INTERNATIONAL JOURNAL OF GAMING HOSPITALITY TOURISM (IJGHT)
STOCKTON UNIVERSITY

Wang, Y. Gunnarsdottir, T. E. Jozwiak, M. D. Asgeirsdottir, L. D. Criscione-Naylor, N. (2023). Tourism Sustainability in the Context of Tourists Safety Concerns at "Reynisfjara" Black Sand Beach. *International Journal of Gaming Hospitality and Tourism.* 3(1). *https://stockton.edu/light/documents/ijght_vol.3no.1/tourists_safety_concerns_at_reynisfjara-6.7.23.pdf*

Tourism Sustainability in the Context of Tourists Safety Concerns at "Reynisfjara" Black Sand Beach

Yutong Wang
Student
Reykjavik University
cleowangyutong@gmail.com

Thuridur Edda Gunnarsdottir
Student
Reykjavik University
tgunnarsdottir112@gmail.com

Marta Dominika Jozwiak
Student
Reykjavik University
m.jozwiak8528@gmail.com

Lilja Dogg Asgeirsdottir
Student
Reykjavik University
Lilja.d.asgeirsdottir@gmail.com

Noel Criscione-Naylor, EdD
Associate Professor of Hospitality, Tourism and Event Management Studies
Stockton University/ Reykjavik University
noel.criscione@stockton.edu

ABSTRACT
Reynisfjara beach is one of Iceland's most popular tourist destinations. It is often overcrowded due to its unique black sand beach blending with the environment of large black cliffs alongside the shore – it is almost a picture-perfect vision. Reynisfjara beach has a darker side due to a phenomenon called 'sneaker waves' that can appear without warning. Twelve serious emergency calls and five fatal tourist cases have occurred in recent years. However, many visitors to Reynisfjara beach are more concerned to capture the perfect photo than heeding the warnings of the beach. This industry commentary article highlights the threats the beach poses for visitors and opportunities to enhance beach safety while creating a more sustainable tourist destination. Accordingly, best practices to promote tourist safety and sustainability suggest collaboration of destination agencies and owners to determine visitor daily allowances and corresponding fees, the development of a warning system, and the utilization of social media, to list a few. Overall, it is essential to focus on visitor safety awareness and the physical facilities of the scenic area, conveyed through the most appropriate means.

Keywords
Sneaker waves, Reynisfjara beach, tourist safety, warning system, over-tourism, sustainability

INTRODUCTION

Reynisfjara, called the Black Sand Beach in English, is in southern Iceland near Vík í Mýrdal. The beach ranked top ten most beautiful non-tropical beaches in the world in 1991 and in 2021 was listed as one of the best beaches in the world (Clayton-Lea, 2022). Meanwhile, it is one of Iceland's most popular tourist destinations. In the Netflix original Icelandic shows, Katla and Game of Thrones, a basalt sea stack called "Reynisdrangar" next to the shore is seen. On a typical day, tourists worldwide congregate at Reynisfjara beach to see the power of nature as the water crashes on the shore. Data from the *Visit South Iceland* site

show approximately 133,000 people visited Reynisfjara beach in the first half of 2022 (Gottlieb, 2022). However, the beach has a dark side called ‘sneaker waves’ that can appear when no one expects. Due to no land between the Antarctica and Reynisfjara beach shores, the tides have thousands of kilometres to build, and several smaller waves form into one larger, sneaker wave. In recent years, twelve serious emergency calls and five fatal tourist cases have been reported (“Beautiful but deadly: Iceland raises the alarm over its famous black sand beaches," 2022). Still, tourists visit this attraction annually to admire the haunting beauty of Reynisfjara beach and these roaring waves.

This research sought to investigate the impact of destination dangers in the case of the sneaker waves at Reynisfjara beach, one of Iceland's most popular tourist destinations. The risk that lurks on this beach is the subject of many other researchers and Icelandic agencies striving to mitigate destination risks, identify safety protocol practices and opportunities, and determine sustainable tourism development guidelines. As part of this investigation, authors evaluated current safety measures and agency actions as well as identified best practices from other dangerous beach destinations that can help improve visitor safety and promote sustainable tourism practices at this destination. Accordingly, this industry commentary article highlights the threats the beach poses for visitors and opportunities to enhance the beach as a sustainable tourist destination and revert from over-tourism. In addition, the role of the Icelandic authorities will be discussed in providing information about the use of hazard signs and offer insight into why there has been little intervention to address the danger warning to tourists.

INDUSTRY CONTEXT

Tourist security and safety is a global issue affecting travellers and destinations, and has become a complex multidimensional notion consisting of political security, public safety, conservation, sustainability, health and sanitation, personal data safety, legal protection of tourists, consumer protection, safety in communication, disaster protection, environmental security, getting authentic information, quality assurance of services, etc., (Chen & Bau, 2016; Chen & Teng; 2016; Kôvári & Zimányi, 2011; Sandhubaya, Hidayatullah, & Roedjinandari, 2021). Thus, safety and security play a primary role in tourism, especially when tourists visit unknown environments in foreign tourist destinations. A tourist destination's success or failure depends on providing visitors with a safe and secure environment. In addition, excessive use of nature or fabrication of the destination site will have a negative impact on nature itself and therefore sustainable practices should be developed (Osmail, 2021).Via a unique arrangement with Landsbjorg, the Icelandic Association for Search, Rescue, and Injury Prevention, the Department of Tourism at the Ministry of Culture and Business Affairs oversees travellers safety in Iceland, which supports the activities of *Safetravel*, an accident prevention project (Icelandic association for search, rescue & injury prevention, 2022; Ministry of Culture and Business Affairs, 2022; Safetravel, 2022). The Icelandic landscape offers a variety of natured based tourism experiences including its active volcanoes, verdant valleys, glaciers, fjords, and black sand beaches such as Reynisfjara—generally unfamiliar to international travellers despite it being the country's most prominent attraction. Many visitors visit Iceland to enjoy the untouched nature in solitude and quietness. Accordingly, nature-based tourism in Iceland has two sides; tourism has helped the country to recover from the 2008 economic crisis and has become one of the largest industries in the country. On the other hand, Iceland is facing over-tourism threatening the balance of nature and the potential for future preservation, which can destroy what made Iceland desirable in the first place. As such, there is great emphasis not only on visitor safety to risky sites but to preserve the destinations through sustainable tourism practices such as considering the carrying capacity of tourist areas (Ismail, 2021).

Reynisfjara beach is a beautiful place where people can enjoy the power of nature, where the Atlantic Ocean hits the shore. The beach has become one of the most popular destinations in Iceland. However, on many occasions, it is overcrowded, and weather conditions can be harsh and can change quickly, resulting in unexpected difficulties at the destination. The danger at Reynisfjara beach is heightened due to the

occurrence of sneaker waves. The term sneaker waves broadly describes cases in which beachgoers are directly affected by wave run-up, i.e. when a victim is standing on dry land and is abruptly overcome by waves (Gara-Medina et al., 2018). Sneaker waves naturally occur when several smaller waves cumulate their energy to create one, large wave. These wave formations materialize due to ocean currents, or in the case of Reynisfjara beach, the pulling effect of the wave is created by an underground cliff just offshore. As such, Reynisfjara beach must adequately inform and prepare visitors for potential dangerous, determine the most appropriate infrastructural design needed to promote safety and mitigate over-tourism, protect the natural destination, and improve future visitors' experiences.

A consultation group on improving the safety of travellers in Reynisfjara beach (2022) organized by the Ministry Culture of Business Affairs reported that the first deadly accident involving a visitor in Reynisfjara beach occurred in 2007 when an American woman in her 80s was dragged into the water. The second fatal accident occurred in 2016 when the sea struck a Chinese tourist in his forties. A Chinese woman in her thirties and a Canadian man in his twenties perished at sea in 2021 after being pushed out by waves caused by the pillar rock. On various occasions, numerous individuals have been washed out to sea, placing their lives and the lives of those who could bring them back to land in considerable danger.

Reynisfjara Beach - Risks and Interventions to Protect Visitors

On Reynisfjara beach, sneaker waves are much more dangerous than other waves because they are solid and can quickly take an adult to sea (Gottlieb, 2022). In the research paper from 2016, *Reynisfjara: Djásn eða dauðagildra*, the authors observed tourists in Reynisfjara beach for three days; it became clear that many of the tourists behaved recklessly and did not seem to perceive danger. Instead of warning visitors, visitors perceive signs as optional information, and many tourists often overcrowd the location. Additionally, many tourists at Reynisfjara beach seek to capture the perfect photo to post on social media. Since they do not want other tourists in their image, they seek out a less crowded place to take the picture, often closer to the water. In a recent article in Morgunblaðið (Bjarnason, 2022), there was an interview with Þórir Bogason, a firefighter and paramedic, who visited Reynsfjara daily in September/October 2022 and observed the visitors there. He said that very few people stopped and looked at the warning signs. The path to the beach was not comprehensive, and easy to miss the characters since visitors can enter the beach from many other places.

In the research paper, *Reynisfjara; Djásn eða dauðagildra* (Rúnarsdóttir & Pétursdóttir, 2016) the authors proposed various remedies for improvement. For example, warnings on social media and in travel guides, strengthening of infrastructure and improved safety measures including more apparent signs in multiple languages with visual alerts, and the presence of a staff member on the beach. Despite these recommended improvements, there have been additional incidents. The most recent fatal was reported June 2022, emphasizing the need to intervene and that the existing methods to warn tourists are minimally effective. Bogason (2022) suggested that the authorities take the "IKEA way," as he calls it. The "IKEA way" is a way that makes it impossible for visitors to enter the beach without paying attention to the warning signs, which means that they cannot enter the beach without seeing the characters in big letters, like when they lead them through the IKEA store. To summarise, visitors must be aware of the dangerous sneaker waves on Reynisfjara beach and take sustainable measures to protect nature from over-tourism. Furthermore, at the destination, there is currently a lack of tools such as lifebuoys and other water retrieval devices.

In terms of security, the physical planning of the infrastructure is a crucial influencing factor, as are the risk aversion and recklessness of visitors (Bahr, Grufving, & Sigurðardóttir, 2016). Therefore, it is essential to start with both visitor safety awareness as well as the physical facilities of the scenic area.

However, according to Guardado and DeCaro (2018), creating too much infrastructure around the scenic area can disrupt Reynisfjara beach, known for its natural beauty. Truter (2017) believes that there are

various safety concerns in coastal areas where the diverse knowledge, experiences, and cultural norms of tourists pose a threat to their safety. Coastal regions can also endanger the lives of tourists who are often unaware of the level of danger in the area. These threats are most familiar to those who reside in the area. Regarding the risks of coastal locations, many of the most harmful characteristics are challenging to spot. Meanwhile, according to Pálsdóttir (2019), tourism and media are related fields, and social media has the persuasive potential to inspire interaction and motivate people to share their experiences. The media must therefore play a role in promoting tourism safety and the do's and don'ts.

In August 2022, a paper was published, *Reynisfjara - viðvörunarkerfi* (Vegagerðin, Jónsdóttir, & Sigurðarson, 2022) in the Icelandic Tourist Board to assess the dangers in Reynisfjara beach and solutions to the problem. The commentary highlighted work to define safety criteria that should govern tourist destinations, nationwide. As such, it was suggested authorities should have clear procedures and authority to issue temporary "closed areas" based on the Civil Protection Act to minimize the risk of casualties and accidents. "The law requires the Civil Protection and Security Council in the Ministry of Justice to create a civil protection policy once every three years. It also requires the National Commissioner of Police to handle day-to-day civil protection matters, including disaster response" (Grantham Research Institute, 2008, para. 1). Accordingly, surveillance equipment will be installed in cooperation with law enforcement agencies and new warning signs will also be installed to comply with the law. (Vegagerðin & Jónsdóttir, Sigurðarson,, 2022)

A forecasting system, a vital reference for the Reynisfjara beach safety management system in Iceland, can forewarn tourists. In a recent interview in Morgunblaðið (2022), a project manager for public safety and a local police officer, Björn Ingi Jónsson, said that the new warning system has not yet seen the light of day in Reynisfjara beach. However, it was scheduled to launch summer of 2022. "This should have come up a while ago, which takes an incredible time, but many things need to be considered. Unfortunately, this is delayed, which is very sad, but we are working on it. The warning system is supposed to warn of the danger that can arise in Reynisfjara beach" (para. 2). Poles have been placed where signs are to be installed. One of them will have warning lights. They are waiting for the final design of the characters to be completed, and Jónsson says he has high hopes that the project will end soon. The transfer of signals for announcements is completed, still, the Icelandic Road Administration's wave forecasting system controls the warning lights. A signal must be sent to the light sensor, which controls which light is on at any given time (Bjarnason, 2022). However, in conjunction with reducing risk for tourists, this destination is challenged on how to control over-tourism.

DISCUSSION

The authors experienced the threatening nature of Reynisfjara beach waves and observed the safety cues and the visitors on site. More importantly, secondary data was gathered from the governmental website, data from the Icelandic Tourist Board in cohesion with the 112 rescue centers in Iceland and the Icelandic Road and Coastal Administration, local news, literature, and visitors to understand the current situation.

Potential dangers include landslides and rock fall wave — wave reflection off pillar rocks, floodplain waves, storm waves, and powerful ocean currents. (*Warning: Reynisfjara Black Sand Beach is dangerous* (no date) *Visit Iceland - Official Tourist Info for Iceland, 2023*. According to Jónsdóttir and Sigurðarson (Reynisfjara - viðvörunarkerfi, 2022), people are drawn to shore by the surf. The spectacle occurs when the weight of the waves crash against the beach and cliffs. The more dangerous and awe-inspiring the surf is to tourists, the larger and more powerful the waves, the greater their appeal. However, the area's warning signs are inconsistent and have been weathered or vandalized by visitors (Bjarnason, 2022). These must be upgraded and renovated following a uniform standard to guarantee they are effective. The warning lights describe using green, yellow, and red. These indicate safety, risk, and high risk,

respectively. A landowners' interest association needs to be established to involve all landowners. Iceland can learn from the experience of other countries in dealing with matters relating to dangerous beaches.

Chen and Bau (2016) identified measures to be taking to create a safe beach space after consulting with experts of a high-use tourist beach in southern Taiwan with similar dangers to Reynisfjara beach. Designating access routes, setting up visible signs indicating locations where potential hazards exist (i.e. rip currents, strong waves) and availability of an adequate number of lifesaving and first aid equipment should be top priority (Chen & Bau). Furthermore, Chen and Teng (2016) identified destinations must investigate tourists' perceptions of the beach environment and use the collected data to make informed decisions to protect the visitors and achieve sustainable beach tourism. They also highlight, "each beach has a unique character and faces its own problems arising from various degrees of human uses. This indicates that each beach needs its own specific management strategies" (p. 214). Furthermore, Sandhubaya, Hidayatullah, and Roedjinandari (2021) reported in their research of Balekambang Beach, Malang Regency, an indicator of visitor safety not only included warning signs but a security task force.

Thus, developing a system that alerts against potentially harmful conditions is essential. Calculations are performed on wave and beach conditions, wave height against wavelength, and an early warning system is established. As Reynisfjara beach is private property, both the installation of alarms and notice boards and the scientific studies carried out for this purpose require the consent of the owners and a meeting with them to reach a consensus. Better coordination of providing information through the internet, travel sites, and other media could prevent those accidents, increase safety awareness among foreign travellers, and give guidelines to airlines, car rentals, and travel agencies on how to react in dangerous situations based on a wave forecast model. In summary, it has become clear to the public that authorities must address the risk of casualties and accidents in Reynisfjara beach. According to research of other destination practices as mentioned above, the location should consider restricting where visitors can enter the beach area, designated areas for observation, and consider a nominal fee and daily allowance of visitors to decrease danger and promote more sustainable practices. Destination revenue can contribute to the development of a safety task force or guides at the destination. Limiting visitors counts will contribute to improve safety, protect the beach from over-tourism, and enhance visitors' experience.

CONCLUSION

Tourist safety due to sneaker waves and over-tourism concerns in Reynisfjara beach, one of Iceland's most popular tourist destinations, is a much-discussed topic. There have been serious incidents, including fatalities, due to sneaker waves. There is an association between over-tourism and increases in danger, and the destination must focus on strategies and practices to mitigate these risks while adopting sustainable tourism practices to preserve the natural beauty of the beach. Research has shown tourists behave recklessly on the beach and do not perceive the higher risk of danger and possible death due to the unique occurrence of sneaker waves. Warning signs are treated more as tourist information or glanced over, and many visitors to Reynisfjara beach are more concerned with capturing the perfect photo to post on social media. Tourism and media are related fields, and social media has the persuasive potential to inspire interaction and motivate people to share their experiences. The media must therefore play a role in promoting tourism safety and the do's and don'ts. Reynisfjara beach must identify the most appropriate strategies based on visitor data and sustainable tourism goals. Regardless, it is essential to start with visitor safety awareness and the physical facilities of the scenic area and convey this through the most appropriate means. Utilization of social media, visible safety signs and signals, a uniform and easily managed pathway and daily allowance of visitors to the black sand beach scenic area are essential.

REFERENCES

Safetravel. (2022). Our Mission. safetravel.is. https://safetravel.is/about-us

Kôvári, I. and Zimányi, K. (2011). Safety and Security in the Age of Global Tourism. *AgEcon*. http://ageconserarch.umn.edu

Bahr, K., Grufving, J., & Sigurdardottir, K. H. (2016). Riskhantering vid natursevärdheter: En fallstudie kring Islands natursevärdhet Reynisfjara.

Euronews (2022, July 22). 'Beautiful but deadly': Iceland raises the alarm over its famous black sand beaches. https://mobile.twitter.com/i/events/1550438644414119936

Bjarnason, F. (2022) *Vill „IKEA-Leiðina" í reynisfjöru*, *mbl.is*. mbl.is. Available at: https://www.mbl.is/frettir/innlent/2022/11/08/vill_ikea_leidina_i_reynisfjoru/ (Accessed: March 15, 2023).

Bjarnason, F., (2022, November 7). The alarm "should have been installed". mbi.is. https://www.mbl.is/frettir/innlent/2022/11/07/vidvorunarkerfid_hefdi_att_ad_vera_komid_upp/

Chung-Ling Chen and Ning Teng (2016). Management priorities and carrying capacity at a high-use beach from tourists' perspectives: A way towards sustainable beach tourism, *Marine Policy*, 74, 213-219. https://doi.org/10.1016/j.marpol.2016.09.030.

Chung-Ling Chen and Yi-Ping Bau (2016). Establishing a multi-criteria evaluation structure for tourist beaches in Taiwan: A foundation for sustainable beach tourism, *Ocean & Coastal Management*, 121, 88-96, https://doi.org/10.1016/j.ocecoaman.2015.12.013.

Clayton-Lea, S. (2022). The 7 Most Beautiful Beaches In Europe – Big 7 Travel. Bigseventravel.com. https://bigseventravel.com/the- 7-most-beautiful-beaches-in-Europe/[CN10]

García-Medina, G., Özkan-Haller, H., Ruggiero, P., Holman, R. A., & Nicolini,
T. (2018). Analysis and catalogue of sneaker waves in the US Pacific Northwest between 2005 and 2017. *Natural Hazards*, *94*(2), 583-603.

Gstaettner, A. (2020). Risk and responsibility: Managing visitors in recreational protected areas[CN11] .

Gottlieb, J. (2022, July 21). Iceland: Alarm sounded over 'beautiful but deadly' black sand beach and sneaker waves. My Europe. https://www.euronews.com/my-europe/2022/07/21/iceland-alarm-sounded-over-beautiful-but-deadly-black-sand-beach-and-sneaker-waves

Guardado, J., & Desaro, N. F. (2018). Tourism in Iceland: How is the Exponentially Increasing Tourism Industry Impacting Iceland's Natural Wonders[CN12]

Icelandic association for search, rescue & injury prevention. (2022). Landsbjorg. https://www.landsbjorg.is/icelandic-association-for-search-and-Rescue

Ismail, Y. (2021). Creating Sustainability Natural Tourism Destination. *GeoJournal of Tourism & Geosites*, 39, 1331–1335. https://doi-org.ezproxy.stockton.edu/10.30892/gtg.394spl02-775

Preko, A. (2020). Safety and security concerns at the beach: Views of migrant visitors in Ghana. *Tourism And Hospitality Research*, *21*(1), 73–85. DOI: 10.1177/1467358420954504

Pálsdóttir, H. M. (2019). Tourism in the age of mobile media: the mediatised tourist practices in Icelandic tourism[CN13] .

Reynisfjara Black Sand Beach (2022) Guide to Iceland https://guidetoiceland.is/travel-iceland/drive/reynisfjara

Rúnarsdóttir, S. and Pétursdóttir, Þ. (2016) *Reynisfjara: Djásn eða dauðagildra?* dissertation.

Sandhubaya, G., Hidayatullah, S. and Roedjinandari, N. (2021). Study of Influence of Cleanliness, Health, Safety & Environment Sustainability on Tourist to Revisit the Beaches of Indonesia.

International Journal of Advances in Scientific Research and Engineering. 7(10). P.36-47. DOI: 10.31695/IJASRE.2021.34090

Semja um gjaldtöku við Reynisfjöru. (2016, April 11). Negotiate a fee with Reynisfjörður. Viðskiptablaðið.https://www.vb.is/frettir/semja-um-gjaldtoku-vid-reynisfjoru/

Weather.gov. (n.d.) Sneakers/High Waves and Log Rolls Can Be Deadly. National Weather Service. https://www.weather.gov/safety/ripcurrent-waves

Ministry of Culture and and Business Affairs. (2002). Tourist Safety. (2022). Government of Iceland. https://www.government.is/topics/business-and-industry/tourism-in-Iceland/tourist-safety/

Truter, A. (2017). *Management of coastal hazardous sites: a case study of Reynisfjara beach, Iceland* (Doctoral dissertation).

Grantham Research Institute (2008). Civil protection act (act no. 82 of 12 June 2008), Iceland. Grantham Research Institute on Climate Change and the Environment. https://www.climate-laws.org/geographies/iceland/laws/civil-protection-act-act-no-82-of-12-june-2008

Wang, J., Liu-Lastres, B., Ritchie, B. W., & Pan, D.-Z. (2019). Risk reduction and adventure tourism safety: An extension of the risk perception attitude framework (RPAF). *Tourism Management*, pp. 74, 247–257.https://doi.org/10.1016/j.tourman.2019.03.012

Warning: Reynisfjara Black Sand Beach is dangerous (no date) *Visit Iceland - Official Tourist Info for Iceland*. Available at: https://www.visiticeland.com/article/reynisfjara-black-sand-beach-is-dangerous (Accessed: March 15, 2023).