Journal of Nature Studies 20(2): 1-21
Online ISSN: 2244-5226

ONLINE VIDEOS ON PHILIPPINE SEAS: CHARACTERISTICS AND THEMES

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ABSTRACT – The Philippine seas are critical to the archipelago's sustainable development, but it is also mired in economic, environmental, political, and social issues. Digital media, particularly online videos, could aid in addressing such issues. However, there is a dearth of studies about the Philippine seas on digital media. Given such, this study investigated the 100 most viewed YouTube videos on Philippine seas. This was done through classification based on producer or uploader, upload year, and format, descriptive analysis of numerical data such as length and engagement metrics (views, likes, dislikes, and comments), and thematic analysis. Key results showed that local multimedia outlets dominated the production or upload of videos. Both professionally generated content produced or uploaded by governments and multimedia outlets and user-generated content produced or uploaded by individuals gained traction. Television news, web news, and news-like materials that provided immediate information were prevalent, while television features or documentaries received the highest engagement. Eleven themes surfaced in the most viewed YouTube videos on Philippine seas: (1) West Philippine Sea dispute; (2) biodiversity; (3) advocacy and call for action; (4) narratives of fisherfolk and residents of coastal areas; (5) leisure and tourism; (6) geography; (7) environmental and marine life destruction; (8) history; (9) indigenous people and culture; (10) research initiatives; (11) trade and resources. The West Philippine Sea dispute recurred in 81 out of the 100 videos. Implications and directions for future research were discussed.

Keywords: marine biodiversity, professionally generated content, West Philippine Sea, user-generated content, YouTube

INTRODUCTION

The Philippines is inextricably linked to its seas being an archipelago with a total coastline of 37,008 kilometers. Its rich marine and coastal resources are considered the "center of the center of marine shore fish biodiversity" in the world for having the highest concentration of species in the Coral Triangle which includes Fiji, Northern Australia, Malaysia, Indonesia, Papua New Guinea, and the Solomon Islands (Carpenter & Springer, 2005). This gives the Philippines a competitive advantage in developing its blue economy and ensuring food security across the archipelago (Azanza et al., 2017). Moreover, recent data showed that its ocean economy (a combination of marine ecosystems and ocean-based industries) amounted to PhP 622.6 billion in 2018 (Bersales et al., 2019). Thus, its seas are essential in keeping the Philippine economy afloat.

To cite this paper: Villanueva, L.A.S. 2021. Online Videos on Philippine Seas: Characteristics and Themes. *Journal of Nature Studies*. 20(2), 1-21.

However, it has been noted that the country's marine biodiversity and other coastal resources are under increasing threats due to human activities. More than 50 percent of municipalities and almost all key cities are in coastal areas and are home to more than 60 percent of the population. Hence, resource use conflicts, population growth and poverty, illegal activities, and pollution are common scenarios (Department of Environment and Natural Resources et al., 2001). Besides these issues, disputes with other nations pose serious threats to sovereign rights over natural resources and jurisdiction over exclusive economic zone (EEZ). Recently, these threats have been highlighted in the country's dispute with China.

Amidst the tensions over disputed areas such as the Spratly Islands and Scarborough Shoal, the Philippine Government decided to name the western side of the Philippine archipelago as the West Philippine Sea (WPS) through Administrative Order No. 29 (Government of the Philippines, 2012). In 2013, the Philippine Government also filed a case against China at the International Tribunal for the Law of the Sea. The case primarily sought to address the growing presence of Chinese vessels and illegal activities in the WPS. Guided by the United Nations Convention on the Law of the Sea (UNCLOS), the arbitral tribunal unanimously ruled in favor of the Philippines. The 2016 ruling recognized the Philippines' sovereign rights over the WPS. It considered China's nine-dash line and historical claims as illegal (United Nations Permanent Court of Arbitration, 2016). Despite these, China continues its activities in the WPS. Furthermore, reports indicated that Chinese island-building activities destroyed 104 square kilometers of reefs (ABS-CBN News, 2019). In April 2021, the Philippine Department of Foreign Affairs filed a diplomatic protest against China (Rocamora, 2021).

Given the role of the Philippine seas in the country's economic, social, and environmental activities, concerned advocates, academics, and scientific institutions have been calling for a comprehensive approach in addressing coastal and marine environment issues (Mendez, 2021). Additionally, non-government organizations have been active in conducting activities to mobilize communities to protect marine life and coastal resources (e.g., Large Marine Vertebrates Research Institute Philippines, n.d.; People and the Sea, n.d.; Marine Wildlife Watch Philippines, 2013; Marine Conservation Philippines, 2018; Coral Cay Conservation, 2020; Save Philippine Seas, 2021). In such mobilization activities, media shape discourses and actions on important issues (Boykoff & Roberts, 2007; Kahne & Middaugh, 2012; Batill & Feldpausch-Parker, 2013). Digital media, particularly online videos, exploit its affordances to create dialogues in various formats (Erviti & Stengler, 2016). It can help the public access mainstream media and continue their call for action (Askanius & Uldam, 2011). Moreover, online videos can sustain discussions. This was evident in the case of climate change scientists in Germany. They started a debate on YouTube, which spilled over to other media and face-to-face discussions, prompting a national debate on climate change policy (Allgaier, 2020).

While online videos have the potential to start concerted actions on scientific and environmental issues, how people represent and discuss such issues using online videos remains understudied (Olausson, 2020). One of the most comprehensive studies was the content analysis of 300 climate change videos by De Lara et al. (2017). Researchers found a wide variety of video formats for either television or web. More than half of the videos followed the web format with varying lengths. The use of web format could be attributed to multimedia organizations' move to make stories available online, if they could not fit into the television broadcast (Svoboda, 2020). The formats of environmental videos are an interest among science communication researchers as it could determine the effectiveness of its message. Documentaries created awareness and desire to act on environmental issues and influence political discussions (Tabasco et al., 2018; Males & Aelst, 2020). Meanwhile, science videos on YouTube that were formatted as vlogs, animation, or panel discussions determined video popularity. In general, video formats, along with video likes, age, and channel productivity, were more influential than video editing features, video length, and

comments in generating views (Velho et al., 2020).

In addition to video formats, De Lara et al. (2017) categorized the producers of videos. Production was dominated by mainstream multimedia outlets such as Guardian, Huffington Post, and Associated Press. Similar findings were reported by Duran-Becerra et al. (2020) in their content analysis of the 100 most viewed YouTube videos on climate change. In contrast, Leon et al. (2018) found that scientific institutions were also active in producing climate change videos along with television and other media outfits, non-government institutions, and online platform users. News sources dominated the video production and upload. Both studies echoed the prevalence of professionally generated content over user-generated content, although the latter was more popular on YouTube (Kim, 2012). In fact, in discussing science, non-scientific YouTubers were successful because they interacted with their audiences frequently, maximized resources for promotion, and attuned their videos to the web audio-visual format (Boy et al., 2020).

As for objectives, De Lara et al. (2017) reported that climate change videos were informational regardless of formats. Some aimed to sensitize issues, while a few were made for entertainment, commercial purposes, and education. Leon et al. (2018) arrived at the same findings. Majority of online videos on climate change were informational, while other videos aimed at engagement, entertainment, infotainment, and education (Leon et al., 2018). Such abundance of informational videos has paved the way for a different kind of visual journalism where YouTube is a popular news source despite accuracy concerns across social media (Pew Research Center 2018). While news items on YouTube presented short-lived information, these could still get higher engagement than entertainment videos, and those that displayed natural disasters or political upheavals were viewed more (Pew Research Center, 2012).

Aside from formats, producers or uploaders, themes of online videos are equally important as these could show what scientific and environmental issues are communicated and how these are discussed. For example, in analyzing Philippine biodiversity on YouTube, Salazar and Barroga-Jamias (2014) surfaced the following themes: environmental beauty/aesthetics, species information, species richness, backlash/deterioration, call for action, environmental/ecological research, tourism, conservation, advertisement, species extinction, environmental protest, and climate change. Apart from the usual environmental and economic aspects of environment-related videos, Jaspal et al.'s (2014) thematic analysis of YouTube videos on fracking showed that themes tackled the human face of the issues, particularly touching on its social and psychological effects on individuals and communities. Themes could also tell the gaps in the discourse on scientific and environmental issues. In Lithuania, climate change broadcasts veered toward a globalized perspective. As a result, climate change issues at the international level had frequent coverage than its local counterparts (Rabitz et al., 2020). Additionally, themes helped surface the frames dominant in online videos. Content analysis of 300 climate change online videos revealed that these were mostly about the ecological-meteorological aspect of climate change followed by the scientific and the political-economic aspects. Despite differences in themes, all the videos employed the loss frame (Leon et al., 2018). Themes were also a factor in video popularity, with videos containing interdisciplinary themes receiving a higher number of views (Velho et al., 2020). Aside from the inclusion and discussion of various environmental themes in online videos, media organizations agreed that linking environmental issues such as climate change to problems that people might encounter could be powerful in increasing its relevance to people's lives (Svoboda, 2020).

Knowledge about online videos is imperative as these become preferred sources of information. While videos on television rely on cues such as opening story, length of time allotted, and repetitions to indicate salience of issues (McComb, 2011), online videos have cues in the form of engagement metrics in the online platforms where these are uploaded. Engagement metrics in the form of views, likes, dislikes,

and comments could shape how people perceive issues (Hong & Cameron, 2018). For example, in the study conducted by Spartz et al. (2015), it was found that a high number of views on YouTube influenced the salience of climate change or its perceived importance to most Americans. The reliance on engagement metrics could be attributed to online platforms' audience fragmentation and selectivity (Feezell, 2017).

Both traditional media and online platforms can influence the salience of issues and its attributes. Traditional media are more dominant in affecting what issues the public thinks about or what McCombs and Shaw coined as first-level agenda-setting. The dominance of traditional media is still observed online as news stories that traditional media practitioners posted on the web can drive the discussion by users of online platforms. Meanwhile, online platforms are more effective in second-level agenda-setting or in influencing how the public thinks about issues. However, it is notable that traditional media and online platforms are complementary and have a bi-directional relationship in agenda-setting (Ceron et al., 2016). In the study conducted by Sayre et al. (2010), YouTube was said to have followed traditional media but also led it in salience of issues. With the capacity of online platforms for agenda-setting, it is critical to investigate what the videos uploaded on those platforms are emphasizing on (Ceron et al., 2016).

While there is an abundance of online videos on Philippine seas, little is known about its characteristics and contents. This study identified the most viewed YouTube videos on Philippine seas. Additionally, this classified video characteristics such as producer or uploader, upload year, and format, determined length and engagement, and surfaced themes. Furthermore, cross tabulations were conducted to classify recurring themes per producer or uploader and per format. The capacity to create awareness and influence the salience of issues is common to traditional media and online platforms (Ceron et al., 2016) and formats (i.e., Tabasco et al., 2018; Males & Aelst, 2020). Hence. the cross tabulations showed what these producers or uploaders and formats highlighted about Philippine seas.

YouTube was chosen for this study since YouTube's annual Brandcast reported that more than 40 million Filipinos watch videos using the platform every month (Adobo Magazine, 2020). Due to the multimodality of YouTube videos, it could be a powerful tool for scientists and environmental protection advocates to raise awareness about the issues surrounding Philippine seas. Broadly, this study adds to the body of knowledge on the use of online video platforms in environmental communication and its potential to make non-scientific users and audiences into active participants of the communication process (Boy et al., 2020). Moreover, this study provided insights on the contents that users of online video platforms have shared which in turn have become parts of the current environmental discourse that can shape how people make sense of environmental issues (Luedecke & Boykoff, 2017).

METHODOLOGY

The YouTube search function was used to locate the videos for this study. The words "Philippine Seas" served as keywords in the search to ensure the inclusion of videos on seas other than the WPS. These videos were then segregated based on the number of views. The rationale was that the number of views on YouTube could influence perceptions of importance (Spartz et al., 2015). One hundred videos were analyzed. As the number of views could fluctuate, the researcher gathered the producer or uploader, upload year, video length, and engagement metrics such as number of views, likes, dislikes, and number of comments of all videos in one day. The producer, upload year, video length, engagement metrics, and video formats are referred in this study as characteristics.

Videos were watched one-by-one. The classifications of producers and video formats were guided by the literature, specifically the study conducted by De Lara et al. (2017). In their content analysis

of climate change videos, the producer or uploader could be any of the following: (1) scientific institutions; (2) companies; (3) television channels; (4) scientific publications; (5) non-governmental organizations; (6) individuals; and (5) multimedia outlets. Television format could be classified as follows: (1) program – factual or fictional content that is different from interview, news, documentary, or debate (Nichols, 1991 as cited in De Lara et al., 2017); (2) news – a fragment or a complete news broadcast; (3) feature or documentary – factual program that presents realities; (4) interview – a conversation between a subject and a journalist; (5) conference – a lecture where the subject shares his or her expertise; (6) debate – a formal discussion of opposing arguments with a moderator (Livingston & Lunt, 2002 as cited in De Lara et al., 2017); (7) comedy – an entertaining scene or sketch; (8) video analysis or statement – a part of a program or news that shows an individual's analysis. Meanwhile, web format included the following: (1) interview – a conversation between a subject and a journalist; (2) video blog – a video that is a part of a series; (3) documentary – "interactive applications, on or off-line, made with the intention of representing reality with its own mechanisms that we can call modes of browsing or interactivity, relative to the level of participation allowed" (Gifreau, 2011, as cited in De Lara et al., 2017); (4) analysis or statement – a part of a program or news that shows an individual's analysis; (6) music video – a video that incorporates a song; (7) news – a fragment or a complete news broadcast; (8) promo – content that aims to promote a product or service; (9) comedy – an entertaining scene or sketch; (9) debate – a formal discussion of opposing arguments with a moderator; and (10) conference – a lecture where a subject shares his or her expertise. De Lara et al. (2017) pointed out that there could be limitations on the classifications, which should be expanded in future studies. Hence, while the researcher found the classifications to be comprehensive and useful, deviations were still noted. For engagement metrics, descriptive statistics were computed.

An iterative process that followed Braun and Clarke's (2006) guidelines was done to surface the themes of the YouTube videos on Philippine seas. This required familiarizing with the data, generating initial codes, sorting codes, reviewing, defining, naming, and reporting the themes. Ryan and Bernard's (2003) observational techniques of noting repetitions and similarities were also employed in surfacing the themes based on subjects of discussions across videos. Each video was watched twice to draw connections among codes and exhaust all possible themes that could be surfaced. The data gathering and analysis were conducted from March to May 2021. The characteristics and themes of YouTube videos on Philippine seas were indicative of salient messages shared on the platform. However, this study did not investigate the audience's characteristics and perception, the alignment of online videos with videos broadcast via traditional media, and the effects of online videos on public agenda and policy agenda.

RESULTS

Video Characteristics

Producer or Uploader

Multimedia outlets such as GMA News and Public Affairs, ABS-CBN News, ANC 24/7, Inquirer.net, Philstar News, and UNTV produced 58 of the most viewed videos on Philippine seas. Almost a third (29) were uploaded by individuals. Some of these individuals were vloggers and enthusiasts interested in history, military, geography, and current events. International media outlets such as the South China Morning Post, Arirang, Al Jazeera, and the Germany-based DW News produced six of the most viewed videos on Philippine seas. Four videos were produced by scientific and educational institutions such as the California Academy of Sciences, Southeast Asian Regional Center for Graduate Study, TEDx, and the United States-Asia Law Institute of New York University. Government-produced videos were

noted as well. There were three videos from RTV Malacañang, the Philippine Navy, and the United States Navy.

Table 1. Producer or uploader of the most viewed YouTube videos on Philippine seas.

Producer/Uploader	Frequency n = 100
Multimedia Outlet – Local	58
Individuals	29
Multimedia Outlet – International	6
Scientific/Educational Institutions	4
Philippine Government	2
Foreign Government	1
Total	100

Upload Year

Thirty-six of the most viewed videos on Philippine seas were uploaded in 2016. These videos primarily centered on the success of the Philippine Government's arbitral case against China (United Nations Permanent Court of Arbitration, 2016) and the pronouncements of the newly installed Duterte administration. Multimedia outlets covered the press conferences conducted by the Chinese Government denouncing that arbitral case ruling. Videos uploaded in 2016 included coverage of China's activities in the WPS, the Philippine Government's bilateral initiatives such as sending former President Fidel V. Ramos to China as a special envoy, and Balikatan exercises with the United States military.

Before 2016, majority of the most viewed videos did not tackle the WPS. Those uploaded in 2011 and 2012 centered on education, tourism, history, and advocacy. The first most viewed video on the WPS was in 2013 titled "General Jardeleza on the South China Seas Dispute - April 24, 2013." The subject was at the United States-Asia Law Institute of New York University, where he discussed the pending arbitral case. There was a spike in most viewed videos in 2017 as local multimedia outlets produced several documentaries. These documentaries were about the Philippines Seas in general, with a few focusing primarily on the WPS: "The Atom Araullo Specials: Philippine Seas", "Spratlys: Mga Isla ng Kalayaan (The Islands of Freedom)", and "Fact or Fake with Joseph Morong: Facts You Need to Know on the West Philippine Sea." Meanwhile, the increase of most viewed videos in 2020 could be attributed to the news about bilateral efforts between allies and neighboring countries.

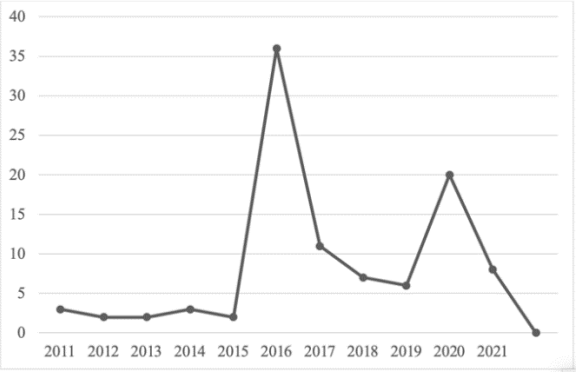

Figure 1. Upload year of most viewed YouTube videos on Philippine seas.

Format

Seventy-two videos followed the web format, particularly those that presented fragments of news broadcasts (42). Some multimedia outlets produced news using videos of press conferences and footage with voice-overs or accompanying texts. Thirteen of the videos exhibited news-like characteristics. However, these videos combined facts with opinions. Voice-overs or accompanying texts were culled from articles published by established multimedia outlets and incorporated with users' opinions. Some of the voice-overs were also done by artificial voices. Five videos were made for educational purposes and tackled geography, biodiversity, advocacy, and history. Three web documentaries were noted as local multimedia outlets came up with documentaries exclusively aired in their online channels (i.e., "Fact or Fake with Joseph Morong: Facts You Need to Know on the West Philippine Sea", "Stand for Truth: Isla sa West Philippine Sea, Bantay-sarado ng Chinese Vessels!", and "Bakit Dapat Tayong Makialam sa West Philippine Sea? NXT").

Twenty-two videos were made for television. Fragments of press conferences and news broadcasts were the most common format, followed by documentaries and educational shows. Television commercials were among the most viewed videos. All of these commercials promoted Atom Araullo's documentary on the Philippine seas. In addition, full-length documentary films and educational films made for cinema were also produced or uploaded. At the same time, only RTV Malacañang had a video made for *teleradyo* broadcast or a video of radio anchors in the radio booth as they receive news from reporters.

Table 2. Format of the most viewed YouTube videos on Philippine seas.

Format		**Frequency n = 100**
Television		
	TV News	9
	TV Feature or Documentary	6
	TV Commercial	5
	TV Interview	1
	TV Religious Show	1
Sub-total		**22**
Web		
	Web News	42
	Web News-like Videos	13
	Web Educational Show	5
	Web Feature or Documentary	4
	Web Footage	3
	Web Vlog	2
	Web Forum	2
	Web Promo	1
Sub-total		72
	Documentary Film	4
	Radio News (Teleradyo)	1
	Educational Film	1
Total		100

Length and Engagement

Length and engagement were numerical data subjected to descriptive analysis. Table 3 shows that the mean length of videos was 9.39 (SD = 18.12) minutes. The range indicated that the shortest video ran for 0.15 seconds while the longest was 88.22 minutes. The videos had a total of 22,789,529 views (Mean

= 227,895.29, SD = 780,381.51), with "The Atom Araullo Specials: Philippine Seas" television feature or documentary receiving more than six million views. The videos received an average of 1,430.46 likes (SD = 4,918.61), 125.80 dislikes (SD = 379.074), and 252.61 comments (SD = 464.86). However, the ranges indicated that some videos did not receive likes, dislikes, or comments from online viewers.

Table 3. Length and engagement of most viewed YouTube videos on Philippine seas.

Characteristics	Sum	Mean	Standard Deviation	Range
Length of Videos (Minutes)	929.50	9.39	18.12	0.15 – 88.22
Engagement				
No. of Views	22,789,529	227,895.29	780,381.51	7,774 – 6,698,912
Likes	143,046	1,430.46	4,918.61	0 – 44,048
Dislikes	12,580	125.80	379.074	0 – 3,241
Comments	25,261	252.61	464.86	0 – 3,073

Note: Engagement as of April 5, 2021.

Engagement metrics were cross tabulated with producers or uploaders since these could shape the perceptions and salience of issues (Hong & Cameron, 2018; Ceron et al., 2016). The cross tabulation results revealed that on average, videos produced or uploaded by the Philippine Government received the highest views (Mean = 523,742, SD = 726,197.96) and likes (Mean = 3,812, SD = 5,279.97). For both engagement metrics, videos from individuals and local multimedia outlets followed. Similarly, videos produced or uploaded by the Philippine Government network RTV Malacañang and the Philippine Navy's communication arm had the highest mean in terms of dislikes (Mean = 313, SD = 440.53). Next were the videos from international multimedia outlets (Mean = 245, SD = 398.56) and individuals (Mean = 135, SD = 211.10). Meanwhile, those that generated the highest number of comments per video were from international multimedia outlets (Mean = 655, SD = 511.08), the Philippine Government (Mean = 537, SD = 745.99), and individuals (Mean = 327, SD = 489.44) (Table 4).

Table 4. Engagement per producer or uploader of most viewed YouTube videos on Philippine seas.

Producer or Uploader	No. of Views	Likes	Dislikes	Comments
Multimedia Outlet – Local (n = 58)	Mean = 198,415 SD = 917,062.41 Range = 7,774 – 6,698,912 Sum = 11,508,041	Mean = 1,086 SD = 5,819.68 Range = 0 – 44,048 Sum = 62,964	Mean = 113 SD = 454.08 Range = 0 – 3,241 Sum = 6,550	Mean = 183 SD = 439.07 Range = 0 – 3,073 Sum = 10,633
Multimedia Outlet – International (n = 6)	Mean = 131,007 SD = 92,142.94 Range = 11,573 – 240,188 Sum = 786,039	Mean = 805 SD = 467.99 Range = 56 – 1,180 Sum = 4,830	Mean = 245 SD = 398.56 Range = 11 – 1,049 Sum = 1,467	Mean = 655 SD = 511.08 Range = 15 – 1,402 Sum = 3,931
Scientific/Educational Institutions (n = 4)	Mean = 64,095 SD = 105,875.29 Range = 9,253 – 222,872 Sum = 256,380	Mean = 269.75 SD = 261.37 Range = 35 – 643 Sum = 1,079	Mean = 7.5 SD = 9.04 Range = 2 – 21 Sum = 30	Mean = 32 SD = 40.05 Range = 0 – 90 Sum = 126

Table 4 (Continued). Engagement per producer or uploader of most viewed YouTube videos on Philippine seas.

Producer or Uploader	No. of Views	Likes	Dislikes	Comments
Philippine Government (n = 2)	Mean = 523,742 SD = 726,197.96 Range = 10,242 – 1,037,241 Sum = 1,047,483	Mean = 3,812 SD = 5,279.97 Range = 78 – 7,545 Sum = 7,623	Mean = 313 SD = 440.53 Range = 1 – 624 Sum = 625	Mean = 537 SD = 745.99 Range = 9 – 1,064 Sum = 1,073
Foreign Government (n = 1)	9,043	28	3	7
Individuals (n = 29)	Mean = 316,639 SD = 629,186.02 Range = 8,090 – 2,707,645 Sum = 9,182,543	Mean = 2,294 SD = 3,712.11 Range = 36 – 16,811 Sum = 66,522	Mean = 135 SD = 211.10 Range = 0 – 895 Sum = 3,905	Mean = 327 SD = 489.44 Range = 5 – 2,280 Sum = 9,491

Note: No. of Views as of April 5, 2021.

Apart from producers or uploaders, engagement metrics were also cross tabulated with formats as these could influence the effectiveness of messages (Tabasco et al., 2018; Males & Aelst, 2020). Television features or documentaries received the highest engagement across video formats. These were viewed 10,269,937 times (Mean = 1,711,656, SD = 2,580,625.49). These television features or documentaries also got the highest average of likes (Mean = 9,814, SD = 17,126.47), dislikes (Mean = 866, SD = 1,270.55), and comments (Mean = 963, SD = 1,150.49). Other notable results for the television format included one religious show with 310,126 views, nine television news with 217,483 views (Mean = 36,247, SD = 35,459.67), and five television commercials of "The Atom Araullo Specials: Philippine Seas," which garnered 88,132 views (Mean = 17,626, SD = 6,836.48).

For the web format, news-like materials (Mean = 222,194, SD = 23,180.40) and vlogs (Mean = 370,150, SD = 367,881.05) were viewed more than others. Likewise, vlogs had the highest average of dislikes (Mean = 183, SD = 258.80) while web features or documentaries got the highest average of likes (Mean = 168.25, SD = 190.82). Audiences also commented more on web news-like materials (Mean = 407, SD = 375.85). The only web promo video received a sizeable number of engagement as it had 343,742 views, 2,555 likes, 87 dislikes, and 421 comments.

Much like their television and web counterparts, documentary films also received a high engagement. The four documentary films were viewed 4,496,703 (Mean = 1,124,176, SD = 1,214,658.69) and generated 17,687 likes (Mean = 4,422, SD = 4,116.52), 1,419 dislikes (Mean = 355, SD = 250.93), and 2,292 comments (Mean = 573, SD = 485.56).

Table 5. Engagement per format of the most viewed YouTube videos on Philippine seas.

Format	No. of Views	Like	Dislike	Comments
Television (n = 22)	Mean = 531,556 SD = 1,464,907.87 Range = 7,954 – 6,698,912 Sum = 11,694,222	Mean = 2,977 SD = 9,398.80 Range = 0 – 44,048 Sum = 65,498	Mean = 268 SD = 725.80 Range = 0 – 3,241 Sum = 5,903	Mean = 405 SD = 699.06 Range = 2 – 3,073 Sum = 8,910

Table 5 (Continued). Engagement per format of the most viewed YouTube videos on Philippine seas.

Format	No. of Views	Like	Dislike	Comments
TV News (n = 9)	Mean = 36,247 SD = 35,459.67 Range = 9,043 – 104,078 Sum = 217,483	Mean = 323 SD = 394.37 Range = 28 – 1,077 Sum = 1,940	Mean = 23 SD = 27.60 Range = 1 – 73 Sum = 139	Mean = 267 SD = 378.04 Range =3 – 973 Sum = 1,599
TV Feature or Documentary (n = 6)	Mean = 1,711,656 SD = 2,580,625.49 Range = 17,132 – 6,698,912 Sum = 10,269,937	Mean = 9,814 SD = 17,126.47 Range = 0 – 44,048 Sum = 58,886	Mean = 866 SD = 1,270.55 Range = 0 – 3,241 Sum = 5,193	Mean = 963 SD = 1,150.49 Range = 20 – 3,073 Sum = 5,779
TV Commercial (n = 5)	Mean = 17,626 SD = 6,836.48 Range = 12,579 – 29,433 Sum = 88,132	Mean = 144 SD = 118.67 Range =83 – 356 Sum = 720	Mean = 5 SD = 2.70 Range = 1 – 8 Sum = 23	Mean = 14 SD = 13.01 Range = 2 – 36 Sum = 69
TV Interview (n = 1)	7,954	78	91	147
TV Religious Show (n = 1)	310,126	663	74	264
Web (n = 72)	Mean = 89,715 SD = 241,050.37 Range = 7,764 – 1,872,100 Sum = 6,459,462	Mean = 830 SD = 2,285.68 Range = 7 – 16,811 Sum = 59,783	Mean = 73 SD = 171.41 Range = 0 – 1,049 Sum = 5,257	Mean = 187 SD = 356.33 Range = 0 – 2,280 Sum = 13,456
Web News (n = 42)	Mean = 34,924 SD = 4,519.81 Range = 7,774 – 18,648 Sum = 131,830	Mean = 164 SD = 8.23 Range =12 – 35 Sum = 215	Mean = 52 SD = 14.26 Range = 1 – 50 Sum = 119	Mean = 125 SD = 25.14 Range = 2 – 78 Sum = 305
Web News-like Videos (n = 13)	Mean = 222,194 SD = 23,180.40 Range = 8,090 – 68,664 Sum = 293,171	Mean = 2,722 SD = 251.91 Range = 295 – 1,014 Sum = 4,659	Mean = 129 SD = 16.30 Range = 10 – 58 Sum = 224	Mean = 407 SD = 375.85 Range = 28 – 1,139 Sum = 1,693
Web Educational Show (n = 5)	Mean = 21,295 SD = 19,759.62 Range = 9,157 – 50,759 Sum = 85,180	Mean = 280.5 SD = 247.73 Range = 105 – 645 Sum = 1,122	Mean = 14.75 SD = 21 Range = 2 – 46 Sum = 59	Mean = 25.25 SD = 23.22 Range = 7 – 59 Sum = 101

Table 5 (Continued). Engagement per format of the most viewed YouTube videos on Philippine seas.

Format	No. of Views	Like	Dislike	Comments
Web Feature or Documentary (n = 4)	Mean = 150,142 SD = 62,090.01 Range = 90,562 – 222,872 Sum = 600,566	Mean = 1,124.75 SD = 414.35 Range = 643 – 1,577 Sum = 4,499	Mean = 168.25 SD = 190.82 Range = 21 – 447 Sum = 673	Mean = 317 SD = 176.95 Range = 90 – 459 Sum = 1,268
Web Footage (n = 3)	Mean = 47,280 SD = 48,067.28 Range = 18,360 – 102,767 Sum = 141,841	Mean = 377 SD = 459.75 Range = 63 – 905 Sum = 1,132	Mean = 18 SD = 14.74 Range =7 – 35 Sum = 55	Mean = 69 SD = 77.53 Range = 5 – 155 Sum = 206
Web Vlog (n = 2)	Mean = 383,354 SD = 519,256.09 Range = 16,184 – 766,707 Sum = 750,523	Mean = 3,410 SD = 4,770.85 Range = 36 – 6,783 Sum = 6,819	Mean = 183 SD = 258.80 Range =0 – 366 Sum = 366	Mean = 327 SD = 452.55 Range = 7 – 647 Sum = 654
Web Forum (n = 2)	Mean = 9,589 SD = 474.47 Range = 9,253 – 9,924 Sum = 19,177	Mean = 107 SD = 101.82 Range = 35 – 179 Sum = 214	Mean = 3.5 SD = 0.71 Range =3 – 4 Sum = 7	Mean = 11 SD = 15.56 Range = 0 – 22 Sum = 22
Web Promo (n=1)	343,742	2,555	87	421
Documentary Film (n = 4)	Mean = 1,124,176 SD = 1,214,658.69 Range = 22,267 – 2,707,645 Sum = 4,496,703	Mean = 4,422 SD = 4,116.52 Range = 491 – 8,083 Sum = 17,687	Mean = 355 SD = 250.93 Range = 5 – 587 Sum = 1,419	Mean = 573 SD = 485.56 Range = 65 – 1,064 Sum = 2,292
Radio News (*Teleradyo*) (n = 1)	128,900	0	0	594
Educational Film (n = 1)	10,242	78	1	9

Note: No. of Views as of April 5, 2021.

Themes of Most Viewed YouTube Videos on Philippine Seas

Eleven themes recurred in the most viewed YouTube videos on Philippine seas (Table 6). Eighty-one videos tackled the WPS dispute. Only a few videos discussed themes outside the context of the dispute. These themes included biodiversity (10), advocacy and call for action (8), narratives of fisherfolk and residents of coastal areas (8), leisure and tourism (7), geography (7), environmental and marine life destruction (6), history (4), indigenous people and culture (3), research initiatives (2), and trade and resources (2). One video was a footage of the Philippine seas from a helicopter and another video was about seeking protection from God against natural disasters brought about by the raging seas (others, 2).

Table 6. Themes of most viewed YouTube videos on Philippine seas.

Themes	Number of Videos (n = 100)
WPS Dispute – these discussed issues about and because of the WPS dispute. These issues included the following: - Differences in the actions taken by the Aquino and Duterte administrations, government pronouncements - Civilian protests against China - Diplomatic protests filed by the Philippines - The process of arbitration and the celebration of its results in favor of the Philippines - Geography of the WPS, including its features - Activities, technology, and presence of the Philippine Military at WPS - Natural resources at WPS that China is said to be after - China's historical claim (particularly the nine-dash line) - China's military, paramilitary, and civilian activities, mostly activities deemed as illegal and as causes of environmental degradation (destruction of coral reefs, ban and harassment done to Filipino fisherfolk, construction of military infrastructure) - Standoff at WPS between China and the Philippines - Philippines' sovereign rights over its Exclusive Economic Zone - Foreign relations with China, other countries in Southeast Asia, and allies - UNCLOS and lawfare approaches instead of warfare - What the Philippine government could still do about China's activities in the WPS	81
Biodiversity – these focused on endangered species and described flora and fauna (specific examples included mangroves, dugong (sea cow), sharks, seagulls)	10
Advocacy and Call for Action – these tackled individual's or organization's activities and call to protect the Philippine marine environment (examples include the rehabilitation of Mantalip Reef, shore clean-ups, information, education, communication initiatives to protect Philippine seas and conserve marine life)	8
Narratives of Fisherfolk and Residents of Coastal Areas – these included discussions about the fisherfolk's economic plight and captivity in other countries, fishing in the high seas, trade activities, Kalayaan Municipality resident's everyday life	8
Leisure and Tourism – these featured seafood delicacies, ocean photography, facilities, and activities such as island hopping, interacting with marine life (sardine run)	7
Geography – these showed the surface and features of Philippine oceans and oceans of neighboring countries.	7
Environmental and Marine Life Destruction – these foregrounded the results of locals' activities (illegal fishing, dynamite fishing, poaching, killing of endangered species) and the threats of climate change.	6
History – these discussed ocean activities during World War II and the Pre-Hispanic period, including the use of sea vessels (balangay)	4
Indigenous People and Culture – these showed the Badjao's household practices, boating activities, cuisines, and religion and the Tagbanua's duty to protect the dugong (sea cow)	3
Research Initiatives – these focused on the scientific research on species identification and exploration of Philippine Rise (formerly Benham Rise)	2
Trade and Resources – these included selling of seafood and other ocean products in the market, marine resources such as oil and energy	2
Others – these included a helicopter ride and a plea to God to protect countries from environmental disasters, including those that emanate from the seas.	2

Note: A video can have multiple themes.

Themes and Producers or Uploaders

Like engagement metrics, themes were cross tabulated with producers or uploaders to determine what they focused on. Videos produced or uploaded by local multimedia outlets covered almost all the themes, 56 of which underlined the WPS dispute. Meanwhile, all videos produced or uploaded by international multimedia outlets as well as the Philippine and foreign governments also focused on the said theme. In addition to the videos produced or uploaded by local multimedia outlets, those by scientific or educational institutions covered several themes such as biodiversity (2), advocacy or call for action (2), geography (1), and environmental and marine life destruction (2) (Table 7).

Table 7. Themes of most viewed YouTube videos per producer or uploader

Theme	Total	Individuals	Multi-media Outlet - Local	Multi-media Outlet – Interna-tional	PH Gov't	Foreign Gov't	Scientific / Educa-tional Institu-tions
WPS Dispute	81	15	56	6	2	1	1
Biodiversity	10	2	6	0	0	0	2
Advocacy, Call for Action	8	1	4	0	1	0	2
Narratives of fisherfolk	8	1	7	0	0	0	0
Leisure and Tourism	7	4	3	0	0	0	0
Geography	7	4	2	0	0	0	1
Environmental and Marine Life Destruction	6	1	2	0	1	0	2
History	4	3	0	0	1	0	0
Indigenous People and Culture	3	2	1	0	0	0	0
Trade and Resources	2	0	1	0	1	0	0
Research Initiatives	2	0	2	0	0	0	0
Others	2	0	2	0	0	0	0

Note: A video can have multiple themes.

Video Themes and Formats

Video formats play a critical role in communicating environmental issues (i.e., Tabasco et al., 2018; Males & Aelst, 2020). Hence, themes were cross tabulated with formats. Table 8 shows the themes of the videos classified under the television format. Eight videos considered as television news discussed the WPS dispute. While six television features or documentaries also tackled the dispute, some covered

almost all the themes, with at least two videos covering biodiversity, narratives of fisherfolk and residents of coastal areas, and advocacy and call for action. All the television commercials were promotions of "The Atom Araullo Specials: Philippine Seas," and four out of five of these television commercials highlighted biodiversity and narratives of fisherfolk and residents of coastal areas.

Table 8. Themes of most viewed YouTube videos per television format.

Themes	Total for TV Format	TV News	TV Feature or Documentary	TV Commercial	TV Interview	TV Religious Show
WPS Dispute	18	8	6	3	1	0
Biodiversity	7	0	3	4	0	0
Narratives of Fisherfolk and Residents of Coastal Areas	7	1	2	4	0	0
Advocacy and Call for Action	4	0	2	2	0	0
Leisure and Tourism	3	0	1	2	0	0
Geography	2	0	1	1	0	0
Environmental and Marine Life Destruction	1	0	1	0	0	0
Indigenous People and Culture	1	0	1	0	0	0
History	1	0	1	0	0	0
Trade and Resources	1	0	1	0	0	0
Research Initiatives	1	0	1	0	0	0
Others	1	0	0	0	0	1

Note: A video can have multiple themes.

The WPS dispute (61) dominated the videos classified under the web format, particularly the web news, web features or documentaries, and web news-like materials. The only web forum was about the WPS dispute as well. Notable exceptions were web educational shows that covered various themes such as geography (3), history (2), advocacy and call for action (1), biodiversity (1), and environmental and marine life destruction (1). In addition, some vlogs focused on leisure and tourism (2) and the narratives of fisherfolk and residents of coastal areas (1) (Table 9).

Table 9. Themes of videos based on web format.

Themes	Total for Web Format	Web News	Web News-like Materials	Web Educational Show	Web Feature or Documentary
WPS Dispute	61	42	13	0	4
Geography	4	0	0	3	1
Leisure and Tourism	4	0	0	0	0

Table 9 (Continued). Themes of videos based on web format.

Themes	Total for Web Format	Web News	Web News-like Materials	Web Educational Show	Web Feature or Documentary
Advocacy and Call for Action	2	0	0	1	1
Biodiversity	2	0	0	1	1
Environmental and Marine Life Destruction	2	0	0	1	1
History	2	0	0	2	0
Narratives of Fisherfolk and Residents of Coastal Areas	1	0	0	0	0
Research Initiatives	1	0	0	0	1
Indigenous People and Culture	0	0	0	0	0
Trade and Resources	0	0	0	0	0
Others	1	0	0	0	0

Note: A video can have multiple themes.

Among the videos not classified under the television or the web format, a piece of radio news and an educational film tackled the WPS dispute. However, none of the documentary films discussed the dispute. Instead, these documentary films highlighted themes such as environmental and marine life destruction (2), indigenous people and culture (2), biodiversity (1), advocacy and call for action (1), geography (1), and history (1) (Table 10).

Table 10. Themes in the documentary films, radio news and educational film.

Themes	Documentary Film	Radio News	Educational Film
Environmental and Marine Life Destruction	2	0	1
Indigenous People and Culture	2	0	0
Biodiversity	1	0	0
Advocacy and Call for Action	1	0	1
Geography	1	0	0
History	1	0	0
WPS Dispute	0	1	1
Narratives of Fisherfolk and Residents of Coastal Areas	0	0	0
Leisure and Tourism	0	0	0
Trade and Resources	0	0	1
Research Initiatives	0	0	0
Others	0	0	0

Note: A video can have multiple themes.

DISCUSSION

This study analyzed the most viewed YouTube videos on Philippine seas. It was found that local multimedia outlets were central to the production and upload of such videos as they produced or uploaded 58 out of the 100 videos. These were consistent with previous studies that indicated the prevalence of videos produced or uploaded by multimedia outlets on YouTube (De Lara et al., 2017; Duran-Becerra et al., 2020). The results also showed that over a third of the most viewed YouTube videos on Philippine seas were produced or uploaded in 2016, when the arbitral tribunal unanimously ruled in favor of the Philippines against China (United Nations Permanent Court of Arbitration, 2016). These videos were mostly news items. Thus, these exemplified the longevity of engagement that news items could still generate despite focusing on short-lived and immediate information (Pew Research Center, 2012).

In terms of formats, 72 videos followed the web format than the television format. This resonated with the findings of De Lara et al. (2017) and could be attributed to multimedia organizations' move to make videos available online, especially if these could not be fitted into the daily television broadcast (Svoboda, 2020). In both the television and web formats, news videos were dominant. This might be because of people's need for immediate information. This could also explain the prevalence of news-like materials, which might heighten accuracy concerns already present across social media (Pew Research Center 2018). Furthermore, the informational nature of these videos might be the reason for the high engagement received by documentary films and television features or documentaries and the high number of likes for web features or documentaries as all these presented facts and realities. Similarly, this was the case for videos produced by common sources of information such as the government and multimedia outlets. These indicated that people relied on YouTube for information (Pew Research Center, 2018). Likewise, results showed the importance of tailor-fitting videos to online viewers as user-generated content such as news-like materials and vlogs all gained traction. Boy et al.'s (2020) content analysis yielded the same results with videos produced or uploaded by individuals, including their vlogs, received a high engagement. These results were likely due to user-generated content characteristics being well-attuned to online viewers' preferences (Kim, 2012). Across formats, the length of videos varied and ranged from 15 seconds to 88.22 minutes. This supported De Lara et al.'s (2017) findings that specified the lack of video length uniformity. This might also be indicative of Velho et al.'s (2020) findings that considered video length as less influential in determining the number of views.

Meanwhile, the most common theme that surfaced from the videos was the WPS dispute. The said theme recurred in 81 videos. This could be attributed to the viewers' informational needs and the abundance of news and news-like materials that delivered ephemeral and urgent information. Since people focused on news that presented political upheaval (Pew Research Center, 2012), it would be typical for producers or uploaders to focus on the WPS dispute over other issues, especially since the said dispute involved intense interactions among nations and underscored both warfare and lawfare as solutions, among others. In contrast with the findings of Leon et al. (2018) on videos about climate change, the recurrence of the WPS dispute meant that YouTube videos on Philippine seas dominantly tackled the political aspects over the ecological-meteorological and scientific aspects. Since the WPS involved the country's bilateral relationship with China and other neighboring countries and allies, the emphasis on this theme followed a global perspective like the climate change broadcasts in Lithuania (Rabitz et al., 2020).

However, outside the context of the WPS dispute were critical themes to focus on, such as biodiversity, advocacy and call for action, narratives of fisherfolk and residents of coastal areas, leisure

and tourism, geography, environmental and marine life destruction, history, indigenous people and culture, research initiatives, and trade and resources. Biodiversity (information on flora and fauna), advocacy and call for action, leisure and tourism, environmental and marine life destruction, and research initiatives themes were also surfaced by Salazar and Barroga-Jamias (2014) in their content analysis of videos on Philippine biodiversity. Themes that focused on people, such as the narratives of fisherfolk and residents and indigenous people and culture, were in accordance with Jaspal et al.'s (2014) findings on the emphasis given to the social dimensions of environmental issues.

Despite the variety of themes that surfaced, these did not recur as often as the WPS dispute. For example, biodiversity only recurred ten times, while the rest of the themes recurred less than ten times. This meant that the WPS dispute was covered more than the other concerns involving the Philippine seas. The dominance of a singular theme limited the assertion of Velho et al. (2020) that having interdisciplinary themes could generate higher views. This assertion was only evident for television and web features and documentaries as well as documentary films that tackled several themes. The dominance of the WPS dispute meant that this issue was made more salient than other ecological-meteorological, social, cultural, and economic issues that were equally important in ensuring marine life and coastal resources conservation and protection across the archipelago.

The dominance of local multimedia outlets was evident in its role as sources of contents for YouTubers who produced news-like videos. Likewise, these local multimedia outlets' television features or documentaries received the highest engagement. These were indicative of the capacity of traditional media to influence the discussions on Philippine seas via online platforms such as YouTube (Ceron et al., 2016). Nonetheless, both professionally generated contents produced or uploaded by established multimedia outlets, scientific institutions, government and non-government organizations, and user-generated contents by individuals exemplified promising potential in making critical issues concerning Philippine seas salient.

CONCLUSION AND RECOMMENDATIONS

As online videos become sources of information, it is imperative to investigate its contents. This study deemed it worthwhile to know what was communicated about Philippine seas in online videos and how online videos could be useful in highlighting the importance of marine life and coastal resources conservation and protection. Based on engagement metrics, online videos, regardless of its length, could be useful in raising awareness, sustaining discussions, mobilizing, and acting on issues concerning Philippine seas. All themes could benefit from the engagement that professionally generated contents and user-generated contents could accumulate. Since majority of the themes tackled the WPS dispute, the discussions on Philippine seas had a more international focus. Scientists and environmental protection advocates could emphasize on the local implications of issues on Philippine seas. As Svoboda et al. (2020) reported, relevance of environmental issues could increase when associated with problems people might encounter. While the WPS dispute is critical to the country in various aspects, scientists and environmental protection advocates can also make equally important issues outside the context of the dispute salient in people's minds. They could rely on multimedia outlets and governments as these organizations' documentary films, features and documentaries gained traction. Additionally, they could harness the potential of individuals and non-scientific communicators to get important messages across through vlogs, citizen online media news, and other audio-visual materials.

DISCUSSION

Several studies can be conducted about online videos on Philippine seas. Future studies can investigate the changes in the level of engagement over time, the characteristics of audiences, and the effects of messages on public agenda and policy agenda. Focus can also be given to the determination of possible factors affecting the popularity of videos. These factors can include communicators, frames of messages, quality and quantity of the messages, accuracy of the messages, advertisements (presence, types, congruence to the messages), and storytelling components, among others. Since this study was limited to numerical data on engagement, an in-depth analysis can be done on the video comments to understand further the discourse on Philippine seas on the YouTube.

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