






Consumer Knowledge Level of Sustainable Palm Cooking Oil

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Abstract. Cooking oil is an important food ingredient for people in Indonesia. However, the issue of sustainable palm cooking oil has not been fully understood by consumers. In fact, the sustainability of palm oil is not only the responsibility of producers but also consumers. The purpose of this study was to analyze the level of consumer knowledge about sustainable palm cooking oil in West Kalimantan. Sampling was carried out through the stratified sampling method by determining the sub-population. Based on the results of the analysis, it was found that knowledge of sustainable palm cooking oil in both city and regency had a medium level of knowledge either. However, they believe that the cooking oil they consume supports sustainable palm oil management practices even though they cannot confirm this further. They also agree that sustainably managed cooking oil is a good product. Consumers do not know about the concept of sustainable cooking oil because they have never looked for information and feel that no stakeholder has informed them about this.

Keywords: Consumer, Cooking Oil, Knowledge

1 Introduction

Indonesia is one of the palm oil producers with the largest production and land area in the world [1]. Indonesia's CPO production in 2020 reached 44.8 million tons, which was produced from large private plantations with a contribution of 60%, smallholder plantations as much as 35% and large state plantations with 5% [2]. Palm oil is a commodity that can produce more oil compared to other vegetable oils. In addition, the characteristic of palm oil which is resistant to oxidants at high pressure makes it superior to others.

The existence of the palm oil industry continues to grow. This is marked by the increasingly widespread oil palm plantations which is spread across several provinces in Indonesia. Therefore, Indonesia still has great potential to market palm oil and its derivatives both at home and abroad. The volume of palm oil exports has increased during the 2016 – 2019 [2]. One of the palm oil processing industries is cooking oil. Cooking oil is a product that is needed by Indonesian people for various kinds of foods. Palm

cooking oil is preferred by the community because the price is more affordable compared to other types of vegetable oils such as sunflower oil, olive oil, coconut oil and others. Consumption of palm cooking oil at the household level has increased until 2.32% during the 2015 - 2021 [3].

Indonesian palm oil industry. Since 2004, the RSPO has emerged to help achieve sustainable palm oil at the global level. Meanwhile in Indonesia, ISPO was formed. In fact, the sustainability of oil palm is not only a joint responsibility of producers, consumers, government, NGOs, and other stakeholders [4]. In recent years, many consumers have debated about the health and sustainability of palm cooking oil [5], especially since there has been a scarcity and rising cooking oil prices in Indonesia. Even so, the concept of sustainable palm cooking oil does not seem to be fully understood by consumers. This can be seen from the large number of consumers who buy palm cooking oil because the price is low, and they pay little attention to other aspects such as whether there is RSPO or ISPO certification as a part of sustainable agriculture implementation.

Consumers have different levels of knowledge. Consumer knowledge is all the information held by consumers related to products and services that will influence their purchasing decisions. Product/service knowledge consists of attribute knowledge, product benefit knowledge, and product/service satisfaction knowledge [6,7]. Analyzing consumer knowledge is important to see how far the level of knowledge is so that it can be used as a basis for determining policies that support the creation of sustainable palm oil practices. Based on the problems that have been presented, the purpose of this study is to analyze the level of consumer knowledge about sustainable palm cooking oil in West Kalimantan. It is instead to increase consumer awareness and contribution to support the realization of sustainable palm cooking oil in Indonesia.

2 Methodology

The research is qualitative descriptive research. This research was conducted conducted in West Kalimantan because West Kalimantan is the third largest CPO producing province after Riau and Central Kalimantan [2]. In addition, thirteen of the 14 regencies/cities in West Kalimantan plant oil palm in varying areas bervariasi [8]. The districts/cities selected to be the sample are the cities of Pontianak and Singkawang which represent non-oil palm production centres in West Kalimantan. Meanwhile, the regencies representing production centres are Ketapang and Sanggau regency.

Sampling was carried out through the stratified sampling method by determining the sub-population (figure 1). The population criteria in this study are 1) respondents are at least 20 years old, 2) respondents have bought palm cooking oil at least 2 times during the last 6 months. The total number of respondents in this study were 412 respondents which were divided into two sub-groups, namely 142 respondents in cities (non-central areas) and 270 respondents in regencies (palm oil production centres).

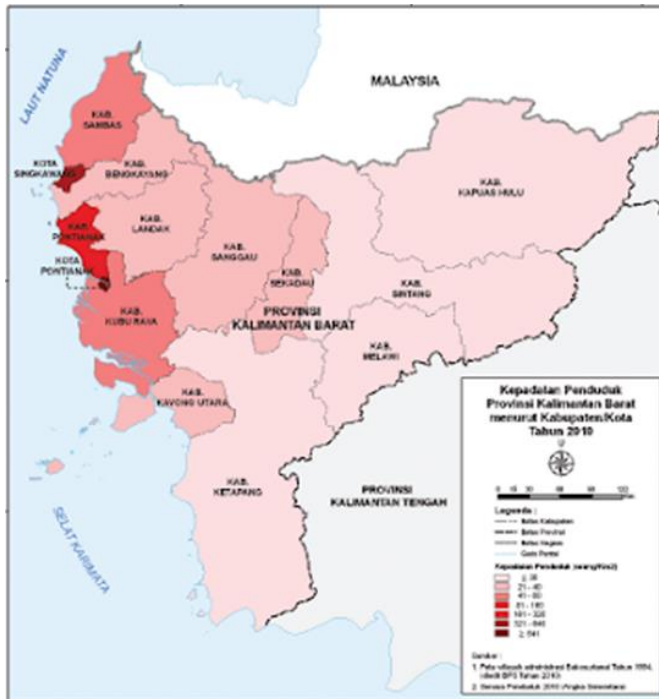


Figure 1. Sampling area.

Respondents were asked several questions related to how far their level of knowledge about sustainable palm cooking oil was. Questions submitted using google form. The consumer knowledge variable consists of product attribute knowledge, product benefit knowledge, and knowledge about palm cooking oil product. The level of consumer knowledge is measured using a Likert scale with a 4-point scale from strongly disagree/very negative (4) until strongly agree/very positive (1). The results of the respondents' answers will then be analyzed to determine the level of knowledge that is high (total score 44 – 46), medium (29 – 43), or low (14 – 28) between the two sub-regions.

3 Results

To determine the quality and stability of the questionnaire, it is necessary to test the validity and reliability. The results of the analysis show that all question items are valid as proven by a significant value below 0.01. Apart from that, the questionnaire is also said to be reliable because the value is greater than 0.7. Therefore, all question items in this research can be used because they fulfill these two requirements. The results of the validity and reliability analysis are summarised in table 1.

Table 1. The result of validity and reliability test.

Question items	Pearson corelation (**)
P1	0.382
P2	0.580
P3	0.444
P4	0.612
P5	0.626
P6	0.740
P7	0.728
P8	0.680
P9	0.668
P10	0.506
P11	0.479
P12	0.683
P13	0.490
P14	0.599
Cronbach's alpha	0.853

** correlation is significant at 0,01

3.1 Sociodemographic Profile

Sociodemographic profile needs to be known to see the distribution of respondents in this study. Respondent characteristics in this study include age, last education, occupation, and gender. The comparison of the characteristics of the respondents is shown in table 2 below.

Table 2. Sociodemographic profile of respondents.

Indicators	City		Regency	
	N	%	N	%
Age				
20-30	48	33.80	132	48.89
31-40	28	19.72	51	18.89
41-50	44	30.99	59	21.85
51-60	21	14.79	27	10.00
60 above	1	0.70	1	0.37
Level of education				
No studies	3	2.11	2	0.74
Elemntary school	16	11.27	29	10.74
Junior high school	13	9.15	35	12.96
Senior high school	69	48.59	124	45.93
Higher education	41	28.88	80	29.63
Occupation				
Civil servant	12	8.45	21	7.78
Employee	34	23.94	70	25.93
Enterpreneur	32	22.54	63	23.33
Housewife	32	22.54	48	17.78
Others	32	22.54	68	25.19
Gender				
Male	43	30.28	110	40.74
Female	99	69.72	160	59.26

The age of the respondents in both groups has the same characteristics, the age range is dominated by 20-30 years. The average age of respondents who are classified as productive makes them more rational in making decisions. On average, most of the respondents had completed secondary education. This shows that the respondent's ability to capture and understand information is better. The most dominant type of work in both groups is employees working in the private sector. The type of work is related to the respondent's income so that it will influence his consumption decisions. Gender is dominated by women. In the purchasing decision process, women usually have an important role, one of which is as a decision maker.

3.2 Knowledge Level of Consumer

Consumer knowledge is information obtained by consumers from various sources or experiences both experienced by themselves and others. Knowledge is an important thing for consumers. Consumers with different levels of knowledge will behave differently, which will influence their decisions in purchasing goods [9]. Consumer knowledge in this study includes knowledge about sustainable oil palm plantation management practices up to the level of consumer confidence regarding sustainable cooking oil products. The level of consumer knowledge in city and regency areas is presented in table 3 below.

Table 3. Knowledge level comparison.

	Score	Mean	Knowlade level
City	34.25	2.28	Medium
Regency	36.03	2.40	Medium

Based on the results of the analysis, the level of knowledge between the two groups of respondents regarding sustainable cooking oil is at a medium level. However, respondents in the district had a better level of knowledge. Both groups of respondents are at the medium level because information about sustainable cooking oil is still limited. Respondents only knew about palm oil, but the concept of sustainable cooking oil was still unfamiliar for them. In more detail, Table 4 shows the average respondents' answers regarding indicators of their level of knowledge.

Almost all respondents have almost the same level of knowledge, only the average knowledge value of respondents in district areas is higher than in cities. General knowledge about oil palm (P1 and P3) is know it (score 3). This is because oil palm is a commodity that is widely planted in West Kalimantan, so respondents know this information well.

Table 4. Distribution of consumer knowledge.

Indicators	Mean	
	City	Regency
(P1) Palm oil knowledge	3.10	3.11
(P2) frequency of reading cooking oil packaging	2.13	2.27
(P3) knowledge of the main raw materials for cooking oil	3.16	3.22
(P4) interest in environmental issues	2.62	2.64
(P5) knowledge of sustainable palm oil logo	2.07	2.29
(P6) knowledge about sustainable palm cooking oil	2.25	2.43
(P7) knowledge of sustainable cooking oil brands	2.27	2.36
(P8) the believes that cooking oil comes from sustainable palm oil plantations	2.73	2.81
(P9) Information about sustainable palm cooking oil in products purchased	2.53	2.76
(P10) sustainable palm oil certification logo on products	2.10	2.29
(P11) perceptions of sustainable cooking oil	2.97	2.96
(P12) level of trust in cooking oil brands	2.61	2.77
(P13) knowledge of cooking oil characteristics needed by consumers	2.30	2.39
(P14) Looking for information of sustainable cooking oil	1.42	1.71

Respondents' awareness and interest in the importance of product attributes and related environmental issues can be seen in indicators P2, P4 and P13. Respondents in both groups rarely read the packaging of the cooking oil they bought. Respondents usually only read the expired date and netto, while other information printed on the packaging is not too important to read. Respondents' interest in environmental issues was also relatively low with a mean of around 2. Respondents' disinterest was because they thought that environmental issues were not directly related to their daily life. Respondents are still unsure about the characteristics of the cooking oil they buy. Sometimes respondents choose cooking oil whose price is more affordable even though the brand is not well known. Sometimes respondents also choose because of quality. They think that the better quality is more efficient to use. Based on this, in general, respondents prefer cooking oil that is affordable.

Respondent's knowledge of sustainable cooking oil is represented in indicators P5, P6, P7, P9, P10, and P14. Respondents in both groups did not know about the sustainable cooking oil logo. This is because the respondents did not know about sustainable cooking oil. Limited information and consumers' reluctance to find out are the reasons why their knowledge is still at the middle level. In addition, respondents also did not know whether there was information about sustainable cooking oil.

Respondent's beliefs about consumed cooking oil products are represented by indicators P8 and P11. Most of the respondents do not fully believe that the products they buy have implemented sustainable practices. This is because their level of knowledge is still at the middle level, so they do not understand the criteria. Even so, they believe that the concept of sustainable cooking oil is good to implement.

3.3 Differences in Level of Knowledge

To see whether there is a difference in knowledge between respondents who live in cities and villages, a difference test was carried out using the Mann Whitney U test. The results of the analysis are presented in table 5 below.

Table 5. the results of the Mann Whitney U test analysis.

	Group	Mean rank
Knowledge level	City	191.28
	Regency	214.51
Mann-whitney U	17008.500	
Wilcoxon w	27161.500	
Z	-2.251	
Asymp.sig (2 tailed)	0.24	

Based on table 5, it can be concluded that there are differences in the level of knowledge of respondents in cities and regencies. The mean rank of respondents who live in cities is 191.28 lower than respondents in districts. If we look at the average of respondent's answers to each indicator, district respondents have higher scores. This could be because respondents who live in the district are more familiar with oil palm because the planting area is in the regency. Apart from that, if we look at the characteristics of the respondents, the district group has a higher level of higher education compared to the city group. The level of education is one of the characteristics that influences an individual's ability to absorb information and innovation, adopt new technology and make decisions in carrying out an activity [10].

4 Conclusion

The knowledge of respondents both living in the city and in the regency is at a medium level. Neither group are still not familiar with the concept of sustainable cooking oil and there is no information regarding this matter. Apart from that, respondents were less interested in environmental issues, so they felt there was no need to find out. However, statistically there are differences in knowledge between the two groups of respondents. Respondents' knowledge in regency areas is higher than in cities. The difference in the education level of respondents between the two is the cause.

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