

CONTENT ANALYSIS OF YOUTUBE VIDEOS ON OIL PALM PRODUCTION AND PROCESSING IN NIGERIA

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ABSTRACT

YouTube has emerged as a vital platform for disseminating agricultural information, particularly on oil palm production and processing, a key economic activity in Nigeria. However, the content quality, presentation patterns, and audience engagement of such videos remain largely unexamined. This study specifically ascertained the metadata, described video characteristics, analyzed patterns of presentation, determined audience engagement levels, and examined the contents of the videos. A total of 152 YouTube videos were purposively sampled. Primary data on video metadata were collected by viewing the videos. Data were analyzed using frequency count, percentage, mean, standard deviation, and independent samples t-test. The findings showed that private individuals (40.1%) and media houses (35.5%) were the dominant video sources. Most videos (79.6%) had descriptions and were uploaded recently (2019–2023). Over half (55.0%) focused on processing, 50.7% were meant for 1–7 minutes, and 57.9% contained mobilizing information. Video qualities were mainly 1080p (46.7%) and 720p (35.5%). Presentation patterns included training/demonstration (16.4%), news (14.9%), and documentary (12.2%). The mean views were 45,964.9, likes 302.7, subscribers 393,000.3, and comments 31.3. Major contents covered commercial production (13.8%), agronomic practices (12.3%), and modern palm oil processing (11.8%). Significant differences existed between recent and older videos in duration ($t = 3.684, p \leq 0.01$), quality ($t = 4.277, p \leq 0.01$), and presentation patterns ($t = 1.994, p \leq 0.05$). YouTube provides varied, targeted agricultural information on oil palm that addresses specific audience needs and can serve as an effective alternative information source.

Keywords: *agricultural extension, content analysis, oil palm, YouTube.*

INTRODUCTION

The agricultural sector remains one of Nigeria's major sectors, providing a livelihood for the majority of Nigerians. The country is renowned for the production of various crops, including cocoa, palm oil, sorghum, beans, and pineapple. Nigeria is Africa's biggest producer of palm oil, with production increasing steadily from precisely 1.28 million tonnes in the year 2020 to 1.57 million tonnes in the year 2025 (Nairametrics, 2026). However, domestic

consumption is estimated at 2.61 million tonnes and continues to surpass local output, necessitating substantial imports (Guardian, 2026; Business Day, 2026).

A very vital part of agricultural development is agricultural extension, which aims at transforming the behaviour of the rural populace through information sharing and education. Its primary goals are to help farmers improve their standard of living, support rural farm families' physical and

psychological well-being, and promote communal welfare. According to Tata and McNamara (2017), agricultural extension is the process of disseminating practical and helpful information about agriculture, applying it to farm and home conditions, and assisting individuals in using this information for personal and community development.

In Nigeria, as in many third-world countries, agricultural extension services continue to be bedeviled by major obstacles that prevent farmers from receiving timely and relevant agricultural information. According to Tata and McNamara (2017) and Daily Trust (2025), these obstacles include insufficient extension staff (currently, the estimated ratio of extension-to-farmer is at 1:6,466, far below the FAO recommendation), inadequate infrastructure, persistent underfunding, and limited adoption of modern technologies and training techniques (Nairametrics, 2026). These limitations hamper the application of beneficial agricultural innovations, which in turn limit farm output and the growth of the industry as a whole.

The oil palm (*Elaeis guineensis*), which is widely grown in many West and Central African countries to produce palm oil from its fruits and seeds, is a major agribusiness in Nigeria. According to Izah and Ohimain (2016), the oil palm sector makes a significant contribution to rural development, employment, and economic growth. Sustainable profitability is the main objective of oil palm farmers and other stakeholders, and it greatly depends on having access to timely, relevant, and accurate information.

Information and Communication Technologies (ICTs) have become increasingly important in agriculture for enhancing productivity and disseminating innovations to farmers. According to Zoundji et al. (2016), traditional barriers to market

access and knowledge distribution have been overcome by digital technologies, which are now effective tools for sharing agricultural information. Digital extension approaches such as mobile apps, SMS, voice services, educational videos, and interactive platforms have become increasingly popular following the COVID-19 pandemic, which brought attention to the shortcomings of traditional face-to-face extension and sparked a shift toward digital and hybrid models (Ayisi-Nyarko *et al.*, 2024; Mulungu *et al.*, 2025).

YouTube is a popular digital platform for video-sharing with over 2.7 billion monthly active users as of February 2026 and provides a dynamic medium to spread agricultural knowledge to a worldwide audience (Global Media Insight, 2026). Its audio-visual approach makes it particularly suitable for non-literate and semi-literate farmers, as it overcomes barriers of illiteracy and language through visual demonstrations. YouTube content can be easily accessed, watched repeatedly, and applied directly, making it an effective tool for extension agents and agricultural trainers to engage communities (Arthurs *et al.*, 2018; Wickman *et al.*, 2021). However, many YouTube videos on agriculture rely mostly on the skill and experience of individual content creators, often with little technical validation or quality control.

This study therefore analysed the contents of YouTube videos on oil palm production and processing in Nigeria posted between 2014 and 2023. There is a need to verify that the information provided to farmers is relevant, accessible, and useful for increasing productivity. The specific objectives of this study were to: (i) ascertain the metadata for oil palm production and processing videos uploaded on YouTube; (ii) describe the characteristics of the sampled videos on YouTube; (iii) analyze the patterns of presentation for the sampled videos; (iv)

determine the level of audience engagement for the sampled videos; and (v) analyze the contents of YouTube videos on oil palm production and processing in the study area.

Statement of Hypothesis

H₀₁: There is no significant difference in video duration, video quality, and presentation patterns between recent (2019–2023) and not recent (2014–2018) YouTube videos on oil palm production and processing in Nigeria.

MATERIALS AND METHODS

Study Area

This study was conducted on YouTube, a foremost global video-sharing platform that serves as an important medium for learning and accessing information on agricultural innovations. YouTube allows users to upload, share, and view videos. Users can upload, share, and watch videos on YouTube. A broad audience, including farmers in developing nations, can utilize the platform because it is available in more than 100 countries and supports more than 80 languages (Global Media Insight, 2026). As a digital space, YouTube provides an avenue for the dissemination of practical knowledge on the production and processing of oil palm to various stakeholders in Nigeria.

Sampling Procedure and Sample Size

A purposive sampling method was employed in selecting the videos for the study. The sample consisted of 152 YouTube videos that contained relevant content on oil palm production and processing in Nigeria, uploaded between 2014 and 2023. Videos were chosen based on their significance in relation to the theme of this study, using appropriate search keywords related to oil palm production and processing activities in the Nigerian context.

Data Analysis

Primary data on video content, duration, source, number of views, quality, presentation format, likes, comments, subscribers, and year of upload were collected through direct observation and viewing of the selected videos.

The variables measured included video metadata (sources of videos, recency, video duration, and description), video characteristics (presence of mobilizing information, type of video, and quality), presentation patterns, audience engagement (views, likes, subscribers, and comments), and content categories of the videos.

Descriptive statistics like frequency counts, percentages, means, and standard deviation were used to analyze the data, while inferential statistics, specifically the independent samples t-test, were used to examine differences between recent (2019–2023) and not recent (2014–2018) videos in terms of selected variables.

RESULTS AND DISCUSSION

Metadata of YouTube Videos on Oil Palm Production and Processing

The results presented in Table 1 reveal that 40.1 percent of the videos were uploaded by private individuals, while 35.5 percent of the videos were uploaded by media houses. This indicates that private personalities and media houses were the main sources of videos on the production and processing of oil palm on YouTube. This could be because many private individuals with vested interest in oil palm production and processing activities are willing to share their experiences through YouTube videos to intimate the audience with their activities. The result affirms the findings of Banmeke *et al.* (2021) that video sources on agricultural production were uploaded mostly by private individuals and media houses. Also, 79.6 percent of the

videos on oil palm production and processing in Nigeria were uploaded recently (2019 – 2023). This shows that a greater proportion of the YouTube videos on the production and processing of oil palm were uploaded in the last five years due to the growing concern for the oil palm industry. This could be because of the COVID-19 pandemic, which changed a lot about the way extension agents and facilitators reach out to their audiences. As a result of the lockdown restrictions, many farmers had to utilise digital content like internet videos to learn more about new technologies and improve their work. This finding aligns with the submission of Muvhuringi *et al.* (2021) that many farmers are utilising internet videos and other digital content to learn more about improved agricultural practices and get access to useful information because the COVID-19 pandemic has limited the physical activities of extension agents and made it more difficult for them to get information. In addition, 79.6

percent of the videos had video descriptions. This implies that a greater proportion of the videos were uploaded with video descriptions, which is a descriptive text to tell the viewers what the video is all about, to give a summary of the video, and to understand the content of the video before watching it. This is because video description gives the viewers the choice of whether to watch the video or not. The result is in tandem with the findings of Fadipe and Yusuf (2022) that video description of YouTube videos related to production facilitate online viewers' comprehension of the content and their subsequent actions regarding the videos. More than half (50.7%) of the videos had a video duration between 1 and 7 minutes, with a mean of 9.6 ± 7.4 minutes. It could be inferred that most of the videos have a video duration of within 10 minutes. This afforded the viewers the chance to pay attention and focus easily while watching the videos since the runtime is not too long.

Table 1: Metadata of YouTube videos on Oil Palm Production and Processing

Variables	Frequency	Percentage	Mean	Standard Deviation
Video source				
Private individual	61	40.1		
Media house	54	35.5		
Farms and processing outlets	24	15.8		
Agricultural project	8	5.3		
Government agency	3	2.0		
Research institute	2	1.3		
Academic institution	0	0.0		
Recency of video upload				
Recent (2019 – 2023)	121	79.6		
Not Recent (2014 – 2018)	31	20.4		
Video description				
Available	121	79.6		
Not available	31	20.4		
Video duration (minutes)				
1 – 7	77	50.7	9.57	7.42
8 – 14	49	32.2		
15 – 21	8	5.3		
22 – 28	15	9.9		
29 – 35	3	2.0		

Source: YouTube survey, 2023

Characteristics of YouTube Videos on Oil Palm Production and Processing

The results presented in Table 2 show that the majority of the videos uploaded were on oil palm processing, while many (45.0%) of the videos were on oil palm production. This shows that more of the uploaded videos were on oil palm processing than on oil palm production. This is because many content creators are more involved in oil palm processing than in production. The result supports the finding of Banmeke *et al.* (2021) that there were more videos on processing activities than production activities. The main video qualities of the selected YouTube videos were 1080p (46.7%) and 720p (35.5%). It can be inferred that a larger percentage of the videos uploaded were of good quality. This afforded the viewers the benefit of a quality viewing experience and enhanced audience clarity. About 60 percent

of the videos had mobilizing information. This indicates that more than half of the videos contain information that prompts YouTube viewers to take actions such as seeking additional information or asking more questions. This encouraged the viewers to find out more after watching the videos. Furthermore, website addresses (29.8%) and social media addresses (26.8%) were the leading types of mobilizing information of the sampled videos. This could be attributed to the popularity of these sources of information, the ease of adding to video clips, and making it possible to communicate with people far away in the shortest period of time. The result corroborates the finding of Fadipe and Yusuf (2022) that websites and social media addresses are the commonly used types of mobilizing information in YouTube videos.

Table 2: Characteristics of YouTube videos on Oil Palm Production and Processing

Variables	Frequency	Percentage
*Type of video		
Processing	121	55.0
Production	99	45.0
Video quality		
1080p	71	46.7
720p	54	35.5
480p	13	8.6
360p	12	7.9
240p	2	1.3
144p	0	0.0
Mobilizing information		
Present	88	57.9
Not resent	64	42.1
*Type of mobilizing information		
Website address	50	29.8
Social media address	45	26.8
Blog	27	16.1
Email address	22	13.1
Phone number	20	11.9
Physical address	4	2.4

**Multiple Responses*

Source: YouTube survey, 2023

Presentation Patterns of YouTube Videos on Oil Palm Production and Processing

The results presented in Table 3 show that training and demonstration (16.4%), news (14.9%), documentary (12.2%), and interview (10.0%) were the main patterns of presentation of the sampled YouTube videos. This shows that many of the YouTube videos posted were presented in the form of training and demonstration, news, documentary, and interview. The viewers may acquire new and adequate oil palm production and processing skills and knowledge through training and demonstration. The demonstration steps give viewers the opportunity to see and hear the details related to the skill being taught. This also affords the viewers the benefit of being

knowledgeable about activities relating to oil palm production and processing in Nigeria through news presentations. The viewers may be enlightened with information through documentaries, and viewers tend to gain rich and detailed information from other oil palm farmers and processors to increase their knowledge through interviews. Video presentations afford more flexibility to viewers, especially in learning programmes. This agrees with the submission of Bede *et al.* (2021) that video-based agricultural content enhances farmers' understanding because it combines visual images with real-life experiences, thereby improving knowledge assimilation and retention in Sub-Saharan Africa.

Table 3: Presentation patterns of YouTube videos on Oil Palm Production and Processing

Variables	Percentage
Training/Demonstration	16.4
News	14.9
Documentary	12.2
Interview	10.0
Education	9.3
Talk	9.3
Tour	9.0
Testimonial	7.3
Elevator pitch	6.4
Exhibition	5.1

**Multiple Responses*

Source: YouTube survey, 2023

Audience Engagement in YouTube Videos on Oil Palm Production and Processing

Results in Table 4 show that the sampled YouTube videos of oil palm production and processing recorded the mean values of 45,964.9 views, 302.7 likes, no dislikes, 393,000.3 subscribers, and 31.3 comments. It could be deduced that there is a substantial amount of viewership of the sampled YouTube videos on oil palm production and processing posted in Nigeria. This may be due to the fact that video is a very effective way to engage the audience as videos are

more visually appealing than text, more engaging, and improve knowledge retention, as one can watch such videos over and over. In addition, it was found that the viewers further liked, subscribed to, and gave comments on the sampled YouTube videos. This may be because the comment section makes it possible for viewers to voice their thoughts on your videos directly to you. This creates a feedback loop that helps the source create more meaningful content, and subscribers can be notified of the newest videos uploaded by the channels they

subscribe to. There was no data recorded on the number of dislikes in this study because it was found that YouTube has removed the

public dislike count, while content creators can still see the number of dislikes within YouTube.

Table 4: Audience Engagement in YouTube videos on Oil Palm Production and Processing

Variables	Percentage	Mean	Standard Deviation
Number of views			
Below mean	91.4	45,964.9	288495.9
Above mean	8.6	-	-
Minimum	-	-	12
Maximum	-	-	3197362
Number of likes			
Below mean	85.5	302.7	1466.9
Above mean	14.5	-	-
Minimum	-	-	0
Maximum	-	-	17000
Number of dislikes			
Below mean	0	0	0
Above mean	0	-	-
Minimum	-	-	0
Maximum	-	-	0
Number of subscribers			
Below mean	84.2	393000.3	1157865.3
Above mean	15.8	-	-
Minimum	-	-	0
Maximum	-	-	10500000
Number of comments			
Below mean	73.0	31.3	72.7
Above mean	27.0	-	-
Minimum	-	-	0
Maximum	-	-	660

Source: YouTube survey, 2023

Content of YouTube Videos on Oil Palm Production and Processing

Table 5 reveals that commercial oil palm production (13.8%), agronomic practices in oil palm production (12.3%), modern processing of palm oil (11.8%), and innovations in oil palm production and processing (10.7%) were the main contents of videos uploaded on YouTube in the years under consideration. This implies that there are different contents to be explored by the

audience. This may be due to the fact that the audience was given the benefit of accessing a wide range of topics on oil palm production and processing on YouTube. The viewers are trained on how to start oil palm production and processing on a large scale for commercial purposes. The results also indicate that YouTube is a content-generating and sharing site that serves as a source of information for various topics of interest to potential users of information.

Table 5: Content of YouTube videos on Oil Palm Production and Processing

Variables	Frequency	Percentage
Commercial oil palm production	13.8	1 st
Agronomic practices in oil palm production	12.3	2 nd
Modern processing of palm oil	11.8	3 rd
Innovations in oil palm production and processing	10.7	4 th
Palm kernel waste extraction	9.3	5 th
Empowerment of oil palm farmers	8.2	6 th
Prospects and Challenges in Oil Palm Production	8.0	7 th
Processing of palm kernel oil	7.5	8 th
Oil palm development and investment fund	6.5	9 th
Value addition	4.8	10 th
Storage of palm oil	3.8	11 th
Traditional processing of palm oil	3.2	12 th

*Multiple Responses

Source: YouTube survey, 2023

Hypothesis Testing

Results in Table 6 show that there was a significant difference between the duration of recent and not recent YouTube videos on oil palm production and processing ($t = 3.684$) at a significant level of $p \leq 0.01$. This implies that recent videos had a duration that is longer than that of the non-recent videos. It could be inferred that the recent videos were posted with more information and content; hence, this accounts for the difference. Also, there was a significant difference between the video quality of recent and non-recent YouTube videos on oil palm production and processing in Nigeria ($t = 4.277$) at a

significant level of $p \leq 0.01$. It could be inferred that the recent videos were uploaded with good video quality to enhance viewership. Furthermore, it was revealed that there was a significant difference between presentation patterns of recent and non-recent videos on oil palm production and processing ($t = 1.994$) at a significant level of $p \leq 0.05$. This is because different patterns of presentation were used to present the videos for viewership by the audience in recent and non-recent videos, as presentation patterns can influence viewing by the target audience because they appeal in different manners to the audience.

Table 6: Results showing Independent Samples Test Analysis of the Difference between the selected variables of Recent and Not recent YouTube videos on Oil Palm Production and Processing

Variables	Mean	Recent videos			Mean	Non recent videos		
		Standard Error Mean	t	p		Standard Error Mean	t	p
Video duration	10.6488	0.67939	3.684	0.000	5.3603	0.99815	4.380	0.000
Video quality	5.3471	0.08021	4.277	0.000	4.5484	0.19586	3.774	0.001
Type of video (production)	0.6694	0.04294	0.922	0.358	0.5806	0.09009	0.890	0.378

Variables	Mean	Recent videos			Mean	Non recent videos		
		Standard Error Mean	t	p		Standard Error Mean	t	p
Type of video (processing)	0.7934	0.03696	-0.160	0.873	0.8065	0.07213	-0.161	0.873
Presentation patterns	2.7851	0.11023	1.994	0.048	2.3226	0.15649	2.416	0.019

****Significant at $p \leq 0.01$, *Significant at $p \leq 0.05$. Source: YouTube survey, 2023**

CONCLUSION AND RECOMMENDATION

The study concluded that private individuals and media houses were the primary sources of YouTube videos on oil palm production and processing in Nigeria, while research institutes, government agencies, and academic institutions contributed little. The majority of the videos were uploaded recently, had descriptions, and were more on processing than production. Video quality was predominantly high, and more than half of the videos contained mobilizing information, mainly website and social media addresses. The main presentation patterns were news, training/demonstration, documentary, and interview. Audience engagement was substantial, with high mean views, likes, subscribers, and comments. Some of the key content areas were commercial production, agronomic practices, modern processing, and innovations, while some of the underrepresented topics were storage of palm oil and value addition. There is a need for research institutes, government agencies, and other academic sources to use YouTube more in propagating improved agricultural practices and relevant information to farmers and other agricultural stakeholders. More importantly, more content on the storage of palm oil and value addition should be made available on YouTube for the audience to explore and add to their knowledge.

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