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# Evaluating Tsunami Memorial Museums in Indonesia and Japan as Post-Disaster Dark Tourism Sites

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## Abstract

The 2011 GEJET in Japan and the 2004 IOET in Indonesia led to the development of tsunami memorial museums in these countries. While this type of tourist site is a new phenomenon in Asia, it aligns with the theory of dark tourism, which focuses on death, suffering, and disaster, particularly those caused by humans. This paper explores whether post-disaster memorial museums, caused by natural hazards, can be classified as dark tourism sites. Four key factors examined include attractiveness, exhibition content, attitude of empathy, and educational programs, to assess how these sites align with the principles of dark tourism. Primary data were gathered from eight respondents (museum managers and tour guides) using online surveys and fieldwork observations as data collection techniques. This study employed a qualitative descriptive analysis technique with a comparative case study. The paper shows that ITMM and MTA use tragic events to heighten emotions and empathy to provide an affective educational process, which can be classified as dark tourism sites. The museum has different exhibition approaches, where MTA incorporates Islamic beliefs and spiritual elements, while ITMM uses a secular and scientific approach to evoke strong emotions. A similarity was found where both museums have symbolic memorial spaces where visitors can show respect in silence or prayer. Ethical issues are addressed by prohibiting photography and video recording out of respect for the victims. The study has implications for other countries with frequent natural disasters to develop similar museums as learning sites that promote empathy and disaster awareness.

**Keywords:** post-disaster memorial museum sites; dark tourism; aceh tsunami memorial museum; iwate tsunami memorial museum; comparative study.

## Introduction

The Pacific Ring of Fire encompasses 15 countries, including Indonesia and Japan, rendering the region highly vulnerable to recurrent volcanic eruptions, seismic activity, and occasional tsunamis (Masum & Akbar, 2019). This is due to the intense geological processes resulting from the convergence of multiple tectonic plates. One of the principal challenges confronting these countries is the recurring risk of similar disasters in the future (Tanioka, Ruff, & Satake, 1997). There is a possibility that the same tragedy could be repeated if the next generation lacks the requisite survival skills to cope with a potential tsunami.

The largest earthquake and tsunami in Indonesia's history occurred on December 26, 2004, when a magnitude Mw 9.1–9.3 earthquake struck off Sumatra's northwest coast, triggering the 2004 Indian Ocean Earthquake and Tsunami – IOET (Satake, 2014). The tsunami caused extensive devastation to coastlines around the Indian Ocean, including those of Aceh, North Sumatra, and other countries in South Asia and East Africa (Fehr, et al. 2004). In Japan, the 2011 East Japan earthquake and tsunami - GEJET, with a magnitude of Mw 9.0, occurred at 14:46 Japan time on 11 March 2011. Soon afterward, a giant tsunami struck the Pacific coast of eastern Japan and caused severe damage (Itaba, 2018). The disaster had profound consequences for Japan and the rest of the world. The official death toll reached 19,689 people, with 2,563 people missing (Fire and Disaster Management Agency



Disaster Response Headquarters, 2019)<sup>1</sup>. The earthquake and tsunami also triggered a nuclear disaster at the Fukushima Daiichi nuclear power plant in Fukushima Prefecture (Gerster & Maly, 2022). However, natural disasters are often forgotten compared to man-made disasters (such as war and genocide), resulting in a lack of reflection on their impact (Loewenstein, Hsee, Weber, & Welch, 2001).

In the post-disaster phase, Indonesia and Japan established tsunami memorial museums to facilitate reflection on the impact of the event. These sites serve to present lessons learned from past disasters, as well as to educate the public on matters of resilience and preparedness for future calamities (Meutia *et al.*, 2021 and Gerster, Boret and Shibayama, 2021). In Indonesia, the tsunami memorial museum is designated as the Museum Tsunami Aceh (MTA), whereas in Japan, it is known as the Iwate Tsunami Memorial Museum (ITMM). These are the most prominent examples of the successful establishment of significant sites following the 2011 Great East Japan Earthquake (GEJET) and the 2004 Indian Ocean Earthquake and Tsunami (IOET). The establishment of tsunami memorial museums is a relatively recent phenomenon in Asia that combines the functions of commemoration and disaster risk reduction (DRR) (Zhang and Izumi 2024). Indonesia and Japan are the only countries that have created such museums on this scale.

Previous research has suggested that ITMM and MTA are important sites for those studying dark tourism (Hanafiah, *et al.*, 2021; Gerster, Boret, and Shibayama 2021). These post-disaster dark tourism sites may provide opportunities for visitors to gain insight through a learning process (Biran *et al.*, 2014). The development of these sites could also serve an important function, particularly for people who have not experienced a disaster first-hand. In contrast to individuals, who may be subject to frequent changes over time, museums demonstrate an enduring form of stability as tangible places that store and communicate history over time (Gerster & Maly, 2022). Thus, the ongoing discussion on the concept of post-disaster tourism sites (disasters caused by natural hazards), which are often associated with tragedy and loss of life, can be related to the theory of dark tourism (Biran *et al.*, 2014; Gerster, Boret and Shibayama, 2021; Ridzuan, Hamed, Omar, 2019; Martini and Minca, 2021; Zhang, 2021; Zhang, Coghlan and Knox, 2018).

The concept of dark tourism theory was first introduced by Foley and Lennon (1996) using a museum dedicated to a man-made disaster as a case study, and was followed by another researcher such (Biran, Poria, and Oren 2011; Podoshen *et al.* 2015; Wight & Lennon 2004; Walby and Piché 2011; Strange and Kempa 2003; Cohen, 2011; Foley and Lennon 1996; Romano *et al.* 2022). Despite the growing discussion of post-disaster tourism as part of dark tourism, there is still a lack of rigorous evaluation of why post-disaster tourism caused by natural hazard sites can be classified as dark tourism sites. In addition, comparative research on post-disaster dark tourism in Indonesia and Japan remains limited, leaving gaps in understanding how the differences and similarities found in the exhibitions are consistent with dark tourism theory. Therefore, this study is important to address the research gap identified in the recent study. Four points are used to determine whether post-disaster tourism caused by a natural hazard site can be classified as a dark tourism site including attractiveness, exhibition content, empathy attitude, and educational program. Discussion to solve the ethical issues is also addressed. The results of this study offer implications for other countries in the Ring of Fire region concerning the potential strategies to prevent a similar tragedy in the future.

## Theoretical Framework

### *Post-Disaster Dark Tourism*

Tourist sites that commemorate disasters, losses, and tragedies can be considered dark tourism sites. This phenomenon is referred to as 'post-disaster dark tourism', which is typically built in the post-disaster phase and

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<sup>1</sup> Fire and Disaster Management Agency Disaster Response Headquarters reports Regarding the 2011 Tohoku Pacific Ocean Earthquake (Great East Japan Earthquake) on Friday, March 8, 2019, 8:00 AM can be accessed on <https://www.fdma.go.jp/disaster/higashinihon/items/159.pdf> (Japanese).

revolves around the disaster theme (Prayag, Buda, & Jordan, 2020). The term 'dark tourism' is widely used in academic literature and refers to travelers visiting sites associated with death, disaster, and tragedy and was first introduced by Foley & Lennon, (1996). Sharpley, (2005) characterized dark tourism as being "driven by a fascination or interest in death and involves tourism to sites associated with death, whether individual, mass, violent, natural, untimely, or other such circumstances".

The concept of dark tourism in Japan was initially introduced by a Japanese researcher (Shinjiro, 2012) in a brief essay published in the *Tourism Research Journal of the Japan Association for Tourism Research*. Shinjiro questioned the appropriateness of using dark tourism in the context of post-disaster tourism in Japan. In response, Ide (2012)<sup>2</sup> defended that the English word "dark" does not have the strong negative nuance that the Japanese word "dark" implies. In addition, the healing effect of international solidarity (sharing grief) is also a great help to disaster victims. Ide asserted that it is the responsibility of tourism researchers to educate the public and residents to correct the negative image associated with dark tourism. Avoiding the term would be a missed opportunity for researchers to reshape their societal perception. Building on this discourse, this study highlights the significance of tsunami memorial museums, framing them within the context of dark tourism in a positive way. However, the debate about the term dark tourism goes beyond this research.

To adjust the positive meaning of dark tourism, this research adopts the definition of post-disaster dark tourism as outlined by (Tarlow, 2005:48), which defines visiting locations where significant tragedies or deaths of historical importance have taken place and which still influence our lives. This definition limits the scope of dark tourism to certain locations and suggests that there are certain underlying benefits. The benefit of developing dark disaster tourism caused by natural disasters has been demonstrated to facilitate the recovery process for individuals, enhance community resilience, and cultivate positive experiences (Biran *et al.*, 2014; Prayag, Buda, and Jordan, 2020). Engaging in activities showcasing tours offered in rebuilding communities can serve as a valuable approach to educating people about recent tragedies and shed light on the ethical complexities of dark and post-disaster tourism. This powerful tool enables disaster education while empowering locals to share their experiences (Gerster, Boret, and Shibayama, 2021) and educate local residence (Bowman & Pezzullo, 2010).

#### *Museum and Dark Tourism*

Dark tourism museums serve as important spaces for engaging with narratives of death, tragedy, and remembrance, offering visitors a mix of emotional, educational, and reflective experiences, as previous research has shown (see Table 2.1). Dark tourism museums, like the U.S. Holocaust Memorial Museum in Washington, D.C., and Auschwitz-Birkenau in Germany, use artifacts and exhibits to educate visitors about historical tragedies while evoking emotional responses such as sorrow and reflection (Lennon and Foley 1999; Biran, Poria, and Oren 2011). These sites not only preserve the memory of past atrocities but also provoke empathy, encouraging critical reflection on themes of death, violence, and human rights. The H.R. Giger Museum in Switzerland and penal museums in Canada and South Africa similarly engage visitors with their disturbing yet fascinating depictions of suffering and incarceration (Podoshen *et al.* 2015; Walby and Piché 2011; Strange and Kempa 2003). These museums serve both as memorials and educational spaces, fostering resilience and societal growth by preserving collective memory and offering lessons from history (Cohen 2011; Maly and Yamazaki 2021). In addition, previous research on dark tourism museums that explore disaster sites has mostly focused on man-made disasters, and there is a lack of research focused on disaster sites caused by natural hazards. This research addresses the gap by focusing research on the exhibition of disasters caused by natural hazards, to give a broader case study of dark tourism study.

<sup>2</sup> Akira Ide. (2012). The need to use the term "dark tourism". Short Essay in Japan Science and Technology Agency. Retrieved from: [https://researchmap.jp/blogs/blog\\_entries/view/77623/7d8a5f3497d1bca5d7cbcf6fc150ee28?frame\\_id=504692](https://researchmap.jp/blogs/blog_entries/view/77623/7d8a5f3497d1bca5d7cbcf6fc150ee28?frame_id=504692). (Accessed on October, 2024).

**Table 1.** The summary of Dark Tourism Museum in the previous literature

| Exhibition of Museum                                                                                                                                                                                                                   | Location                                                  | Author (s)                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-------------------------------------|
| Photographs, uniforms, letters, and a rail car were used to take Jewish prisoners and others to the death camps.                                                                                                                       | U.S. Holocaust Memorial Museum, Washington, D.C.          | (Lennon and Foley 1999)             |
| The center for the mass extermination of European Jewry, mostly in gas chambers. It is estimated that between one and one and a half million people were murdered in Auschwitz, about 90 percent of them were Jewish.                  | Auschwitz-Birkenau death camp, Germany.                   | (Biran <i>et al.</i> , 2011)        |
| Giger's work related to death, violence, and the grotesque, making visitors repulsed by the disfigurement of alien creatures yet drawn to the beauty of their matriarchal and feminine forms, evoking a mix of horror and fascination. | H.R. Giger Museum in Gruyeres, Switzerland                | (Podoshen <i>et al.</i> , 2015)     |
| Museums of dark tourism sites dedicated to WWII can neutralize the fear of death and acknowledge travellers' broad diversity of emotions.                                                                                              | Imperial War Museum of the North, Manchester              | (Wight & Lennon 2004)               |
| Tour guides, placards, and plaques provide narratives that encode messages regarding imprisonment and punishment what is called 'memorialization'                                                                                      | Penal Museums in the Province of Ontario, Canada          | (Walby & Piché, 2011)               |
| Low-tech prison museums that show recorded voices, photographs, and tours led by former prisoners to recount the story of imprisonment there.                                                                                          | Robben Island Museum                                      | (Strange & Kempa, 2003)             |
| Museum about 3.11 and the nuclear accident at Fukushima Daiichi Company                                                                                                                                                                | 2011 GEJET and Nuclear Disaster Memorial Museum Fukushima | (Maly & Yamazaki, 2021)             |
| Collapsed buildings, and ruined streets after the Wenchuan earthquake in China                                                                                                                                                         | Wenchuan Earthquake Memorial Centre                       | (Qian, Zhang, Zhang, & Zheng, 2017) |
| Known as Yad Vashem, it is Israel's official memorial to the victims of the Holocaust.                                                                                                                                                 | In Populo Site the Holocaust Museum in Jerusalem          | (Cohen, 2011)                       |
| The museum offers an in-depth exploration of Kennedy's life, career, and pivotal moments during his presidency.                                                                                                                        | The New Museum at the John F. Kennedy Library, Boston.    | (Foley & Lennon, 1996)              |
| The history and aftermath of the atomic bombing of Hiroshima on August 6, 1945.                                                                                                                                                        | Hiroshima Memorial Museum                                 | (Romano <i>et al.</i> 2022)         |

To evaluate whether a site qualifies as dark tourism, Stone (2006: 151) conceptualized a framework that can be applied in this research, which includes nine perceived product features: political influence and ideology, site

status, attraction orientation, site-centric, product interpretation, location status, time scale, supply, and infrastructure. Specifically, the study will focus on four out of nine points, including attraction orientation (attractiveness), site-centric (attitude of empathy), product interpretation (exhibition content), and the supply (education program), to classify a museum as a dark tourism site. By narrowing the evaluation to these four features, the study can still provide a comprehensive understanding of what makes a site engage with dark tourism, using the available information and relevant aspects of the museum's operations.

### Research Objectives

The damaged items by the tsunami disaster, photographs of affected areas, documentary videos, and human bodies shown in the video of the tsunami memorial museum, are a major attraction for the site visitors. These elements connect visitors emotionally to the past, providing a deep and authentic understanding of the event and presenting a major attraction for the site visitors' as we as humans are sensitive and emotional. Stone's understanding of dark tourism extends beyond its connected attractions (Stone, 2006). According to his viewpoint, several heavily visited tourist destinations can transform into dark tourism sites because of the historical associations with death. Events related to dark tourism sites should have a tragic or controversial history, such as natural disasters, major accidents, wars, genocide, serious crimes, or other traumatic events. Therefore, it is essential to understand the historical narratives associated with the natural disasters that this museum possesses to become an attraction for visitors. Hence, that explanation brings out the first research objective, which is to explore the history and association with natural disasters that the museum possesses, which can be an attraction for visitors.

Retelling the history and preserving the heritage of debris from the tsunami disaster in a memorial museum, have been done for several reasons, including feelings of guilt reduction, respect for the victims, and potential economic benefits, which then relate to dark tourism sites (Petrevska, Krakover, and Collins-Kreiner 2017). Regardless of sensationalism, memorial museums also provide education and awareness about the history and context of the tragic events that occurred there. Content and exhibitions in post-disaster memorial museums typically focus on presenting education, honoring the victims, and raising awareness about natural disasters. The second research objective came out based on that perspective, whether on MTA and ITMM have exhibition content for education, respect for victims, escalate the disaster awareness, or only sensationalism showing the terrible disaster.

In tourism-related literature, one attitude that must be shown in honoring the victim is showing empathy, not only by the visitor but also in the context of guiding and interpretation at museums and heritage sites, including those categorized as 'dark tourism' sites. Additionally, tour guides are recognized as contributors to the development of 'historical empathy' (Tucker, 2016). Therefore, memorial museums should ensure that visitors can demonstrate respect and empathy toward the victims of natural disasters. This can begin with the management of post-disaster dark tourism, which should first show respect and empathy towards the victims and the suffering associated with the disasters while considering the sensitivity of the visitors. Hence, the third research objective of this research is to find information about how the tsunami memorial engages visitors to show empathy toward the victim and the victim's family.

It showed that empathy needs to be noticed by all parties related to post-disaster sites. On the other hand, even though the term "dark tourism sites" has faced criticism for its negative connotations, such as anxiety and moral panic or negative emotions associated with visiting such places, it is essential to acknowledge that visits to post-disaster dark sites can also lead to enlightening experiences with positive outcomes. These positive benefits may include opportunities for educational experiences (Biran *et al.*, 2014). Therefore, finding the education program that is given through the exhibition at the MTA and ITMM needs to be understood.

Finally, further study on detailed exhibition between two tsunami museums leads to determining whether a natural disaster museum can be classified as a dark tourism site, and it is essential to bring detailed information to check the readiness before labeling the tsunami museum as a post-natural disaster dark tourism.

Method

This study employs the primary data sources that were collected directly from the sources (Saunders, Lewis, and Thornhill, 2023). In this study, primary data were gathered from eight respondents (see detail in Table 1) using two data collection techniques: Google Form surveys and fieldwork observations. The fieldwork for data collection was conducted on 25 - 26 December 2023 at the MTA in Aceh, while the ITMM was conducted on 27 - 28 February 2024, where participants answered using Google Forms. Open-ended questions on Google Forms were designed to elicit responses on four key points: attractiveness, exhibition content, attitude to empathy, and educational program of the exhibition. The detailed questions are shown in Table 2.

Table 2. Respondents in this Study

| Country   | Site                          | Category       | Informant   |
|-----------|-------------------------------|----------------|-------------|
| Japan     | Iwate Tsunami Memorial Museum | Museum Manager | Informant 1 |
|           |                               | Tour Guide 1   | Informant 2 |
|           |                               | Tour Guide 2   | Informant 3 |
|           |                               | Tour Guide 3   | Informant 4 |
|           |                               | Museum Manager | Informant 5 |
| Indonesia | Museum Tsunami Aceh           | Tour Guide 1   | Informant 6 |
|           |                               | Tour Guide 2   | Informant 7 |
|           |                               | Tour Guide 3   | Informant 8 |
|           |                               | Total          |             |

Source: Author, 2024

Table 3. Interview Guideline for Respondent

| Topic                   | Question                                                                                                               |
|-------------------------|------------------------------------------------------------------------------------------------------------------------|
| Descriptive Question    | Name                                                                                                                   |
|                         | Job Position                                                                                                           |
|                         | How long have you been working on this site?                                                                           |
| Attractiveness          | 1. What is the main value that contributes to the attractiveness of a museum?                                          |
|                         | 2. Is there any other attraction related to the disaster surrounding the museum? What is the story of this attraction? |
| Exhibition content      | What is the lesson learned in every zone in the museum?                                                                |
| The attitude of empathy | How do the exhibitions evoke empathy in visitors?                                                                      |
| Education program       | What educational programs do the museum offer to convey to visitors?                                                   |

Source: (Stone, 2006)

## Result

The first exhibition at the ITMM is called Tracing History (歴史をひもとく). As visitors enter the first zone, the main lighting is dimmed and only modest sources of light are used. Zone 1, Tracing History, tells the story about;

*“The history of the earthquake and tsunami that hit Iwate and how people living along the coast prepared for tsunamis.” ---Informant 1.*

The first zone of the ITMM will explore the tsunami disaster from both a historical and scientific point of view. The museum aims to review the information, methods, and social practices that have evolved over the centuries. On the other hand, this zone seeks to consider new ways of living in harmony with nature, even though people in the coastal area of the Tohoku region have to live in a dangerous place.

Compared to MTA, the first exhibition is called Tsunami Alley (*Lorong Tsunami*); this alley will bring visitors to feel the atmosphere when the tsunami happened. The museum sets the frame for visitors in this exhibition to be silent and feel the fear of the tsunami; this alley also provides sound effects such as the roar of water, crying and chanting prayers from the Islamic religion that is *Lailahaillallah* which means nothing deserves to be worshipped except God Almighty.

The next exhibition at ITMM is called Zone 2, "Learning the facts" (事実を知る), and the respondents' explanation of Zone 2 is as follows;

*“Introduces the strength and terror of tsunamis through videos of the tsunami, photographs of the affected areas, actual victims, and the voices of victims.” ---Informant 2.*

In Zone 2, visitors can experience the power of GEJET 2011. This is illustrated through tangible artifacts that were damaged, photographic documentation of the affected sites, first-hand accounts, and memories of those who experienced the tragedy. One of the items damaged by the disaster is the presentation of the fire engine in Tanohata Village (see Fig. 1), which is made of high-quality metallic materials. The damaged part of the Kesen Ohashi Bridge is also on display. It was swept away by the tsunami and split into two parts (see Fig. 2). These exhibitions effectively illustrate the profound impact of the tsunami disaster (Halabi *et al.*, 2022). Zone 2 of the ITMM will also show the short film, which is repeated and lasts approximately seven minutes. The short film shows the video of the 2011 GEJET disaster, using scientific data and images and videos documenting the occurrence of the earthquake and tsunami.

The next exhibition at the MTA was Space of Memory (*Ruang Kenangan*); after walking through the 30-meter-long Tsunami Alley, visitors enter the Memorial Hall. This room has 26 monitors to symbolize the date when the tsunami hit Aceh. Each monitor displays images and photos of the victims and the sites of the disaster that hit Aceh during the tsunami. Visitors seem to be in the middle of the ocean when they enter the room, which is symbolized by glass walls that represent the extent of the seabed, monitors in the room are symbolized as rocks in the water, and dim lights on the roof of the room are symbolized as light from above the surface of the water entering the seabed (Informant 5).



**Figure 1.** Damaged Fire Truck by Tsunami Disaster, Source: Author (2024)



**Figure 2.** Kesen Ohashi Bridge Part Damaged by Tsunami Disaster, Source: Author (2024).

One of the monitors in the Memorial Hall showed the image of the *Baiturrahman* Mosque (see Fig. 3), which stood firm even though the surrounding area had been destroyed. This is one of the miracle stories told by many national and international mass media (Informant 6). The tsunami came and swept the road along with the rubble of the building, but the tsunami water only passed along the side of the mosque without even entering the

mosque courtyard (informant 7). Eyewitnesses said that all the people who had taken shelter in the mosque were not affected by the tsunami and survived (informant 8).



**Figure 3.** Baiturrahman Mosque in Aceh Survived the Tsunami, Source: Saget, retrieved on August 2023.

The next exhibition at ITMM, called Zone 3 "Learning Lessons" (教訓を学ぶ), the respondents' explanation of Zone 3 is as follows;

*"Introduces how to protect one's own life and efforts to save the lives of others based on actions taken during the Great East Japan Earthquake and Tsunami."---Informant 4*

Information on saving lives, protecting and supporting lives, evacuating to live, and building a future was also displayed in this zone. The best lesson for the next generation in Japan to escape a disaster such as a tsunami is to start with tsunami tendenko (津波てんでんこ) (Informant 2). The concept of "tsunami *tendenko*," encourages a swift evacuation to higher ground without waiting for others, even one's family members (Kodama, 2015; Satake, 2014). In the local Japanese dialect, "*tendenko*" signifies an "every person for themselves" approach (Informant 2). This principle emphasizes that rapid evacuation to higher ground, without concern for others, is the only way to escape the catastrophic effects of a devastating wave (Yamori, 2012). This concept is shown in the ITMM due to the lessons learned from GEJET 2011, where the main reason for the high death toll was the failure of residents to evacuate (Informant 4).

In comparison to the MTA, the third exhibition is the blessing chamber (*Ruang Sumur Doa*). The Blessing Chamber is a 30-metre high, dimly lit cylindrical room with around 2,000 names of tsunami victims written on each wall. This room is philosophized as a tsunami mass grave and visitors who enter this room are encouraged to pray for the victims according to their respective religions and beliefs (Informant 6). This room also depicts man's relationship with God (*Hablumminallah*), symbolized by the calligraphy of ﷻ (*Allah*) printed on the chimney, with the light pointing upwards, reciting verses from the Al-Qur'an. Implies that every human being will surely return to the Creator (God Almighty) (Informant 7).

Finally, the last zone of ITMM is called Zone 4, "Reconstruction Together" (復興を共に進める), where the respondent's explanation of Zone 4 is as follows;

*"It shows showing the reconstruction of the disaster area is progressing with support from Japan and overseas,"---Informant 1.*

This zone shows the appreciation of receiving tremendous support to Japan from within and outside Japan after the 2011 Great East Japan Earthquake and Tsunami occurred (Informant 2). The display in Zone 4 implies the collaborative effort and determination of a community or group to move forward and rebuild after a tsunami disaster (Informant 3). It signifies that, rather than being deterred by the destruction caused by the tsunami, those affected are committed to working together to recover, rehabilitate, and rebuild their lives and environment, demonstrating a spirit of resilience, cooperation, and a common goal to rebuild after a devastating event.

The final exhibition at MTA is Space of Confusion, which leads to Bridge of Hope (*Jembatan Harapan*). The philosophy of these two exhibitions shows the confusion and despair of the people of Aceh when they were hit by the tsunami in 2004, confusion about the direction of the destination, confusion about finding missing relatives, and confusion about the loss of property and objects (Informant 8). After that, however, visitors move on to the natural light that symbolizes the hope of the people of Aceh at that time (Informant 7). To summarise the exhibition, visitors can enter a studio set up like a cinema with big screens to show short films of about 10 minutes and also show sensitive things like bodies (Informant 6). The story of the documentary begins by explaining that the 2004 IOET could have happened because of the Indo-Australian and Eurasian tectonic plates shifting and piling up. It is recorded by several international institutions as the deadliest tsunami in history (Nazaruddin & Sulaiman, 2013).

It is estimated that around 167,000 people died as a result of the tsunami. This is because at the time, the majority of Acehnese were unaware that a tsunami could occur following a strong earthquake (Informant 6). As a result, many people did not evacuate the area immediately and instead stayed on the coast, collecting fish from the beach as the water receded (Informant 7). Indeed, there is a lesson for this generation to learn from how the people of Semeulue Island dealt with the 2004 IOET tsunami. Although this island is closer to the epicentre and thousands of houses were destroyed, only 7 (seven) deaths were recorded there (Informant 8). One reason why Semeulue islanders were spared from the 2004 IOET tsunami is that residents retained local wisdom or knowledge about the occurrence of the 1907 tsunami (Informant 6). The local wisdom disseminated among the people of Semeulue Island is Smong. Smong is monumentalised in manafi-nafi (folklore), mananga-nanga (child lullaby), and nandong (humming), which are introduced to offspring from the cradle to old age (Gadeng, Maryani, & Rohmat, 2018). If the ITMM has 'tsunami *tendenko*', the MTA has '*smong*' as local wisdom for disaster preparedness.

## Discussion

### *Attractiveness – Tragic Events and Meaningful Knowledge*

Attractions associated with death, disaster, tragic events, and suffering have been collectively referred to as 'dark tourism' (Stone, 2006; Foley and Lennon, 1996; Lennon and Foley, 1999; Lennon, 2017). Indeed, post-disaster memorial museums caused by natural hazards are a subset of tourist sites associated with death, suffering, disaster, and tragic events, but the sites also provide meaningful knowledge and learning in advance. The tragic events, which Zerva (2021) posits as the primary attraction of dark tourism, have become the main attraction of the MTA and ITMM. The tragic event of 2011 GEJET and 2004 IOET, is related to the high death toll caused by technological failure (Koshimura, Hayashi, & Gokon, 2013; Ozaki, 2012) and the normalcy bias (Tanaka, 2023) in Japan, and the lack of tsunami education and warning systems in Indonesia (Informant 7), which also have been identified as the primary reasons for the development of the tsunami memorial museum (Gerster *et al.*, 2021). In addition, the findings of this study indicate that the attractiveness offered by MTA and ITMM goes beyond the tragic events, as they also incorporate elements of meaningful knowledge, as previously asserted by Chang (2014) as benefits from visiting dark tourism sites. These exhibitions present a rich blend of scientific explanations and historical recounts that detail the causes, impacts, and lessons from earthquakes and tsunamis. The portrayal of

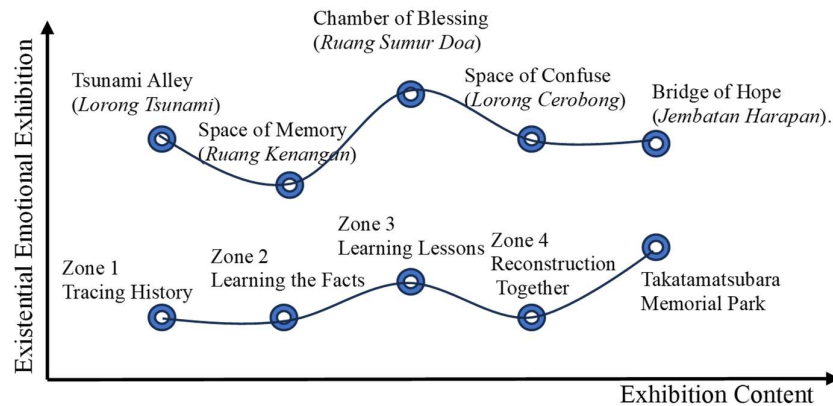
dramatic and tragic elements, such as delayed evacuations, the magnitude of destruction, and the unforeseen scale of disaster events, further enhance their attractiveness. This dual offering—combining meaningful knowledge with the allure of tragic stories—positions these sites as compelling dark tourism destinations (Mostafa & Ibrahim, 2022). In addition, this finding supports Stone (2006) who argues that dark tourism attractiveness includes displays and places where the design conveys knowledge and learning opportunities.

#### *Exhibition content – Emotional Involving*

A previous study on NEE (negative emotional experience) in dark tourism shows that the presence of negative emotions distinguishes this site from other leisure tourism (Martini & Minca, 2018). While most travel managers aim to minimize such experiences (Hosany, Prayag, Van Der Veen, Huang, & Deesilatham, 2017), negative emotions experienced during visits to post-disaster dark tourism sites caused by natural hazards can evoke sublime effects (Martini & Sharma, 2022). The sublime effect goes beyond the NEE, where this effect also includes elements of beauty or respect for something very powerful. Previous research on the 2011 GEJET tourism site shows that the feelings of awe and wonder evoked by a mixture of pleasure and a sense of powerlessness when confronted with the overwhelming grandeur of nature during a visit to the site is known as the sublime effect (Ibid, 2022:10). However, within the realm of dark tourism, unfavorable emotions can sometimes lead visitors to experience feelings of grief (Brown, 2015) or even reluctance to revisit the location (Zhang, Yang, Zheng, & Zhang, 2016). Nonetheless, certain emotions, such as ‘shock,’ ‘sorrow,’ and ‘depression,’ can also indirectly transform into a sense of spiritual significance, enriching the overall experience (Martini & Minca, 2018).

In considering the emotional involvement in the exhibitions at both MTA and IMTT, it is possible to identify a range of emotional involvement (see Fig. 4.4). These emotions can be positive, such as appreciation, hope, gratitude, and excitement, or negative, such as sorrow, shock, depression, fear, and sadness. This study result is consistent with past research by Zheng *et al.*, (2020), which stated that dark tourism sites, being locations associated with mortality, evoke complex feelings that often include a blend of both negative and positive sentiments. Based on Figure 4.4, the author argues that the exhibitions at MTA, particularly *Tsunami Alley* and the *Chamber of Blessing*, can evoke strong emotions in visitors. These exhibitions may give visitors a greater sense of respect for the tsunami victims compared to other zones. The heightened emotional response may be due to the design of these areas, which encourages visitors to reflect and believe that great power comes from God Almighty, something beyond human control. In addition, this result is supported by past research, which argues that dark tourism sites, as locations associated with mortality, evoke complex emotions that often include a mix of both negative and positive sentiments (Stone, 2006).

Nevertheless, researchers argue that ITMM itself is difficult to categorize as a dark tourism site without including the *Takatamatsubara* Memorial Park as part of the unit.



**Figure 4.** Existential Emotional on Exhibition Content toward ITMM and MTA, Source: Researcher, (2024).

Based on Fig. 4, Takamatatsubara Memorial Park are exhibition believed to elicit strong emotional responses from visitors. Takamatatsubara Memorial Park, located next to the ITMM, features a vast open area where visitors can offer fresh flowers, pray for the victims, and view the exhibition of the Miracle Pine. The surrounding area is calm and provides visitors with a space to spend time in silence, reflecting on the philosophy of the pine tree. Despite the enormous challenges faced by the people in the Tohoku area, their resilience is a core belief, and visitors are encouraged to embrace this mindset

#### *Empathy – for Victim and the Tragedy*

Dark tourism, as discussed by (Miles, 2002) and (Stone, 2006) emphasizes the importance of empathy in its impact on visitors, suggesting that empathy is enhanced by the spatial and locational connections provided by dark tourism sites. Miles (2002:1176) posits that a dark tourism attraction must foster a degree of empathy between the visitor and the past victims, going beyond merely evoking historical knowledge. Modlin, Alderman, and Gentry, (2011) further demonstrate how tour guides can help visitors cultivate this empathy by encouraging them to adopt perspectives different from their own and emotionally connect with tragic events from the past.

The MTA and ITMM exhibitions are designed to foster empathy by telling the personal and collective stories of tsunami victims, helping visitors to emotionally engage with their tragic experiences. Audio and video recordings of interviews with victims and rescue workers and reconstructed spaces and objects depicting daily life before the tsunami deepen this emotional engagement (Ivanova, Light, & Barrow, 2017). In addition, photographs, art exhibitions, and stories of survival, recovery, and community solidarity inspire hope that transcends grief and loss. In ITMM, empathy is also created by tour guides (*kataribe*). This practice is not new in Japan (Fulco, 2017), as *kataribe* are usually people who have directly experienced tragic events or heard first-hand stories, while in Aceh such guides are less common. The findings of this study support Miles (2002) who argues that dark tourism sites can evoke empathy for victims, and this connection is reinforced by the spatial design of the exhibitions, consistent with the idea that dark tourism can foster empathy.

### *Education Program - Local Wisdom and Disaster Literacy*

Education is one of the main activities of museums, along with conservation, research, and presentation of museum objects (UNESCO, 2012). Dark tourism is closely related to the concepts of educational tourism, as highlighted by several scholars (Foley and Lennon 1996, 2000; Israfilova and Khoo-Lattimore 2019; Stone, 2013, 2012). The dark tourism museums in this study, which showcase post-disaster exhibitions caused by natural hazards, stood out by enhancing empathy and evoking strong emotions, making disaster education more memorable, and serving the purpose of memory-making (Yoshida, Bui, and Lee, 2016). Therefore, disaster education from dark tourism is similar to disaster literacy. Disaster literacy is the ability of individuals, groups, or communities to understand, evaluate, and use disaster-related information to reduce risk, prepare, and respond effectively (Amini *et al.*, 2024).

In advance, both MTA and ITMM offered similar patterns of educational programs, where the exhibition begins with the story of the tragedy of the natural disaster in the form of the earthquake and tsunami itself. The story of the tragedy is told, followed by a scientific explanation of why the disaster can occur. The main educational message in the memorial museum is what lessons can be learned from the disaster. The lesson is divided into two parts: first, people can die because of a failed evacuation; second, people can be saved because they evacuated in time, similar to the local wisdom taught. The emotion attached to each exhibition, which includes sound, images, and video of the tragedy, creates an education that is easy to remember and pass on to a future generation. In addition, this site aims to convey the stories of "Hope and Miracles" (shown in the Miracle Pine Exhibition in ITMM and Baiturrahman Mosque in MTA) of what the survivors went through after losing their family, home, and everything. By seeing these examples, visitors can gain hope and faith that even when bad things happen in life, there is a chance to rebuild and achieve miracles. This finding is also supported by previous research which suggests that a dark exhibit refers to those exhibits and sites that combine product design to reflect education and potential learning opportunities (Stone, 2006).

### **Conclusion**

ITMM and MTA, which are dedicated to commemorating the devastating tsunami, are interesting examples of dark tourism sites. Based on The four points put forward by (Stone, 2006) to determine whether a tsunami memorial museum is considered dark tourism shows that the use of tragic events in museums is a way to increase emotional responses and empathy that go beyond the cognitive effect to the affective on the educational process, which is argued by (Martini & Sharma, 2022) as the function of a dark tourism museum. This involves emotional engagement with the content, which can lead to increased retention, empathy, and behavioral change (Rogers, & Prentice-Dunn, 1997).

Comparative studies reveal similarities and differences between MTA and ITMM in four key areas: attractiveness, exhibition content, empathy, and educational programs. Both museums attract visitors by depicting the tragic events of the tsunamis (the 2004 IOET or the 2011 GEJET) while emphasizing local wisdom - the MTA emphasizes 'Smong' and the ITMM focuses on 'tsunami tendenko' - as tools for disaster education and risk reduction. Both museums promote empathy through storytelling, using survivors' experiences, audio-visual materials, and personal artifacts to create emotional engagement that strengthens disaster literacy and increases the potential for preparedness and mitigation to leave a lasting impression. However, there are differences in approach: MTA incorporates Islamic beliefs and spiritual elements such as prayers and the symbolism of the Baiturrahman Mosque, combining spirituality with memorialization to evoke strong emotional responses. In contrast, ITMM takes a secular and scientific approach, requiring additional spaces such as Takatamatsubara Park for activities such as paying respects to the victims. ITMM also uses kataribe (storytellers), often survivors, to share their personal experiences, while MTA relies more on exhibits and multimedia storytelling, as survivor-led tours are less common.

As the development of dark tourism raises ethical issues (Stone and Sharpley, 2008), these museums, which have the potential to become sensitive spaces for victims' families, prioritize the ethical framing of victims' stories and exhibition content to preserve dignity and manage visitor attitudes. To uphold these standards, the museums use short video presentations that authentically portray the aftermath, while prohibiting visitors from taking photos or videos to ensure the integrity of the content. They also include symbolic memorial spaces where visitors can pay their respects in silence or prayer, reinforcing the commemorative purpose of the exhibitions. In addition, the museums are designed as not-for-profit sites, which is reflected in their very low admission prices. The findings have implications for other countries facing the same challenge of recurrent natural disasters. The development of a dark tourism memorial museum may be beneficial for such countries, as it has demonstrated affective learning (Martini and Sharma, 2022) in promoting community resilience, disaster awareness and literacy, and the full potential of social change agents. While both museums provide valuable insights into the devastating effects of tsunamis, further research is needed to assess their long-term impact on motivating visitors to engage in disaster preparedness behaviors.

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