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Iceland's burgeoning cruise industry: An economic opportunity or a local threat?

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Abstract

The cruise industry is the fastest growing component of mass tourism and is as a key contributor to overtourism. The cruise industry is having a very significant impact on the country of Iceland, as cruises take people to some of the country's most remote areas. In Iceland, the increase has been even more dramatic, with cruise ship arrivals increasing by over 91% (between 2015 and 2019) in Iceland's small northern town of Akureyri and its surrounding ports. This paper is critical of the expansion of cruise tourism in Iceland despite the potential economic impacts of cruise ship tourism. Scholars argue is the need to consider economic gains alongside environmental costs and social consequences that disrupt communities. This in perspective paper considers current economic, environmental and social impacts of cruise ship arrivals in Iceland before outlining some recommendations that align with environmentally friendly practices for policy makers to consider going forward. The triple bottom line framework is widely considered in tourism planning, and this paper seeks to connect the economic, social and environmental dimensions of tourism in a sustainable way to look at the present situation in Iceland and address policy considerations going forward.

Keywords

Cruise Tourism, Iceland, Overtourism, Triple Bottom Line, Local Tourism Policy

Introduction

The cruise industry is the fastest growing component of mass tourism (de Grosbois, 2015) and the European Union identifies this type of tourism as a key contributor to overtourism (see Peeters et al., 2018). For example, from 2000 to 2010, cruise tourism increased at double the rate of land-based tourism. The reason for this has been declines in ticket prices, which has opened the cruise tourism market up to budget travellers (João Lopes and Dredge, 2018). Even despite the financial crises, international cruise demand increased by 84% from 2004 to 2014 (Vayá et al., 2018). In Iceland, the increase has been even more dramatic, with cruise ship arrivals increasing by over 91% (between 2015 and 2019) in Iceland's small northern town of Akureyri (with a local population of 18,000) and its surrounding ports alone (Isavia, 2019). A survey by Cruise Iceland (the regulatory body that overlooks promotion and cruise services in Iceland) notes the country amassed around 72.6M Euros in 2018 and created about 900 jobs (Cruise Iceland, 2019). Despite the potential economic impacts of cruise ships visiting Iceland, what scholars argue is the need to consider economic gains alongside environmental costs and social consequences that disrupt communities (Vayá et al., 2018; Jordan and Vogt, 2017; Jones et al., 2016).

To highlight the contemporary nature of this debate, a report in *The Economist* (2017) states: "15 of the biggest ships emit more of the noxious oxides of nitrogen and sulphur than all the world's cars put together". The reason is cruise ships burn heavy fuel; fuel that is much cheaper than refined diesel or petrol (that cars use). An analysis by the Transport and Environment (2019) group found that one company alone can emit ten times more Sulphur Oxide (SOx) along a European coastline than all the (260 million) cars on the continent. To environmentalists, this has raised concern for more than a

decade now (see Klein, 2007), but another concern is that while governments and local authorities in popular cruise ship destinations are banning polluting diesel cars, considerations of putting strict regulations on the cruise industry is being overlooked. The actual economic benefits that the cruise industry contributes to towns and cities is limited (Torbianelli, 2012). A cruise ship passenger travelling on an all-inclusive package only spends a fraction of what visitors who arrive by plane or other means (i.e. those who must pay for accommodation, food and domestic transport) spend on land. Again, the problem is both in respect of health concerns because of pollution from Nitrogen Oxide (NOx), SOx and the increased CO2 levels. Social impacts on the community are also a concern, especially in remote places such as Akureyri in north-central Iceland. The issue here is if/how a community can accommodate mass tourism when suddenly high volumes of tourists enter a destination. Arguably, the sharp increase in cruise arrivals is just too much for smaller destinations to cope with, leaving a destination vulnerable to further increase of environmental and social issues. Aligned with topical concerns surrounding mass tourism, is this can lead to issues pertinent to ongoing discussions of overtourism (Milano et al., 2019).

In contrast to the increased cruise tourism in Iceland, the number of air traffic passengers is slightly decreasing in Iceland (Isavia, 2019). Some argue that this is partly because of the increasing popularity of cruises ship itineraries to and around Iceland. Increased cruise tourism brings more pollution and in turn does not increase revenues from tourism spend; this is a concern because this damaging to both the environment and the local economy. This is a critical paradox for countries and destinations, as increased demand and the consumption of cruise tourism is damaging the environment with little to no economic gain. The cruise ship companies do not have much to lose, and while stricter regulations might result in increased costs for cruise operators, they often pass such increases to consumers and if a destination is popular they will usually still be able to sell, as the cruise companies earn a profit while the local communities do not profit economically.

This in perspective paper considers current economic, environmental and social impacts of cruise ship arrivals in Iceland before outlining some recommendations that align with environmentally friendly practices for policy makers to consider going forward. The triple bottom line (TBL) framework is widely used as a framework in tourism planning to connect the economic, social and environmental dimensions of tourism in a sustainable way (Dwyer, 2005; Wise, 2016). John Elkington captioned the TBL framework because he observed the need to businesses to focus more on corporate responsibility and sustainable development (see Henriques and Richardson, 2004). The TBL framework is also known as the three P's (People, Planet and Profit), with a focus on creating transformation so that policies can have a positive impact on places and destinations (Rendtorff, 2019). This approach is especially important for tourism managers and planners to consider, as this industry is inescapably reliant on its resources, and for destinations to make a profit we need to keep a close eye on preserving the environment and take into the account the success of local communities and cultures because of any business activities (Wise, 2016).

Economic benefits

While the previously cited figures from Cruise Iceland look impressive, it is worth considering them more closely. The members of Cruise Iceland are companies that gain financially from the increase (and positive image) of cruise tourism, such as port authorities, tour operators, travel agents and the shipping industry. Lansky (2016) critiques a report that shows that the average spend of a passenger is roughly US\$80-US\$150, but these figures are presented by the cruise lines and such studies lack scientific credibility and even methodology, and are sometimes interpreted as rough estimates. The same author also highlights that similar surveys are conducted by Destination Marketing

Organisations (DMO's) or Port Authorities, and these spending figures are almost always significantly lower (Lansky, 2016).

Identifying the economic benefits gained from cruise tourists in a destination is very controversial. Cruise tourists tend to spend much less than other tourists that enter the country by other means, as those arriving by air pay for all services and goods on land, with similar observations made for over a decade now (Brida and Zapata, 2010; João et al., 2018; Vayá et al., 2018). Cruise ship passengers have all-inclusive deals when on-board the ship and are therefore tempted to settle for small food and beverage purchases when on an excursion. According to a study by Huijbens and Gunnarsson (2014), cafes in Akureyri registered a 3.5% increase in business during a cruise ship visit while restaurants measured under 1%. This tiny increase is even in spite of most of the cruise ship docking a short 10-15 min walking distance from the town centre with most of the restaurants and cafes. Related studies that look into cruise passengers spending patterns off the ship found that they spend considerably less than other visitors. This is not solely because they have all-inclusive deals on the ship, but based on the length of the stay (usually 8 hours or less on average), while other visitors tend to stay longer and thus pay for accommodation and all meals in a destination (see Marksel et al., 2016). With all-inclusive catering (similar to hotel resorts), it has been argued that these attract more budget passengers who in turn will contribute less to the destination economy (Anderson, 2010). While the cruise industry does take people to remote places sometimes difficult to access, the economic gain is for the benefit of the cruise companies opposed to local suppliers and communities (Torbianelli, 2012).

Another concern is, in many places, destination planners go to great lengths to accommodate the cruise industry. This includes giving cruise ship companies discounts on port fees and great deals on land excursions brought on by competition; this is even in spite of the cruise industry only contributing about 2% of the expenditures of land tourism (Brida and Zapata, 2010). João Lopes and Dredge (2018) also note that destinations often assume that the cruise tourism will create value while strategies for optimising and capturing value are rarely in place. For an example, in Copenhagen, there is huge competition amongst tour operators to capture the business of the cruise ship companies (often even sold at a cost price), and the huge cost of new infrastructure to accommodate the cruise ships and their passengers (João Lopes and Dredge, 2018). In Aruba, cruise tourism decreased in 2015 but the total tourist revenue went up, and academics have argued that this is not a coincidence (Lansky, 2016). This will question the financial justification of cruise travel and whether the industry creates value at all at their destinations even before the environmental and social factors are considered. This is especially true if the destination port is not a 'home port' such as Barcelona and Copenhagen often are, but a 'port of call', which all Icelandic ports are. According to Vayá et al. (2018), cruise passengers who spend the night in Barcelona spend around €200 per day while day visitors from the cruise ships spent only €53 per day.

Environmental Issues

Pollution from cruise ships comes mostly from fuel oil and diesel particle emissions that can carry sulphur dioxide (SO_x) and Nitrogen Oxide (NO_x) which can be very hazardous to health (Náttúruverndarsamtök Íslands, 2017). The particles emitted can cause respiratory and coronary illnesses (Khan and Siddiqui, 2014; Hafstað, 2019) and boats use a lot of fuel upon docking and departing, as well as ships keeping the engine idling while in port to create electricity for the passengers. Such excessive fuel use causes extra emissions and can affect community residents' quality of life in port destinations. In the United States, Canada and most of Europe, there exist strong regulations about how much SO_x can be in oil (up to 0.1%) anywhere within these country's jurisdictions. However, in Iceland, these regulations only apply to when a ship is in port. When the ship is not in port the percentage of SO_x in the oil can be as high as 3.5%, and Iceland's Ministry for

the Environment is considering an amendment to reduce emissions to 0.1% next year (Kyzer, 2019). In Iceland, the law states fuel oil is not allowed in port and cruise ships need to swap to a less polluting diesel fuel or natural gas. Sigurdardottir (2017) reports from a study that particles from a cruise ship in Reykjavik harbour showed that one ship polluted about the same as one million cars, and on some days there were three or more ships in the city's harbour. The particles mostly travelled inland so they would affect all the citizens of the city. Moreover, these tiny particles can enter wind currents and even travel up to 400km inland and can settle on glacial ice; observed in studies focusing on SOx particles found inland on glacial ice (see Naftz et al., 2012). The wider issues here then is these particles, as they build up, can speed up the melting process. CO₂ emissions can be, of course, a serious by-product of cruise ship activity, but there are positive signs that new policies will aim to reduce CO₂ and SO₂ emissions.

In Akureyri, for example, harbour authorities are paying for the planting of 2,000 new trees each year and harbour authorities in Reykjavik have committed to spending €11,000 every year for the next ten years on planting trees to offset some of the CO₂ emissions (Havardsson, 2018). Passengers can also opt to buy a tree on arrival to counterbalance the carbon footprint caused by the cruise liners. In this context then, it is worth mentioning that aviation and nautical travel is exempt from the Paris Agreement, so it is in the hands of each country to offset the CO₂ emissions caused by planes and cruises. The Cruise industry is also trying to reduce the SOx on their ships by fitting them with scrubbers, a device that cleans the SOx from the exhaust. This will allow them to comply with new standards set by the International Maritime Organisation (IMO), which is now official from 1 January 2020 (see Crisp, 2019). However, this is somewhat controversial as Crisp (2019) points out: many of these scrubbers are open loop scrubbers that will turn the extracted sulphur to liquid, which will then run into the ocean where it can pose risk to sea life. Subsequent pollution, such as cruise ship waste can also be very dangerous to the marine environment. This includes sewage, greywater (from sinks, baths and washing), hazardous wastes, oily bilge water, ballast water, and solid waste. According to Guilford (2014), cruise ships dump one billion gallons of sewage into the oceans every year, and this figure may have well increased since this study was published in 2014. Sewage dumped close to land (within 300 nautical miles) requires careful treatment. A ship with 3,000 passengers and crew can generate around 15,000 to 30,000 gallons of blackwater or sewage waste per day (Jennings et al., 2016). The dumping of untreated blackwater around Iceland can have serious effects on marine life, which is vital to Iceland's fishing culture and economy. There are regulations that ships are liable for whatever pollution they produce, and the crews cannot dump any objects, substances or waste within Iceland's territorial waters. Sewage disposal is prohibited in Iceland within "twelve nautical miles from the territorial sea baseline points" and treated sewage can be disposed of within three nautical miles of the same point (Umhverfisstofnun, 2019: 9). Such rules and regulations as determining the actual levels of SOx and NOx in cruise ship's exhausts are notoriously hard to regulate, especially when the ships are far from shore. Aligned to this point, Huijbens and Gunnarsson (2014) point out the lack of waste management regulations when at sea, given there is no real framework in place about how waste management is (and can be) regulated far from shores. This is a major problem for a country like Iceland that prides (and promotes) its nation as a 'clean' destination.

Social and community considerations

In Akureyri and other cruise ship destinations in Iceland, many locals oppose cruise ships, not only because they pollute, but also because of the strain put on the inhabitants and local infrastructure. Statistics from 2018 show that 75% of the Icelandic population thought that tourism in general had a negative effect on nature (Ferdamalastofa, 2020). In the town of Isafjordur along the West Fjords, cruise ships can triple the town's population. Isafjordur, due to its isolation, gets less in the form of

traditional land-based tourism with the majority of the tourists coming from the cruise ships, yet only 5% of the town's inhabitants say that they would like more cruise ships (Ferdamalastofa, 2016).

A community of residents are a pivotal part of the triple bottom line framework, especially in relation to the impact on the local economy (Wise, 2017). As cruise ships coming to Iceland increase, communities must be 'on board' and feel like they are a part of the decision making process. There is a need for communities to believe decisions made by the authorities will benefit them as well as the harbour authorities and the cruise ship companies. According to a report by the Icelandic Tourism Research Centre (2017), representatives from the local authorities have little to do with any decision-making regarding marketing or service of the cruise ships in their communities. These are mainly in the hands of Cruise Iceland and companies that benefit from the industry. The cruise lines themselves decide when they arrive and what is organised for the passengers (such as when embarking on land excursion). When the cruise ships are in port this can cause further problems with, for example, transport or lack thereof for excursions to places of interest.

It is thus easy to see the conundrum concerning why local authorities are reluctant to reduce arrivals of big cruise ships based on pollution, social effects and minimum economic gain for the local economy. In Iceland, the port authorities are making money and pretty much run themselves, which leaves more money for the local authorities (city and town councils) to use on other matters. However, it might be in their interest, and more profitable in the long run, to put emphasise on tourism that is more beneficial (i.e. creates more revenue, pollutes less and is less of a burden on destinations resulting in overtourism and dissatisfaction amongst local people). A recent CNN Travel report asks the question: Is the cruise industry responsible for overtourism? (Street, 2019). This is a valid point, and even though the report mentions cruise tourism only accounts for about 5% of the overall number of tourists in big destinations like Venice, Amsterdam and Barcelona, it is a fact that cruise ship passengers create a huge amount of congestion in popular tourist spots (Ricaurte et al., 2016; McCarthy and Skrede, 2018). The development of cruise tourism not only has environmental issues but also can have diverse effects on societal circumstances and cause the destruction of (what is often) fragile cultural resources. Considering the case of Venice as an example here, this can lead to anger and frustration. In this context, Adams and Coffey (2019) have listed destinations to avoid in 2020 which includes popular cruise ship destinations such as Iceland, Venice, Barcelona, Rome and Amsterdam; and in all those cases it is predominantly due to overtourism. For this reason, therefore, the European Parliament issued a study aimed at finding policy solutions (see again Peeters et al., 2018). These social and community considerations further pinpoint how important it is for the cruise industry to consider all elements of the triple bottom line framework effectively.

Going forward

Installing Alternative Marine Power (AMP), or shore power, is a potential way forward to minimise the effects of SO_x, NO_x and CO₂ emission from the cruise ships. Whilst AMP and shore power are possibilities, the challenge is that these options are expensive, and many city/town councils are reluctant to invest the finances needed. The cost of setting up a shore power facility can be from £9M to £25M based on examples from other European cities (Green Cruise Port, 2019) not to mention the huge amount of electricity needed to fuel these 'sea-based cities'. However, an individual from Landsnet, the company that transmit electricity around Iceland, points out that it is well within the country's means and although a lot of energy is necessary, it would not exceed the necessary electricity capacity. AMP and/or shore power will be important in the future to generate an economic alternative and help offset carbon emission caused by the cruise industry.

Cruise Ships today are better equipped to deal with pollution, sewage, and other waste. Companies have made progress with sewage treatment and water quality compliance, but air pollution reduction still requires improvement. Goodwin (2016) points out that competition is one of the main reasons that industries, businesses and even national governments are reluctant to put money into costly energy programmes that can reduce carbon because there is a concern that competitors who are not investing will have an advantage. The cruise industry is no exception and therefore change is slow. Countries like Iceland who do not have large financial resources are also reluctant to put money into infrastructure, which might force them to increase harbour taxes and add a similar air pollution tax to other countries, as this might threaten competitiveness (OCED, 2018). Increased docking costs or taxes might make cruise ship companies reconsider and go elsewhere if that kind of price-rise is not in their budget. Nevertheless, the question that arises, then, is would that be so bad? While this would be a potential economic threat, there may then be environmental and social impact advantages. For example, Amsterdam has recently decided to add a tourist tax exclusively for cruise ship passengers in an attempt to reduce overtourism and pollution from large cruise ships, and this approach is working as some cruise lines have removed Amsterdam from their itineraries (see Featherstone, 2019; Quest et al., 2019). It is unlikely that the cruise ship companies will cover extra costs in the future—patrons on the cruise ships will pay this in their cruise fare.

It is evident that cruise ships pollute the environment, through air pollution and wastes dumped in the ocean. Countries with pristine natural environments such as Iceland could consider other countries as benchmarks that have more experience dealing with environmental protection and community sustainability, including setting up AMP or fining companies that pollute over a set limit (but strict legislations need to be put in place). In the past few years, understanding and discussions surrounding cruise ships and their social and environmental issues have been developing in Iceland. The Icelandic parliament discussed the subject last year and identified the need for cruise tourism, especially in smaller towns as they feel this is needed economically, but they also acknowledged the environmental effects and the necessity of a new set of rules and framework to deal with it to protect communities (Althingi, 2018). In October 2019, it was discussed in Iceland's parliament that the government is putting a research policy agenda in place to gauge their options at and find solutions so that economic, environmental and social impacts can be realised. In the parliamentary discussion, the Icelandic Government acknowledged that shore connections for the big cruise ships in the future is inevitable; however, they also mentioned they would prioritise inland connections for cars now considering the funds available so that other communities can gain economically. This was something that other parliamentarians disagreed on, especially considering the huge amount of pollution and danger to health that the cruises ships cause when in port. It was also noted that despite the huge expenses involved, making towns and cities healthier and more socially satisfying to live in would outweigh the cost (Althingi, 2019).

A recent report by Korneliusdottir and Sverrisdottir (2019) found that the port authorities themselves would never be able to fund the cost of AMP. Therefore, the Icelandic government will need to provide financing for smaller/rural port towns. Other Nordic countries place less tax on the sale of electricity to cruise ships to make it easier and more of an incentive for the cruise ship companies to acquire an alternative/cleaner form of energy, however burning fossil fuels is still cheaper despite the subsidies offered. That report also suggests there should be considerable grants and support from government agencies to support greener technology in Iceland's ports. Korneliusdottir and Sverrisdottir (2019) also mention there exists an opportunity while building a planned new harbour extension in Reykjavik, to include a high voltage electric connection needed for the cruise ships and then use this experience to explore further action at other ports. Another report suggests that to make AMP a viable option, the government could put a tax on using fossil fuels and therefore make using the AMP more worthwhile for the cruise ship companies (see Hallgrímsson and Gíslason, 2019). Regulations for cruise ships in Iceland are lacking and protocols need to be amongst the first steps that the government and harbour

officials put in place for the industry to becoming sustainable and more environmentally friendly. Considering the rapid increase of the cruise ship arrivals in Iceland in the last 20 years it would not be hard to argue that DMO's and local authorities simply have not been able to keep up with development and just focus on how to accommodate the ships rather than how to accommodate the local people and their precious natural resources. Another individual (that the lead author conversed with) mentions what is needed is official measurements of the real amount of pollution from cruise ships in Iceland. This means stricter regulations for the Cruise ship companies themselves and an infrastructure to manage and regulate it where companies receive considerable fines for exceeding set maximum pollution levels.

Concluding thoughts

Banning ships over a certain size (or even all together) until they set stricter environmental regulations and agree the intended impact of cruise tourism with communities is a compromise that needs considered. There is also a need for more research on the economic perspective that would help DMO's come to a conclusion on the attributes (or non-attributes) of the industry and to help them establish policies and strategies for effective management purposes that best serve the triple bottom line (Baker, 2016). Iceland also needs to consider again (or re-think) marketing efforts focused on land-based tourism which brings more revenue and is a driver for improving internal infrastructure. It would be logical to argue that decreasing cruise tourism in Iceland would automatically increase land-based tourism (by air) as the only means of travelling to the country, simultaneously filling hotels and restaurants and creating less competition amongst tour companies. This would provide optimal economic gain that would create less congestion, pollution and social discontent. This would also counteract the potential loss of revenue due to less cruise ships in certain harbours. Inhabitants in popular cruise tourism destinations and affected areas need to have a greater say, and more research needs to consider local residents so that policy makers and companies can realise how residents in cruise tourism destinations view economic, environmental and social impact.

The cruise ship industry today is big business for the ever-expanding global tourism industry, and it appears to have managed to convince their destinations in Iceland that stopping here is vital for the economy, especially along Iceland's north coast, where this is most controversial when considering negative environmental and social/community impacts. There are small towns in the country that almost exclusively receive tourism from cruise ships, simply because they are remote and hard to get to otherwise—even in the summer. Tourist arrivals in Iceland by air are also mostly concentrated on the south west around the capital Reykjavik so people who don't stay for long (which is common due to the cost of living) will focus their stay on and around that area simply because getting to other parts of the country is time consuming and internal flights are expensive. This then encourages people who want to cover more of the country to take a cruise instead. The occasional cruise ship will undeniably boost their economy somewhat, but in other towns such as Reykjavik, Akureyri and even Isafjordur, the social inconvenience caused by sudden increased tourism might not be worth it considering the relatively small economic gain. The final decision seems to be with the government who must consider all costs and benefits, economically, environmentally and socially for setting legislation promoting sustainable futures and responsible progress. The Brundtland Report (1987: 16) states: "sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs". Iceland must look more closely at what environmental and social effects the cruise ships are causing now and how it will affect future generations and remote communities.

To conclude, a policy consideration is the government could consider undertaking a large-scale economic research study into the impacts of cruise tourism, specifically concerning Iceland as a unique

and clean destination. The key focus is considering all real economic gain versus the perceived benefits, as the cost of maintaining cruise tourism infrastructure is looking to result in more costs than benefits, especially in very geographically remote places such as the north of Iceland. Given the trends and insight observed in recent studies, policy documents and newspaper reports noted in this paper, the cruise industry will in the near future surely be confronted with a critical binary: to make responsible and sustainable changes in accordance with the TBL framework, or face losing business in destinations such as Iceland. Policy-makers must decide on Iceland's future and determine the extent of which cruise tourism is encouraged/promoted and/or what restrictions or supplemental tariffs are necessary to put on cruise ship arrivals, based on the evidence of minimal economic gains for remote communities and the wider environmental issues caused by the ships. It seems that until radical steps are taken by cruise company's, the Icelandic government, and harbour officials, the growing cruise industry in Iceland will continue to face dilemmas and future that does not look socially, economically or environmentally sustainable.

References

Adams C & Coffey H (2019) Where not to go in 2020. *Independent* 30 December 2019. Available at: <https://www.independent.co.uk/travel/news-and-advice/where-not-to-go-2020-iceland-bruges-kyoto-venice-machu-picchu-a9250771.html#comments> (accessed 27 January 2020).

Althingi (2018). Móttaka skemmtiferðaskipa. Available at: <https://www.althingi.is/altext/upptokur/raeda/?raeda=rad20180322T122340> (accessed 27 January 2020).

Althingi (2019). Fyrirspyrjandi (Albertína Friðbjörg Elíasdóttir) (Sf). Available at: <https://www.althingi.is/altext/raeda/150/rad20191021T173150.html> (accessed 27 January 2020).

Anderson W (2010) Determinants of all-inclusive travel expenditure. *Tourism Review* 65: 4-15.

Baker, DMA (2016) The cruise industry: past, present and future. *Journal of Tourism Research* 14(1): 141-153.

Brida JG & Zapata S (2010) Economic impacts of cruise tourism: The case of Costa Rica. *Anatolia* 21(2): 322-338.

Bruntland GH (1987) Report of the World Commission on Environment and Development: Our Common Future. Available at: <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf> (accessed 27 January 2020).

Crisp W (2019) Thousands of ships fitted with 'cheat devices' to divert poisonous pollution into sea. *The Independent* 29 September 2019. Available at: <https://www.independent.co.uk/environment/shipping-pollution-sea-open-loop-scrubber-carbon-dioxide-environment-a9123181.html> (accessed 27 January 2020).

Cruise Iceland (2019) Fréttatilkynning mars 2019. Available at: <http://www.cruiseiceland.com/frettatilkynning-mars-2019/> (accessed 27 January 2020).

de Grosbois D (2015) Corporate social responsibility reporting in the cruise tourism industry: a performance evaluation using a new institutional theory based model. *Journal of Sustainable Tourism* 24(2): 245-269.

Dwyer L (2005) Relevance of triple bottom line reporting to achievement of sustainable tourism: A scoping study. *Tourism Review International* 9(1): 79-93.

Featherstone E (2019) Cruise lines ditch Amsterdam after passengers targeted by new taxes. *Telegraph* 9 January 2019. Available at: <https://www.telegraph.co.uk/travel/cruises/news/how-new-tourist-taxes-are-targeting-cruise-passengers/> (accessed 27 January 2020).

Ferdamalastofa (2016) Áfangastaðaáætlun Vestfjarða. Markaðsstofa Vestfjarða. Available at: https://www.ferdamalastofa.is/static/files/ferdamalastofa/DMP/vefdir_rett.pdf.

Ferdamalastofa (2020) 2,3 milljónir erlendra farþega 2018. Available at: <https://www.ferdamalastofa.is/is/um-ferdamalastofu/frettir/23-milljonir-fartheega-2018> (accessed 27 January 2020).

Goodwin H (2016) *Responsible Tourism: Using Tourism for Sustainable Development*, 2nd Edition. Oxford: Goodfellows Publishers.

Green Cruise Port (2019). Green cruise port: Sustainable development of cruise port locations 2016 – 2019. *Interreg*. Available at: <http://greencruiseport.eu/Home.html> (accessed 27 January 2020).

Guilford G (2014) Cruise ships dump 1 billion gallons of sewage into the ocean every year. *Quartz* 9 December 2014. Available at: <https://qz.com/308970/cruise-ships-dump-1-billion-tons-of-sewage-into-the-ocean-every-year/> (accessed 29 January 2020).

Hafstað V (2019) Cruise ship pollutes as much as thousands of cars. *Iceland Monitor* 7 August 2019. Available at: https://icelandmonitor.mbl.is/news/news/2019/08/07/cruise_ship_pollutes_as_much_as_thousands_of_cars/ (accessed 27 January 2020).

Hallgrímsson JH & Gíslason K (2019) Hagræn greining á landtengingu skipa. EFLA. Available at: https://fagthing.is/wp-content/uploads/2019/06/Jonas_Hallgrimsson.pdf (accessed 29 January 2020).

Havardsson S (2018) Hafnir kolefnisjafna með trjárækt. *Fiskifréttir* 17 March 2018. Available at: <https://www.fiskifrettir.is/frettir/hafnaryfirvold-i-tveimur-af-staerstu-hofnum-landsins-freista-thessad-kolefnisjafna-utblastur-hafnir/145744/> (accessed 27 January 2020).

Henriques A & Richardson J (2004) *The Triple Bottom Line: Does it all add up?* London: Earthscan.

Huijbens EH & Gunnarsson KB (2014) Skemmtiferðaskip við Ísland: Úttekt á áhrifum. Rannsóknamidstöð Ferdamala. Available at: <http://www.rmfi.is/static/research/files/skyrsla-skemmtiferdskip-2014-vefutgafapdf> (accessed 29 January 2020).

Isavia (2019). Farþegaspá Keflavíkurflugvallar 2019 Available at: <https://www.isavia.is/media/1/19-1184-farthe gaspa-skyrsla-final.pdf> (accessed 27 January 2020).

Jennings H, Ulrik K & Bishop P (2016) Cruise tourism – what's below the surface? *Tourism Concern: Research Briefing*. Available at: <https://tourismconcern.org.uk/wp-content/uploads/2016/02/Cruise-Ship-Report-high-res-pages-002.pdf> (accessed 27 January 2020).

João Lopes M & Dredge D (2018) Cruise tourism shore excursions: Value for destinations? *Tourism Planning & Development* 15(6): 633-652.

Jones P, Hillier D & Comfort D (2016) The environmental, social and economic impacts of cruising and corporate sustainability Strategies. *Athens Journal of Tourism* 3(4): 273-283.

Jordan EJ & Vogt CA (2017). Residents' perceptions of stress related to cruise tourism development. *Tourism Planning & Development* 14(4): 527-547.

Khan RR & Siddiqui, MJA (2014) Review on effects of particulates: Sulfur dioxide and nitrogen dioxide on human health. *International Research Journal Environmental Science* 3(4): 70-73.

Klein RA (2007) The Politics of environmental activism: A case study of the cruise industry and the environmental movement. *Sociological Research Online* 12(2): 17-29.

Korneliusdottir A & Sverrisdottir S (2019) Aðgerðaáætlun um orkuskipti í íslenskum höfnum—með áherslu á raftengingar til skipa í höfn. Available at: <https://www.stjornarradid.is/lisalib/getfile.aspx?itemid=79fed9fd-2892-11e9-942f-005056bc4d74> (accessed 27 January 2020).

Kyser L (2019) Stricter Regulations on Marine Fuel Proposed. *Iceland Review* 26 May 2019 Available at: <https://www.icelandreview.com/news/stricter-regulations-on-marine-fuel-proposed/> (accessed 27 January 2020).

Lansky D (2016) Can destinations increase revenue by limiting (or banning) cruise ships? Yes, keep reading. *Destination Development Watch* 9 January 2016. Available at: <http://www.destinationdevelopmentwatch.com/can-destinations-increase-revenue-limiting-banning-cruise-ships-yes-keep-reading/> (accessed 27 January 2020).

Marksel M, Tominc P & Bozicnic S (2016) Determinants of Cruise Passengers' Expenditure in the Port of Call. *Management* 21(2): 121-143.

McCarthy M & Skrede J (2018) A New Cruise Landscape: Cruise Europe is working closely with its members to help destinations overcome issues with overcrowding and prepare for the new generation of cruise ships. *International Cruise & Ferry Review* Autumn/Winter(53): 146-147.

Milano C, Cheer MJ & Novelli M (2019) *Overtourism*. Wallingford, UK: CABI.

Naftz DL, Schuster PF & Johnson CA (2012) A 50-year record of NO_x and SO₂ sources in precipitation in the Northern Rocky Mountains, USA. *Geochem Transactions* 12(4): 1-10.

Náttúruverndarsamtök Íslands (2017) Mengun frá skemmtiferðaskipum í Reykjavíkurböfn. Available at: <https://natturuvernd.is/Sida/Mengun-fra-skemmtiferdaskipum-i-Reykjavikurbofn> (accessed 27 January 2020).

OECD (2018) *Towards investment and financing for sustainable tourism*. Paris: OECD Publishing.

Peeters P, Gössling S, Klijs J, Milano C, Novelli M, Dijkmans C, Eijgelaar E, Hartman S, Heslinga J, Isaac R, Mitas O, Moretti S, Nawijn J, Papp B & Postma A (2018) Research for TRAN Committee - Overtourism: impact and possible policy responses. Brussels: European Parliament, Policy Department for Structural and Cohesion Policies.

Quest R, Hardingham-Gill T & Appiah L (2019) How Amsterdam is fighting back against mass tourism. CNN. 23 May 2019. Available at: <https://edition.cnn.com/travel/article/amsterdam-overtourism/index.html> (accessed 27 January 2020).

Rendtorff JD (2019) Sustainable Development Goals and progressive business models for economic transformation. *Local Economy* 34(6): 510-524.

Ricaurte E, Kang G, Vu M, Christ C, Farrar, L & Shiben SK (2016) Sustainable Cruise Tourism Development Strategies: Tackling the Challenges in Itinerary Design in South-East Asia. *UNWTO*. Available at: <https://www.e-unwto.org/doi/pdf/10.18111/9789284417292> (accessed 27 January 2020).

Sigurdardottir K (2017) Menga þrisvar sinnum meira en bílafloinn. *Rúv* 30 August 2017. Available at: <https://www.ruv.is/frett/menga-thrisvar-sinum-meira-en-bilafloinn> (accessed 27 January 2020).

Street F (2019) Is the cruise industry responsible for overtourism? *CNN Travel* 16 August 2019. Available at: <https://edition.cnn.com/travel/article/overtourism-cruise-industry/index.html> (accessed 27 January 2020).

The Economist (2017) Green finance for dirty ships. *The Economist* 11 March, 2017. Available at: <https://www.economist.com/finance-and-economics/2017/03/11/green-finance-for-dirty-ships> (accessed 27 January 2020).

Torbianelli V (2012) The local economic impact of cruises: From figures to the active policies of the European harbour cities. *POMORSTVO—Scientific Journal of Maritime Research* 26(1): 139-150.

Transport and Environment (2019) Luxury cruise giant emits 10 times more air pollution (SOx) than all of Europe's cars—study. *Transport and Environment* 4 June 2019. Available at: <https://www.transportenvironment.org/press/luxury-cruise-giant-emits-10-times-more-air-pollution-sox-all-europe%E2%80%99s-cars-%E2%80%93-study> (accessed 27 January 2020).

Umhverfisstofnun (2019) Guidelines for masters of cruise and passenger ships arriving in Iceland. Available at: <https://www.ust.is/library/sida/haf-og-vatn/Enska%20Lei%C3%B0beiningar%20fyrir%20stjo%CC%81rnendur%20Far%C3%BEgaskipa%20sem%20koma%20til%20I%CC%81slands%20ju%CC%81ni%CC%81%202019.pdf> (accessed 27 January 2020).

Vayá E, Garcia JM, Román J & Suriñach J (2018) Economic impact of cruise activity: The case of Barcelona. *Journal of Travel & Tourism Marketing* 35(4): 479-492.

Wise N (2016) Outlining triple bottom line contexts in urban tourism regeneration. *Cities* 53: 30-33.

Wise N (2017) Local community and local economy: Place, policies and power at the micro-scale. *Local Economy* 32(7): 595-600.