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Exploring the Consumption of Recreational Fishing Content on Social Media

Albert Medina^{1,2}  | Robert Arlinghaus^{3,4}  | Valerio Sbragaglia¹ 

¹Department of Marine Renewable Resources, Marine Science Institute (ICM-CSIC), Barcelona, Spain | ²Pyrenean Institute of Ecology (IPE-CSIC), Zaragoza, Spain | ³Department of Fish Biology, Fisheries and Aquaculture, Leibniz Institute of Freshwater Ecology and Inland Fisheries, Berlin, Germany | ⁴Humboldt-Universität zu Berlin, Division of Integrative Fisheries Management and Integrative Research Institute on Transformations of Human-Environmental Systems (IRI THESys), Berlin, Germany

Correspondence: Valerio Sbragaglia (valeriosbra@gmail.com)**Received:** 14 August 2025 | **Revised:** 10 December 2025 | **Accepted:** 25 February 2026**Keywords:** digital platforms | fishing avidity | frequency of use | recreational fishers | TikTok | YouTube

ABSTRACT

Social media platforms are ubiquitous and may influence how recreational fishers engage with fishing and consume fishing-related content. However, fishers' consumption patterns remain poorly characterized. Using a sample of recreational fishers from Catalonia (Spain), we examined how age, gender, and avidity predict preferences for different digital platforms and consumption frequency. Over half (55%) of surveyed fishers consumed fishing content online. YouTube emerged as the most widely used platform. Among younger fishers, Instagram showed similar prevalence to YouTube. Older fishers showed comparable engagement with Facebook and YouTube but used Instagram less. While significantly fewer women than men consumed fishing content, preferences for the most popular platforms were similar across genders. Avid fishers favored YouTube, Instagram, and Facebook, whereas less avid fishers mainly used YouTube. Our findings offer initial insights into how recreational fishers consume social media, which may inform future research and communication strategies for recreational fisheries.

1 | Introduction

Effective communication between recreational fishers and managers, tourism operators and business owners can foster mutual understanding, enhance compliance with regulations, increase sales and ensure that management strategies are informed by on-the-ground realities (Dedual et al. 2013; Hyder et al. 2020; Pita et al. 2025). Although fisheries managers regularly consult with recreational fishers about future fishing regulations and inform them about ongoing changes (Bonney et al. 2021; Copeland et al. 2017; Hunt et al. 2013; Page and Radomski 2006), a communication gap may arise due to different interests, general mistrust, lack of penetration into the recreational fishing communities, and inadequate use of communication channels (Dedual et al. 2013; Ehrlich et al. 2023; Pita et al. 2025). The broad scope and complexity of recreational fisheries management often make it difficult for individual fishers to understand

and engage with management decisions as well as the underlying rationale of decisions (Bower et al. 2014; Cardona and Morales-Nin 2013; Page and Radomski 2006; Wilberg 2009). Management decisions may also directly counter interests of fishers, which can cause conflicts (Arlinghaus 2005; Klefoth et al. 2023; Slaton et al. 2023). Additionally, traditional top-down approaches to fisheries governance and management, where decisions are made without inclusion of stakeholders, often fail to incorporate the experiential knowledge of fishers, leading to regulations that may not be well-received by all or may be impractical (Crandall et al. 2019; Irwin et al. 2011; Moorman et al. 2025). Bridging this gap requires developing more effective, inclusive, and participatory communication strategies (Dedual et al. 2013; Ehrlich et al. 2023; Irwin et al. 2011). In this context, recreational fishing associations, federations, and other organizations (hereafter referred to as "organizations") may be key for reaching out and communicating with recreational fishers

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(Arlinghaus et al. 2019; Freudenberg and Arlinghaus 2008; Johnson et al. 2009). However, these organizations reach only a fraction of the recreational fishing population, as many fishers go fishing without being associated with any organization. A lack of far-reaching communication with all recreational fishers poses challenges for effective management, education, business, and conservation efforts, especially in spatially extensive areas, such as marine coastal zones, which attract fishers from a wide regional scope. Many recreational fishers have embraced the opportunity to share and consume fishing content online (Lennox et al. 2022; Vitale et al. 2021). Fishing applications exist, where users voluntarily report their fishing activities and which also offer opportunities to share information with recreational fishers (Johnston et al. 2022; Skov et al. 2021; Venturelli et al. 2017). Additionally, social media platforms and online forums may assemble a large portion of the recreational fishing community (Lennox et al. 2022; Sbragaglia et al. 2020). The vast volume of social media data can help monitor recreational fishing (e.g., Brownscombe et al. 2019; Lennox et al. 2022; Sbragaglia et al. 2020) and help answer research questions about effort shifts or changes in the distribution of species in response to climate change (Espasandín et al. 2024). More generally, social media can also be used to improve communication with the recreational fishing community (Holder et al. 2020; Sbragaglia et al. 2023), particularly those groups that are not easy to reach through classic organizational channels. Such outreach can alter preferences, attitudes, and behaviors of fishers (e.g., Allison et al. 2023; Sbragaglia and Arlinghaus 2020). If scientists and managers aim to engage with recreational fishers through social media, similar to the now widespread use of social marketing in business (Chen and Lin 2019; Hajli 2014), they should choose the platforms that are more likely to reach their target audience. However, the social media consumption patterns of recreational fishers are largely unknown, which represents a limiting factor in planning effective and targeted communication strategies.

This paper aims to characterize recreational fishers who consume recreational fishing content on social media as a function of age, gender, and avidity. Younger fishers can be expected to use digital platforms more frequently than older ones (Anderson and Jiang 2018; Koironen et al. 2020; Laor 2022). Highly visual and short-form content platforms like Instagram and TikTok may be particularly prevalent among younger fishers because of the evidence that many struggle with maintaining attention while reading longer texts, which are common in traditional communication and more easily digestible by older people (Auxier and Anderson 2021). Different age groups may also have distinct platform preferences. For instance, older individuals might favor Facebook because it may be the first platform they used, given the history of Facebook and because of Facebook's emphasis on community interaction and discussion using text as well as visuals (Dixon 2024; Vitale et al. 2021). A possible gender bias in recreational fishing presents a further intriguing aspect to explore in the context of social media use and communication. Given that fishing has traditionally been a male-dominated activity (Arlinghaus 2024; Morales-Nin et al. 2025), understanding the platforms that women prefer to consume recreational fishing content from could be key to effectively reach and engage this underrepresented demographic group. Men, being more competitive in demonstrating physical skills (Saccardo et al. 2018; Arlinghaus 2024), may more

frequently use platforms like YouTube, which offer detailed tutorials to enhance expertise and performance (Hruska and Maresova 2020). By contrast, women tend to prioritize the social and relational as well as food-related aspects of fishing over mastery-oriented achievements (Morales-Nin et al. 2021, 2025; Schroeder et al. 2006), possibly making platforms like Facebook and Instagram, which emphasize community building and interpersonal interactions, more appealing to them compared to men (Hruska and Maresova 2020). Finally, avid recreational fishers—those who dedicate much of their spare time to fishing (Bryan 1977)—are known to be more inclined to consume fishing-related media (Ditton et al. 1992; Gundelund et al. 2020). Therefore, it is reasonable to assume that this tendency could extend to social media. Avid fishers may more regularly use digital platforms (Gundelund et al. 2020) not only to share their experiences and connect with peers (Vitale et al. 2021) but also to consume content to stay informed and reinforce their central role in the community. By contrast, less avid fishers may consume content on these platforms more occasionally, primarily for inspiration, tutorials, and advice from more experienced fishers.

We focused on four key aspects in formulating our research questions: (i) What proportion of the sample population of fishers consumes recreational fishing content on social media, which platforms do they use and how often? (ii) Does the age of fishers differ between those who consume recreational fishing content on social media and those who do not? How does age affect the frequency of usage of different digital platforms? (iii) Do men and women differ in their consumption of recreational fishing content on social media? Does gender affect the type of platform consumed and the frequency with which each platform is used? (iv) Is fishing avidity related to the likelihood of consumption of social media or not? How does avidity affect the type of platform fishers use and the frequency with which each platform is used? By answering these questions, we aim to contribute to the development of more targeted strategies to engage the recreational fishing community through social media.

2 | Materials and Methods

2.1 | Data Collection

Data used for this study were provided by the Catalan Institute of Research for the Governance of the Sea (ICATMAR), which is in charge of a marine recreational fishing monitoring program in Catalonia, Spain. This program includes data collection from online questionnaires that are sent to a random sample of license holders. For the present study, we used data collected during 2022, as this was the only year in which questions on social media habits related to recreational fishing were included in the surveys. The data were provided voluntarily by respondents and thus represented a self-selection sample. The data were stored in a database subjected to the EU 2016/679 personal data protection regulation; accordingly, it was not possible to trace back the license user responding to the survey.

The survey was sent to personal e-mails of recreational fishers who obtained a license, which is required to practice recreational fishing in Catalonia. A questionnaire was sent each month to about 4000 unique e-mails that were randomly

sampled from the license registry (i.e., at about 48,000 license holders sampled from the 1st of January to the 31st of December 2022). License holders could only be sampled from the database once. Automatic reminders were sent three days and one week after the original e-mail was sent and were programmed to be received only by individuals who had not yet responded to the survey. Surveys could be started and continued within a period of two weeks.

Questions included information on social profile (age and gender), frequency of consumption of recreational fishing content on each digital platform (YouTube, Instagram, Facebook, TikTok, and others), and number of fishing trips during the past 12 months (hereafter referred to as “avidity”). Respondents were first asked, “Do you use social media to watch recreational fishing content?” If they answered affirmatively, in the question that followed they could specify “Which social media platform do you use to watch recreational fishing content?” This question offered five possible platforms, allowing respondents to select multiple options: YouTube, Facebook, Instagram, TikTok, and “Others” (which respondents could interpret to include anything not listed, from general platforms like Twitter/X to fishing-specific platforms, forums, and blogs, even though these were not provided as explicit choices). For each selected platform, participants could choose from five frequency-of-use categories: “Never”, “A few times per year”, “A few times per month”, “A few times per week”, and “Almost every day”.

The Qualtrics XM platform was used to program the surveys, which includes logic features such as branching, question skips, and carrying forward selected options. This allowed respondents to only be presented with those question options that were relevant to them. The application was responsive to personal computers, smartphones, and tablets and to the major operating systems (Microsoft, Android, iOS, and Ubuntu). The survey could only be answered by the recipient's IP address. Responses could be paused, and the survey could be retaken within 2 weeks. The questions were available in Catalan, Spanish, English, and French.

2.2 | Data Treatment and Statistical Analysis

For analyses involving demographic factors (age, gender, and avidity), we excluded cases where respondents reported an age below 18 to focus on the population who can personally obtain a license. Additionally, cases were removed if participants answered ‘Yes’ to consuming recreational fishing content on social media but failed to indicate any frequency of consumption on the respective platforms in the follow-up questions.

To examine differences in age and fishing avidity between those who consumed fishing content on social media and those who did not, a non-parametric Mann–Whitney *U* test was conducted, as the data did not meet normality assumptions. Therefore, median and interquartile ranges were considered more defensible measures of central tendency and spread for these variables than the mean and standard deviation. A chi-square test was used to assess differences between men and women. Additionally, to analyze the frequency of consumption based on age, gender, and avidity across different platforms, we applied a Cumulative Link

Mixed Model (CLMM) and tested for the interactions between fisher characteristics and type of platforms (i.e., age $\times$ platform, gender $\times$ platform, and avidity $\times$ platform). We included individual ID as a random factor to account for autocorrelation within the answers of individual respondents. The CLMM was chosen because it enables the analysis of an ordinal response variable (categories of frequency of use), while allowing the use of random factors (i.e., the respondent ID). We ran all the analyses in R (version 4.3.2), with a 95% confidence interval.

3 | Results

Out of the 48,000 questionnaires sent via email, we received 6801 responses (14.2% response rate). Out of the 6801 respondents who submitted the questionnaire, 6213 indicated whether they consume recreational fishing content on social media (3388; 54.5%) or they do not (2825; 45.5%); this sample was included in our analysis (inlet Figure 1). Among those who declared to consume recreational fishing content on social media, a large majority (92.8%) followed up with the rest of the questions (Figure 1). YouTube was the most popular platform, with 45.6% of social media users (1346 out of 3388) reporting usage at least once a week, followed by Instagram (32.3%) and Facebook (29.2%). TikTok was the least popular platform, with 75.7% of social media users not using it at all. In addition to the platforms analyzed, nearly one-third (32.3%) of people who used social media also reported using “Other” platforms to some extent.

Fishers who consumed fishing-related content on social media were significantly younger (Mann–Whitney *U* test: $U = 5,204,125$, $n = 5787$, $p < 0.001$), and fished significantly more days ($U = 2,259,702$, $n = 5787$, $p < 0.001$) per year than those who did not consume fishing content (Table 1). In terms of gender, 4192 of the respondents identified as men (94.5%), while only 246 identified as women (5.5%). There were large and significant differences between men and women in the consumption of fishing content on digital platforms ($\chi^2 = 29.91$, $df = 1$, $p < 0.001$). Consumption of online recreational fishing content was most prevalent among men (56.7%) and less so among women (38.6%).

The results of the CLMM (for detailed statistics, see Table S1) showed that the frequency of consumption of Instagram, YouTube, and TikTok decreased significantly with age, especially in the case of TikTok and Instagram (Figure 2; Table 2), while the use of “Other” platforms and Facebook increased with age. Pairwise comparisons of marginal means revealed no significant gender differences in usage frequency for YouTube, Instagram, Facebook, or TikTok (Figure 3; Table S2), but women showed a significantly higher use of “Other” platforms compared to men ($p < 0.01$; Table S2). A significant positive relationship was also found between fishing avidity and the frequency of consumption on all platforms except TikTok (Figure 4; Table 2), with the steepest slope observed for Instagram, significantly higher than for all other platforms except Facebook (Table 2).

4 | Discussion

As expected a priori, the likelihood and frequency of consumption of fishing content on social media depended on the

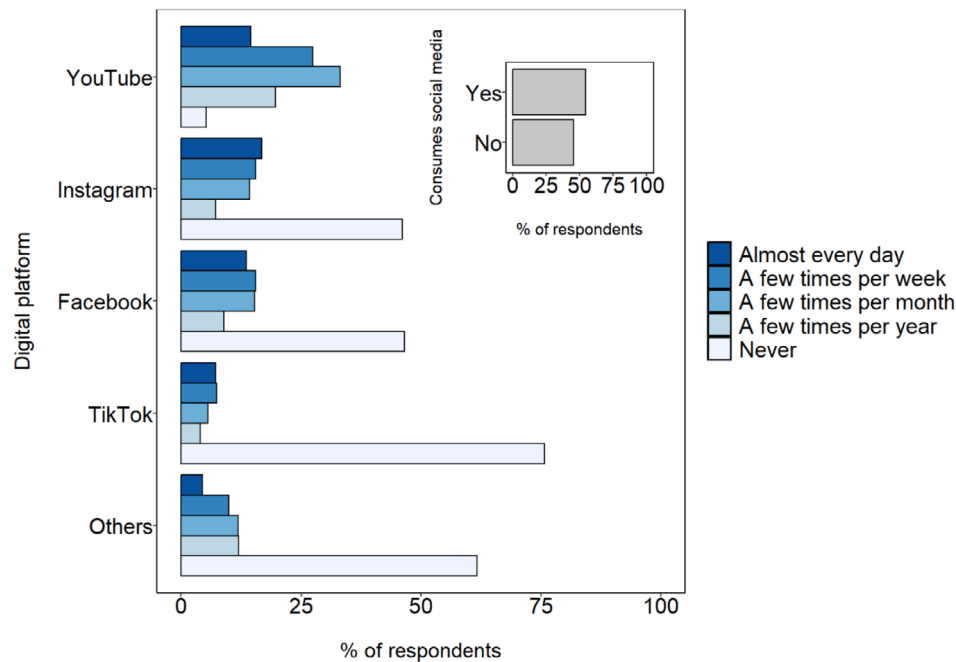


FIGURE 1 | Survey responses to the question: “What social media platforms do you use to watch recreational fishing content?” ($n = 6213$). Overall, 54.53% of respondents ($n = 3388$) indicated they consume recreational fishing content on digital platforms, while 45.47% ($n = 2825$) answered “No” (inlet). The grouped bar plot shows the distribution of users across specific platforms and their reported frequency of use: YouTube ($n = 3215$), Instagram ($n = 2935$), Facebook ($n = 2988$), TikTok ($n = 2885$), and “Other” platforms ($n = 2861$).

TABLE 1 | Descriptive statistics for age and avidity among groups of recreational fishers who consume or do not consume fishing-related content online. For each group and variable, the table reports the median, interquartile range (IQR, indicating the spread of the middle 50% of values), mean, standard deviation (SD, showing variability around the mean), standard error (SE, indicating the precision of the mean estimate), and the number of cases (n).

	Consumes social media?	Median	IQR	Mean	SD	SE	<i>n</i>
Age	Yes	47	20	47.5	13.4	0.240	3145
	No	54	21	53.6	13.4	0.260	2642
Avidity	Yes	20	30	30.8	31.3	0.558	2833
	No	12	18	19.6	23.1	0.450	2177

characteristics of the recreational fisher, more specifically age, gender, and avidity, and varied by digital platforms. We found that recreational fishers from Catalonia who consumed fishing content on digital platforms were younger than those who did not. This finding was expected, as younger individuals are generally more familiar with digital platforms and more skilled in their use compared to older people (Fietkiewicz et al. 2016; Hruska and Maresova 2020). Another possible interpretation is that older people may have less free time due to family commitments, which could reduce their consumption of online content. Age also influenced the frequency of consumption across the different platforms, where three main results stood out. First, the consumption frequency of recreational fishing content decreased with fishers' age on YouTube, TikTok, and Instagram, the latter showing the steepest decline. This age-related decline is consistent with that of other studies on social media use in the general population (Eastman et al. 2021; Hruska and Maresova 2020). We interpret this trend for Instagram and TikTok as a reflection of the emphasis of these platforms on

short, easily accessible visual content, which appeals primarily to younger audiences, who are more inclined to instant gratification (Panek 2012). However, another possible interpretation is that Instagram and TikTok are more novel and consequently have increased in popularity generally with younger fishers. This may be because younger individuals tend to be more novelty-seeking and more socially dependent (Trouillet and Gana 2008), which makes them prone to following trends. The less pronounced decline in TikTok consumption with age compared to Instagram was perhaps because TikTok usage was already relatively low among younger fishers. This may be because TikTok offers fewer alternative features than Instagram, as well as having a shorter presence in the market (TikTok was launched in its present form in 2018, while Instagram was launched in 2010); therefore, TikTok could not yet have had enough time to achieve widespread adoption among fishers, not even among the younger ones. Second, YouTube was the most consumed platform across all age groups, although it competed with Instagram among younger fishers and with Facebook among

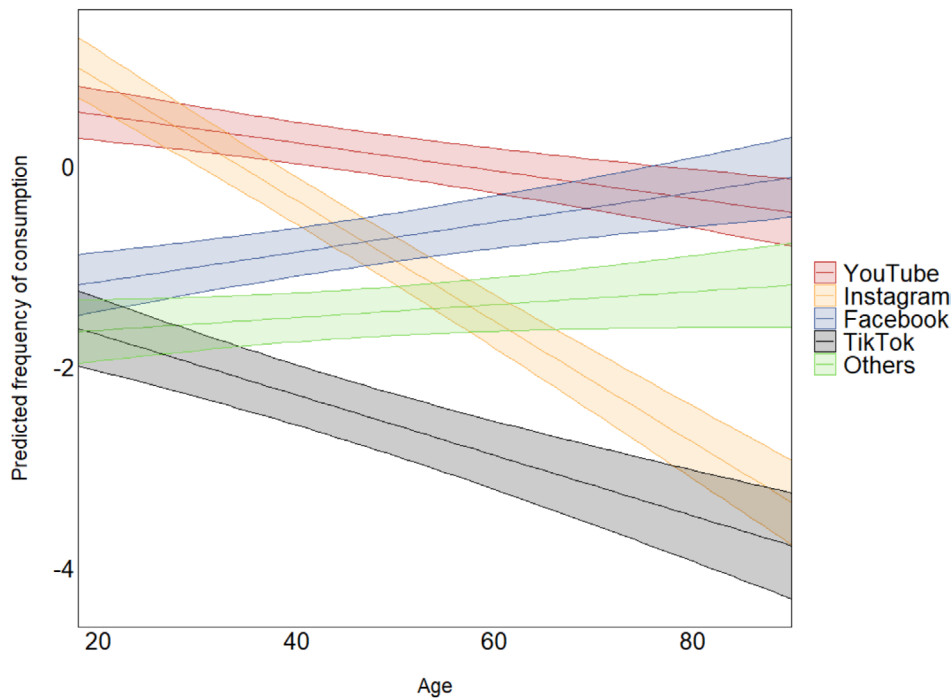


FIGURE 2 | Predicted relative frequency of recreational fishing content consumption across five social media platforms as a function of age, based on ordinal regression (CLMM) model results. Each line represents a different platform, and shaded ribbons indicate 95% confidence intervals around the predicted values. The y-axis does not represent the original ordinal categories of frequency of consumption but rather the predictive relative values estimated by the model. Sample sizes (n): YouTube = 3032; Instagram = 2765; Facebook = 2821; TikTok = 2722; Others = 2701.

TABLE 2 | Estimated trends for the effect of age and avidity on the frequency of recreational fishing content consumption across five digital platforms. Platforms are sorted in ascending order of slope, which represents the strength and direction of the relationship. The table also includes the standard error of the estimated slope (SE), the asymptotic lower confidence limit (Lower), and the asymptotic upper confidence limit (Upper) for each platform and continuous variable. Significant differences between platforms (based on Table S2) are indicated by the “Group” column, which uses compact letter display (a<b<c<d); platforms sharing a letter are not significantly different (see Table S2 for more details about multi comparisons and p values).

	Platform	Slope	SE	Lower	Upper	Group
Age	Instagram	-0.06021	0.00383	-0.07005	-0.05037	a
	TikTok	-0.03009	0.00466	-0.04205	-0.01812	b
	YouTube	-0.01389	0.00305	-0.02172	-0.00606	c
	Others	0.00644	0.00387	-0.00351	0.01638	d
	Facebook	0.01488	0.00358	0.00566	0.02409	d
Avidity	TikTok	0.00301	0.00181	-0.001646	0.00767	a
	Others	0.00499	0.00158	0.000927	0.00906	ab
	YouTube	0.00705	0.00131	0.003696	0.01041	ab
	Facebook	0.01009	0.00148	0.006280	0.01390	bc
	Instagram	0.01339	0.00154	0.009429	0.01735	c

older fishers. Despite showing an expected decline in usage with age (Dixon 2024), YouTube is an easily accessible platform that accommodates a wide range of fishing-related interests across all age groups. Regardless of video length, fishers can easily search for and engage in discussions on a variety of topics such as observing curiosities, tutorials, novel technology, and environmental issues (Sbragaglia et al. 2020, 2022). It is important to

mention that we did not estimate the volume and type of fishing content across platforms, which could be responsible of some of the relationships presented here (especially between YouTube and Facebook); this represents an important aspect to study in the future to increase robustness of our interpretations. Third, we found that, in contrast to the other main platforms, Facebook showed a positive correlation between frequency of use and age.

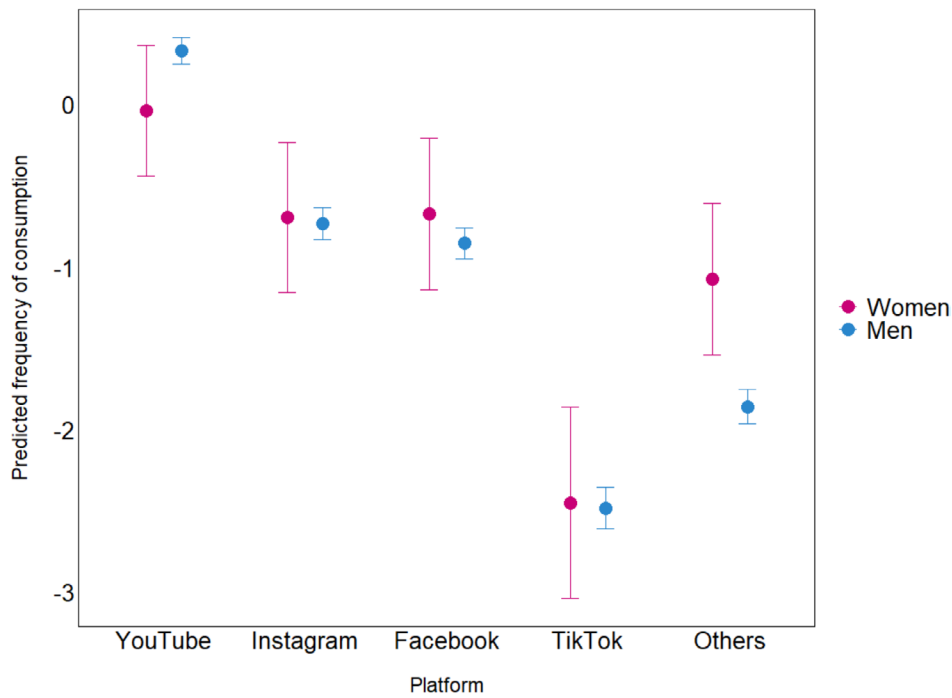


FIGURE 3 | Predicted relative frequency of recreational fishing content consumption across five social media platforms as a function of gender, based on ordinal regression (CLMM) model results. Points represent mean predicted values for men and women, while error bars show 95% confidence intervals. The y-axis does not represent the original ordinal categories of frequency of consumption but rather the predictive relative values estimated by the model. Sample sizes (n): YouTube = 2390; Instagram = 2172; Facebook = 2222; TikTok = 2146; Others = 2134.

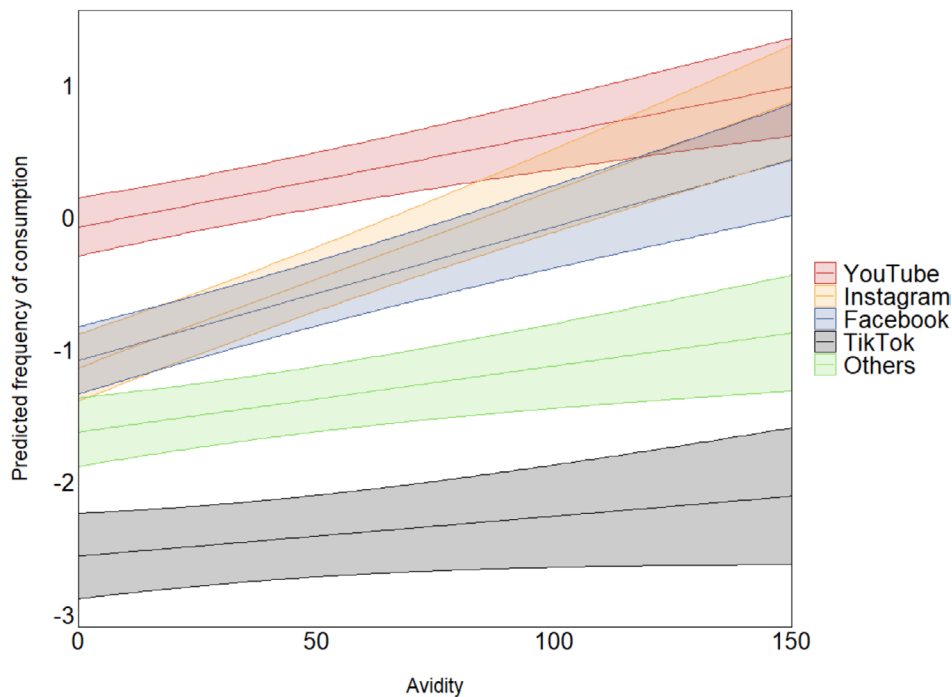


FIGURE 4 | Predicted relative frequency of recreational fishing content consumption across five social media platforms as a function of avidity (i.e., number of fishing days per year), based on ordinal regression (CLMM) model results. Each line represents a different platform, and shaded ribbons indicate 95% confidence intervals around the predicted values. The y-axis does not represent the original ordinal categories of frequency of consumption but rather the predictive relative values estimated by the model. Sample sizes (n): YouTube = 2740; Instagram = 2497; Facebook = 2544; TikTok = 2463; Others = 2445.

This may be due to the fact that Facebook, apart from being the oldest platform (it became open to the general public in 2006, and it is the most familiar to older users; Fietkiewicz et al. 2016),

offers an intuitive user interface (like YouTube, Facebook is both desktop and mobile-friendly), and includes features that may be more appealing or convenient for older fishers and that

Instagram or TikTok does not offer, such as clickable links in posts or comments, text-only posts, photo albums, and comprehensive biographies (i.e., descriptions of users or groups).

The difference between genders in the likelihood of consuming recreational fishing content on social media was significant, with proportionally more men consuming fishing content than women. Studies on general social media use, however, consistently report that women consume more social media than men (Gambo and Özad 2020; Kimbrough et al. 2013). This might in part reflect the broad gender gap in engagement in recreational fishing (Arlinghaus 2024), which has also been reported for Spain (Morales-Nin et al. 2025). Social media is a way to engage in fishing outside the actual practice, and as men are generally more engaged in fishing, they may also use digital fishing media more frequently than women. Regarding gender biases in the content consumption across different platforms, there were no significant differences between men and women in the four most used platforms. This disagrees with earlier studies, such as the one of Hruska and Maresova (2020), who found that, in the USA, women are more likely to consume general content on Facebook, while men are more inclined to use YouTube. The lack of significant differences in our study could be partially explained by the much lower sample size and higher data uncertainty that we had for women. Nonetheless, our results imply that women can be effectively reached through the same platforms as men, but one will reach fewer women overall. Given that most of the recreational fishers in Spain are men (72%, according to Morales-Nin et al. 2021), if the goal is to reach as many people as possible, the results from the male consumption pattern should guide outreach efforts. If the goal is to better reach female audiences, more studies are needed to understand why females are less inclined to social media consumption about fishing and which platforms they prefer when they refer to the “Others” category, which was a black box in our survey since no option for indicating other platforms was provided.

Regarding avidity, we found a strong and positive relationship between the frequency of fishing trips and the frequency of consumption of content online. This finding agreed with Ditton et al. (1992) who postulated that more engaged recreational fisheries should show greater degree of media interactions. Fishers who consume fishing content on social media were indeed more avid, going fishing approximately 11 days more per year than those who do not consume fishing content. The positive relationship between avidity and frequency of consumption was consistent across platforms. However, the trends varied from one platform to another. YouTube remained the most popular platform across all levels of avidity, with only a modest increase in consumption with avidity, whereas Facebook and Instagram showed the steepest increases in content consumption frequency as avidity grew. We attributed this to the difference in diversity and length of the content presented in each of them. YouTube supports long-form video content, allowing visual demonstrations of fishing techniques and gear operation (Sbragaglia et al. 2020, 2022), and also has an advanced search functionality (Zhou et al. 2016), which allows fishers with different experience and avidity levels to quickly find videos tailored to their interests, whether it is learning basic techniques or niche, specialized content. By contrast, both Facebook and Instagram are very versatile platforms and support a variety of

content formats (i.e., photos, videos, text, groups), although their focus differs. Instagram delivers a high volume of short-duration content (even if it is not deeply informative), allowing quick and effortless consumption and engagement. Facebook, however, also provides access to more detailed or contextualized content (Fietkiewicz et al. 2016), often through organized groups around specific topics. This could also explain why the increase in consumption frequency with avidity observed on Facebook was not significantly different from that on YouTube. Like YouTube, Facebook provides information on specific topics, fishing locations, or technological innovations. Nevertheless, the two platforms are not totally comparable because, while YouTube does offer a community section, it is not to the same level and complexity of interaction as that of Facebook. Finally, it is important to note that, although the content formats previously described generally reflect the core focus of each digital platform, there might be substantial overlap among platforms. Content might often be cross-posted on multiple platforms that feature similar formats (e.g., YouTube Shorts, Instagram Reels, Facebook Reels, and TikTok), blurring the distinction between platforms and complicating the interpretation of platform-specific patterns.

We found clear patterns in the consumption of recreational fishing content on social media that depend on the characteristics of the fishers. However, we acknowledge that the temporal constraint of the data (i.e., 2022) prevents us from studying the evolution of these patterns over time. Digital platforms tend to capture specific generations, and it is common for new generations to look for newer platforms (Loos and Ivan 2024). A notable example is Facebook, which by the early 2010s was already popular across all age groups, but is now experiencing a significant decline among younger users, who have shifted towards Instagram (Anderson and Jiang 2018; Vogels et al. 2022). Therefore, a currently successful digital platform may lose relevance within a few years, as it is replaced by newer alternatives. Changes in behavior and preferences also occur within the same generation. For instance, younger individuals are more likely to engage in frequent, impersonal online interactions (Cáceres Zapatero et al. 2013). However, as young people grow older, they tend to value personal relationships more (Hampton et al. 2011). Another limitation is the online survey method used here, which is subject to potential biases. While online surveys are significantly more cost-effective (Lehdonvirta et al. 2021), the data collected are biased towards respondents with certain computer literacy and Internet access (Andrade 2020) and towards those sufficiently interested in the topic to take the time to respond (Howarth et al. 2024; Lewin et al. 2021; Ryan et al. 2024). Thus, given the online nature of the sampling and the overall only modest response rates, it is very likely that the sample we analyzed was biased towards greater avidity than is to be expected in the general fisher population, which has also been reported for fishing application users (Gundelund et al. 2020) and for survey participations in online surveys vs. offsite surveys (Ryan et al. 2024). Therefore, it is very likely that the sample proportions (e.g., proportions of the sample that consumed social media vs. those that did not) do not represent valid population-level estimates, and we assume the actual consumption frequency to be lower in the real population than in our sample. Also, we cannot be sure that the online consumption patterns of very lowly engaged fishers are similar to what we report here. Moreover, our sample is biased to Catalonia and therefore should not be

generalized to other areas in Spain or beyond. However, Vitale et al. (2021), who used both online and onsite survey data in our same study area, found similar patterns in content-sharing behavior across online and on-site survey methods, suggesting that our survey results may hold for responses to be expected from random on-site surveys in Catalonia. Yet, given the lack of non-response bias, our population-level data that we present (e.g., the frequency of use data) shall not be read as necessarily representing the population of Catalanian fishers.

As our study is hypothesis-testing in nature, we believe that the correlations we found are generally valid, while population-level data (e.g., which percentage of an age group uses social media) are likely biased towards more avid fishers and cannot be generalized. That said, in our sample, we identified YouTube as the most commonly used platform to consume fishing content by recreational fishers in Catalonia (Spain), with an average usage significantly higher than Instagram and Facebook, making it a practical option for reaching the largest number of fishers when resources are limited. Instagram, meanwhile, is particularly popular among younger fishers, enabling managers and other communicators to post photos and maintain a visually appealing profile with less time investment than video editing on YouTube. For communicating with an older audience (47+ years), Facebook seems more effective than Instagram, possibly because of its more specialized information and capacity to develop peer-to-peer relationships with other fishers (e.g., Facebook “friends” vs. Instagram “followers”; Fietkiewicz et al. 2016). For communication objectives focused on engaging both avid and less avid fishers, YouTube may be the most recommended platform, followed by Instagram and Facebook as equally viable alternatives. By contrast, TikTok is currently the least advisable platform for communicators to engage with recreational fishers in Catalonia (although its general user base is growing; Gottfried 2024). Although it is likely that Catalonia shares similar trends with other developed regions in the northern Mediterranean Sea, and the consumption patterns of the analyzed platforms align with those of other countries (beyond the specific context of fishing; Eastman et al. 2021; Hruska and Maresova 2020), any extrapolations to other areas should be made with caution, and new studies be conducted before the population-level data we report can be taken at face value, ideally also exploring the types of content consumed on these platforms (e.g., catches, fishing trips, or tutorials).

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Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from ICATMAR. Restrictions apply to the availability of these data, which were used under license for this study. Data are available from the author(s) with the permission of ICATMAR.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section. **Table S1:** Results of the Cumulative Link Mixed Model (CLMM). **Table S2:** Pairwise comparisons of the effects of Age; Gender and Avidity on the frequency of recreational fishing content consumption across the five digital platforms. The table includes the following columns: *estimate* (difference in the predicted relative frequency of content consumption between pairs of platforms); SE (standard error of the estimate); *z-ratio* (z-score obtained by dividing the estimate by its standard error); and *p-value*. In the case of Gender, the pairwise comparison is made between men (M) and women (F) within the same platform.