Early assessment of a new media model for promoting marine conservation awareness in Malaysia

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Abstract Marine conservation is one of the areas that need attention in pursuit of a sustainable planet. Human activities have led to the current dire state of the marine ecosystem. To arrest this, many initiatives have been carried out to inculcate marine awareness using various media, approaches, and target audiences. The emergence of new media provides the opportunity to disseminate awareness on marine conservation to a wider audience. However, the efficacy of this medium in the local context has yet to be determined. Hence, this paper presents the early assessment of the effectiveness of a new media model for promoting marine conservation awareness in Malaysia. Data from nine semistructured interviews with marine experts, media practitioners and media influencers are presented. The results emphasized the importance of developing a long-term communications strategy that advocates for a new media model to promote awareness of marine environmental impacts and conservation issues. The findings suggest that the new media has great potential to promote marine conservation awareness with higher impacts than conventional media. Nevertheless, further research is needed to explore the long-term effectiveness of the new media model and its potential to bring about positive behavioral changes among the target audience.

Keywords: communication strategy, conservation awareness, semistructured interviews, marine-related content, marine experts, media practitioners

1. Introduction

Marine conservation is a pressing issue in Malaysia, but people may not be fully aware of the current state of the country’s marine ecosystem or how they can contribute to conservation efforts. Despite the importance of marine ecosystems, public knowledge and awareness of conservation issues are still lacking (Mat, 2019). This is likely due to minimal media coverage of these issues. Hence, effectively communicating these issues through mass media is essential for enhancing the discussion of marine conservation (Kolandai-Matchett & Armoudian, 2020). Although the mass media is perceived as a useful avenue for enhancing public awareness of marine life conservation, there is insufficient research evidence to support this assertion (Thompson-Saud et al., 2018; Mat, 2019).

The use of social media to create or enhance environmental awareness could influence political will, subsequently leading to the improvement of environment-related policies, including sustainable practices and regulations (Mohamad & Dominic, 2021). In addition, cognitive and affective triggers from user-generated content on social media can also positively affect travelers’ environmental concerns, attitudes, and behaviors at tourist destinations, for example, in coastal areas (Sultan et al., 2021). Nevertheless, sustainable tourism continues to be a challenge because of the prevalence of irresponsible tourist behavior, which dampens conservation efforts. The essential parts of coastal tourism are marine environments and beaches that are well cared for. They must be preserved and kept reasonably in good shape to contribute to the industry’s long-term economic growth (Semeoshenkov & Newton, 2015).

However, the lack of traditional media coverage and use of social media platforms for presenting information on marine life extinction to the general public is a concern in Malaysia. Therefore, this paper proposes a new media model for promoting marine life conservation awareness in Malaysia, which draws on social media insights, marketing, user-generated content and many more. The proposed model is based on a participatory approach that aims to engage new media users in
producing and disseminating conservation-related content using digital tools and social media platforms that are currently popular. Therefore, this study aims to answer the following research questions:

RQ1: What are the reliable platforms of new media for raising marine life conservation awareness in Malaysia?
RQ2: How do media practitioners, social media influencers, and marine experts incorporate marine life conservation into their programs?
RQ3: What is the new media model to be developed for promoting marine life conservation awareness in Malaysia?

2. Literature Review

2.1. A New Media Trend in Malaysia

Mobile technology integration is nothing new in the current modern world (Ismail et al., 2022). It can be employed as the most enhanced pedagogical tool for 21st-century education. The advances in Internet connectivity and mobile technologies have led to a surge in digital and social media usage among Malaysians, particularly younger generations. Information is now easily accessible, and online platforms such as Facebook, Instagram, TikTok, Twitter and YouTube are popular choices for news, entertainment and social interaction. Hence, the popularity of social media platforms has led to the emergence of new media businesses and influencers who leverage the power of social media to connect with their audiences and drive engagement.

In addition, the rapid growth of information communications technology (ICT) has significantly impacted all facets of everyday life, including political, social, and economic aspects, at all levels. At present, economic growth in many countries relies heavily on strong and advanced ICT infrastructure. This is supported by Muhamad et al. (2021), who stated that in the age of globalization, new media played an important role in disseminating information on all human activities, including business, social, economic and political matters. It also opens up new paths for political engagement.

The media is an important part of people’s lives and helps define each generation. The revolution in new media has shifted the mass media landscape (Bani et al., 2019). According to Jais et al. (2021), different media generations, such as radio generation, screen generation, and the current net generation, were identified and categorized based on their media usage. Moreover, people from older generations are now catching up with the latest emerging media, including social media and food delivery apps. The adoption of these emerging media outlets accelerated due to the COVID-19 lockdowns. On the other hand, younger people are more interested in the latest media technologies such as online games, entertainment apps, and online meeting apps (Jais et al., 2021). Social media platforms and applications are increasingly popular (Teng & Dhanapal, 2022), and they are currently being used as a typical way of communicating with many people without putting in much time or effort.

2.2. Marine-related Content in New Media

Marine-related content in new media is any form of digital media, such as articles, videos, social media posts, podcasts, and blogs focusing on marine-related topics. These topics include marine life, conservation efforts, ocean pollution, sustainable fishing, and marine tourism. New media has played a significant role in raising awareness about marine-related issues and promoting conservation efforts. To support this point, Kolandai-Matchett et al. (2021) stated that considering the deteriorating state of the oceans, scientists need to use the media to their fullest potential if they want the public to care about and support marine conservation efforts. Thus, effective communication and diffusion strategies are required to increase commitment to achieving environmental sustainability and to increase awareness of the issue (Legagneux et al., 2018; Do et al., 2015). Hence, the media is important for helping people know about issues and getting them involved, as it can also influence how people perceive and behave about this serious matter.

Takahashi and Tandoc (2016) highlighted that new media is a crucial way to disseminate scientific information to the public. It can also help reach a broad audience and promote awareness about marine life conservation issues. Although social media has been widely employed in many scientific fields, examples of its application in conservation science are currently limited (Minin et al., 2015). One of the main challenges of marine conservation is the lack of media coverage of marine-related content. Previous studies have shown that there is not much coverage of marine life conservation issues, but there has been extensive reporting on environmental pollution, for example, plastic waste and climate change. Yan et al. (2021) stated that marine conservation involves a diverse range of topics, from overfishing and pollution to climate change and habitat destruction, which can be difficult to convey in a clear and accessible manner. Moreover, Choong et al. (2021) and Heneghan et al. (2019) mentioned that plastic waste causes severe pollution and indirectly changes the climate by causing numerous alterations in the composition and operation of marine ecosystems. Many other concerns have resulted in species extinction and habitat degradation in marine ecosystems. This phenomenon could lead to fragmented and inconsistent coverage of marine conservation issues, thus hindering public engagement and understanding.

Another challenge of media coverage related to marine conservation is framing this issue, which has a significant impact on public perceptions and attitudes toward these issues (Shiffman et al., 2021). For instance, policymakers and business leaders may find media coverage that emphasizes the financial benefits of marine conservation, such as sustainable...
fisheries and ecotourism, more appealing than coverage that highlights the ethical or moral imperative of marine conservation (Notarbartolo di Sciara et al., 2020). However, framing the need for marine conservation primarily in economic terms may resonate less strongly with the public, who may be more responsive to emotional appeals and personal stories. A study by Mat (2019) concluded that rhetorical elements (according to high-efficacy sequences) that focus on ethical (ethos), emotional (pathos) and rational (logos) appeals are needed to encourage pro-conservation attitudes. Among these appeals, however, pathos is the most effective at promoting pro-conservation awareness and enhancing social change.

Media coverage tends to reflect people’s sensitivities and public opinion. Other variables may also affect media coverage, resulting in new media trends directly impacting the direction of the general public’s attention. Media coverage may be biased toward dramatic or sensational stories that emphasize conflict and spectacle over educating and providing information to people (Toivonen et al., 2019). Previous studies have analyzed media coverage trends and issues related to environmental threats, such as air pollution (Tvinnerereim et al., 2017) and wildlife populations (Chandler et al., 2018). Nevertheless, information regarding how marine issues are portrayed in the media is insufficient. Additionally, it has been discovered that extensive media coverage of marine plastics emphasizes emotional imagery to draw audiences’ attention. According to Koelmans et al. (2017), this emotional coverage of the issue might bias not only the general public but also scientists’ and politicians’ opinions regarding how to manage marine plastic pollution and conserve marine ecosystems. Overall, new media has become an important tool for sharing information and raising awareness about marine-related issues, and it is likely that new media will continue to play a critical role in conservation efforts in the future.

2.3. The Level of Marine Conservation Awareness in Malaysia

Understanding the fragility of our environment and the significance of its preservation are important concepts in promoting environmental awareness. A study by Jusoh et al. (2018) revealed that university students in Malaysia have a moderate level of environmental awareness. However, the level of awareness depends on the issue being assessed. Despite significant progress in raising awareness about marine conservation in recent years, there is a need for greater awareness and action in Malaysia. Some critical marine conservation issues in Malaysia include overfishing, marine pollution, and habitat destruction. Efforts to address these issues include establishing marine protected areas, adopting sustainable fishing practices, and initiatives to reduce marine pollution. According to Boyes and Stanisstreet (2012), behavioral change may be possible if environmental education encourages students to make wise decisions about their actions on emerging issues.

Various studies have been conducted to evaluate the level of awareness, knowledge, and attitudes of Malaysians toward marine conservation. Despite efforts by government and nongovernmental organizations, it has been found that the level of awareness and understanding of marine conservation among Malaysians is relatively low (Mat, 2019). Abidin et al. (2020) highlighted that conservation awareness, as part of a long-term strategy to preserve Malaysia’s marine ecosystems, should target individuals of all ages, from children to elderly individuals. To support this point, Evans et al. (2007) stated that environmental education needs to start at an early phase of schooling, approximately the age of 11, when children begin to understand the impact of anthropogenic activities on the environment. In addition, programs that fully engage the public in learning about marine species can enhance participant understanding and empathy, which may affect their behavior and motivate them to take action related to conservation issues (Zeppelin, 2008). Conservation awareness, therefore, educates individuals to understand how natural resources and ecosystems affect each other and how these assets can all be appropriately managed through organized educational opportunities and experiences focused on various age ranges and communities.

Malaysia sees marine ecotourism as sustainable by encouraging eco-awareness and touting it as an alternative economic activity for depleting underwater ecosystems (Alamah & Elias, 2021). The public is also focused on increasing their awareness of marine park conservation efforts (Islam et al., 2014). By doing so, the conservation of marine life and resources will be more successful, as this will improve authorities’ and local populations’ awareness and concern, allowing ecotourism activities to continue. A study by Chen et al. (2019) showed that residents in some areas attach less social value cognition to marine ecosystems than tourists and conservation experts do, indicating a need for more education and awareness-building efforts among local communities. While there is some level of awareness about marine conservation among the general public in Malaysia, there is still a need for greater education and awareness-building efforts to ensure that people are informed about current issues and able to act to protect marine ecosystems.

3. Methodology

The qualitative research approach of the semistructured interviews was the most appropriate for identifying, examining, and finding a reliable new media model for promoting marine life conservation awareness. Choosing a qualitative approach was necessary to gain the broad perspective of the studied informants (Abdullah & Raman, 2001). The qualitative approach aims to understand the subjective reality of the participants. The general rule in the qualitative approach is that sampling will be continuously conducted until a saturation point, where no new information or insight is gained (Omona, 2013). In doing so, a semistructured interview was employed to gain in-depth information about the detailed implementation
of the new media model. This method was used because it encouraged the informants to freely speak based on their perceived information and communication about marine life conservation that was influenced by media messages, which is something that cannot be done by other methods. In this study, the data were obtained by conducting semistructured interviews with a total of nine informants, comprising marine experts, media practitioners, and media influencers. The small sample size is not a significant issue in qualitative studies since most scholars believe that a small number of subjects can provide in-depth and sufficient data (Suri, 2011).

In this study, the sample size for the interviews was designed and determined using the purposive sampling technique to ensure that the study participants could provide relevant information. Therefore, in this study, the researchers terminated the interview process because the data were saturated and no new information surfaced throughout the interview. In addition, purposive sampling was chosen based on researchers’ assessments that met specific criteria of the sample, which was believed to represent the research study’s core objective (Merriam & Tisdell, 2016). There were specific demographic requirements for the respondents in this study, which included marine experts, media practitioners, and new media influencers. Therefore, reliable qualitative respondents were selected based on the following characteristics that enabled them to contribute to the present study:

1) Malaysian marine experts, media practitioners, and new media influencers (age not related);
2) Of any ethnicity and marital status; and
3) Voluntary participants in the research.

In addition, this study employed semistructured interviews to combine structured and unstructured questions. The interview questions were more flexible, and the sessions were guided by a standard protocol consisting of a list of questions and steps to ensure that the interview session went smoothly and that the informants answered all the research questions needed (Hunter, 2012). All interviews with the informants were conducted online using Webex Meetings, with each session lasting approximately one to two hours to ensure that the data gathered were rich and in depth. To make each interviewee feel comfortable, the interviewer explained the purpose of the interview and the terms used for confidentiality. All participants consented for their interviews to be video recorded and for the researcher to take brief notes during the interview.

Thematic analysis was employed to identify, examine, and discover important and interesting patterns, channels and variables in the data. The data extracted formed the main themes and subthemes driven by the research objectives. For example, the researchers identified preliminary themes by examining codes that overlapped and then categorizing codes that were similar to each other, forming a theme that encompasses reliable social media platforms, media strategies, and hands-on contributions (see Figure 1). Thus, reliability and validity issues are highly important in qualitative research for determining the trustworthiness and power of research (Mytton et al., 2016; Wimmer & Dominick 2013).

3.1. Participant Indication

Semistructured interviews with nine informants, comprising marine experts, media practitioners, and media influencers, were also conducted. Here, each category of informant was labeled A, B, or C, and each individual was tagged 1, 2, or 3, respectively, to help the researchers easily identify each participant, as shown in Table 1.

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Participant</th>
<th>Tagging</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine expert</td>
<td>Expert in marine education and conservation</td>
<td>Marine expert 1</td>
<td>A1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine expert 2</td>
<td>A2</td>
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<tr>
<td></td>
<td></td>
<td>Marine expert 3</td>
<td>A3</td>
</tr>
<tr>
<td>Media practitioner</td>
<td>Practitioners with several years of experience in media institution or broadcasting industry</td>
<td>Media practitioner 1</td>
<td>B1</td>
</tr>
<tr>
<td>Media influencer</td>
<td>Content and video creator on several social media platforms</td>
<td>Media influencer 1</td>
<td>C1</td>
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<td></td>
<td></td>
<td>Media influencer 2</td>
<td>C2</td>
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<tr>
<td></td>
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<td>Media influencer 3</td>
<td>C3</td>
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4. Results

The research questions posed to participants were as follows: (i) what are the reliable platforms of new media for raising marine life conservation awareness in Malaysia?; (ii) how do local media practitioners, social media influencers, and marine experts portray marine life conservation in their programs?; and (iii) what is the new media model to be developed for promoting marine life conservation awareness in Malaysia? Based on the answers to these questions, several themes were generated from the data analysis regarding the reliability of the new media model.

The aim of the data analysis was to explore the reliability of the new media model, where the data were obtained from semistructured interviews with the informants. The recorded interviews were transcribed before the data were...
analyzed. Thematic analysis was used to identify the themes developed. The data analysis began with familiarization, whereby information identification, transcript reading and translation of the data were performed so that identification and analysis would be easier. The information obtained from the interviews was classified into three main themes: (i) a reliable new media platform, (ii) a media strategy for promoting marine conservation awareness, and (iii) a hands-on contribution to encouraging marine conservation. The themes that emerged are listed in the subsection below and are summarized in Figure 1, followed by excerpts from informants.

![Social Media Model for Marine Conservation](image)

**Figure 1** Social media model for marine conservation.

### 4.1. The Reliable New Media Platform

The first theme that emerged from the data analysis was the reliable new media platform. The data showed that the most reliable new media platforms for disseminating information to the public about marine life conservation are TikTok, Instagram, Facebook, YouTube, Twitter, and LinkedIn. These social media platforms are relevant and essential for promoting marine life conservation awareness in Malaysia. According to Informant A1, “As for me, I am focusing on LinkedIn because I think LinkedIn is where we can talk about issues professionally and we can learn how people are discussing such educational issues professionally”. In addition, informant A2 said, “These days, I am only on Facebook. I am not on Twitter; I am not on Instagram or any other social media platform, and lots of people actually already migrated out of Facebook these days. They are either on Instagram or TikTok primarily”. Another informant, B3, added that “For me, personally, Twitter is the fastest news page in Malaysia compared to others because the news can be shared instantly. There is no limitation of characters on Twitter when you’re sharing information”.

Moreover, some informants stated that TikTok is the preferred platform among Malaysians, especially among younger generations. As mentioned by Informant A3, “I would say that the platforms which prioritize photographs and videos like Instagram and TikTok, seemed to be preferred by the younger generation”. In addition, informant B1 added, “Currently, TikTok is the preferred one”. Additionally, Informants C1 and C3 supported by stating that “As for me, the most suitable and trending social media platforms currently are none other than TikTok”. “For me, the new media currently is topped by TikTok because it has approximately 7.8 billion users at the time and the majority of the users are from the young generations and school kids”.

With regard to the finding that TikTok is the most popular platform among younger generations, some informants agreed that there were a few reasons why new media was preferred as the most reliable platform. These data are not derived from diverse perspectives but rather from specific demographic information, which includes information from marine experts, media practitioners, and new media influencers. The data revealed three subthemes, namely, “everything is on a fingertip”, “active participation in a virtual community”, and “multipurpose usage”.

#### 4.1.1. Everything is on Fingertips
TikTok is the preferred choice because it is user friendly. As informants B1 and B3 highlighted, “TikTok is easy to install... It has many features and easy to add info into it... In TikTok, we can import the link into it, and then we can browse and add music that is not even in our phone’s library. In other words, it is more user friendly... It is an app that can include a lot of things... TikTok is much faster... TikTok is much more convenient and faster without spending much on it”. Informant B3 stated, “I think the first one is easily accessible. You can access it from your phone... Everyone can install it, create an account and then can access the contents on the platform... Therefore, I think the younger generation, even those who are still in school, have enough resources to get into that platform and use it without spending much”.

4.1.2. Active Participation in a Virtual Community

Several informants shared the opinion that TikTok allows easy and active participation among users. As informant A1 said, “TikTok has a very strong influence I might say... They are putting some kind of monetization, meaning to say the more content and more views you get”. Another informant, B1, added that “TikTok can capture the audience, mostly among young people. For example, the content for celebrating Malulidur Rasul. Young people will automatically view and sometimes comment on the content regarding Maulidur Rasul when we promote it on TikTok as they scroll their feeds”.

In addition, informant C1 stated, “TikTok uses the concept of short videos, and it is more attractive than other platforms... It also keeps up with a lot of trends, and the content on TikTok is easy to increase, meaning that it is easy for the views to keep adding up and make the content quickly go viral. For example, when I create content about fish and there are many followers who like fish or marine life, they will focus on that content, and then the content will become viral on TikTok’s hashtag... TikTok can popularize ordinary people who come from the village like me or my friends, who originally started from 0 followers to hundreds of thousands of followers. That is the advantage of TikTok... At first, I was skeptical too. However, it becomes trusted when there are more and more users, not just us. Other companies also use it to promote their products. Therefore, we can see that the platform is indeed authorized and safe”.

4.1.3. Multipurpose Usage

Social media is considered to be used for multiple purposes among younger generations. As informant A1 said, “They can promote their business and for marketing needs. Therefore, they have their own purposes, including in terms of making money”. Similarly, informant B1 said that young people are more active in using media platforms to do business: “Currently, it is easy to do online business because the buyer can just click the link provided and buy whatever they want. It is very convenient”.

Furthermore, young generations also considered TikTok to be a reliable platform for accessing education. According to informant C1, “TikTok itself also has TikTok education that brings many benefits to the young generation and students. TikTok has specialized in every field and niche. As for me, I joined TikTok in the food niche, and a friend of mine joined the education niche... TikTok is not only used for entertainment but also to blast information in education and many more... In one application, we can do many things”.

4.2. Media Strategy for Promoting Marine Conservation Awareness

The second theme that emerged from the data analysis was the media strategy for promoting marine conservation awareness. The results revealed that media strategy is vital in disseminating knowledge and information on marine life conservation awareness to the public. The media strategies, as noted by the informants, include (i) collaborating with social media influencers, (ii) consulting spokespersons who are experts in the field, (iii) providing eye-catching content, (iv) participating in citizen journalism, (v) meeting the demands of audiences, and (vi) engaging actively. The results suggested that these media strategies can be effective at promoting marine conservation awareness among Malaysians.

4.2.1. Collaboration with Social Media Influencers

In the context of its validity, reliability and exposure to an issue, most of the informants agreed that collaboration with social media influencers is a relevant and essential media strategy for promoting marine conservation awareness. As informant A3, B3 and C1 highlighted, “Team up and collaborate with people who are animators, people who are in the digital creative media advertising. I think they always have ideas on how to make animations, and those are always fun. People retain information and are attracted to things that are animated even if it is like interactive or little games and things like that...” Informant B3 added that “…Can do collaborations with influencers and the celebrities... Create an event to attract the young generation. At least, they are aware of something related to marine life, such as marine species extinction... We can also consider using influential people whom the youngsters are following”. Informant C1 said, “I think we must hire influencers with many followers to facilitate sharing on marine issue awareness... Many companies or agencies now use influencer services to market or promote their products. Therefore, the marine field can also use the same concept...”.

4.2.2. Spokespersons Among Field Experts
The selection of field experts as marine conservation spokespersons is crucial. As informant B1 mentioned, “We can use trusted sources and media personalities. Public figures who are reliable and suitable and who would not cause netizens to hesitate to believe what they are conveying... As Mat Dan has once become radio DJ for the east coast slot, then he is qualified. I think we can also use an expert diver, marine experts or people who were involved in the field of marine life so that the people will have more trust”. In addition, informant C1 added, “ML Studio usually spreads awareness about marine life. There were a few speakers talking about marine life, such as turtle issues, coral reefs, endangered species, etc. [ML Studio hires a few speakers to talk about issues that are currently happening].

4.2.3. Eye-catching Content

Another relevant media strategy to be considered in promoting marine conservation awareness is the eye-catching content created and used in new media platforms to ensure that the content can capture audiences. According to Informant A2, “Short video or reels are good, long videos are not good due to people’s short attention span. On TikTok, we learned about putting in music or audio that is trending all over TikTok so that people can view your video more, keywords, etc., and things like that”. Informant A3 said, “I would come up with short humorous videos, and those videos should not condescend or preach. It should be more about sharing in a humorous way, where I do not portray myself as a scientist but more like someone who shares about daily activities and invites people to learn new things together”.

Moreover, Informant B1 added that “The content must be in audio-visual form and relaxed... Maybe we can include some of the marine animals that we have never seen before in that content. Therefore, when people see that kind of content, they will be amazed... We can do Q&A type of content or slow-motion video type of content”. Another informant, B2, stated, “You just need a phone. In addition, then, there’s a audio visual. It is much more engaging and it is very necessary because people are more attracted to audio visual rather than just a still picture. Therefore, make use of the sound, make use of the video of people talking, or whatever content that you are doing”. Informant B3 further agreed that “Like videos that contain interesting and rare facts, the ones that many people do not know yet, or content that can trigger them to determine more about certain things. Because I think these days, triggering videos can create engagement, and it can get a lot of interaction among the people”. Informant C3 emphasized the following: “Use more visual aids and utilize the green screen feature, for example”.

4.2.4. Citizen Journalism

The study revealed that citizen journalism can also be an effective media strategy for promoting and disseminating marine conservation awareness in Malaysia. Informants A1, B1, and C1 shared the following: “I think we need to have a program or activity... We have to establish some program that they can get involved in, like coral adoption, and make them feel closer to us rather than a seminar and whatnot... For example, in Pulau Tioman, they can assemble a group of villagers to do activities together for the sake of the ocean. In Pulau Semporna too. Therefore, it is great to see that apart from spreading awareness, they took the initiative to teach the community how to boost the economy and make handicrafts; all these sustainable takes on the economy”. Informant B1 added, “Before this, we used to do a show about a busking project. We went to the islands and busked there. Then, the artist involved with the busking project will generally talk a little bit about things related to the ocean, such as protecting the ocean... We can divide and assign these particular locations to the media teams... Therefore, every year, the team needs to handle these checkpoints. When they have personally experienced interaction with marine life, they will know the feeling if we were to lose the creatures”. Informant C1 clarified, “Have to make content near that area. For example, I went to the island to see turtles. While creating content about the turtle, we will share awareness about the need to care for these marine life... People will be excited about our content because it is adventurous and interesting”.

4.2.5. Meeting the Demands of Audiences

The demand from audiences should be considered an important element of media strategy. As Informant C1 commented, “As for me, I usually make content based on what people commented on the previous content I posted. In other words, I make it based on their preferences... We must be friendly with our followers. They will like it if we are friendly with them. Therefore, for the next video, more people will comment, and because of that, our engagement will be high”. Furthermore, Informant C3 shared the following: “Usually, when we post a video, at the end of it you will find a CTA (call to action) where we will prompt our audience to give comments or opinions regarding the topic explained in the video”.

4.2.6. Active Engagement

Several informants mentioned that active engagement with users on new media platforms will be an effective and essential media strategy for promoting awareness of marine life conservation among the public. Informant A1 suggested that “When we set up a Facebook account for marine content, we tell the public that there is a reef in our coastal waters, so many people commented and were intrigued to join in. Posting Pictures of our activities will get many likes, so we can assume
that they pay attention to the postings. Every content is based on our interests and preferences. Once we like a page, we consent to be in that community and interact with the people in that particular group."

In addition, Informant B1 claimed that “they can build a group in the new media where the members and users will be in charge of spreading information and blasting it onto every media platform in order to trigger netizens... Make a contest to reward the audience. The prizes can be sponsored trips, but at the same time, we will have environmental activities such as picking up trash from the beach, etc.”. Similarly, Informant C1 supported that “Only when we are active and consistent will people be interested in finding out more... They may start doing programs or study tours to conservation places. Maybe a few of them will record their moments and post them on their social media platforms. From there, awareness will spread more widely”.

4.3. Hands-on Contribution to the Conservation of Marine Support

The findings of this study clearly show that one of the important factors in encouraging people to engage in marine conservation is the implementation of all the media strategies previously described. Moreover, awareness should also be linked to real-time activities that will lead to action. Hence, the next theme that emerged from the data analysis is hands-on contribution to encouraging marine conservation through (i) involvement in a marine conservation-related campaign or programme and (ii) visiting a conservation place.

4.3.1. Involvement in a Marine Conservation-related Campaign or Programme

Involvement in a marine conservation-related campaign or programme is a great way to encourage marine life conservation among the public, especially among young people. According to Informant A1, “When we have enough funding, you can plan many programs where the audience can get involved without spending money and both parties can gain from it... Therefore, we are going to have programs such as coral adoption, beach cleaning, coral monitoring and so on... They have an open webinar for everyone to join, and they also book a few slots on the radio... A festival, I might say. A enormous-scale event where everyone can join”.

In addition, Informant A2 stated, “Perhaps we the media can provide like a weekly or monthly column that’s dedicated to marine life and conservation. They can get people who are specialists in marine topics... Definitely on social media, they can have more engaging activities. For example, during the lockdown, marine experts ran many online webinars once a week, or something else; then, we would have a guest speaker, and we would basically go live and people can just tune in, for an hour. Marine experts curated these webinars that were specific to marine mammals and marine conservation... I think in news media, they should dedicate a column or space for marine conservation-related content”.

In addition, Informant B2 added, “Come out with a campaign and such... In addition, get all these brands to collaborate with you. Like maybe you can go to Starbucks and tell them ‘Hey, we’re doing this awareness (campaign) so on Saturday and Sunday, no cups are allowed, customers have to bring their own cup to Starbucks and they will get a 2 dollar discount’. Therefore, the people will participate in that action”. Informant B3 was supported by saying, “We can have a ‘Minggu Kesedaran’ or marine awareness month. Additionally, we can request that the government dedicate a day to马来西亚Marine Day, for example. Then, every state can hold an event to celebrate it and to raise awareness among the people of a specific area”.

Moreover, media influencers believe that interactive social media content such as Virtula Competition and Activity can invite young generations to marine conservation. As Informant C1 stated, “Previous campaigns such as reducing the use of plastic and reducing the use of straws... Maybe the agency can hold a competition to create a video and post it on social media. The best video and the video that gets the most views will be given a token of appreciation from the agency”.

4.3.2. Visits to Conservation Places

Some informants agreed that visiting a conservation place or site is also an effective hands-on contribution to encouraging marine life conservation. This is supported by Informant B1, who stated, “We need to bring them to the location of the marine life. Let us see with their eyes and meet the creatures and educate them about the importance of marine life in our lives”. Informant C1 also said, “Make content near that area. For example, I went to the island to see turtles. While creating content about the turtle, we will inform and share awareness about the need to care for these marine lives”. Moreover, Informant C2 shared that “I had the experience of cleaning turtles’ nests of remnants of unheated eggs that was during my undergraduate studies”. In addition, Informant C3 mentioned, “Let people experience seeing these marine life, like what they have in Aquaria. From there, people will be more interested in digging deeper about marine life”.

5. Discussion

This study outlined the research objective of exploring a new media model for promoting marine life conservation awareness in Malaysia. With respect to the research objective, three main themes were generated from the data analysis.
regarding the reliability of the new media model: reliable new media platforms, media strategies for promoting marine conservation awareness, and hands-on contributions to encouraging marine conservation.

Based on the results that were evaluated and reviewed in this study, new media has great potential for promoting marine conservation awareness compared to conventional media. These findings coincide with those of O’Bryhim and Parsons (2015), who showed how essential it is to develop various forms of media that can raise public awareness and deliver accurate information. Similarly, Santos and Wong-Parodi (2022) described how people who learn about environmental issues could be influenced by many factors in the mass media, leading to further in-depth information seeking.

Although there are numerous platforms for new media, this study showed that social media, specifically TikTok, is mostly used and highly preferred by Malaysians as a reliable platform for promoting conservation-related content. The preference of TikTok as a reliable platform is based on a variety of factors and rationalities, such as having the driver be on the fingertips, actively participating in a virtual community, and using multiple purposes. People prefer to use TikTok, as this platform is currently considered the most common platform compared to other social media platforms. However, information on how marine-related issues are portrayed in the media is still lacking and insufficient. This is supported by Hautea et al. (2021), who stated that despite TikTok starting out as a microvideo platform, it has become a well-liked hub for social activism and self-expression, especially among young people; however, the use of the platform’s affective affordances to raise awareness of significant issues has not been sufficiently studied.

Additionally, media strategy is highly important for disseminating knowledge and information on marine-related content to promote marine life conservation. With six emerging subthemes—collaboration with social media influencers, spokespersons among field experts, eye-catching content, citizen journalism, meeting the demand of audiences, and active engagement—the main theme is further reinforced in setting these media strategies as effective ways to promote marine conservation awareness among Malaysians.

By implementing all the media strategies previously stated, the findings clearly show that these strategies can significantly encourage people to engage in marine conservation. However, to educate people on marine life conservation, awareness should also be linked to real-time activities and hands-on contributions to relate the spirit to action. Mat (2019) posited that it is important to educate the public about marine life extinction to increase their interest and motivate them to support marine life conservation. Hence, it is crucial to not only know but also understand society’s livelihoods (Reuben & Gunggut, 2021) so that people’s involvement and contributions can support the development of an effective plan to address concerns that might affect and harm the diversity of marine ecosystems.

As a result, this study potentially constructs a new framework to form a new media model to reach the public and to influence opinion leaders toward the promotion of marine life conservation in Malaysia. The findings of this study are subject to two limitations, namely, the study sample and study design. The study sampling limited the perspectives and potential biases from three specific demographic aspects (marine experts, media practitioners and new media influencers). Second, the study design generated rich data on hands-on contributions to encouraging marine conservation, but clear statistical data on the general public’s experiences with this activity have yet to be obtained. This has impeded the gathering of valuable data on the variables that could influence a comprehensive investigation of the new media model that has encouraged public awareness of marine conservation.

6. Conclusions

In summary, based on an early assessment of a new media model for promoting marine life conservation awareness in Malaysia, it can be concluded that the new media model has the potential to be an effective tool for raising awareness and promoting conservation efforts. The new media model leverages social media platforms, for example, TikTok, which is currently the most trending platform for showcasing Malaysia’s marine life’s beauty and importance while highlighting the threats it faces, such as pollution, overfishing and many others. Early indicators suggest that the new media model has generated interest and engagement, with increasing followers, likes, and comments on social media. However, it is too early to determine the impact of the model on actual conservation efforts. Moving forward, it will be important to continue monitoring the effectiveness of the new media model and to assess its impact on actual conservation outcomes. Additionally, efforts should be made to reach a broader audience, including those who may not be active on social media, and to work with local communities and responsible authorities to ensure that conservation efforts are culturally and socially relevant.

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Ethical considerations

The study was conducted in accordance with the standard research protocol.

Conflict of interest
The authors declare no conflicts of interest.

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