

DATA STORYTELLING AS A TOOL FOR THE ACCEPTANCE OF SUSTAINABLE FISHING PRACTICES IN SMALL-SCALE FISHERIES

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UDC: 639.2:004.62(497.5)
DOI: <https://doi.org/10.15291/cores.4769>
CoReS CoReS 1, 1 (2025): 5-25
Original Scientific Paper
Submission received: 22 June 2025
Revised: 1 December 2025
Accepted: 14 December 2025
Published: 16 July 2026

ABSTRACT

Purpose: This study examines whether a brief data storytelling video is associated with pre-post differences in small-scale fishers' acceptance indicators for sustainable fishing (economic-benefit orientation and support for sustainability policies) and describes post-intervention self-reported behavioural intentions.

Approach/methodology/design: We conducted a mixed-methods, single-group pre-post pilot study with 16 small-scale fishers in northern Dalmatia. Participants completed a baseline questionnaire, watched a 3:46-minute data storytelling video designed using multimedia learning principles, and then completed a follow-up questionnaire with post-intervention open-ended items. Pre-post differences were examined using Wilcoxon signed-rank tests, and qualitative comments were analysed using reflexive thematic analysis.

Main findings: After watching the video, participants reported high motivation and strong self-reported behavioural intentions for practical actions (e.g., using selective gear and complying with regulations and

KEYWORDS:

behavioural intentions, data storytelling, fisheries management, local ecological knowledge, policy acceptance

AUTHOR'S NOTE:

Funding: This research received no external funding.

Conflicts of Interest: The authors declare no conflict of interest.

Data Availability: Data are available from the corresponding author¹ upon reasonable request.

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quotas). Intentions were weaker for measures perceived as more restrictive or collective (e.g., seasonal bans and broader conservation initiatives). In this pilot sample, post-intervention ratings were significantly higher for indicators of perceived long-term economic benefits, and support for sustainability-oriented policies.

Research limitations: The findings are exploratory due to the small sample, absence of a control group, and reliance on self-reported outcomes measured immediately after exposure. The study does not measure observed behaviour.

Practical implications: Brief, locally grounded video narratives can complement technical communication by translating evidence into understandable, locally relevant messages and addressing concerns about legitimacy and fairness.

Social implications: Communication interventions that integrate scientific evidence with fishers' perspectives may foster more inclusive, trust-based governance dialogues.

Originality/value: The study provides exploratory pilot evidence on data storytelling as a communication intervention for acceptance indicators in small-scale fisheries and links exploratory indicator patterns to fishers' evaluations of persuasive narrative elements.

1 INTRODUCTION

In many coastal communities, fishing supports livelihoods and local identity. Yet fisheries face increasing ecological and economic pressures (Golden et al. 2024; Pelage and Frédou 2023). This makes sustainability a central governance concern. Fisheries management is an inherently applied activity carried out under conditions of global change (Cooke et al. 2024). Policy success depends on whether local actors accept and follow rules, which is shaped by legitimacy, trust and communication. When stakeholders do not understand the rationale for measures, compliance weakens (Pita et al. 2025). Fishers' perceptions are therefore essential, as they reveal how resource users experience and judge governance (Powell and Ordonez-Gauger 2024).

Many scholars propose integrating scientific data with fishers' local ecological knowledge (LEK), especially in data-poor systems (Pelage and Frédou 2023). However, evidence shows that higher LEK does not necessarily co-vary with support for specific policies, such as marine protected areas (McClean and García-Quijano 2022). This suggests that knowledge integration alone may be insufficient and that communication barriers and information flow within socio-political networks also matter (McClean and García-Quijano 2022).

Data storytelling offers a plausible way to address these barriers. It combines evidence, visuals and narrative to make complex information easier to process (Segel and Heer 2010). In fisheries governance, such formats can explain not only what regulations require, but also why they matter. They may also support legitimacy by connecting scientific claims to local realities and concerns about fairness (Pita et al. 2025; Powell and Ordonez-Gauger 2024). Multimedia principles suggest design features that may support comprehension and engagement (Mayer 2024). Narrative elements can increase attention and perceived relevance, which may support deeper processing of evidence (Dahlstrom 2014).

Despite these arguments, direct evidence from intervention studies remain limited. Implementation science approaches that test how evidence is adopted in routine practice are uncommon in fisheries research (Cooke et al. 2024). Most of the literature describes perceptions and LEK, rather than evaluating specific communication tools. Researchers widely use

video for data collection, but they rarely use it to disseminate findings to the public or to shift intentions in practice-oriented settings (Walker and Boyer 2018). In addition, multimedia design principles mostly originate from domains such as educational psychology (Mayer 2024). Their value in the fisheries domain therefore remains an empirical question.

To address this gap, we conducted a mixed-method, single-group pre-post pilot study with small-scale fishers in northern Dalmatia. Our objective is to explore whether exposure to a data storytelling video is associated with pre-post differences in acceptance indicators (economic-benefit orientation and support for sustainability-oriented policies). We also describe post-intervention self-reported behavioural intentions regarding specific practices. Accordingly, we ask: (RQ1) What are small-scale fishers' baseline perceptions of and concerns about sustainable fishing? (RQ2) Do perceived long-term economic benefits and support for sustainability-oriented policies differ after the video intervention? (RQ3) Which practices show the highest post-intervention self-reported behavioural intentions and which narrative elements do small-scale fishers identify as most persuasive, and why?

This study provides exploratory pilot evidence on a brief, theory-informed communication intervention for small-scale fisheries. It links exploratory pre-post indicator patterns to fishers' post-intervention reflections on narrative elements. Methodologically, it combines survey measures with qualitative interpretation to clarify outcome patterns and fishers perceived persuasive features. Practically, it informs the design of stakeholder-facing communication tools and motivates larger controlled and longitudinal research to test durability and links to observable practice.

2 LITERATURE REVIEW

2.1 SUSTAINABILITY PERCEPTION

Fishers' understanding and definition of sustainability is often shaped by a combination of their own experience, generational knowledge, and socio-environmental conditions. Gaining insight into these perceptions is crucial for developing management strategies that are not only eco-

logically sound, but also socially acceptable. Several studies have investigated this topic, revealing common concerns, as well as differences in how sustainability is perceived across various fishing communities. For example, fishers often cite the decline of fish stocks and biodiversity as evidence that current practices are not sustainable (Pelage and Frédou 2023; Karnad and Karanth 2014). Although overfishing is the most frequently identified culprit, many also highlight other stressors such as pollution and climate-related changes in the oceans.

Some fishers feel excluded from decision-making, arguing that policies often ignore their experience and local knowledge (Pelage and Frédou 2023). Regulations are not always perceived as helpful. In some cases, they are perceived as too strict or not in line with actual conditions, leading to non-compliance (Karnad and Karanth 2014). This is particularly true when rules are perceived as threatening to their short-term livelihoods. These findings link acceptance to perceived fairness and feasibility, not only to awareness.

However, attitudes towards the conservation of marine resources improve when fishers see tangible benefits for their community. Factors such as education, environmental awareness and participation in decision-making are often associated with more positive perception of sustainability (Braga and Pardal 2017; McDonald and Vianna 2020; Buana and Barlian 2023). Traditional ecological knowledge also plays a significant role. This evidence suggests that local ecological knowledge does not always translate into support for specific conservation policies, highlighting the importance of governance legitimacy and communication.

Fishers who follow sustainable fishing practices, such as observing seasonal bans and using selective gear, often support conservation efforts (Audefroy and Sánchez 2017). Although local priorities differ across regions, fishers consistently express a desire to participate in policy-making, to have their knowledge respected, and to ensure the long-term sustainability of marine resources. This underscores the importance of involving fishers not only as stakeholders but also as collaborators in creating a sustainable fishing system. Combining scientific knowledge with the practical knowledge of local communities can offer the most effective way forward in achieving resilient and equitable management of marine

resources. At the same time, the literature suggests that the pathway from knowledge to acceptance is not automatic, which motivates testing communication interventions that explain policy rationales and address fairness concerns.

2.2 DATA STORYTELLING

Communicating complex data in ways that are understandable to diverse audiences has long been a challenge. This is especially true in fisheries management where decisions often rely on technical information such as stock assessment models, catch and effort statistics, biological reference points, and spatial management data. One technique that is increasingly used is data storytelling. Through visualisation and narration, data storytelling presents information in ways that are relatable and impactful, enabling audiences to understand insights and act on them. In this paper, data storytelling refers to narrative-driven communication that combines evidence with visual structure and a clear message. It is important when communicating information to decision makers, stakeholders and wider audiences.

This method was used to draw attention to discarded fish in the Fish Fight campaign which employed a mix of media platforms (Gambarato and Medvedev 2015). Stories do more than convey facts, they evoke emotion, empathy, and urgency. In the context of marine sustainability, narratives about declining fish stocks, habitat loss, or illegal practices can resonate strongly with audiences. When told effectively, these stories can foster a shared sense of responsibility. Emotional engagement can also make complex environmental challenges feel more personal, which in turn boosts public support for conservation (Funk 2024; Savoie 2022).

Beyond raising awareness, storytelling can encourage active engagement and participation. Initiatives that invite fishers, researchers, and policymakers to share experiences and insights through media - whether videos, interviews, or interactive tools - help build mutual understanding. Co-created narratives reflect a broader range of voices and encourage joint ownership of proposed solutions (Buana and Barlian 2023; Gercek and Malvarosa 2022).

Visual tools play a major role in this process: interactive maps, digital dashboards, and real-time monitoring systems are not just technical add-ons, they convert raw data into meaningful, actionable insights. Technologies such as geospatial mapping and IoT devices have already shown promise in tracking fishing patterns and identifying critical zones, making it easier to act before problems escalate (Amora and Cuizon 2024; Ribera-Altimir and Galimany 2023). However, despite growing interest in narrative and multimedia formats, there is limited intervention evidence on whether brief data-storytelling videos can shift acceptance indicators or behavioural intentions among small-scale fishers.

3 METHODOLOGY

3.1 RESEARCH DESIGN

This pilot study employs a mixed-methods, single-group within-subjects pre-post design to investigate whether exposure to a data storytelling intervention is associated with changes in self-reported acceptance indicators among small-scale fishers, including perceptions and behavioural intentions related to sustainable fishing practices. Quantitative and qualitative methods are combined to provide a comprehensive understanding of post-exposure change patterns and participants' interpretations. Participants first completed a baseline questionnaire, then viewed a context-specific data storytelling video, and subsequently completed a follow-up questionnaire. The quantitative component assessed pre-post changes in perceived economic benefits of sustainable fishing and support for related policies using non-parametric analysis. The qualitative component was informed by reflexive thematic analysis (Braun and Clarke 2019), which explored participants' post-intervention reflections and the meanings they attributed to the video. This pragmatic mixed-methods approach enabled the integration of quantitative findings with participants' qualitative insights, enhancing the interpretive depth of the results. Given the pilot design and absence of a control group, quantitative findings are interpreted as exploratory.

3.2 PARTICIPANTS

A total of 16 small-scale fishers from a northern Dalmatian coastal community participated in this pilot study. Participants were selected using purposive sampling, targeting individuals actively engaged in local small-scale fisheries who employed diverse fishing methods and had varying levels of experiences. This strategy aimed to ensure the inclusion of a range of perspectives relevant to the study's focus on sustainable fishing practices. All participants were male, with ages ranging from 38 to 72 years ($M = 51.3$, $SD = 9.2$). The majority had completed secondary education ($n = 10$, 62.5%), while the remainder held a university degree ($n = 6$, 37.5%). Participants were recruited through direct contact and in collaboration with local fisheries associations and cooperatives. Participation in the study was voluntary, and all individuals provided informed consent prior to data collection. Before participating, they were informed about the purpose of the study, the voluntary nature of participation, their right to withdraw without consequences and that the collected data would be used for research purposes and reported in anonymised, aggregated form. Ethical procedures were followed throughout the research, including the protection of participant confidentiality and the right to withdraw at any time. No personally identifiable information was recorded. Although limited in size, this sample was considered appropriate for the exploratory objectives of a pilot study, providing initial insights into the feasibility of the research and potential post-exposure changes in the measured indicators.

3.3 MATERIALS

Two self-administered questionnaires were developed for this study: a pre-intervention (baseline) questionnaire and a post-intervention (follow-up) questionnaire. Both instruments included closed-ended Likert-scale items, while open-ended items were included only in the post-intervention questionnaire. The baseline questionnaire assessed fishers' initial perceptions, policy support and self-reported behavioural intentions related to sustainable fishing practices. After

completing the baseline questionnaire, participants viewed a data storytelling video intervention. Immediately after viewing the video, participants completed the follow-up questionnaire. The post-intervention questionnaire included the same core closed-ended items to enable pre-post comparison plus additional items designed to capture post-exposure motivation and participants' reflections on the video content. The Likert-scale items ranged from 1 (strongly disagree) to 5 (strongly agree) or from 1 (never) to 5 (very often), depending on the question format. Open-ended items invited participants to describe which part of the video had the greatest impact on them and to offer any additional comments or suggestions. The questionnaire content was informed by relevant literature on fisheries sustainability, EU policy frameworks, and prior studies exploring fishers' perceptions and behavioural intentions.

The video intervention was designed in alignment with the Cognitive Theory of Multimedia Learning (CTML), as recently expanded by Mayer (2024). CTML posits that meaningful learning occurs when instructional materials foster appropriate cognitive, affective, and motivational processing. According to the theory's three guiding assumptions - dual channels, limited capacity, and active processing - people learn best when visual and auditory channels are used efficiently, cognitive load is minimised, and learners are actively engaged in selecting, organising, and integrating information. The 3:46-minute data storytelling video presented key concepts of sustainable fisheries and real-life examples within the Croatian context. It combined simplified data visualisations with explanations to illustrate trends in fish stock depletion and the ecological and economic consequences of overfishing. The video also addressed the role of regulatory measures, selective fishing gear, and spatial protection in supporting stock recovery. The content was evidence-based to support understanding, rather than to instruct participants on specific actions. The short video served as a data storytelling intervention and was carefully crafted to resonate with small-scale fishers who may be less accustomed to data-dense presentations. Drawing on Mayer's (2024) multimedia design principles, the intervention emphasised coherence, personalisation, signalling, and modality. The full video script and slide deck are available from the authors on request.

3.4 PROCEDURE

The pilot study was conducted as a pre-post pilot intervention in October 2024, targeting small-scale fishers in a northern Dalmatian coastal community. Data were collected remotely using a digital survey developed in Google Forms. Participants received an email invitation that included a brief explanation of the study and a direct link to the Google Form. Upon accessing the form, participants were presented with an informed consent page, followed by the pre-intervention questionnaire. Immediately after completing the baseline section, the participants were directed to watch a video-based data storytelling intervention. Following the video, participants were seamlessly directed to the post-intervention questionnaire. The entire process was self-administered and took approximately 15-20 minutes to complete. No compensation was offered, and participation was entirely voluntary and anonymous.

3.5 DATA ANALYSIS

Quantitative data were analysed using non-parametric statistical procedures appropriate for ordinal-level data and small sample sizes. Given the within-subjects, repeated-measures design in which the same participants completed pre- and post-intervention questionnaires, Wilcoxon Signed-Rank Tests were conducted to assess changes in key outcome variables. These included perceptions of the long-term economic benefits of sustainable fishing and support for sustainable fisheries policies. The Wilcoxon test was selected due to its suitability for analysing Likert-type data that do not meet the assumptions of parametric tests (Field 2024). Descriptive statistics, including the mean, median, standard deviation, and standard error, were computed to summarise central tendencies and variability. Effect sizes were calculated using rank-biserial correlation, providing a measure of the magnitude of change (Kerby 2014). Given the pilot design and small sample size, statistical inference is treated as exploratory.

Qualitative data from post-intervention open-ended questionnaire items were analysed using reflexive thematic analysis (RTA), following the

six-phase process outlined by Braun and Clarke (2019). This approach recognises the researcher’s active role in theme development and treats reflexivity as an integral part of the analytic process. The analysis was conducted inductively, with codes generated directly from the data and grouped into broader themes that reflected shared patterns of meaning. This iterative and reflective approach was used to identify and interpret fishers post-intervention reflections on sustainable fishing and the narrative elements they perceived as persuasive.

4 RESULTS

This section presents the results of a pilot study conducted among 16 small-scale fishers from a northern Dalmatian coastal community. Descriptive statistics summarise the participants’ fishing practices, awareness of sustainable fishing principles, and their responses following the video intervention. Subsequent inferential analyses explore whether pre-post differences are observed in participants’ perceptions and policy support, given the single-group pilot design and exploratory intent.

4.1 DESCRIPTIVE STATISTICS

Descriptive data were collected to contextualise participants’ baseline engagement with sustainable fishing practices and to report post-intervention levels of motivation and behavioural intention following the video intervention.

TABLE 1. Descriptive Fishing Practices and Training

Category	Frequency	Percentage
Use of Selective Fishing Gear		
Yes	11	68.8%
Not sure	4	25.0%
No	1	6.2%

Category	Frequency	Percentage
Adherence to Fishing Regulations		
Mostly	8	50.0%
Strictly	8	50.0%
Prior Training in Sustainable Practices		
No - not offered	10	62.5%
No - not needed	3	18.8%
Yes, applies it	2	12.5%
Yes, not applicable	1	6.2%

On average, participants rated the frequency of community discussions about sustainable fishing as 3.5 ($SD = 0.97$), on a scale from 1 to 5.

Following the video intervention, participants reported high levels of motivation and behavioural intentions to engage in sustainable fishing practices. On a scale from 1 (not at all) to 5 (very much), the average motivation score was 4.56 ($SD = 1.03$), indicating that most participants felt strongly motivated to apply what they had learnt. Similarly, the intention to use selective fishing gear was very high, with a mean of 4.75 ($SD = 0.45$), suggesting near-universal readiness to adopt more sustainable tools.

Intentions to comply with fishing regulations and quotas were also strong ($M = 4.56$, $SD = 1.03$), while slightly lower scores were observed for avoiding fishing during spawning periods ($M = 4.38$, $SD = 1.09$) and engaging in broader conservation initiatives ($M = 4.00$, $SD = 1.26$). Despite these small differences, all variables showed positively skewed distributions, with most responses clustered near the upper end of the scale. These results indicate high levels of self-reported motivation and behavioural intentions to adopt selected sustainability-oriented practices following the video intervention.

4.2 QUANTITATIVE ANALYSIS

To examine whether acceptance-related indicators differed before and after exposure to the video, Wilcoxon Signed-Rank Tests were conducted on two key dimensions: perceived long-term economic benefits of sustainable fishing and support for sustainable fisheries policies.

Results indicated a statistically significant increase in perceived economic benefits, $W = 12.5$, $p = .012$. The median score rose from 3.00 at baseline to 5.00 post-intervention, indicating higher post-intervention ratings in this pilot sample. The effect size, reported as a rank-biserial correlation, was -0.762 , indicating a large effect (see Table 2 and Table 3). This indicates a post-intervention increase in participants perceived understanding of the long-term economic benefits of sustainable fishing.

Similarly, support for sustainable fisheries policies showed a statistically significant increase, $W = 0.0$, $p = .021$. The median support score increased from 4.5 to 5.0, with a rank-biserial effect size of -1.000 , also indicating a large effect (see Tables 4 and 5). These results indicate higher post-intervention support for sustainability-oriented fisheries policies and regulatory measures. Given the pilot design ($N=16$) and the absence of a control group, these inferential results are interpreted as exploratory evidence of post-exposure change rather than causal effects.

TABLE 2. Wilcoxon Signed-Rank Test Results for Economic Benefits Understanding

Variable Pair	<i>W</i>	<i>p-value</i>	Effect Size (<i>r_rb</i>)
Understands_Econ_Benefits_pre vs BenefitToCommunity_post	12.5	.012	-0.762

TABLE 3. Descriptive Statistics for Economic Benefits Understanding

Variable	<i>N</i>	Mean	Median	<i>SD</i>	<i>SE</i>
Understands_Econ_Benefits_pre	16	3.06	3.00	0.854	0.213
BenefitToCommunity_post	16	4.44	5.00	1.094	0.273

TABLE 4. Wilcoxon Signed-Rank Test Results for Policy Support

Variable Pair	<i>W</i>	<i>p-value</i>	Effect Size (<i>r_rb</i>)
SustainablePolicy_Agree_pre vs Policy_Importance_post	0.0	.021	-1

TABLE 5. Descriptive Statistics for Policy Support

Variable	<i>N</i>	Mean	Median	<i>SD</i>	<i>SE</i>
SustainablePolicy_Agree_pre	16	4.00	4.5	1.211	0.303
Policy_Importance_post	16	4.75	5.0	0.775	0.194

4.3 QUALITATIVE ANALYSIS

Through reflexive thematic analysis, several rich, coherent themes were developed that reflect participants' diverse perceptions and motivations following the video intervention (see Figure 1 and Table 6).

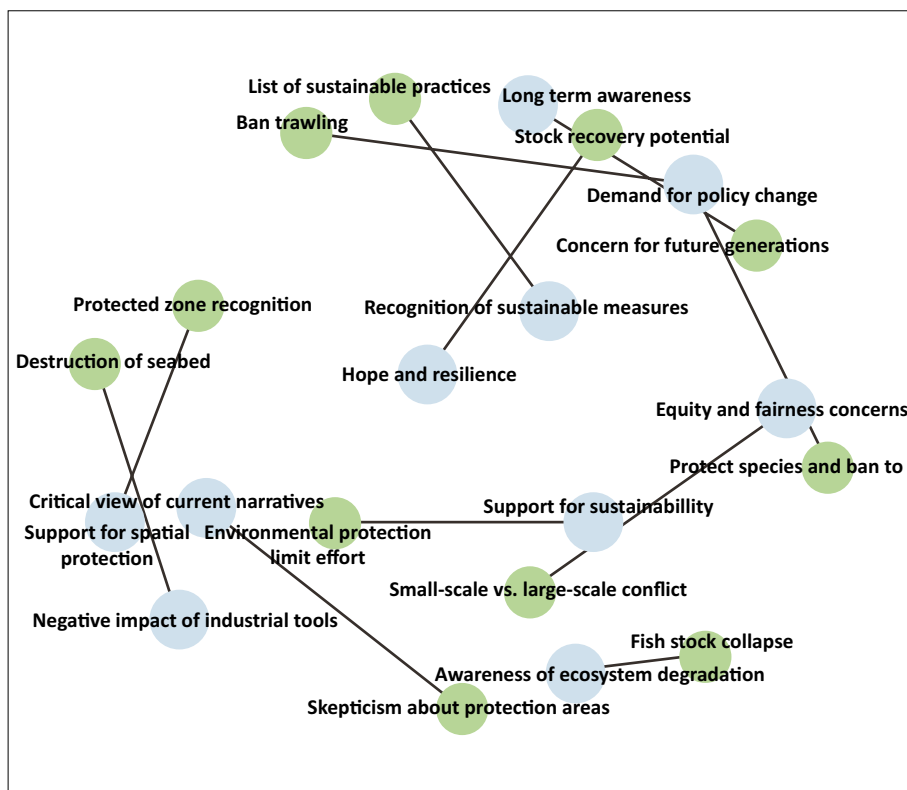


FIGURE 1. Thematic Map of Fishers' Reflections on Sustainable Fishing

A prominent theme, long-term awareness, reflected concern for future generations and the sustainability of marine resources. Demand for policy change emerged as a central theme, including calls for banning destructive practices such as bottom trawling. Other themes included the negative impacts of industrial tools, support for spatial protection, and hope and resilience, based on the perceived potential for fish stock recovery. Critical views of prevailing narratives were also noted, as some

participants questioned the emphasis on specific zones. Equity and fairness concerns surfaced, particularly highlighting the imbalance between small-scale and industrial fisheries. Participants demonstrated recognition of sustainable measures, listing concrete tools and practices. These themes reflect participants' perspectives on sustainable fishing and the meanings they attributed to the video content. Because open-ended responses were collected only post-intervention, qualitative findings are interpreted as participants' reflections after exposure rather than evidence of within-person change.

TABLE 6. Sample Codes and Themes from Open-Ended Responses

Quote (in Croatian language)	Code	Theme
Budući naraštaji	Concern for future generations	Long-term awareness
Dio koji pokazuje statistiku uništavanja morskog dna kočama...	Destruction of seabed	Negative impact of industrial tools
Koče treba skroz zabraniti!!	Ban trawling	Demand for policy change
No take zona Jabučne kotline	Protected zone recognition	Support for spatial protection
Dio o vrstama riba koje su bile pred kolapsom	Fish stock collapse	Awareness of ecosystem degradation
Objašnjenje obnove ribljeg fonda	Stock recovery potential	Hope and resilience
Nijedan, previše se hvalite Jabučnom kotlinom	Skepticism about protection areas	Critical view of current narratives
Zaštita staništa, selektivni alati, zabrana potegača	List of sustainable practices	Recognition of sustainable measures
Komentar o malim ribarima i kočama	Small-scale vs. large-scale conflict	Equity and fairness concerns
Očuvanje organizama i zabrana potegača	Protect species and ban tools	Demand for policy change
Zaštita okoliša i smanjenje ribara	Environmental protection; limit effort	Support for sustainability

5 DISCUSSION

The findings are interpreted in relation to the study objectives, with particular attention to how a data storytelling intervention is associated with differences in fishers' perceptions, attitudes, and self-reported behavioural intentions regarding sustainable fishing. Drawing on Mayer's Cognitive Theory of Multimedia Learning, the results suggest that the intervention was acceptable and engaging for participants. Addressing RQ1, the baseline findings indicate that small-scale fishers were already highly compliant with existing regulations and reported frequent use of selective fishing gear, despite limited access to formal training in sustainable fishing practices (see Table 1). This combination suggests that sustainability-oriented practices in the community studied are shaped less by formal education and more by experiential knowledge and regulatory exposure. At the same time, moderate levels of community discussion about sustainability point to gaps in structured communication and shared reflection, echoing previous research showing that compliance does not necessarily imply policy understanding or support (McLean and García-Quijano 2022; Powell and Ordonez-Gauger 2024).

Quantitative results showed significant pre-post differences of both perceived economic benefits of sustainable fishing ($p = .012$, $r_{rb} = -0.762$) and support for fisheries policies ($p = .021$, $r_{rb} = -1.000$), each with large effect sizes. In relation to RQ2, these findings suggest that exposure to the data storytelling video was associated with more favourable perceptions of the economic rationale for sustainability measures and stronger policy support. This is consistent with Gambarato and Medvedev's (2015) research on the potential role of storytelling strategies in increasing awareness of fishing policies. Importantly, participants also reported high post-intervention motivation, particularly in their intention to adopt selective gear, follow regulations, and avoid spawning periods. These results align with Mayer's (2024) emphasis on affective and motivational engagement in multimedia learning. Although these findings reflect self-reported behavioural intentions rather than observed behaviour, they indicate areas where data storytelling approaches may be particularly relevant for fostering engagement with complex fisheries governance issues.

The qualitative findings, analysed through reflexive thematic analysis, added context to the interpretation of these findings. Themes such as long-term awareness, demand for policy change, and hope for ecological recovery showed that participants were reflective and future oriented in their post-intervention accounts. In addition, expressions of fairness concerns and critical views of dominant narratives suggest that participants engaged critically with the content, rather than merely absorbing it passively. This active engagement of the participants aligns with Buana and Barlian's (2023) qualitative research on community engagement with sustainable small-scale fisheries. It also supports Braun and Clarke's (2019) view of meaning-making as an active, interpretive process, co-shaped by participants lived experiences. Addressing RQ3, the qualitative findings indicate that locally relevant examples and visual evidence of stock recovery were perceived as particularly persuasive. Because open-ended responses were collected only post-intervention, these qualitative themes are interpreted as reflections after exposure rather than evidence of within-person change.

The findings have several implications for designing of sustainability communication in fisheries management. First, they suggest that multimedia interventions tailored to the cultural and cognitive context of the audience (in this case small-scale fishers) can support understanding and self-reported changes in behavioural intention (Gambarato and Medvedev 2015). Second, integrating data storytelling and narrative framing offers a valuable complement to more technical or policy-heavy communication formats (Funk 2024). Finally, using accessible digital platforms, such as Google Forms, demonstrates the feasibility of implementing such interventions remotely, even in resource-limited contexts.

6 CONCLUSION

This study provides pilot empirical evidence that a data storytelling video may be a promising communication tool in small-scale fisheries contexts. The findings suggest that a short video adapted to the local fisheries context is associated with higher ratings on acceptance indicators, including perceived long-term economic benefits of sustainable fishing and support

for sustainability-oriented fisheries policies. Participants also reported high post-intervention self-reported behavioural intentions related to selected sustainable practices, indicating that narrative-based communication may support engagement with complex sustainability issues.

The study has several limitations that constrain interpretation. The sample size was small ($N = 16$) and drawn from a single coastal community which limits generalisability. The single-group pre-post design lacked a control or comparison group. Therefore, observed pre-post differences cannot be attributed solely to the intervention. Another limitation is that outcomes were self-reported and measured immediately after exposure, preventing assessment of longer-term persistence and observed behavioural change. Finally, open-ended responses were collected only post-intervention and therefore capture participants' reflections after exposure rather than qualitative within-person change.

Future studies should expand the sample size and include a control or comparison group to strengthen causal inference. There is also potential to explore longitudinal impacts by assessing whether changes in self-reported behavioural intentions persist and relate to observable practices over time. Finally, adapting the storytelling model for different stakeholder groups, including policymakers, young people, urban consumers, could broaden its application within the fisheries sector and beyond.

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