper and more stable compared to the crude palm oil price that follows the international price dynamics.

Therefore, this study intends to assess the current condition of household UCO collection and what enabling environment and support are needed to strengthen it. This will provide an idea of how much is the potential supply of UCO provided by households in Indonesia which can be utilized as inputs for producing other goods. In collaboration with a third-party provider, LPEM FEB UI ran an online survey to assess the current landscape of UCO utilization, production, and support needed by households in Indonesia. The survey was conducted between October 11<sup>th</sup> – November 4<sup>th</sup>, 2021 in 16 provinces to represent each region in Indonesia. This survey provides a complimentary initial assessment of household UCO utilization, production, and support needed in Indonesia. We hope this survey ignites the interest of studies regarding UCO in Indonesia as there are more potential topics to be elaborated regarding UCO, such as the utilization of UCO for further usages, more parties that can provide UCO (businesses, restaurants, etc.), and impacts on the usage of UCO.

# 2. SURVEY METHODOLOGY

# **CHAPTER 2**

# SURVEY METHODOLOGY

## Sampling

The survey in this study was conducted using online questionnaires distributed through email to capture the households' new cooking oil and UCO usage, UCO production, preferences of UCO collection, and knowledge on UCO which was conducted between October – November 2021. We use multistage random sampling with the population taken from a database of a third party that worked together with LPEM FEB UI to run the survey. The population was chosen randomly based on specific socio-economic characteristics. The sampling process comprised three steps. First, the proportion of samples was based on the population proportion in one island. Second, the sample quota of each province was based on job status, with the highest proportion being workers, business owners, and unemployed samples. Lastly, the sample is randomized from the population based on the segmentation from previous steps. In the survey process, we also had filtered respondents who are users of palm cooking oil and know the pattern of the cooking oil used in the household to ensure accuracy of the answer in the survey. The number of samples involved was 2,500 people spread in 16 provinces<sup>1</sup> across the country with the majority of respondents from Java (48.72%).

#### Figure 2.1 Map of Survey Locations



<sup>&</sup>lt;sup>1</sup> The provinces surveyed include North Sumatra, Jambi, DKI Jakarta, East Java, Banten, Bali, West Nusa Tenggara, South Kalimantan, East Kalimantan, North Sulawesi, South Sulawesi, Southeast Sulawesi, Maluku, North Maluku, West Papua, and Papua.

## Questionnaire

Before beginning the questionnaire, respondents are asked for their consent to take part in the survey. The survey consists of 81 questions divided into 5 blocks as follows:

- I. Selection questions
- II. Demographic questions
- III. Behaviour of cooking oil usage, behaviour of cooking, and behaviour of UCO treatment
- IV. Incentive mechanism for UCO management
- V. Respondents' behaviour and knowledge regarding health and environmental consequences of UCO

The first block is filter questions to select respondents. Respondents who can take part in this survey are households that consume palm cooking oil and generally know how their households use cooking oil for their daily needs. The second block contains the demographics of the respondents. Included in this block are questions to map the geographic location and socioeconomic profile of the respondents.

The third block explains how the behaviour of respondents in consuming cooking oil, cooking habits, and habits in UCO treatment. In the cooking oil consumption section, the consumption patterns of new cooking oil and UCO are also distinguished, and each one is distinguished again based on the method of obtaining it, whether by purchase or given. The questions asked in this section are about the amount of cooking oil consumed per week, the type of cooking oil consumed, to the average expenditure for buying cooking oil. In the cooking habits section, questions are asked about the types of dishes that are generally cooked, the usual cooking methods, and the types of food for each type of cooking method. In the UCO treatment section, questions were asked regarding the amount of UCO produced, how households store and distribute UCO, and the quality of UCO produced (UCO colour & amount of dregs in the oil).

The fourth block maps the incentive mechanism for UCO treatment, starting from the expected collection method, preference for collection time, enabling environment to increase UCO collection, as well as the expected incentives from collecting UCO. Lastly, the fifth block deals with knowledge related to the impact of UCO on health and the environment as well as mapping the respondents' environment-related and social knowledge.

# 3. RESPONDENT PROFILE

# **CHAPTER 3**

# **RESPONDENT PROFILE**

The proportion of respondents' gender in this survey (Table 3.1) is dominated by women (57.08%) with the largest age group of 25-29 years old by 25.68% of the total respondents (Table 3.5). Meanwhile, the education level is dominated by respondents with Diploma III/IV or bachelor's degree (S1) at 53.72% (see Table 3.6). Out of 2,500 respondents, 64.60% are not married, 50.92% are married, and the remaining 2.48% are either divorced or widowed (Table 3.2). Respondents involved in this survey came from various regions covering 16 of 34 provinces in Indonesia, including DKI Jakarta, East Java, Bali, West Papua, North Maluku, South Kalimantan, among others (Table 3.7).

### Gender

Table 3.1 Respondent Gender		
Gender Percentage		
Male	42.92%	
Female	57.08%	
Total	100.00%	
Total Sample (n) 2,500		

## **Marital Status**

Table 3.2 Respondent Marital Status	
Marital Status	Percentage
Not Yet Married	64.60%
Married	50.92%
Divorced	1.92%
Widowed	0.56%
Total	100.00%
Total Sample (n)	2,500

## **Relationship with Household Head**

Relationship with Household Head	Percentage
Household Head	24.68%
Husband/Wife	28.80%
Child	36.16%
Sons/Daughters-in-law	0.32%
Granchild	0.24%
Parents/Father/mother-in-law	7.68%
Other Family Members	2.12%
Servants	0.00%
Others	0.00%
Total	100.00%
Total Sample (n)	2,500

## Number of Household Members Living Together

Table 3.4 Number of Household Members Living Together, including Respondent	
Number of Household Members	Percentage
1 person	2.32%
2 people	7.68%
3 people	20.56%
4 people	29.68%
5 people	22.08%
6 people	9.60%
> 6 people	8.08%
Total	100.00%
Total Sample (n)	2,500

Table 3.3 Respondent Relationship with Household Hea

.

## Age Group

Table 3.5 Respondent Age Group	
Age Group	Percentage
<20 years old	3.12%
20-24 years old	25.00%
25-29 years old	25.68%
30-34 years old	17.48%
35-39 years old	12.96%
40-44 years old	7.88%
45-49 years old	4.80%
50-54 years old	1.92%
55-59 years old	0.92%
≥60 years old	0.24%
Total	100.00%
Total Sample (n)	2,500

## **Education Level**

Table 3.6 Respondent Education Level		
Education Level	Percentage	
Not Attending School	0.00%	
Not Graduated from Elementary School	0.16%	
Graduated from Elementary School	1.20%	
Graduated from Secondary School	2.36%	
Graduated from High School	36.32%	
Diploma I/ II	3.12%	
Diploma III/ IV/ S1	53.72%	
S2/ S3	3.12%	
Total	100.00%	
Total Sample (n)	2,500	

## **Province of Residence**

Table 3.7 Respondent Province of Residence			
Province	Frequency	Percentage	
North Sumatera	375	15.00%	
Jambi	80	3.20%	
DKI Jakarta	537	21.48%	
East Java	550	22.00%	
Banten	131	5.24%	
Bali	175	7.00%	
West Nusa Tenggara	100	4.00%	
South Kalimantan	138	5.52%	
East Kalimantan	114	4.56%	
North Sulawesi	52	2.08%	
South Sulawesi	162	6.48%	
Southeast Sulawesi	36	1.44%	
Maluku	10	0.40%	
North Maluku	10	0.40%	
West Papua	10	0.40%	
Рариа	20	0.80%	
Total sample (n)	2,500	100.00%	

## Employment Characteristics

Table 3.8 Respondent Main Activity		
Main Activity	Percentage	
Student	6.32%	
Taking Care of Household		
(Housewives/House Husbands)	13.4070	
Not Working and Not Looking for Job	3.92%	

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Main Activity	Percentage
(other than Students and Housewives/House Husbands)	
Not Working and Looking for Job	12.32%
Working	61.96%
Total	100.00%
Total Sample (n)	2,500

Table 3.9 Employment Sector

Employment Sector	Percentage
Agriculture Sector	3.32%
Mining Sector	1.36%
Industry and Manufacture Sector	7.60%
Construction/Building Sector	4.72%
Trade Sector	11.76%
Hotel and Restaurant Sector	3.80%
Transportation and Communication Sector	4.88%
Finance, Banking, and Real Estate Sector	5.28%
Service and Other Sectors	19.24%
Total	100.00%
Total Sample (n)	1,549

#### Table 3.10 Respondent Employment Status

Employment Status	Percentage
Self-employed/business owner without employees	7.80%
Business owner with non-permanent employees	2.96%
Business owner with permanent employees	3.28%
Employee/labor	44.44%
Freelance workers in the agriculture sector	0.52%
Freelance workers in sectors other than agriculture	2.76%

Employment Status	Percentage
Unpaid workers (example: working for family)	0.20%
Total	100,00%
Total Sample (n)	1,549
	6 - C

#### Table 3.11 Respondent Daily Working Hours

Daily Working Hours	Percentage
2 - 4 Hours	3.04%
5 - 7 Hours	18.98%
8 - 10 Hours	71.14%
> 10 Hours	6.83%
Total	100.00%
Total Sample (n)	1,549

## **Household Welfare Condition**

#### Average Monthly Expenditure Percentage < IDR 500,000 3.80% IDR 500,001 - 1,000,000 10.92% IDR 1,000,001 - 2,500,000 29.44% IDR 2,500,001 - 5,000,000 36.60% 11.08% IDR 5,000,001 - 7,500,000 IDR 7,500,001 – 10,000,000 4.56% IDR 10,000,001 - 20,000,000 2.56% IDR 20,000,001 - 35,000,000 0.56% IDR 35,000,001 - 50,000,000 0.28% > IDR 50,000,000 0.20% 100.00% Total

#### Table 3.12 Average Monthly Expenditure

Average Monthly Expenditure	Percentage
Total Sample (n)	2,500

Social Assistance Received by Household	Yes	No	Total	Total Sample (n)
Did Not Receive Social Assistance	51.56%	48.44%	100.00%	2,500
Family Hope Program	4.76%	95.24%	100.00%	2,500
Non-Cash Food Assistance	2.76%	97.24%	100.00%	2,500
Non-Contributory Health Insurance/Health BPJS	13.48%	86.52%	100.00%	2,500
Smart Indonesia Card or Other Education Assistance	6.24%	93.76%	100.00%	2,500
Electricity Subsidy	7.00%	93.00%	100.00%	2,500
Pre-Employment Card	20.00%	80.00%	100.00%	2,500
Interest Subsidy or Delays on Credit Installments	2.80%	97.20%	100.00%	2,500
Assistance for the Elderly or the Disabled	1.44%	98.56%	100.00%	2,500
Other Cash Assistances	7.28%	92.72%	100.00%	2,500
Other Food-Related Assistances	10.00%	90.00%	100.00%	2,500
Other Government Assistances	4.52%	95.48%	100.00%	2,500

### Table 3.13 Social Assistance Received by Household

## **Housing Characteristics**

Residential Status	Percentage
Self-Owned	37.52%
Owned by Parents/Relatives/Friends	45.60%
Rented	15.88%
Representative Official Residence	1.00%
Others	0.00%

Residential Status	Percentage
Total	100.00%
Total Sample (n)	2,500
	1.1.1

### Table 3.15 Electrical Power Installed in House

Electrical Power Installation	Percentage
Do not know	5.84%
450 Watt	13.08%
900 Watt	32.16%
1300 Watt	33.56%
2200 Watt	12.52%
3300 Watt	1.44%
4400 Watt	0.64%
5500 Watt	0.52%
$\geq$ 6600 Watt	0.24%
Total	100.00%
Total Sample (n)	2,500

### Table 3.16 Main Fuel Used for Cooking

Main Fuel Used for Cooking	Percentage
Electricity	1.96%
LPG above 3 kg	27.84%
LPG 3 kg	64.68%
City Gas	1.32%
Biogas	0.24%
Kerosene	2.72%
Bricket	0.00%
Charcoal	0.00%
Firewood	1.12%

Percentage
0.12%
100.00%
2,500

4. HOUSEHOLD COOKING OIL CONSUMPTION

# **CHAPTER 4**

# HOUSEHOLD COOKING OIL CONSUMPTION

Most of the respondents consume New Cooking Oil, only very few of the respondents consume UCO. Most of the respondents consume new cooking oil for health reasons. Of all consumers who consume new cooking oil, either by purchase or given, prefer branded cooking oil over bulk cooking oil. On average, the consumption of New Cooking Oil by purchase per week is 2.24 liters while new cooking oil by given is 0.35 liters. Respondents who consumed new cooking oil spent an average of IDR 43,718 for their cooking oil consumption per week and IDR 18,218 for cooking oil consumption per liter. Meanwhile, some respondents who consumed UCO reasoned that their consumption choices were based on price reasons. The average consumption per week for UCO by purchase is 0.20 liters while for UCO by given 0.14 liters per week. Their average expenditure to buy UCO per week is IDR 15,255 with an average expenditure per liter of IDR 7,510.

## **New Cooking Oil Consumption**

The majority of respondents get their New Cooking Oil by purchase (88.20%) while the rest get their New Cooking Oil by given (0.40%) or by purchasing and being given (11.16%). Only very few do not consume New Cooking Oil at all (0.24%).

Method of Obtaining New Cooking Oil	Percentage
Purchasing	88.20%
Being Given	0.40%
Purchasing and Being Given	11.16%
No Consumption of New Cooking Oil	0.24%
Total	100.00%
Total Sample (n)	2,500

Table 4.1 Household Consumption of New Cooking Oil by Method of Obtaining

Branded New Cooking Oil is more of a choice for respondents relative to bulk New Cooking Oil. Moreover, in proportion, more respondents consume branded New Cooking Oil when they get it by purchasing (93.56%) than when they get it by being given (88.24%).

Table 4.2 Type of New Cooking Oil Consumption			
Type of New Cooking Oil	Purchasing	Being Given	
Branded New Cooking Oil	93.56%	88.24%	
Bulk New Cooking Oil	6.44%	11.76%	
Total	100.00%	100.00%	
Total sample (n)	2,484	289	

Respondents showed different reasons when they buy branded or bulk New Cooking Oil (Table 4.3). When buying branded New Cooking Oil, the majority of respondents bought it for health reasons (58.65%). Meanwhile, when buying bulk New Cooking Oil, the majority of respondents bought it for price reasons (93.13%).

Table 4.3 Reasons for Purchasing Each Type of New Cooking Oil

Respondent Reasons	New Cooking Oil with Brand	Bulk New Cooking Oil
Promo (for branded) / Price (for bulk)	30.46%	93.13%
Taste	7.31%	1.25%
Health	58.65%	5.00%
Other	3.57%	0.63%
Total	100.00%	100.00%
Total Sample (n)	2,324	160

When buying branded New Cooking Oil (Table 4.4), the majority of respondents bought it at minimarkets (43.07%), followed by supermarkets (26.12%) and grocery stores (13.64%). Meanwhile, the majority of respondents bought bulk New Cooking Oil at stalls (55.63%), followed by traditional markets (21.88%) and grocery stores (18.75%).

### Table 4.4 Location of Buying New Cooking Oil

Location	Branded New Cooking Oil	Bulk New Cooking Oil
Stall	11.70%	55.63%
Traditional Market	5.25%	21.88%
Grocery Store	13.64%	18.75%
New Cooking Oil Seller	0.00%	3.75%
Minimarket	43.07%	0.00%
Supermarket	26.12%	0.00%
Other	0.22%	0.00%
Total	100.00%	100.00%
Total Sample (n)	2,324	160

Branded New Cooking Oil and bulk New Cooking Oil show different patterns in terms of the types of packaging that are usually purchased/obtained (Table 4.5). For branded New Cooking Oil, the majority of respondents buy/get it in refill packs. Meanwhile, for bulk New Cooking Oil, the majority of respondents buy/get it in plastic bags.

Table 4.5 Type of Packaging for New Cooking Oil

Type of packaging	Branded New Cooking Oil, Purchased	Branded New Cooking Oil, Given	Bulk New Cooking Oil, Purchased	Bulk New Cooking Oil, Given
Refill Packaging	72.89%	68.63%	0%	0%
Bottle Packaging	22.42%	28.63%	0%	0%
Plastic Bag	0%	0%	84.38%	76.47%
Jerry Can	4.69%	2.75%	15.63%	23.53%
Total	100.00%	100.00%	100.00%	100.00%
Total Sample (n)	2,324	255	160	34

More than half of the respondents, either getting New Cooking Oil by purchase or being given, consume New Cooking Oil with an average of fewer than 2 liters per week (Table 4.6). For New Cooking Oil obtained by purchase, the majority of respondents consume less than 1 liter per week

(42.79%). Meanwhile, for New Cooking Oil obtained as a gift, the majority of respondents consume between 1-2 liters per week (30.10%).

Consumption	New Cooking Oil by purchasing	New Cooking Oil by being given	
≤1 Liters/week	42.79%	25.61%	
1.1 - 2 Liters/week	32.69%	30.10%	
2.1 - 3 Liters/week	8.54%	16.26%	
3.1 - 4 Liters/week	6.20%	7.27%	
4.1 - 5 Liters/week	5.31%	12.46%	
5.1 - 6 Liters/week	1.41%	1.73%	
6.1 - 7 Liters/week	0.36%	2.08%	
7.1 - 8 Liters/week	0.40%	0.69%	
8.1 - 9 Liters/week	0.08%	0.00%	
9.1 - 10 Liters/week	1.37%	2.08%	
>10 Liters/week	0.85%	1.73%	
Total	100.00%	100.00%	
Total Sample (n)	2,484	289	

Table 4.6 Average Weekly Consumption of New Cooking Oil

As shown in Table 4.7, respondents' average spending to buy New Cooking Oil in a week is IDR 43,718. The majority of respondents have expenses of IDR 10,000 - 20,000 per week (28.31%), followed by IDR 20,000-30,000 (24.95%) and IDR 40,000-50,000 (12.84%).

Table 4.7 Average	Weekly Spending o	on New Cooking Oil Purchase
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Consumption	Percentage
≤ IDR 10,000	3.74%
IDR 10,001-20,000	28.31%
IDR 20,001-30,000	24.95%
IDR 30,001-40,000	8.02%
IDR 40,001-50,000	12.84%
IDR 50,001-60,000	4.39%

Consumption	Percentage
IDR 60,001-70,000	2.53%
IDR 70,001-80,000	3.10%
IDR 80,001-90,000	1.09%
IDR 90,001-100,000	5.68%
>IDR 100,000	5.35%
Total	100.00%
Total Sample (n)	2,484

The average spending of respondents to buy 1 liter of New Cooking Oil is IDR 18,218 (Table 4.8). The majority of respondents have expenses of IDR 10,000 - 20,000 (64.65%), followed by IDR 20,000-30,000 (22.23%) and below IDR 10,000 (9.30%).

Table 4.8 Average Spending	j for 1 Liter o	of New Cooking Oil
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Spending	Percentage	
≤ IDR 10,000	9.30%	
IDR 10,001-20,000	64.65%	
IDR 20,001-30,000	22.23%	
IDR 30,001-40,000	3.54%	
>IDR 40,000	0.28%	
Total	100.00%	
Total Sample (n)	2,484	

## Household UCO Consumption

As presented in Table 4.9, the majority of respondents do not consume UCO at all (84.08%). The majority of respondents who consumed UCO received it by purchasing (9.20%), followed by being given (5.20%), and both by purchasing and being given (1.52%).

Method of Obtaining UCO	Percentage
Purchasing	9.20%
Being given	5.20%
Purchasing and Being Given	1.52%
No Consumption	84.08%
Total	100.00%
Total sample (n)	2,500

Table 4.9 Percentage of Household UCO Consumption by Method of Obtaining

The majority of respondents bought UCO for price reasons (75.75%), followed by health reasons (13.43%), and taste (8.96%). See Table 4.10.

Reasons	Percentage
Price	75.75%
Taste	8.96%
Health	13.43%
Other	1.87%
Total	100.00%
Total sample (n)	268

Table 4.10	Reasons	for	Purchasing	UCO
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Referring to the place where the UCO is obtained by respondents (Table 4.11), when respondents got their UCO by purchasing, the majority of them bought it at stall (52.99%), followed by traditional market (25.75%) and UCO collector (11.57%). Meanwhile, the majority of respondents who received UCO by being given got it also from stalls (37.50%), followed by traditional markets (22.62%) and relatives/family outside the household (21.43%).

Table 4.11	Location	of	Obtaining	UCO
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Location	Purchasing	Being Given
Stall	52.99%	37.50%
Traditional Market	25.75%	22.62%
UCO Collector	11.57%	10.71%
Relatives/family outside the household	7.46%	21.43%

Location	Purchasing	Being Given
Neighbor	1.87%	7.14%
Other	0.37%	0.60%
Total	100.00%	100.00%
Total Sample (n)	268	168

For UCO obtained by purchasing, the majority of respondents consumed on average less than or equal to 1 liter per week (63.43%), followed by 1-2 liters (17.54%), and 2-3 liters (7.09%). A somewhat similar story comes from UCO obtained by given, the majority of respondents consumed on average less than 1 liter per week (61.31%), followed by 1-2 liters (17.26%), and more than 5 liters (7.71%).

Table 4.12 Average Weekly UCO Consumption

Consumption	Purchasing	Being Given
≤1 Liters/week	63.43%	61.31%
1.1 - 2 Liters/week	17.54%	17.26%
2.1 - 3 Liters/week	7.09%	4.76%
3.1 - 4 Liters/week	2.61%	3.57%
4.1 - 5 Liters/week	5.97%	5.36%
>5 Liters/week	3.36%	7.71%
Total	100.00%	100.00%
Total sample (n)	268	168

The average spending from respondents to buy cooking oil in a week is IDR 15,255 (Table 4.13). The majority of respondents have expenses less than or equal to IDR 10,000 (60.07%), followed by IDR 10,000-20,000 (20.09%) and IDR 20,000-30,000 (8.58%).

Consumption	Percentage
≤ IDR 10,000	60.07%
IDR 10,001-20,000	20.09%
IDR 20,001-30,000	8.58%
IDR 30,001-40,000	2.61%

Table 4.13 Average Weekly Spending on UCO Purchase

Consumption	Percentage
IDR 40,001-50,000	4.48%
> IDR 50,000	3.36%
Total	100.00%
Total Sample (n)	268

The average spending from respondents to buy 1 liter of cooking oil is IDR 7,510 (Table 4.14). The majority of respondents have expenses of IDR 5,000 - 10,000 (47.39%), followed by IDR 0 -10,000 (38.43%) and IDR 10,000-15,000 (14.18%).

Table 4.14 Average	Spending	on Purchasing	1 Liter o	f UCO
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Consumption	Percentage
IDR 0 - 5,000	38.43%
IDR 5,001 -10,000	47.39%
IDR 10,001 - 15,000	14.18%
Total	100.00%
Total sample (n)	268

# 5. HOUSEHOLD COOKING BEHAVIOR

# **CHAPTER 5**

## **HOUSEHOLD COOKING BEHAVIOR**

Overall, the majority of respondents used their cooking oil for cooking more than twice, but before the oil got darker. Households tend to favor frying-based cooking methods (deep frying, moderate frying, and sauté) compared to other cooking methods.

## Household Cooking Oil Usage

As can be seen in Table 5.1, before it is disposed, most of the households use their cooking oil more than twice, but not until the its color gets dark (44.88%), followed by households that use it twice (30.84%), and households that use it only once before disposing it (13.48%).

Usage	Percentage
Once	13.48%
Twice	30.84%
More than twice when the color of cooking oil has not turned into dark	44.88%
More than twice until the color of cooking oil becomes dark	7.68%
Until the used cooking oil on the frying pan almost finished then adding it with new cooking oil	3.12%
Total	100.00%
Total Sample (n)	2,500

Table 5.1 Frequency	of Usin	g Cooking	Oil
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## **Household Cooked Food**

Households tend to cook chicken, fish, and eggs as their main source of protein (Table 5.2). 42.36% of households answered that chicken was their most cooked item in their household. This was followed by fish (20.44%) and eggs (13.36%). Whereas the least cooked item in the household was meat (5.04%).
Most Cooked Food in Household	Rank 1 - Most Cooked Food in Household	Rank 2 - Most Cooked Food in Household	Rank 3 - Most Cooked Food in Household
Chicken	42.36%	13.56%	12.36%
Fishes	20.44%	26.76%	12.36%
Meat (Beef, Mutton, etc.)	5.04%	6.80%	9.64%
Vegetables	6.56%	13.64%	14.76%
Tofu and Tempeh	11.88%	23.28%	21.40%
Eggs	13.36%	15.52%	28.52%
Others	0.36%	0.44%	0.96%
Total	100.00%	100.00%	100.00%
Total Sample (n)	2,500	2,500	2,500

#### Table 5.2 Top 3 Most Cooked Food in Household

### **Cooking Method and Cooked Food in Household**

Households tend to favor frying-based cooking methods (deep frying, moderate frying, and sauté) compared to other cooking methods (Table 5.3). In terms of cooking methods, most households tend to utilize variants of frying for their top preference of cooking methods (deep frying, moderate frying, and sauté). 92.52% of households choose a variant of frying as their most preferred (Rank 1) cooking method with moderate frying being the most preferred method (48.36%). This is followed by deep frying (27.28%) and sauté (16.88%). The non-frying method which is the most preferred cooking method is boiling (5.08%)

Table 5.3 Top 3 Most Used Cooking Methods in Household

Cooking Method Used Most in Household	Rank 1 – Cooking Method Used Most in Household	Rank 2 – Cooking Method Used Most in Household	Rank 3 - Cooking Method Used Most in Household
Deep Frying	27.28%	8.64%	16.32%
Moderate Frying	48.36%	27.92%	12.08%
Sauté	16.88%	46.24%	25.72%
Boling	5.08%	12.16%	25.56%
Streaming	1.32%	2.68%	9.52%

Cooking Method Used Most in Household	Rank 1 – Cooking Method Used Most in Household	Rank 2 – Cooking Method Used Most in Household	Rank 3 - Cooking Method Used Most in Household
Baking	1.04%	2.20%	10.40%
Others	0.04%	0.16%	0.40%
Total	100.00%	100.00%	100.00%
Total Sample (n)	2,500	2,500	2,500

Households tend to cook chicken and fish with the deep-frying method (Table 5.4). 82.32% of households cooked their chicken with the deep fry method, while 69.04% of households cooked their fish with the deep-fry method. Moreover, 49.52% of households cooked their tofu and tempeh with the deep-fry method. Only 3.20% of households did not incorporate the deep fry method in their cooking.

Most Cooked Food by Deep Frying	Yes	No	No Total	
Chicken	82.32%	17.68%	100.00%	2,500
Fishes	69.04%	30.96%	100.00%	2,500
Meat (Beef, Mutton, etc.)	17.72%	82.28%	100.00%	2,500
Vegetables	6.36%	93.64%	100.00%	2,500
Tofu and Tempeh	49.52%	50.48%	100.00%	2,500
Eggs	15.16%	84.84%	100.00%	2,500
Others	2.12%	97.88%	100.00%	2,500
None	3.20%	96.80%	100.00%	2,500

Table 5.4 Household Cooked Food by Deep Frying Method

Households tend to cook tofu and tempeh and eggs with the moderate frying method (Table 5.5). 56.72% of households cooked their chicken with the moderate frying method, while 52.88% of households cooked their eggs with the moderate frying method. Moreover, 46.76% of households cooked their fish with the moderate frying method. Only 0.44% of households did not incorporate the moderate frying method in their cooking.

Table 5.5 Household Cooked Food by Moderate Frying Method

Most Cooked Food by Moderate Frying	Yes	No	Total	Total Sample (n)
Chicken	28.64%	71.36%	100.00%	2,500
Fishes	36.76%	63.24%	100.00%	2,500
Meat (Beef, Mutton, etc.)	16.40%	83.60%	100.00%	2,500
Vegetables	19.28%	80.72%	100.00%	2,500
Tofu and Tempeh	56.72%	43.28%	100.00%	2,500
Eggs	52.88%	47.12%	100.00%	2,500
Others	0.48%	99.52%	100.00%	2,500
None	0.44%	99.56%	100.00%	2,500

Households tend to cook vegetables using the sauté method (Table 5.6). 91.96% of households cooked their vegetables with the sauté method. Moreover, 32.16% of households cooked their tofu and tempeh with the sauté method. Only 0.16% of households did not incorporate the sauté method in their cooking.

Most Cooked Food by Sauté	Yes	No	Total	Total Sample (n)
Chicken	11.08%	88.92%	100.00%	2,500
Fishes	8.60%	91.40%	100.00%	2,500
Meat (Beef, Mutton, etc.)	13.76%	86.24%	100.00%	2,500
Vegetables	91.96%	8.04%	100.00%	2,500
Tofu and Tempeh	32.16%	67.84%	100.00%	2,500
Eggs	17.68%	82.32%	100.00%	2,500
Others	0.36%	99.64%	100.00%	2,500
None	0.16%	99.84%	100.00%	2,500

# 6. HOUSEHOLD UCO TREATMENT

# **CHAPTER 6**

# HOUSEHOLD UCO TREATMENT

In terms of UCO production, more than half of households had produced UCO. On average, households that produced UCO would generate 0.41 liter of UCO per week. The UCO produced tended to have leftovers and were colored brownish. In terms of UCO treatment, households tended to dispose their UCO, especially in drains/sewers/gutters.

## **Household UCO Production Quantity**

Regarding UCO production, more than half of households in Indonesia produced UCO (Table 6.1). 55.28% of households had produced UCO, whereas the remaining 44.72% of households did not produce UCO.

Household Producing UCO	Percentage	
Yes	55.28%	
No	44.72%	
Total	100.00%	
Total Sample (n)	2,500	

#### Table 6.1 Household UCO Production

Compared to households in the Western part of Indonesia, the households in Eastern parts of Indonesia are less likely to produce UCO (Table 6.2). Sulawesi and Maluku and Papua have the lowest percentage of households that produce UCO at 33.20% and 34% respectively. Whereas, Java and Sumatera have the highest percentage of households that produce UCO at 63.71% and 57.58% respectively.

#### Table 6.2 Household Producing UCO by Island

Thesh	Hous			
Island	Yes	No	Total	l otal Sample (n)
Java	63.71%	36.29%	100.00%	1,218
Sumatra	57.58%	42.42%	100.00%	455
Nusa Tenggara	42.91%	57.09%	100.00%	275

Telond	House	Household Produces UCO			
isiand	Yes	No	Total	rotai Sample (n)	
Kalimantan	50.00%	50.00%	100.00%	252	
Sulawesi	33.20%	66.80%	100.00%	250	
Maluku and Papua	34.00%	66.00%	100.00%	50	

The majority of households produced less than 1 liter of UCO per week. 45.01% of households that produced UCO only produced 0.25 liters per week. 28% of households that produced UCO could produce between 0.26 - 0.5 liters per week. Whereas only 5.57% of households could produce more than 1 liter of UCO per week (Table 6.3a).

UCO Weekly Production	Percentage
≤0.25 Liters/Week	45.01%
0.26 - 0.50 Liters/Week	28.00%
0.51 - 0.75 Liters/Week	13.39%
0.76 - 1.00 Liters/Week	8.03%
1.01 - 1.25 Liters/Week	4.92%
> 1.25 Liters/Week	0.65%
Total	100.00%
Total Sample (n)	1,382

Fable 6.3a Household	l Weekly	UCO	Production
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In general, the more cooking oil consumed by the household, the more amount of household UCO will be generated. As indicated in Table 6.3b, households tended to produce UCO less than 0.25 liter per week with the proportion tending to decrease as cooking oil consumption increases (with the exception for households consuming 1.01 - 1.25 liters per week of cooking oil).

Table 6.4b Household Weekly Cooking Oil Consumption and UCO Production								
UCO Weekly Production (Liter/Week)								
Cooking Oil Consumption (Liter/Week)	≤ 0.25 Liters/ Week	0.26 - 0.50 Liters/ Week	0.51 - 0.75 Liters/ Week	0.76 - 1.00 Liters/ Week	1.01 - 1.25 Liters/ Week	> 1.25 Liters/ Week	Total	Total Sample (n)
≤ 0.25 Liters/Week	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	4
0.26 - 0.50 Liters/Week	81.82%	18.18%	0.00%	0.00%	0.00%	0.00%	100.00%	44
0.51 - 0.75 Liters/Week	83.33%	0.00%	16.67%	0.00%	0.00%	0.00%	100.00%	6
0.76 - 1.00 Liters/Week	60.28%	24.02%	11.32%	4.39%	0.00%	0.00%	100.00%	433
1.01 - 1.25 Liters/Week	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	4
> 1.25 Liters/Week	35.02%	30.86%	15.15%	10.33%	7.63%	1.01%	100.00%	891

As can be seen in Table 6.4, the majority of households used closed containers to keep their produced UCO (59.12%). They stored their UCO in a closed container, whereas the remaining 40.88% of households had stored their UCO in an opened container.

Table 6.5 Household UCO Storage Container

Household UCO Storage Container	Percentage		
Opened Container	40.88%		
Closed Container	59.12%		
Total	100.00%		
Total Sample (n)	1,382		

#### Household UCO Treatment

The majority of households that used cooking oil manage the UCO by disposing it (58.39%). This is followed by households that utilize the UCO for cooking until it finished (17.22%). A number of of households that produce UCO (14.54%) give away their UCO to third parties that are mostly organizations/institutions. Only 8.18% of UCO-producing households sell their UCO (Table 6.5).

#### Table 6.6 Treatment for Household UCO

Treatment for Household UCO	Percentage	Percentage of UCO Produced
Using the UCO Repeatedly Until It Gets Finished	17.22%	13.84%
Disposing	58.39%	55.83%
Giving away the UCO to Other People	6.22%	7.70%
Giving away the UCO to An Organization/Institution	8.32%	8.73%
Sold	8.18%	11.95%
Others	1.66%	1.95%
Total	100.00%	100.00%
Total Sample (n)/Total UCO (liter)	1,382	569.80

Table 6.6 shows that the majority of households had disposed their UCO into the drains/sewers/gutters (33.46%). Moreover, they also disposed it into the ground (21.93%), sink (18.46%), and in the river (1.36%). Only a few households had thrown away their UCO into the trash can (24.66%).

Table 6.7 Household	UCO	Dump Sites
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Place for Disposal	Percentage	Percentage of UCO Production
Trash Can	24.66%	25.28%
Drains/Sewers/Gutters	33.46%	32.50%
Sink	18.46%	18.81%
River	1.36%	1.24%
Ground	21.93%	22.06%
Others	0.12%	0.10%
Total	100.00%	100.00%
Total Sample (n)/Total UCO (liter)	807	318.12

Regarding the households that gave away their UCO to third parties (Table 6.7), most of the households stated that the third parties utilized the UCO for non-cooking usages (44.28%). Moreover, 13.43% of third parties would sell the UCO that they had received, and 9.45% of third parties would utilize the UCO they received for cooking. However, 28.86% of households did not know whether the third parties used the UCO or not.

Table 6.8 Third Party Usage of the Given UCO				
Third-Party Using the Given UCO	Percentage			
Do not know	28.86%			
For Cooking	9.45%			
For Usages Other than Cooking	44.28%			
Sold to Other Parties	13.43%			
Others	3.98%			
Total	100.00%			
Total Sample (n)	201			

On average, households that sold their UCO would put the price at IDR 4,489/liter (Table 6.8). The majority of households that sold their UCO had set the price between IDR 4,001 – 5,000/liter (26.43%). This is followed by the price of IDR 2,001 – 3,000/liter (19.28%) and IDR 1,001 – 2,000/liter (12.14%). Only 8.57% of households sold their UCO at the price above IDR 8.000.

Table	6.9	UCO	Selling	Price
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UCO Selling Price	Percentage
≤ IDR 1000/liter	8.57%
IDR 1001 - 2000/liter	12.14%
IDR 2001 - 3000/liter	19.28%
IDR 3001 - 4000/liter	11.43%
IDR 4001 - 5000/liter	26.43%
IDR 5001 - 6000/liter	4.28%
IDR 6001 - 7000/liter	5.00%
IDR 7001 - 8000/liter	4.28%
IDR > 8000/liter	8.57%
Total	100.00%
Total Sample (n)	140

# Household UCO Production Quality

The UCO produced by the majority of households tended to have lots of leftovers from the cooking (6.73%). Most households answered that their UCO had a few amounts of leftovers (46.96%) followed by those carrying moderate amount of leftovers (43.13%). Only 3.18% of households that produced UCO did not leave any leftovers in their UCO (Table 6.9).

**Table 6.10 Leftovers in UCO Production** 

Leftovers in UCO Production	Percentage		
Many Leftovers	6.73%		
Moderate Leftovers	43.13%		
Little Leftovers	46.96%		
No Leftovers	3.18%		
Total	100.00%		
Total Sample (n)	1,382		

The majority of households did not further process their UCO (such as filtering the leftovers) after using it (Table 6.10). Only 29.88% of households had processed the UCO further, whereas the remaining 70.12% of households did not do it.

UCO Process of Filtering	Percentage
Yes	29.88%
No	70.12%
Total	100.00%
Total Sample (n)	1,382

We find that the highest proportion of households that filtered their UCO were those whose UCO contained many leftovers (48.39%). Whereas, less than 30% of households that produced UCO with moderate and little leftovers had filtered their UCO (Table 6.11).

Laffavors in LICO Produced	Hous	T-4-1 C1- ()		
Lenovers in OCO Produced	Yes	No	Total	i otar Sample (fi)
Many Leftovers	48.39%	51.61%	100.00%	93
Moderate Leftovers	29.87%	70.13%	100.00%	596
Little Leftovers	26.19%	73.81%	100.00%	649
No Leftovers	45.45%	54.55%	100.00%	44

#### Table 6.12 Household UCO Filtering by Amount of Its Leftovers

In terms of the UCO color, most of the UCO produced by households had changed beyond a brown to black color (the  $3^{rd} - 5^{th}$  color palette) reaching up to 71.93% (Table 6.12). This is in line with the cooking patterns survey results as most households utilized cooking oil more than two times for cooking. 51.16% of UCO produced by households were brown colored, while 26.12% of UCO produced were dark-brown colored and only 1.95% of UCO produced became black colored.





# 7. MECHANISMS AND INCENTIVES FOR COLLECTING AND PROCESSING HOUSEHOLD UCO

# CHAPTER 7

# MECHANISMS AND INCENTIVES FOR COLLECTING HOUSEHOLD UCO

Most of the respondents still do not know that UCO can be processed further. Of the respondents who know that UCO can be processed, the type of product most commonly known as a UCO derivative is fuel (e.g., biodiesel). Regarding the UCO collection mechanism, most of the respondents chose the home collection method. The reason is there is no need to deliver UCO somewhere. Meanwhile, in terms of frequency, the majority of respondents prefer collection to be carried out without a regular schedule, preferring to depend on the forgiveness of UCO they have collected. In terms of the size of incentives, on average, respondents were willing to accept IDR 4289/liter of UCO in form of cash. Whereas, on average, respondents were also willing to trade in 3.54 liters of UCO for 1 liter of new cooking oil.

### **Mechanisms for Household UCO Collection**

From all of the respondents, more than half of them do not know that UCO can be further processed (55.88%). Only 44.12% of them know that UCO can further be processed (Table 7.1).

	Knowledge on Possibility of UCO Further Process	Percentage
Know		44.12%
Do not know		55.88%
	Total	100.00%
	Total sample (n)	2,500

Table 7.1 Respondent Knowledge on Possibility of UCO Further Process

Of all respondents, they mostly know that UCO can be further processed into fuel (e.g., biodiesel)—a product that is widely known as a derivative of UCO. The percentage of respondents that had known fuel as derivative products of UCO was 72.98% (Table 7.2). Meanwhile, less than 50% of these respondents know that UCO can be processed into new cooking oil (31.64%) or other products, such as soap, candles, etc. (43.25%).

#### Table 7.2 Respondent Knowledge about Derivative Products of UCO

Product	Yes	No	Total	Total sample (n)
New cooking oil	31.64%	68.36%	100.00%	1,103
Fuel (e.g., biodiesel)	72.98%	27.02%	100.00%	1,103
Non-cooking oil and non-fuel products (e.g., soap, wax, etc.)	43.25%	56.75%	100.00%	1,103
Others	0.27%	99.73%	100.00%	1,103

The majority of respondents preferred the UCO to be picked up at home (60.12%). This is followed by preference to deliver the UCO to the waste bank/cooking oil collector (15.72%) and to a collection point in the neighbourhood (15.60%). The rest are other places that are likely to be traversed in the daily commute (Table 7.3).

Collection Method	Percentage
Picked up at home	60.12%
Delivered to the waste bank/UCO collector	15.72%
Delivered to a collection point in the neighborhood area	15.60%
Delivered to school	0.32%
Delivered to stall	4.24%
Delivered to the convenience store	1.56%
Delivered to traditional market	2.12%
Delivered to other collection points	0.32%
Total	100.00%
Total Sample (n)	2,500

Table 7.3 Respondent Preference on UCO Collecting Method

As shown in Table 7.4, most of the respondents chose the mechanism of UCO collection because there was no need to drop it off (47.20%). This is followed by the close distance to the collection point (26.76%) and trust with the UCO collector (19.36%).

#### Table 7.4 Reasons for Choosing UCO Collection Method

Reasons	Percentage
Close distance to the collection point	26.76%
Often visit the collection point	6.32%
No need to deliver the UCO	47.20%
Trust the UCO collector	19.36%
Others	0.36%
Total	100.00%
Total sample (n)	2,500

Most of the households choose to collect oil without a regular schedule (Table 7.5). The majority of households preference for UCO collection depends on the amount of UCO they have collected (40.12%), followed by twice a week (26.08%) and once a week (11.48%) preference.

Collection Method	Percentage
Depending on the amount of UCO to be collected	40.12%
Daily	2.64%
Twice a week	26.08%
Weekly	9.08%
Once every two weeks	9.40%
Monthly	11.48%
More than 1 month	1.20%
Total	100.00%
Total Sample (n)	2,500

Table 7.5 Respondent Preference on UCO Collection Frequency

In the case that respondents need to store their UCO first before distributing it to collectors, the majority of them are only willing to accommodate less than 1 liter (71.36%). This was followed by 1-2 liters (24.36%) and 2-3 liters (2.36%) (see Table 7.6)

Amount of UCO Stored	Percentage
≤ 1 Liters	72.48%
1.1 - 2 Liters	23.24%
2.1 - 3 Liters	2.36%
3.1 - 4 Liters	0.24%
4.1 - 5 Liters	1.08%
> 5 Liters	0.60%
Total	100%
Total sample (n)	2,500

#### Table 7.6 Maximum Amount of UCO to be Stored at Home Before Disposal

Table 7.7 explains that more than 50% of the respondents chose social media as the main communication media with the UCO collector (51.32%), followed by telephone/mobile phone (28.40%) and direct communication (17.76%).

Table 7.7 Respondent Preferences on Communication Media for Contacting UCO Collectors

Preferred Communication Media	Percentage
Directly	17.76%
Telephone/mobile phone	28.40%
Social media (Whatsapp, Instagram, etc)	51.32%
Phone/computer application	2.40%
Others	0.12%
Total	100.00%
Total sample (n)	2,500

## **Expected Support for UCO Collection**

Of all respondents in this survey, most of them expected to get more information on how to manage UCO that is collected at home (78.91%). More than 50% of them also expect for provision of UCO collection facilities/infrastructure (53.52%) and socialization of the UCO management benefits.

#### Table 7.8 Respondent Expected Support for Household UCO Collection

Expected Support for UCO Collection	Yes	No	Total	Total Sample (n)
Education on how to manage UCO	78.91%	21.08%	100.00%	2,500
Provision of UCO collection facilities/infrastructure	53.52%	46.48%	100.00%	2,500
Socialization of the benefits of UCO management	64.60%	35.40%	100.00%	2,500
Provision of UCO collectors in the neighborhood	47.88%	52.12%	100.00%	2,500
Others	0.20%	99.80%	100.00%	2,500

# Incentives for Household UCO Collection

Most respondents expected to get incentives in the form of money (41.80%) and new cooking oil (32.76%) for the UCO that they collected at home. 19.96% of the respondents also answered that they do not need incentives for the UCO collection (Table 7.9).

Expected Incentives for UCO Collection	Percentage
No need for incentives	19.96%
Money	41.80%
New cooking oil	32.76%
Rice	2.88%
Sugar	0.64%
Eggs	1.28%
Others	0.68%
Total	100.00%
Total sample (n)	2,500

Table 7.9 Respondent Expected Incentives Mechanism for Household UCO Collection

From 499 respondents that answered they do not need incentives for the UCO collection (19.96%), 60.32% of them chose environmental reasons as the main reason, followed by 31.46% that considered the use of UCO for other parties, 7.62% that thought the incentives are insignificant, and 0.60% with other reasons (Table 7.10).

Table 7.10 Respondent Reasons for Household UCO Collection without Incentives

Reasons for UCO Collection without Incentives	Percentage
The amount of money/incentives is not significant	7.62%
Because UCO is useful for other parties	31.46%
Environmental reasons (preventing pollution, reducing obstructions in waterways, etc)	60.32%
Others	0.60%
Total	100.00%
Total sample (n)	499

As for the 1,045 respondents who chose money as the form of UCO collection incentives, 76.46% of them preferred to be paid in cash, followed by 13.11% chosing electronic money (e.g., Go-Pay, Shopee Pay, etc), 8.23% preferring bank transfer, and 2.20% chosing groceries voucher (Table 7.11).

Table 7.11 Respondent Preferences of Form for Monetary Incentives
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Respondent Preferences of Form for Monetary Incentives	Percentage
Cash	76.46%
Bank Transfer	8.23%
Electronic Money (e.g., Go-Pay, Shopee Pay, Ovo, etc)	13.11%
Groceries Voucher	2.20%
Total	100.00%
Total sample (n)	1,045

### Willingness to Pay/Willingness to Accept

On average respondents were willing to trade in 3.54 liters of UCO for 1 liter of new cooking oil. Moreover, in terms of cash, respondents were willing to accept IDR 4289/liter of UCO.

In general, the respondent's maximum willingness to pay for 1 liter of new cooking oil was 3.54/liters of UCO. The majority of respondents were willing to pay 1,1-2 liters of UCO for 1 liter of cooking oil (31.26%). This is followed by those who were willing to pay 2.1-3 liters (20.75%) and 4.1-5 liters (18.56%).

Table 7.12. Maximum Willingness to Pay (in liter of UCO) for 1 Liter of New Cooking Oil

Maximum Willingness to Pay (in liter of UCO) for 1 Liter of Cooking Oil	Percentage
$\leq 1$ Liter	10.62%
1.1 - 2 Liter	31.26%
2.1 - 3 Liter	20.75%
3.1 - 4 Liter	9.03%
4.1 - 5 Liter	18.56%
> 5 Liter	9.76%
Total	100.00%
Total Sample (n)	819

On average, the respondent's minimum willingness to accept in cash for 1 liter of UCO was IDR 4289/liter (Table 7.13) The majority of respondents were willing to sell their UCO for IDR 4001 – 5000/liter (24.96%). This is followed by the willingness to accept IDR 2001 – 3000/liter (11.76%) and IDR 9001 – 1000/liter (10.88%). Only 2.72% of respondents were willing to sell their UCO for more than IDR 10000. Moreover, 19.96% of respondents did not want any incentives for their UCO (willingness to accept = IDR 0).

Table 7.13 Cash Minimum Willingness to Accept for 1	Liter of UCO
---	--------------

Cash Minimum Willingness to Accept for 1 Liter of UCO	Percentage
IDR 0	19.96%
IDR 1 - 1000	3.40%
IDR 1001 - 2000	10.16%
IDR 2001 - 3000	11.76%
IDR 3001 - 4000	4.96%
IDR 4001 - 5000	24.96%
IDR 5001 - 6000	2.20%
IDR 6001 - 7000	3.60%
IDR 7001 - 8000	4.52%
IDR 8001 - 9000	0.88%
IDR 9001 - 10000	10.88%

Cash Minimum Willingness to Accept for 1 Liter of UCO	Percentage
> IDR 10000	2.72%
Total	100.00%
Total Sample (n)	2,500

# 8. KNOWLEDGE, BEHAVIOR, AND PERCEPTION OF HEALTH AND ENVIRONMENTAL ISSUES

# **CHAPTER 8**

# KNOWLEDGE, BEHAVIOR, AND PERCEPTION RELATED TO HEALTH, ENVIRONMENTAL, AND SOCIAL ISSUES

Typically, most respondents had the perception that there were high impacts on health and environment caused by multiple usages of UCO or incorrect disposal of it. Moreover, respondents already had the knowledge on other health and environmental impacts caused by UCO. They also had shown their environmentally friendly and health conscious behavior in the form of collecting trash (other than UCO), reducing electricity usage, and taking their meals on regular schedule.

### Knowledge on Health Issues of Household UCO

In general, most respondents believe that the multiple usages of UCO had an impact on health and were knowledgeable of this health issue. Most respondents believed that the multiple usages of UCO would have an impact on health (Table 8.1). As many as 65.88% consider the risks as "high impact", 13.68% consider it as "there is an impact, but can be easily treated", 16.12% consider it as "little impact", and the remaining 4.32% think that there is no impact at all.

Perception on Health Impact of Multiple Usage of UCO	Percentage
No Impact	4.32%
Little Impact	16.12%
There is an impact, but can be easily treated	13.68%
High Impact	65.88%
Total	100.00%
Total Sample (n)	2,500

Table 8.1 Perception on Health Impact of Multiple Usage of Cooking Oil

The majority of households understood well the health issues caused by multiple usages of UCO. The survey provided statements from Venkata & Subramanyam (2016) that the consumption of cooking oil that is used repeatedly has been scientifically proven to be able to trigger the formation of cancer cells and from Kruman et.al., (1997) and Cicero, et.al. (2014) that repeated consumption of cooking oil can also increase the risk of stroke, high blood pressure, and senile dementia. In such case, 80.16% of respondents claimed to know the impact, whereas the rest did not know.

Knowledge on Health Impact of Multiple Usage of UCO		Percentage	
Yes		80.04%	
No		19.96%	
	Total	100.00%	
	Total Sample (n)	2,500	

Table 8.2 Knowledge on Health Impact of Multiple Usage of Cooking Oil

As indicated in Table 8.3, generally respondents perceived the impact of continuous consumption of UCO as more dangerous compared to other behaviors/pollutants. They believed that the impact of continuous consumption of UCO is more dangerous compared to lack of exercise (55.96%). Compared to lack of sleep, they believed that the impact of continuous consumption of UCO is more dangerous (54.00%), where 62.20% of households believed that the impact of continuous consumption of UCO is more dangerous compared to smoking. Furthermore, 65.00% of households believed that the impact of continuous consumption of UCO is more dangerous consumption of UCO is more dangerous compared to smoking. Furthermore, 65.00% of households believed that the impact of continuous consumption of UCO is more dangerous consumption.

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Respondents Perception	Lack of Exercise	Lack of Sleep	Smoking	Consuming Alcohol	Air Pollution
More Dangerous	55.96%	54.00%	62.20%	65.00%	54.84%
As Dangerous	33.44%	37.12%	32.60%	28.60%	40.16%
Less Dangerous	10.60%	8.88%	5.20%	6.40%	5.00%
Total	100.00%	100.00%	100.00%	100.00%	100.00%
Total Sample (n)	2,500	2,500	2,500	2,500	2,500

# Knowledge on Environmental Issues of Household UCO

Most respondents believed that improper disposal of UCO would have an impact on the environment. Out of the total respondents, 63.36% considered the risks as "high impact", and 17.92% believed that the impact could be easily handled. Meanwhile, 13.36% consider it as having "little impact", and the remaining 5.12% think that there is no impact at all (Table 8.4).

Table 8.4 Perception on Environmental Impact of Improper Household UCO Disposal

Perceptions on Improper Household UCO Disposal	Percentage
No Impact	5.12%
Little Impact	13.60%
There is an impact, but can be easily handled	17.92%
High Impact	63.36%
Total	100.00%
Total Sample (n)	2,500

The majority of households (72.16%) generally knew about environmental issues caused by improper disposal of UCO (Table 8.5). Given a statement that improper disposal of UCO can cause clogged drains and unpleasant odors (Orjuela & Clark 2020), 27.84% of respondents claimed that they did not know the environmental impact of incorrect UCO disposal.

Table 8.1. Knowledge on Environmental Impact of Improper Household UCO Disposal

Knowing about the Impact of Improper Household UCO Disposal	Percentage
Yes	72.16%
No	27.84%
Total	100.00%
Total Sample (n)	2500

## Health and Environment-Related Behavior of Households

As shown in Table 8.6, more than half of the households surveyed collected trash other than UCO (57.96%). The type of trash they mostly collected was plastic trash (47.88%), which is followed by cardboard trash (28.04%), and paper trash (19.52%). Glass and metal trash were the type of trash least collected by households (9.28%).

#### Table 8.6 Collection of Trash Other Than Household UCO

Trash Other Than UCO Collected	Yes	No	Total	Total Sample (n)
Does not collect Trash	42.04%	57.96%	100.00%	2,500
Plastic Trash	47.88%	52.12%	100.00%	2,500
Paper Trash	19.52%	80.48%	100.00%	2,500
Glass and Metal Trash	9.28%	90.72%	100.00%	2,500
Sachet Trash	10.16%	89.84%	100.00%	2,500
Drinking Carts Trash	15.04%	84.96%	100.00%	2,500
Cardboard Trash	28.04%	71.96%	100.00%	2,500
Other Trash	1.12%	98.88%	100.00%	2,500

Nearly two-thirds of households (62.48%) consumed cooking oil other than palm cooking oil (Table 8.7). The percentage of those who consumed coconut oil for cooking was 35.12%, followed by olive oil (33.96%) and sesame oil (22.60%). Avocado oil was another type of cooking oil consumed by households (1.36%).

Cooking Oil Consumed Other Than Palm Cooking Oil	Yes	No	Total	Total Sample (n)
None	37.52%	62.48%	100.00%	2,500
Coconut Oil	35.12%	64.88%	100.00%	2,500
Olive Oil	33.96%	66.04%	100.00%	2,500
Sesame Oil	22.60%	77.40%	100.00%	2,500
Canola Oil	12.88%	87.12%	100.00%	2,500
Sunflower Oil	5.40%	94.60%	100.00%	2,500
Peanut Oil	2.64%	97.36%	100.00%	2,500
Soybean Oil	3.64%	96.36%	100.00%	2,500
Flaxseed Oil	1.76%	98.24%	100.00%	2,500
Walnut Oil	1.48%	98.52%	100.00%	2,500
Avocado Oil	1.36%	98.64%	100.00%	2,500

Table 8.7 Consumption of Cooking Oil Other than Palm Cooking Oil

Cooking Oil Consumed Other Than Palm Cooking Oil	Yes	No	Total	Total Sample (n)
Other Cooking Oils	0.44%	99.56%	100.00%	2,500

In general, respondents had various daily activities that became their habits and some that were never done. Out of the total respondents, 42.76% had routinely reduced electricity usage (Table 8.8). Moreover, 35.80% of respondents had routinely taken their meals on a regular schedule. On the other hand, 64.52% of respondents had not done processing compost. Furthermore, 61.96% of respondents had not recycled their household trash.

Types of Activities	Have Not	Have Done, Not Routine	Have Done and Routine	Total	Total Sample (n)
Sorting Out Trash	26.08%	59.36%	14.56%	100.00%	2,500
Recycling Trash	61.96%	33.24%	4.80%	100.00%	2,500
Reducing Consumption of Single Usage Plastics	17.44%	56.60%	25.96%	100.00%	2,500
Processing Compost	64.52%	27.16%	8.32%	100.00%	2,500
Gardening	24.44%	47.04%	28.52%	100.00%	2,500
Exercising	7.92%	64.24%	27.84%	100.00%	2,500
Community Service Near Home	22.64%	60.04%	17.32%	100.00%	2,500
Sleeping With Regular Schedule	18.28%	54.36%	27.36%	100.00%	2,500
Having Enough Sleep	15.16%	53.64%	31.20%	100.00%	2,500
Eating With Regular Schedule	14.12%	50.08%	35.80%	100.00%	2,500
Eating Healthy	8.88%	62.60%	28.52%	100.00%	2,500
Reducing Electricity Usage	8.00%	49.24%	42.76%	100.00%	2,500

Table 8.8 Fre	equency of	Daily	Activities
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## **Perception on Social Issues**

Most respondents chose economic and health-related issues as one of the top 3 social issues they considered as very important (Table 8.9). Among the respondents interviewed, 66.72% had poverty

and welfare as one of the top 3 important social issues. Moreover, when asked about the top 3 social issues, 58.16% chose unemployment and job opportunities, whereas 52.16% considered health issue as the most important. Meanwhile, social conflict was the least chosen as the top 3 important social issues (4.60%).

Most Important Social Issues	Yes	No	Total	Total Sample (n)
Poverty and Welfare	66.72%	33.28%	100.00%	2,500
Unemployment and Job Opportunities	58.16%	41.84%	100.00%	2,500
Health	52.16%	47.84%	100.00%	2,500
Environmental Preservation	37.72%	62.28%	100.00%	2,500
Price of Basic Necessities	30.88%	69.12%	100.00%	2,500
Education	28.80%	71.20%	100.00%	2,500
Corruption	14.84%	85.16%	100.00%	2,500
Political Stability	6.12%	93.88%	100.00%	2,500
Social Conflict	4.60%	95.40%	100.00%	2,500

Table 8.9 One of the Top 3 Social Issues

Most respondents chose trash and floods as one of the top 3 environmental issues (Table 8.10). Out of the total respondents, among the top 3 environmental issues, 79.52% chose trash, 44.36% flood, 37.08% air dan dust pollution; whereas defecation pollution was the least chosen as the top 3 important environmental issues (1.72%).

#### Table 8.10 One of the Top 3 Environmental Issues

Most Important Environmental Issues	Yes	No	Total	Total Sample (n)
Trash	79.52%	20.48%	100.00%	2,500
Flood	44.36%	55.64%	100.00%	2,500
Air and Dust Pollution	37.08%	62.92%	100.00%	2,500
Extensive Natural Resources Extraction	35.08%	64.92%	100.00%	2,500
Water Pollution	32.68%	67.32%	100.00%	2,500
Traffic	22.76%	77.24%	100.00%	2,500
Household Waste Water Pollution	16.84%	83.16%	100.00%	2,500

Most Important Environmental Issues	Yes	No	Total	Total Sample (n)
Other Natural Disasters	14.52%	85.48%	100.00%	2,500
Hot Weather	11.88%	88.12%	100.00%	2,500
Noise Pollution	3.56%	96.44%	100.00%	2,500
Defecation Pollution	1.72%	98.28%	100.00%	2,500

# Appendices: Questionnaires (in Indonesian)

## Survei Daring

### Perilaku Rumah Tangga dalam Penggunaan Minyak Goreng

### I. Pertanyaan Seleksi Responden

1	Apakah rumah tangga anda menggunakan/mengonsumsi minyak goreng kelapa sawit (misalnya untuk memasak)? [Single-Select]	1. Ya 2. Tidak <b>[WAWANCARA SELESAI]</b>
2	Apakah secara umum mengetahui bagaimana Anda atau keluarga Anda menggunakan minyak goreng untuk keperluan sehari-hari? [Single-Select]	1. Ya 2. Tidak <b>[WAWANCARA SELESAI]</b>

#### II. Demografi Responden

1	Jenis kelamin [Single- Select] : 1. Laki-laki	2. Perempuan
2	Usia responden saat ini (Tahun)?	: L L Tahun
3	Status perkawinan [Single-Select]	<ol> <li>Belum kawin</li> <li>Kawin</li> <li>Cerai hidup</li> <li>Cerai mati</li> </ol>
4	<ul> <li>a. Hubungan Anda dengan kepala rumah tangga [Single-Select]</li> <li>b. Berapa jumlah anggota rumah tangga Anda yang tinggal bersama Anda saat</li> </ul>	<ol> <li>Kepala rumah tangga</li> <li>Suami/istri</li> <li>Anak</li> <li>Menantu</li> <li>Cucu</li> <li>Orang tua/mertua</li> <li>Famili lain</li> <li>Pembantu rumah tangga</li> <li>Lainnya</li> </ol>
	ini? (termasuk Anda sendiri)	014115
5	Pendidikan terakhir yang Anda tamatkan? [Single-Select]	<ol> <li>Tidak sekolah</li> <li>Tidak tamat SD/ MI sederajat</li> <li>Tamat SD/ MI Sederajat</li> <li>Tamat SLTP/ MTs Sederajat</li> <li>Tamat SLTA/ MA Sederajat</li> <li>Diploma I/ II</li> <li>Diploma III/ IV/ S1</li> <li>S2/ S3</li> </ol>
6	Bagaimana status tempat tinggal Anda saat ini? [Single-Select]	<ol> <li>Milik sendiri</li> <li>Milik orang tua/ sanak/ kerabat/ teman</li> </ol>

		<ol> <li>Sewa/ kontrak/ kos</li> <li>Rumah dinas</li> <li>Lainnya</li> </ol>		
	Dimana Lokasi Tempat Tinggal Anda:			
	a. Provinsi	(Pilihan)		
8	b. Kota/Kabupaten	(Pilihan)		
	c. Kecamatan	(Isian)		
9	Apa <b>kegiatan utama Anda?</b> [Single- Select]	<ol> <li>Sekolah/Pelajar [Lanjut ke 13]</li> <li>Mengurus rumah tangga [Lanjut ke 13]</li> <li>Tidak bekerja dan tidak sedang mencari pekerja (selain pelajar dan mengurus rumah tangga) [La ke 13]</li> <li>Tidak bekerja dan mencari pekerjaan [Lanjut ke</li> <li>Bekerja</li> </ol>		
10	Apa <b>SEKTOR/ BIDANG</b> pekerjaan <b>utama</b> Anda? [Single-Select]	<ol> <li>Bekerja di sektor pertanian</li> <li>Bekerja di sektor pertambangan</li> <li>Bekerja di sektor industri dan manufaktur</li> <li>Bekerja di sektor konstruksi/ bangunan</li> <li>Bekerja di sektor perdagangan</li> <li>Bekerja di sektor hotel &amp; rumah makan</li> <li>Bekerja di sektor transportasi dan komunikasi</li> <li>Bekerja di sektor keuangan, perbankan, dan real</li> <li>Bekerja di sektor jasa dan lainnya</li> </ol>		
11	Apa <b>STATUS</b> pekerjaan utama Anda? [Single-Select]	<ol> <li>Bekerja sendiri/ pemilik usaha tanpa karyawan</li> <li>Pemilik usaha dengan karyawan tidak tetap</li> <li>Pemilik usaha dengan karyawan tetap</li> <li>Pegawai/karyawan/buruh</li> <li>Pekerja bebas (<i>freelance</i>) di sektor pertanian</li> <li>Pekerja bebas (<i>freelance</i>) di sektor selain pertani</li> <li>Pekerja tidak dibayar (contoh: bekerja untuk keluarga)</li> </ol>		
12	dalam satu hari?	jam		
13	Berapa perkiraan rata-rata pengeluaran RUMAH TANGGA Anda dalam sebulan? [Single-Select]	1. < Rp 500.000 2. Rp 500.001 - 1.000.000 3. Rp 1.000.001 - 2.500.000 4. Rp 2.500.001 - 5.000.000 5. Rp 5.000.001 - 7.500.000 6. Rp 7.500.001 - 10.000.000 7. Rp 10.000.001 - 20.000.000 8. Rp 20.000.001 - 35.000.000 9. Rp 35.000.001 - 50.000.000 10.> Rp 50.000.000		
14	Berapa daya listrik terpasang di tempat tinggal Anda saat ini? [Single Select]	1. Tidak tahu 2. 450 watt		

		<ul> <li>3. 900 watt</li> <li>4. 1300 watt</li> <li>5. 2200 watt</li> <li>6. 3300 watt</li> <li>7. 4400 watt</li> <li>8. 5500 watt</li> <li>9. ≥ 6600 watt</li> <li>1. Tidak Menerima Bantuan</li> <li>2. Program Keluarga Harapan (PKH)</li> <li>3. PBNT (Bantuan Bangan New Tunci)</li> </ul>
15	Bantuan sosial seperti apa yang diterima oleh rumah tangga Anda? [Multi-Select]	<ol> <li>BPN1 (Bantuan Pangan Non-Tunat)</li> <li>PBI Jaminan Kesehatan Nasional/ BPJS Kesehatan</li> <li>Kartu Indonesia Pintar atau bantuan pendidikan lainnya</li> <li>Subsidi/pengurangan biaya listrik</li> <li>Kartu prakerja</li> <li>Subsidi bunga atau penundaan pembayaran cicilan kredit</li> <li>Bantuan untuk lansia atau penyandang disabilitas</li> <li>Bantuan dalam bentuk uang lainnya</li> <li>Bantuan lainnya dari pemerintah</li> </ol>
16	Apa bahan bakar utama memasak rumah tangga Anda?	<ol> <li>Listrik</li> <li>Elpiji diatas 3 kg</li> <li>Elpiji 3 kg</li> <li>Gas kota</li> <li>Biogas</li> <li>Minyak tanah</li> <li>Briket</li> <li>Arang</li> <li>Kayu bakar</li> <li>Lainnya</li> </ol>

#### III. Perilaku Penggunaan Minyak Goreng/Memasak/Pengolahan Minyak Jelantah

Pada bagian ini dan seterusnya, apabila tidak diberikan keterangan, maka yang dimaksud minyak goreng adalah **minyak goreng masak yang biasa (yang berasal dari minyak sawit)**, dan bukan minyak zaitun, minyak jagung/canola, atau minyak selain minyak goreng sawit lainnya.

jagung/canola, atau minyak selam minyak goreng sawit taninya.					
			A. Minyak	B. Minyak	
			Goreng Pemberian/Hadiah	Goreng Yang Dibeli/Baru	
	a.	Apakah rumah tangga Anda mengkonsumsi []? [Single- Select]	1. Ada 2. Tidak Ada [Lanjut ke B1]	1. Ada 2. Tidak Ada [Lanjut ke C3]	
1	b.	Apa jenis minyak goreng [] yang dikonsumsi rumah tangga Anda? [Single-Select]	<ol> <li>Minyak Goreng Curah</li> <li>Minyak Goreng Bermerek [Lanjut ke A11]</li> </ol>	<ol> <li>Minyak Goreng Curah</li> <li>Minyak Goreng Bermerek [Lanjut ke B1h]</li> </ol>	
1	c.	Apa alasan utama rumah tangga Anda <b>membeli</b> minyak goreng curah? [Single-Select]		<ol> <li>Harga [Lanjut ke B1e]</li> <li>Rasa [Lanjut ke B1e]</li> <li>Kesehatan [Lanjut ke B1e]</li> <li>Lainnya, sebutkan</li> </ol>	
	d.	Lainnya, sebutkan [Jika B1c = 4]			

	e. Dimana tempat biasanya rumah tangga Anda <b>membeli</b> minyak goreng curah? [Single-Select]		<ol> <li>Warung [Lanjut ke B1g]</li> <li>Pasar [Lanjut ke B1g]</li> <li>Toko Sembako [Lanjut ke B1g]</li> <li>Agen Minyak [Lanjut ke B1g]</li> <li>Lainnya, sebutkan</li> </ol>
	f. Lainnya, sebutkan		
	<ul> <li>g. Apa jenis kemasan minyak goreng curah [] yang biasa rumah tangga Anda konsumsi? [Single-Select]</li> </ul>	1.Kantung Plastik [Lanjut ke A2a] 2.Jirigen [Lanjut ke A2a]	1.Kantung Plastik [Lanjut ke B2a] 2.Jirigen [Lanjut ke B2a]
	<ul> <li>Apa alasan utama rumah tangga Anda membeli minyak goreng bermerek? [Single-Select]</li> </ul>		<ol> <li>Harga promo [Lanjut ke B1j]</li> <li>Rasa [Lanjut ke B1j]</li> <li>Kesehatan [Lanjut ke B1j]</li> <li>Lainnya (misal Reputasi), sebutkan</li> </ol>
	i. Lainnya, sebutkan		
	j. Dimana tempat rumah tangga Anda biasanya <b>membeli</b> minyak goreng bermerek? [Single- Select]		<ol> <li>Warung [Lanjut ke B11]</li> <li>Pasar [Lanjut ke B11]</li> <li>Toko Sembako [Lanjut ke B11]</li> <li>Minimarket [Lanjut ke B11]</li> <li>Supermarket [Lanjut ke B11]</li> <li>Lainnya, sebutkan</li> </ol>
	k. Lainnya, sebutkan [Jika B1j = 6]		
	<ol> <li>Apa jenis kemasan minyak goreng bermerek [] yang biasa rumah tangga Anda konsumsi? [Single-Select]</li> </ol>	<ol> <li>Kemasan Plastik Isi Ulang [Lanjut ke A2a]</li> <li>Kemasan Botol [Lanjut ke A2a]</li> <li>Kemasan Jirigen [Lanjut ke A2a]</li> </ol>	<ol> <li>Kemasan Plastik Isi Ulang [Lanjut ke B2a</li> <li>Kemasan Botol [Lanjut ke B2a]</li> <li>Kemasan Jirigen [Lanjut ke B2a]</li> </ol>
	a. Berapa rata-rata minyak goreng [] yang dikonsumsi rumah tangga Anda dalam seminggu (liter)?	Liter [Lanjut ke B1]	Liter
2	b. Berapa rata-rata pengeluaran rumah tangga Anda untuk minyak goreng yang <b>dibeli/baru</b> dalam seminggu?		Rupiah
	c. Berapa harga per liter untuk minyak goreng yang rumah tangga Anda <b>biasa beli</b> ?		Rupiah/liter
		C. Minyak Jelantah Dari Luar Rumah Tangga (Pemberian/Hadiah)	D. Minyak Jelantah Yang Dibeli
3	a. Apakah rumah tangga Anda mengkonsumsi []? [Single- Select]	1. Ada 2. Tidak Ada [Lanjut ke D3a]	1. Ada 2. Tidak Ada [Lanjut ke 5]

	<ul> <li>b. Apa alasan utama membeli minyak jelantah? [Single- Select]</li> </ul>		<ol> <li>Harga [Lanjut ke D3d]</li> <li>Rasa [Lanjut ke D3d]</li> <li>Kesehatan [Lanjut ke D3d]</li> <li>Lainnya, sebutkan</li> </ol>
	c. Lainnya, sebutkan [Jika D3b = 4]		
	d. Dimana tempat rumah tangga Anda biasanya mendapatkan/membeli minyak jelantah []? [Single-Select]	<ol> <li>Warung [Lanjut ke C4a]</li> <li>Pasar [Lanjut ke C4a]</li> <li>Pengepul Minyak Jelantah [Lanjut ke C4a]</li> <li>Kerabat/Keluarga di luar rumah tangga [Lanjut ke C4a]</li> <li>Tetangga [Lanjut ke C4a]</li> <li>Lainnya, sebutkan</li> </ol>	<ol> <li>Warung [Lanjut ke D4a]</li> <li>Pasar [Lanjut ke D4a]</li> <li>Pengepul Minyak Jelanta [Lanjut ke D4a]</li> <li>Kerabat/Keluarga di lua rumah tangga [Lanjut ke D4a]</li> <li>Tetangga [Lanjut ke D4a]</li> <li>Lainnya, sebutkan</li> </ol>
	e. Lainnya, sebutkan [Jika C3d/D3d = 6]		
	a. Berapa banyak minyak jelantah [] yang dikonsumsi rumah tangga rata-rata dalam seminggu (liter)?	Liter [Lanjut ke D3a]	Liter
4	b. Berapa pengeluaran rumah tangga untuk minyak jelantah yang <b>dibeli/baru</b> rata-rata dalam seminggu?	L J J	Rupiah
	c. Berapa harga per liter untuk minyak jelantah yang rumah tangga Anda <b>biasa beli</b> ?		Rupiah/liter
5	Bagaimana kebiasaan penggunaan minyak goreng untuk memasak rumah Anda? [Single-Select]	<ol> <li>1 kali saja/sekali pakai</li> <li>2 kali</li> <li>Lebih dari dua kali tetapi warna</li> <li>Lebih dari dua kali hingga warn</li> <li>Minyak digunakan sampai h minyak baru</li> </ol>	a minyak belum gelap na minyak menjadi gelap ampir habis kemudian ditamba
6	Apakah jenis masakan yang secara umum biasa dimasak oleh rumah tangga Anda? [Rank 3 jenis masakan paling sering]	1.Ayam 2.Ikan 3.Daging (Sapi, Kambing, dll) 4.Sayuran 5.Tahu dan Tempe 6.Telur 7.Lainnya, sebutkan	
7	Lainnya, sebutkan [Jika 6 = 7]		
8	Bagaimana cara memasak yang biasanya dilakukan oleh rumah tangga Anda? [Rank 3 metode paling sering]	<ol> <li>1. Deep fry (Menggoreng dengan j tenggelam di dalam minyak)</li> <li>2. Menggoreng dengan jumlah mir</li> <li>3. Menumis</li> <li>4. Merebus</li> <li>5. Mengukus</li> <li>6. Memanggang</li> <li>7. Lainnya, sebutkan</li> </ol>	umlah minyak banyak, masakan 1yak sedang
9	Lainnya, sebutkan [Jika 8 = 7]		

10	Jenis makanan apa yang biasanya dimasak dengan cara menggoreng dengan jumlah minyak banyak ( <i>deep</i> <i>fry</i> ) oleh rumah tangga Anda? [Multi-Select]	1.Ayam 2.Ikan 3.Daging (Sapi, Kambing, dll) 4.Sayuran 5.Tahu dan Tempe 6.Telur 7.Lainnya, sebutkan 8.Tidak Ada
11	Lainnya, sebutkan [Jika 10 = 7]	
12	Jenis makanan apa yang biasanya dimasak dengan cara digoreng dengan jumlah minyak sedang oleh rumah tangga Anda? [Multi-Select]	1. Ayam 2. Ikan 3. Daging (Sapi, Kambing, dll) 4. Sayuran 5. Tahu dan Tempe 6. Telur 7. Lainnya, sebutkan 8. Tidak Ada
13	Lainnya, sebutkan [Jika 12 = 7]	
14	Jenis makanan apa yang biasanya dimasak dengan cara ditumis oleh rumah tangga Anda? [Multi-Select]	1. Ayam         2. Ikan         3. Daging (Sapi, Kambing, dll)         4. Sayuran         5. Tahu dan Tempe         6. Telur         7. Lainnya, sebutkan         8. Tidak Ada
15	Lainnya, sebutkan [Jika 14 = 7]	
16	Apakah rumah tangga Anda menghasilkan minyak jelantah?	1. Ya 2. Tidak [Lanjut ke Bagian IV]
17	Berapa banyak minyak jelantah yang dihasilkan rumah tangga Anda rata- rata dalam seminggu? (dalam gelas air mineral) [Single-Select] Apapun wadah yang Anda gunakan untuk menampung minyak jelantah, mohon perkirakan berapa minyak jelantah yang dihasilkan setara dengan gelas air mineral?	<ol> <li>0,5 gelas [Lanjut ke 19]</li> <li>1 gelas [Lanjut ke 19]</li> <li>1,5 gelas [Lanjut ke 19]</li> <li>2 gelas [Lanjut ke 19]</li> <li>2,5 gelas [Lanjut ke 19]</li> <li>3 gelas [Lanjut ke 19]</li> <li>3,5 gelas [Lanjut ke 19]</li> <li>4 gelas [Lanjut ke 19]</li> <li>4,5 gelas [Lanjut ke 19]</li> <li>5 gelas [Lanjut ke 19]</li> <li>10. 5 gelas [Lanjut ke 19]</li> <li>11. Lebih dari 5 gelas, sebutkan</li> </ol>
18	Lebih dari 5 gelas, sebutkan	gelas
19	Dimanakah rumah tangga Anda menyimpan minyak jelantah yang dihasilkan? [Single-Select]	1. Wadah Terbuka 2. Wadah Tertutup
20	Biasanya apa yang dilakukan rumah tangga Anda pada minyak jelantah yang dihasilkan? [Single-Select]	<ol> <li>Dipakai lagi sampai habis [Lanjut ke 27]</li> <li>Dibuang [Lanjut ke 22]</li> <li>Diberikan ke orang lain [Lanjut ke 24]</li> </ol>

		<ul> <li>4. Diberikan ke organisasi/lembaga [Lanjut ke 24]</li> <li>5. Dijual [Lanjut ke 26]</li> <li>6. Lainnya, sebutkan</li> </ul>
21	Lainnya, sebutkan [Jika 20 = 6]	[Lanjut ke 27]
22	Kemana tempat pembuangan minyak jelantah yang rumah tangga Anda paling sering dilakukan? [Single- Select]	<ol> <li>Dibuang di tempat sampah [Lanjut ke 27]</li> <li>Dibuang di saluran air/selokan/got [Lanjut ke 27]</li> <li>Dibuang di bak cuci piring [Lanjut ke 27]</li> <li>Dibuang ke sungai [Lanjut ke 27]</li> <li>Dibuang ke tanah [Lanjut ke 27]</li> <li>Lainnya, sebutkan</li> </ol>
23	Lainnya, sebutkan [Jika 22 = 6]	[Lanjut ke 27]
24	Untuk apa minyak jelantah yang rumah tangga Anda berikan digunakan/dimanfaatkan orang lain/organisasi/lembaga tersebut? [Single-Select]	<ol> <li>Tidak tahu [Lanjut ke 27]</li> <li>Untuk memasak [Lanjut ke 27]</li> <li>Untuk penggunaan lain selain memasak [Lanjut ke 27]</li> <li>Dijual ke pihak lain [Lanjut ke 26]</li> <li>Lainnya, sebutkan</li> </ol>
25	Lainnya, sebutkan [Jika R24 = 5]	[Lanjut ke 27]
26	Apabila rumah tangga Anda menjual minyak jelantah, berapa rata-rata harga jual minyak jelantah per liternya?	Rupiah/Liter
27	Bagaimana jumlah ampas sisa makanan dalam minyak jelantah? [Single-Select]	1.Banyak 2.Sedang 3.Sedikit 4.Tidak Ada Sama Sekali
28	Apakah rumah tangga Anda melakukan pengolahan lebih lanjut pada minyak jelantah? (misalnya disaring) [Single-Select]	1.Ya 2.Tidak
29	1 2 3 4 5 Dari gambar berikut, manakah yang mendekati warna minyak jelantah rumah tangga Anda hasilkan?	1.1 2.2 3.3 4.4 5.5

## IV. Mekanisme Insentif Pengolahan Minyak Jelantah

1	Apakah Anda mengetahui bahwa minyak jelantah dapat diolah lebih lanjut?	1. Ya 2. Tidak [Lanjut ke 4]
2	Menurut yang Anda ketahui, minyak jelantah dapat diolah menjadi produk apa saja? [Multi-Select]	1. Diolah menjadi minyak goreng baru [Lanjut ke 4]
		<ol> <li>Diolah menjadi bahan bakar (biodiesel ata lainnya) [Lanjut ke 4]</li> <li>Diolah menjadi produk non-minyak gorer baru dan non-biodiesel (seperti sabun, dll) [Lanjut ke 4]</li> <li>Lainnya, sebutkan</li> </ol>
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3	Lainnya, sebutkan [Jika 2 = 4]	
4	Jika ada pihak yang mengumpulkan minyak jelantah, bagaimana cara pengumpulan minyak jelantah yang anda harapkan? [Single-Select]	<ol> <li>Dijemput ke rumah [Lanjut ke 6]</li> <li>Diantar ke bank sampah/Pengepul minyal jelantah [Lanjut ke 6]</li> <li>Diantar ke titik pengumpulan lingkungan RT/RW [Lanjut ke 6]</li> <li>Diantar ke sekolah (dimana anak bersekolah) [Lanjut ke 6]</li> <li>Diantar ke warung biasa berbelanja [Lanju ke 6]</li> <li>Diantar ke minimarket biasa berbelanja [Lanjut ke 6]</li> <li>Diantar ke pasar biasa berbelanja [Lanjut 6]</li> <li>Diantar ke titik pengumpulan lainnya</li> </ol>
5	Titik lainnya, Sebutkan [Jika 4 = 8]	
6	Mengapa Anda memilih cara tersebut? [Single-Select]	<ol> <li>Jarak yang dekat [Lanjut ke 8]</li> <li>Sering ke tempat tersebut [Lanjut ke 8]</li> <li>Tidak perlu mengantar [Lanjut ke 8]</li> <li>Percaya dengan pihak tersebut [Lanjut ke</li> <li>Lainnya, sebutkan</li> </ol>
7	Lainnya, sebutkan [Jika 6 = 5]	
8	Bagaimana preferensi waktu pengumpulan minyak jelantah yang anda harapkan? [Single-Select]	<ol> <li>Tergantung dari minyak jelantah yang sud dikumpulkan</li> <li>Harian</li> <li>Seminggu dua kali</li> <li>Mingguan</li> <li>Dua Minggu Sekali</li> <li>Bulanan</li> <li>Lebih dari 1 bulan</li> </ol>
9	Dengan cara pengumpulan yang telah Anda pilih, berapakah jumlah maksimal minyak jelantah yang bersedia Anda simpan dirumah sebelum akhirnya diberikan ke pihak tersebut? Apapun wadah yang Anda gunakan untuk menampung minyak jelantah, mohon perkirakan berapa minyak jelantah yang dihasilkan setara dengan gelas air mineral?	<ol> <li>0,5 gelas [Lanjut ke 11]</li> <li>1 gelas [Lanjut ke 11]</li> <li>1,5 gelas [Lanjut ke 11]</li> <li>2 gelas [Lanjut ke 11]</li> <li>2,5 gelas [Lanjut ke 11]</li> <li>3 gelas [Lanjut ke 11]</li> <li>3,5 gelas [Lanjut ke 11]</li> <li>4 gelas [Lanjut ke 11]</li> <li>4,5 gelas [Lanjut ke 11]</li> <li>5 gelas [Lanjut ke 11]</li> <li>4,5 gelas [Lanjut ke 11]</li> <li>5 gelas [Lanjut ke 11]</li> </ol>
10	Lebih dari 5 gelas, sebutkan	gelas

11	Media komunikasi apa yang Anda akan gunakan untuk menghubungi pihak yang mengumpulkan minyak jelantah? [Single-Select]	<ol> <li>Secara langsung [Lanjut ke 13]</li> <li>Telepon / handphone [Lanjut ke 13]</li> <li>Media Sosial (Whatsapp, Instagram dll) [Lanjut ke 13]</li> <li>Aplikasi HP/komputer [Lanjut ke 13]</li> <li>Lainnya, sebutkan</li> </ol>
12	Lainnya, sebutkan [Jika 11 = 5]	
13	Dukungan apa yang Anda harapkan untuk pengumpulan minyak jelantah? [multi-Select]	<ol> <li>Edukasi tentang cara pengolalaan minya jelantah [Lanjut ke 15]</li> <li>Menyediakan fasilitas/infrastruktu pengumpulan jelantah [Lanjut ke 15]</li> <li>Sosialisasi manfaat pengelolaan minya jelantah [Lanjut ke 15]</li> <li>Keberadaan pengumpul jelantah c lingkungan sekitar [Lanjut ke 15]</li> <li>Lainnya, sebutkan</li> </ol>
14	Lainnya, sebutkan [Jika 13 = 5]	
15	Dalam mengumpulkan minyak jelantah, insentif seperti apa yang Anda harapkan? [Single-Select]	<ol> <li>Tidak perlu ada insentif [Lanjut ke 17]</li> <li>Uang [Lanjut ke 19]</li> <li>Minyak Goreng Masak Baru [Lanjut ke 20]</li> <li>Beras [Lanjut ke 21]</li> <li>Gula [Lanjut ke 22]</li> <li>Telur [Lanjut ke 23]</li> <li>Lainnya, sebutkan</li> </ol>
16	Lainnya, sebutkan [Jika 15 = 7]	[Lanjut ke 24]
17	Jika tidak perlu insentif, apa alasan utama Anda masih bersedia mengumpulkan minyak jelantah? [Single-Select] [Jika 15 = 1]	<ol> <li>Jumlah uang/<i>in-kind</i> tidak signifikan [Lanju ke V]</li> <li>Merasa minyak jelantah memiliki manfaa bagi pihak lain [Lanjut ke V]</li> <li>Alasan lingkungan (mencegah pencemaran mengurangi hambatan di saluran air, dll [Lanjut ke V]</li> <li>Lainnya, sebutkan</li> </ol>
18	Lainnya, sebutkan [Jika 17 = 4]	[Lanjut ke V]
19	Apabila skema insentif yang dipilih adalah uang, dalam bentuk seperti apa uang tersebut diberikan? [Single-Select] [Jika 15 = 2]	<ol> <li>Uang tunai [Lanjut ke 24]</li> <li>Di transfer ke rekening [Lanjut ke 24]</li> <li>Uang elektronik (mis. Go-Pay, Shopee Pay) [Lanjut ke 24]</li> <li>Voucher untuk membeli sembako [Lanjut ke 24]</li> </ol>
20	a. Apabila insentif diberikan dalam bentuk minyak goreng baru, berapa liter minyak jelantah yang bersedia Anda kumpulkan untuk mendapatkan 1 liter minyak goreng baru?	
	Catatan: Perlu diingat logikanya, nilai minyak jelantah per liter akan lebih rendah dari minyak goreng baru per liter. Tidak akan ada orang yang	Liter

	<ul> <li>mau menukar barang dengan nilai uang yang tidak setara.</li> <li>Apabila insentif diberikan dalam bentuk minyak goreng baru, berapa liter minyak jelantah yang maksimum bersedia Anda kumpulkan untuk mendapatkan 1 liter minyak goreng baru?</li> <li>Catatan: Perlu diingat logikanya, nilai minyak jelantah per liter akan lebih rendah dari minyak goreng baru per liter. Tidak akan ada orang yang mau menukar barang dengan nilai uang yang tidak setara.</li> <li>Apabila insentif diberikan dalam bentuk beras, berapa liter minyak jelantah yang bersedia Anda kumpulkan untuk mendapatkan 1 liter beras?</li> <li>Catatan: Mohon diingat perbandingan harga beras dan minyak goreng baru. Logikanya, nilai minyak jelantah per liter akan lebih rendah dari minyak</li> </ul>	Liter [Lanjut ke 24]
a.	<ul> <li>Apabila insentif diberikan dalam bentuk minyak goreng baru, berapa liter minyak jelantah yang maksimum bersedia Anda kumpulkan untuk mendapatkan l liter minyak goreng baru?</li> <li>Catatan: Perlu diingat logikanya, nilai minyak jelantah per liter akan lebih rendah dari minyak goreng baru per liter. Tidak akan ada orang yang mau menukar barang dengan nilai uang yang tidak setara.</li> <li>Apabila insentif diberikan dalam bentuk beras, berapa liter minyak jelantah yang bersedia Anda kumpulkan untuk mendapatkan l liter beras?</li> <li>Catatan: Mohon diingat perbandingan harga beras dan minyak goreng baru. Logikanya, nilai minyak jelantah per liter akan lebih rendah dari minyak</li> </ul>	Liter [Lanjut ke 24]
a.	Catatan: Perlu diingat logikanya, nilai minyak jelantah per liter akan lebih rendah dari minyak goreng baru per liter. Tidak akan ada orang yang mau menukar barang dengan nilai uang yang tidak setara. Apabila insentif diberikan dalam bentuk beras, berapa liter minyak jelantah yang bersedia Anda kumpulkan untuk mendapatkan 1 liter beras? Catatan: Mohon diingat perbandingan harga beras dan minyak goreng baru. Logikanya, nilai minyak jelantah per liter akan lebih rendah dari minyak	Liter [Lanjut ke 24]
a	<ul> <li>Apabila insentif diberikan dalam bentuk beras, berapa liter minyak jelantah yang bersedia Anda kumpulkan untuk mendapatkan 1 liter beras?</li> <li>Catatan: Mohon diingat perbandingan harga beras dan minyak goreng baru. Logikanya, nilai minyak jelantah per liter akan lebih rendah dari minyak</li> </ul>	
	Catatan: Mohon diingat perbandingan harga beras dan minyak goreng baru. Logikanya, nilai minyak jelantah per liter akan lebih rendah dari minyak	
-	goreng baru per liter. Tidak akan ada orang yang mau menukar barang dengan nilai uang yang tidak setara. (Probing 1 liter beras = +- 1,3 kg beras)	Liter
21 b	b. Apabila insentif diberikan dalam bentuk beras, berapa liter minyak jelantah <b>maksimum</b> yang bersedia Anda kumpulkan untuk mendapatkan 1 liter beras?	
	Catatan: Mohon diingat perbandingan harga beras dan minyak goreng baru. Logikanya, nilai minyak jelantah per liter akan lebih rendah dari minyak goreng baru per liter. Tidak akan ada orang yang mau menukar barang dengan nilai uang yang tidak setara. (Probing 1 liter beras = +- 1,3 kg beras)	Liter [Lanjut ke 24
a t k	a. Apabila insentif diberikan dalam bentuk gula, berapa liter minyak jelantah yang bersedia Anda kumpulkan untuk mendapatkan 1 kg gula?	
22 s	Catatan: Mohon diingat perbandingan harga gula dan minyak goreng baru. Logikanya, nilai minyak jelantah per liter akan lebih rendah dari minyak goreng baru per liter. Tidak akan ada orang yang mau menukar barang dengan nilai uang yang tidak setara.	Liter
ני ני ג	b. Apabila insentif diberikan dalam bentuk gula, berapa liter minyak jelantah <b>maksimum</b> yang bersedia Anda kumpulkan untuk mendapatkan 1 kg gula?	
	Catatan: Mohon diingat perbandingan harga gula dan minyak goreng baru. Logikanya, nilai minyak jelantah per liter akan lebih rendah dari minyak	

1	mau menukar barang dengan nilai uang yang tidak setara.	
(	a. Apabila insentif diberikan dalam bentuk telur, berapa liter minyak jelantah yang bersedia Anda kumpulkan untuk mendapatkan 1 kg telur?	
	Catatan: Mohon diingat perbandingan harga telur dan minyak goreng baru. Logikanya, nilai minyak jelantah per liter akan lebih rendah dari minyak goreng baru per liter. Tidak akan ada orang yang mau menukar barang dengan nilai uang yang tidak setara.	Liter
23	b. Apabila insentif diberikan dalam bentuk telur, berapa liter minyak jelantah <b>maksimum</b> yang bersedia Anda kumpulkan untuk mendapatkan 1 kg telur?	
	Catatan: Mohon diingat perbandingan harga telur dan minyak goreng baru. Logikanya, nilai minyak jelantah per liter akan lebih rendah dari minyak goreng baru per liter. Tidak akan ada orang yang mau menukar barang dengan nilai uang yang tidak setara.	Liter
	a. Apabila insentif diberikan dalam bentuk uang tunai, berapa nilai yang menurut Anda layak untuk 1 liter minyak jelantah? [Jika IV15 = 2/3/4/5/6/7]	
24	Catatan: logikanya, harga yang anda akan dapatkan dari minyak jelantah akan lebih rendah dari harga minyak goreng baru	Rupiah/lite
24	b. Apabila insentif diberikan dalam bentuk uang tunai, berapa nilai <b>minimum</b> yang bersedia Anda terima untuk 1 liter minyak jelantah?	
	Catatan: logikanya, harga yang anda akan dapatkan dari minyak jelantah akan lebih rendah dari harga minyak goreng baru	
	$ J_{1}Ka   V_{1}5 = 2/3/4/5/6// $	Kupiah/lite

## V. Perilaku dan Pengetahuan terkait Kesehatan dan Lingkungan

1Bagaimana menurut Anda penggunaan minyak goreng yang digunakan berulang kali terhadap kesehatan? [Single-Select]1. Tidak ada pengaruhnya sama sekali 2. Sedikit pengaruhnya 3. Ada pengaruhnya, tetapi mudah diobati 4. Besar pengaruhnya	
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2	Konsumsi minyak goreng yang digunakan berulang kali telah terbukti secara ilmiah mampu memicu pembentukan sel kanker (Venkata & Subramanyam, 2016). Konsumsi minyak secara berulang juga dapat meningkatkan risiko penyakit stroke, darah tinggi, dan pikun (Kruman et.al., 1997 dan Cicero, et.al. 2014). Apakah Anda sudah pernah mengetahui setidaknya salah satu pernyataan di atas sebelumnya?	1. Ya 2. Tidak
3	[Single-Select] Bagaimana menurut Anda penggunaan minyak goreng yang digunakan berulang kali terhadap lingkungan? [Single-Select]	<ol> <li>Tidak ada pengaruhnya sama sekali</li> <li>Sedikit pengaruhnya</li> <li>Ada pengaruhnya, tetapi mudah ditanggulangi</li> <li>Besar pengaruhnya</li> </ol>
4	Pembuangan minyak jelantah secara tidak tepat dapat menyebabkan penyumbatan saluran air serta bau yang tidak sedap (Orjuela & Clark, 2020). Penyumbatan saluran air bisa berakibat pada terjadinya banjir di perumahan. Apakah Anda sudah pernah mengetahui	1. Ya 2. Tidak
5	sebudahiya salah satu peniyataan di atas sebelumnya? [Single-Select] Menurut Anda, bagaiamana bahaya kesehatan mengonsumsi minyak jelantah terus-menerus apabila dibandingkan dengan [] 1: Lebih Berbahaya 2: Sama Saja 3: Lebih Aman	Kurang Berolahraga    Kurang Tidur    Merokok    Mengonsumsi Minuman Keras    Polusi Udara
6	Apakah rumah tangga Anda saat ini melakukan kegiatan pengumpulan sampah selain minyak jelantah? [multi- Select]	<ol> <li>Tidak ada (tidak perlu menjawab jawaban lainnya)</li> <li>Ya, sampah plastik</li> <li>Ya, sampah kertas</li> <li>Ya, sampah kaca &amp; logam</li> <li>Ya, sampah sachet</li> <li>Ya, sampah karton minuman</li> <li>Ya, sampah kardus</li> <li>Ya, lainnya, sebutkan</li> </ol>
7	Lainnya, sebutkan [Jika 6 = 8]	
8	Selain minyak goreng biasa dikonsumsi (yang berasal dari kelapa sawit), jenis minyak apalagi yang dimanfaatkan oleh rumah tangga untuk memasak? [multi- Select]	<ol> <li>Tidak ada (tidak perlu menjawab jawaban lainnya)</li> <li>Minyak Jagung (Canola Oil)</li> <li>Minyak Zaitun (Olive Oil)</li> <li>Minyak Kelapa (mis. merk Barco)</li> <li>Minyak Wijen (Sesame Oil)</li> <li>Minyak Kedelai</li> <li>Minyak Biji Bunga Matahari (Sunflower Oil)</li> <li>Minyak Biji Rami (Flaxseed Oil)</li> </ol>

9	Lainnya, sebutkan	<ul> <li>9. Minyak Walnut</li> <li>10. Minyak Alpukat</li> <li>11. Minyak Kacang Tanah (Peanut Oil)</li> <li>12. Lainnya, sebutkan</li> </ul>
10	[Jika 8 = 12] Apakah anda pernah melakukan hal-hal berikut ini? 1: Belum 2: Sudah, tapi tidak rutin 3: Sudah dan rutin	Memilah sampah         Mendaur ulang sampah         Mengurangi konsumsi plastik sekali pakai         Mengolah kompos         Berkebun         Berolahraga         Bekerja bakti di sekitar rumah         Tidur dengan waktu yang teratur         Tidur dengan waktu yang cukup         Makan dengan waktu teratur         Memilih makanan yang sehat         Menghemat penggunaan listrik
11	Pilih 3 di antara isu sosial berikut yang menurut Anda masalah penting bagi Anda.	Kemiskinan dan kesejahteraan         Pengangguran dan kesempatan kerja         Kelestarian lingkungan hidup         Kesehatan         Harga barang kebutuhan pokok         Pendidikan         Kestabilan politik         Konflik masyarakat         Korupsi
12	Pilih 3 di antara permasahan lingkungan berikut yang menurut Anda masalah penting untuk segera diselesaikan.	Sampah         Banjir         Bencana alam lainnya         Pencemaran air         Pencemaran udara dan debu         Pengambilan sumber daya alam yang berlebihan         Kebisingan         Kemacetan         Cuaca panas



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