



HEALTH AND SAFETY-RELATED ISSUES AT LAKE BOSOMETWE, GHANA

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Received: 01.02.2022

Accepted: 17.02.2022

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Abstract

Health and safety matters in attraction sites are some of the crucial aspects of tourism keeping the industry alive. Considering this, the study has explored the health and safety concerns at Lake Bosometwe in Ghana, and ways to deal with them due to the shortage of evidence-based empirical studies in the field. The study made use of exploratory research design; primary data (qualitative) from 387 responses were analysed in percentages and frequencies on tables and charts. The qualitative data was analysed through open content analysis. From the results, major health and safety issues associated with the site were cholera, skin diseases and headache. They were attributed to low cleaning practices like inadequate sewage disposals. Others were robbery, theft (due to inadequate security systems) and road accidents (due to the poor road system and carelessness of some drivers). The study recommends that there should be a provision of good road and security systems, health/clinic facilities, health and security policy programmes and intensive education to all stakeholders to contribute to healthy and secured tourism at the site.

Keywords: Tourism, Health, Safety and security, Lake Bosomtwe, Ghana

Introduction

The safety and wellbeing of tourists are critical features of tourism. According to the West Virginia Bureau for Public Health (WVBPH, 2012) health and safety help to create a safe and secure atmosphere for people. Thus, providing a safer condition for successful tourism development. Although, it is widely accepted that somehow, tourism promotes the health of people from their stressful everyday work and boredom and an opportunity for people to engage in health-related activities like sports, spas, health tourism among others. However, these aspects of tourism have turned out to be otherwise in some parts of the world, especially in developing countries like Ghana especially, Lake Bosomtwe (Joy, 2018). This happens as a result of the inadequate security at these tourist destinations. That is not to say that there are inadequate safety systems to fully protect tourists in the country. Even in the so-called developed world like Europe such cases exist. As rightly put by Bauer et al. (2001), the overall injury mortality of non-domestic tourists was found to range between 130 and 200 fatalities per 100.000 person-years of exposure, with a mid-point estimate of 170 in Europe. Therefore, inadequate safety in tourism is almost a global issue.

Security and health issues have a significant detrimental impact on tourism (Novelli et al., 2018). This notion and the devastating terrorist attack on September 11th, have increased the research on health, safety and security at tourist destinations (Koravi & Zimanyi, 2011). For example, current studies such as Ji et al. (2021), Islam et al. (2020), Tuclea et al. (2020) and Hindley & Marmion (2019). In Croatia, Gotova (2007) also studied what effective tourist destination management should be like by highlighting security as a critical aspect in developing safe tourism to assure people's wellbeing through a multifaceted structure such as security and health services. Moreover, studies like Dosoo et al. (2020) Hindley et al. (2019) and Boakye (2012) as well have discussed similar subject matter.

However, despite the increasing studies, none has focused on evidence-based research on health, safety and security problems related to a particular tourist destination as a guide for relevant tourism stakeholders and management to better understand the narrative of insecurity and danger in the tourism sector. Based on this, the study has conducted an in-depth study on some common health and safety problems at Lake Bosomtwe, a popular lake in the second biggest city in Ghana, Kumasi. The study aimed to produce knowledge on key elements including the level of health and safety and the measures to help reduce safety risks and insecurity at the site. In this regard, the study sought to find answers to questions like:

- (i) What are the key health and safety issues at Lake Bosomtwe?
- (ii) What are the existing health and safety measures at Lake Bosomtwe?
- (iii) What methods should be employed at Lake Bosomtwe to reduce health and safety issues?

1. Background

1.1 *The relationship among health, safety and tourism*

Tourism and health and safety of tourists have a symbiotic relationship. This is due to the current goal of tourism, which is to meet the health and safety needs of visitors aside from the tourism services they have paid for (Wall & Mathieson, 2006). Based on this Renata (2007) stressed the need for a concentrated effort with a clear aim in mind to safeguard tourists while also advancing tourism goals for the benefit of both the guest and the host. The comprehensive account from the author makes it clear that if the safety of relevant stakeholders in the tourism industry especially, tourists and indigenes are not assured, the prime goal of the UNWTO which seeks to 'commit tourism to peace, understanding, wellbeing and prosperity throughout the world" will be a standstill (McIntosh et al., 1995). On this note, Brenner (2017) suggests the need to promote secure tourism that will make a community a destination rather than insecure residential areas. Khajuria & Khanna (2014) corroborates that the concern for tourist wellbeing and security are essential part of travel and tourism.

The significant interrelationship between travel, tourism and health is not underestimated because they work together to achieve the overall tourist experience (Hindley & Marmion, 2019). For instance, tourism supports the health and wellbeing of a country by tactically reinvesting into its health-related services United Nations World Tourism Organization (UNWTO, 2015). Good health also promotes and protects people and the communities where they live, learn, work and play as indicated by the American Public Health Association (APHA, 2021). Binns et al. (2015) added that good health' helps to fight diseases to improve man's healthiness. The authors argue that even just an idea of disease is life-threatening to the thinker, whether he/she has experienced it or not. In the same case, the assumption of insecurity at a tourist destination is a threat to tourists' health and wellbeing.

The lack of proper health and security guarantee has posed a challenge to the tourism business. This element has been identified as one of the five forces generating changes in the global tourism sector in the past to date (Breda & Cost, 2005). These forces including wrongdoing, fear-

based oppression, sustenance security, medical problems and disastrous events as mentioned by the authors are forcing reform in the travel industry, making tourism security a major worry for travellers. They make tourists view destinations with two eyes, thus, viewing the positive and negative sides of a destination before a final decision is established. Pizam & Mansfeld (2006) likewise recognized four kinds of security occurrences noted to have negatively impacted the travel industry and tourists' satisfaction. These are psychological warfare, crime, war and political disorder (Poku, 2016). The author argues that these occurrences limit the expectations that are formed by tourists before, during and after their visits. Hampering future travel decisions due to the break of the relation between the tourist and the industry.

1.2 Health and safety hazards in tourism

The health conditions at tourism destination centres on supportive amenities, health products and services, sanitation, food safety, customer services, weather condition, local behaviour and other activities that directly affect tourists. Goodrich (1987, p. 217) described health in tourism as "the attempt regarding a tourist facility to pull in visitors by deliberately developing its health care services and infrastructure. This means that health in tourism focuses on the totality of people's wellbeing, prosperity and guidance on behaviour, not only the corrective action of sicknesses or treatment of illness. The health and safety hazards of tourists include tourist encounters with robbery, food insecurity, medical problems, disease and catastrophic events and other perceived abnormalities during tourist visits. Nwokorie (2014) posits that the concern for safety and security has become of higher importance over the last two decades in the global tourism space because of the emerging hazards in the industry.

Security hazards of tourists result in the terrible reputation of the destination in question, creating a negative picture in the minds of the existing and potential guests (Goeldner & Ritchie, 2002). Some tourist sites are becoming more associated with security risks such as pickpockets and criminals, hunting foreigners. For instance, in places like Beijing, Shanghai, and the shopping locale of Shenzhen, foreigner attacks and burglary are common occurrences in popular bars and clubs (Breda & Costa, 2005). Similarly, Boakye (2012) added that despite the fact that Ghana is known as a safe tourist destination, crime is on the rise. Consequently, creating a high degree of negative effects in the country's tourism sector.

It is important to know that tagging a single tourist destination with insecurity may leave a poor remark for a nation. According to Ritchie et al. (2017), the tourism sector has suffered in recent years as a result of the creation of an unpleasant environment for visitors' well-being, both real and imagined. This is because, through modern technologies, potential tourists after a bad remark of a place assume the same for other destinations which may be doing well with respect to tourists' safety. These and other safety concerns have prompted a growing desire to promote health and safety as a discipline, societal commitment and a goal especially, in the global tourism space.

1.3 Methods of ensuring health and safety at tourist destinations

Mostly, a bad image is formed after a tourist's encounter with a destination's environment. This is because, a destination's environment provides room for criminal and bad behavior (Lu et al., 2018). Meanwhile, the UNWTO (2017) suggests that destinations should reasonably develop more conspicuous wellbeing and prosperity while strengthening general health services and reducing imbalances. Considering this, a destination's environment can be modified to assure security and safety when tourism stakeholders work together towards a change in both assumed and identified health and security issues of a destination (Turker et al., 2016; Amira, 2015).

The study Peng & Wu (2017) aimed to analyze the tourism security in Jiangxi Province established the theme "Prevention first, safety first". The authors further explained that integration is key therefore, all tourism practitioners such as tour operators, trainers, local tourism authorities and other stakeholders, should establish a high grade to regulate emergencies and occurrences of tourism insecurities to build a sturdy barrier that will safeguard visitors and host communities. This means that the method of ensuring responsible (sustainable) tourism will improve the lives of locals and tourists (Mathew & Sreejesh, 2017; Goodwin, 2011). However, Mihalic (2016) argues that responsible tourism is not a replacement for sustainable tourism. From the author, there should be a need (a set of fundamental needs for all tourism facilities, regardless of service type or destinations) to protect all facets of the tourism industry to make its development a success.

Generally, a destination can improve its health and safety through effective communication of regulations at the site. The United Nations World Tourism Organization (UNWTO, 2017) recommends actions for tourism health and safety to be initiated to designate appropriate health services for tourists. This entails providing tourists with information about services and how such

activities or services should be carried out. Providing information helps to promote awareness of risk prevention and local customs among tourists to improve tourist-locals relationships (Andrews, 2016).

1.4. Theoretical Background

The Health Belief Model (HBM) by Becker & Maiman (1975) is useful in predicting public perceptions, attitudes and behaviours related to health. It takes into account the socio-behavioural determinants of health and security compliance. According to the model, the chance of performing health-related preventive actions will be determined by perceived dangers, insecurity and disease and the anticipated advantages of such preventive actions. This means that people's attitudes about health and security issues and their perceptions of the benefits of taking action to avoid them are said to impact their willingness to act, according to the model.

The Securitization Theory (ST) sheds insight on the ideas established in the HBM. The Securitization theory adds that the evaluation of people especially tourists is determined by many variables including individual perception and beliefs as stated in the Health Belief Model. Specifically, when it comes to security, there are three key categories, according to ST. These include security challenges, the actions needed and their repercussions (Wæver, 1995). This means that there are insecurity situations in tourist destinations that step into the smooth operation of tourist activities. Consequently, this causes the development of a system of action following the identification of danger or threat. With danger involving man, the Commission of Human Security (CHS, 2003) argues that such actions should focus on man's liberties, satisfaction and the protection of life, particularly from crime.

Considering this, safety and security at tourist destinations that are threatened by crimes are issues mostly discussed with two theoretical approaches: the economic theory of crime (ETC) and the routine activity theory (RAT). The economic theory of crime helps to understand how insecurity and criminal activities continue to occur in tourism destinations. The theory states that the act of crime will continue to happen when people believe that the gains, they will make from criminal activities are higher than that of investing their resources like money and time (Becker 1968). Boakye (2012) agrees with the theory and adds that criminals are reasonable 'decision-makers' by weighing the profits (material resources) and cost (punishment) of their activities before a final decision is made.

He continued that criminal activity increases when tourists (victims) numbers increase in tourist destinations. Similarly, the routine activity theory also states that the more and more victims become available with fewer preventive systems like regulation and security systems (police) criminals are motivated to commit crimes. From the theory, in such cases, criminal activities will continue to become a routine (Cohen & Felson, 1979).

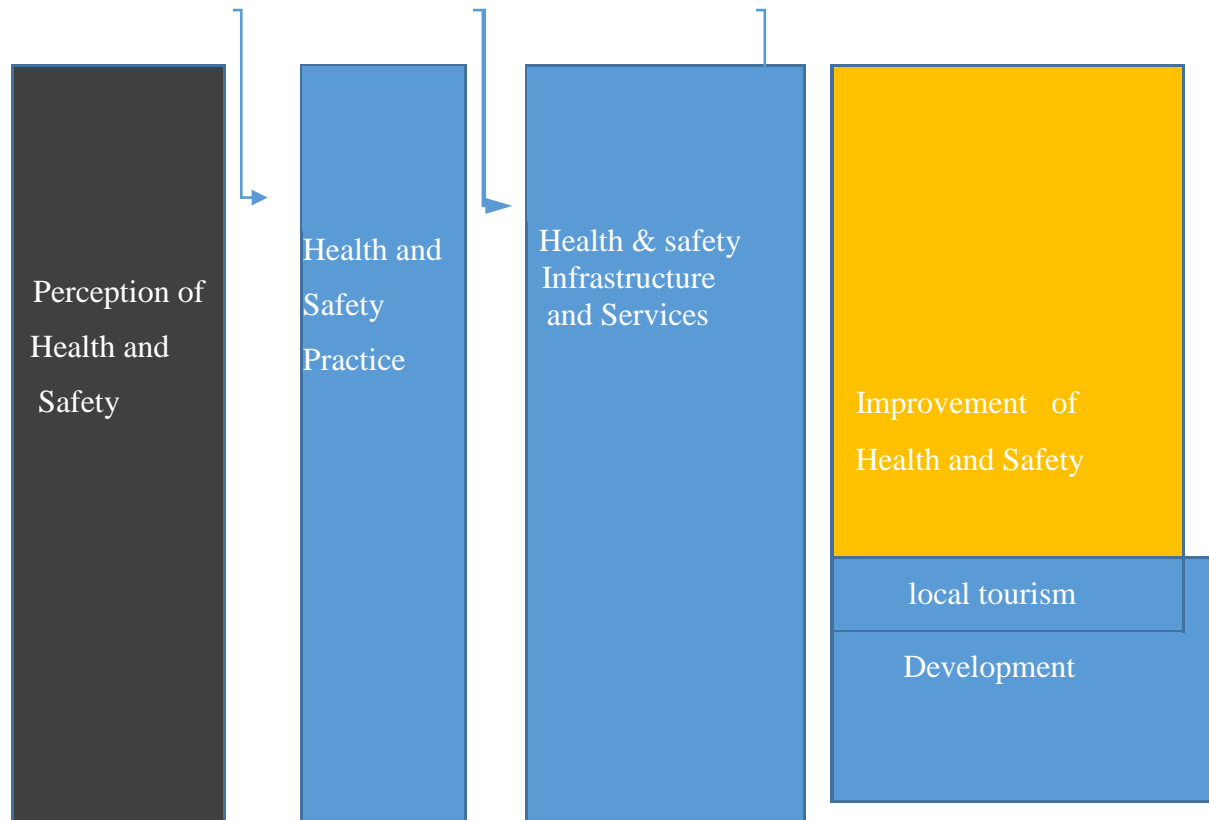
The ideas and arguments made in BHM give a clear view on tourist health, safety and security and the actions that are likely to be taken when people perceive health and security issues. The other theories - ST, ETC and RAT have also provided a comprehensive account which is not far from the idea that when causal insecurity variables including crimes, rape, theft, robbery and perceived health problems are noticed by tourists will develop negative assumptions about a particular tourist destination. This is because a crime like assaults will put the health of tourists and host communities in danger (Akadiri et al., 2020). Consequently, tourism demand, motivation to travel, host community and repeat visits are at risk. This study on this note adds and concludes that an increased rate of insecurity like criminalities against tourists may cause a decrease in tourist visits, local investments and the overall tourism development of a tourist destination. Thus, if tourists continue to perceive or experience threats and health issues at a tourist destination, will not only affects their activities but also, repeat visit and the entire tourism industry.

Taken together, the comprehensive ideas mounted in BHM and other supportive theories like the ST, ETC and RAT have paved the way for this study to explore tourist health and safety issues that may hinder local tourism development and economic resilience at Lake Bosomtwe.

The conceptual framework adopted for the study was inspired by Partnership for African Social & Governance Research (PASGR, 2013) on its study 'Political economy of universal social protection policy uptake in Africa'. This framework provides an in-depth understanding of the application of developmental programmes. It emphasizes that with the availability of ideas, institutions and actors combined, an impact is achieved. From the framework, risk perception activates social policies to support security and growth.

Based on this, the study agrees that tourists' perception of health and safety risks involves many evaluations including subjective feelings, objective evaluation and awareness of potential negative outcomes. Specifically, the subjective feelings encompass the physical and psychological

elements of the risk. The objective factors focus on the economic, equipment, social, time and opportunities such risks may affect (Cui et al., 2016). Considering this, the framework states that an evaluation of risk develops health and safety consciousness and the right system to deal with them. As a result, tourists and locals' comfort and wellbeing will be ensured (Hamarneh & Jeřábek, 2018; Okan, 2010).



Source: Adapted from PASGR PEA framework, 2013

Figure 1: Conceptual Framework adapted from “Political Economy Analysis Framework” cited in De-Graft Aikins et al. (2016)

In summary, the framework of this study states that when security and health risks are identified by a tourist destination, it develops infrastructure and institutions to improve such destination's security and wellbeing status. In light of this, the study utilised the conceptual framework in three ways; (1) to identify the right health and safety measures to improve the health and safety of Lake Bosomtwe, (2) to guide and inform stakeholders to address dangers associated with the site to help promote tourism

at the site and (3) to usher relevant stakeholders to institutionalize a framework that will safeguard tourists' and locals' health and safety at the lake. Subsequently, this will help in the application of the 'Social Protection Floor' by the United Nations Development Group, which focuses on the need for industries to provide equal and universal access to essential services like health, education and sanitation (UNDG, 2010).

2. METHODOLOGY

2.1 STUDY AREA

The study was conducted at Abono, a town located inside the Bosomtwe district in the Ashanti region of Ghana, specifically, at Lake Bosomtwe. The study area was selected for the study mainly because of high tourist receipts to the site and its recognition as the only closed (endorheic) lake in Ghana and Africa, and the third-largest closed lake in the world (Amu-Mensah et al., 2019).

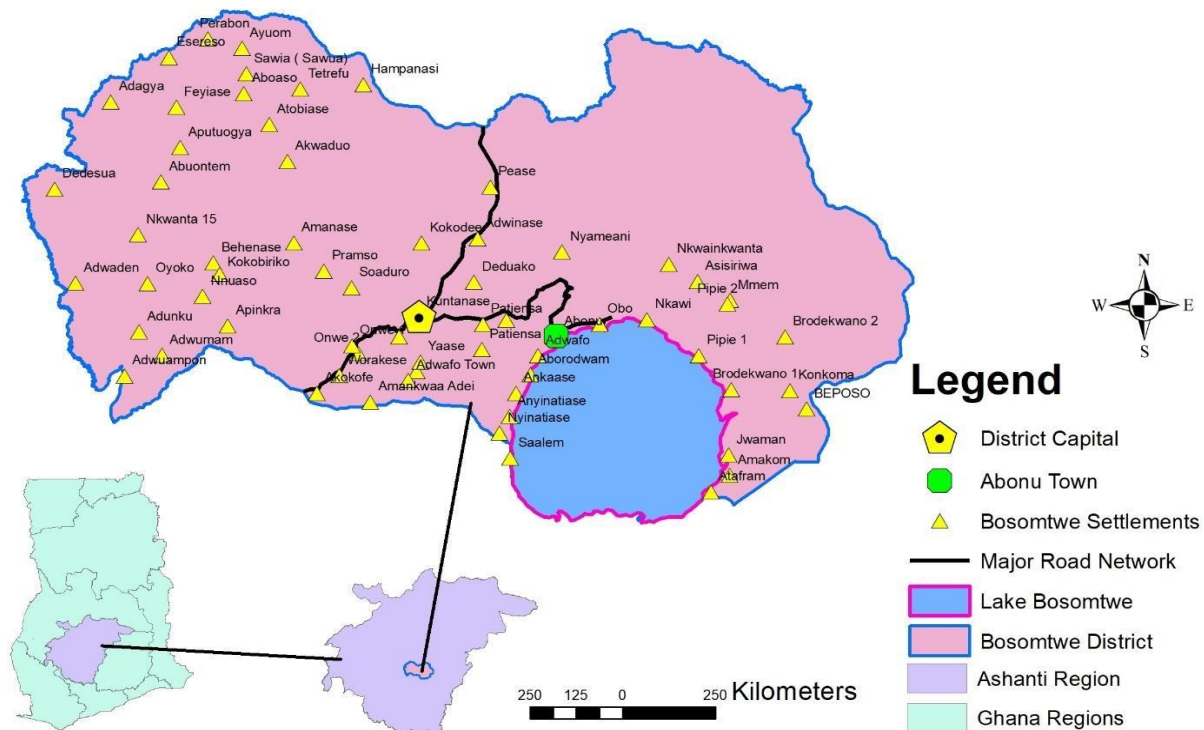


Figure 2. Map of Ghana showing the study area

2.2 Research design and sampling procedure

The study utilized an exploratory research design. This helped to acquire a representative sample of a total population in the study area (Sedgwick, 2013). To help establish a relationship between public health and safety (independent variables) and the promotion of local tourism (dependent variable), the study adopted accidental and convenience sampling techniques to select respondents. The accidental sampling technique was used to select (213) local respondents haphazardly in the Abono community. This technique was chosen to ensure that each member of the community can be selected randomly for the study (Battaglia, 2008). The convenience sampling technique was used to select (174) tourists. This was also employed to facilitate easy contact with tourists to participate in the study (Dornyei, 2007). Because most tourists visit the site during holidays, the researchers had little choice but to utilise convenience sampling to make responses more accessible (Lawrence et al., 2013).

2.3 Data collection and instrumentation

The study employed a mixed-method approach: quantitative and qualitative approaches. A quantitative research approach was adopted to quantify the presumed health and safety issues at the site and easily generate data for the study (Wyse, 2011). Questionnaires were administered to tourists and locals for their responses on experience on safety incidences at the site. The local tourism authorities at the site such as the Friends of Rivers and Water bodies and Bosomtwe District officials were also queried by the same instruments. Additionally, the study obtained qualitative data through semi-structured interviews and got access to extra evidence-based information (Williams, 2015). The interview was done to better understand the experiences and perceptions of respondents to get more information on health and safety issues at the site.

2.4 Data analysis

The quantitative data was analysed on a descriptive statistic; where Chi-square, frequency, and percentages were developed to group responses to common patterns in order to achieve the goal and objectives of the study. Before, the data were first examined to identify foreign responses that might not be needed from the study, but none was found. The quantitative data were presented in tables,

charts and graphs. The two levels of statistical analysis; univariate and bivariate were used. The univariate was used to understand the demographic features of the respondents (Babbie, 2007). The bivariate analysis was done to examine the relationships between the dependent and independent variables of the study (Sandilands, 2014). Furthermore, the study made use of qualitative data through interviews which were recorded, transcribed and critically analysed through content analysis. This technique was used to provide accurate meaning from the data gathered. After critical examination, responses were grouped into themes and evaluated accordingly based on the study's objective. Moreover, direct quotations from the interview and written observation were used to support the quantitative data.

3. RESULTS

Presentation of results and discussions from the study has been made in line with the background characteristics of the respondents and key targets of the study. Thus, identifying public health and safety issues/hazards at Lake Bosomtwe with methods to curb these issues to draw tourists, improve the lives of people and tourism development at the site.

3.1 *Demographic features of respondents*

Background characteristics of the 387 respondents include their gender, age, level of education, frequency of tourists visit, length of stay and tourist activities. From the study, there were 60.1% male and 39.9% female local respondents. Tourists constituted 51.1% females and 48.9% males see Table 1. From this, we conclude that more females visit Lake Bosomtwe than males. This was reaffirmed that female tourists are warmly welcomed by inhabitants of the site due to the fact that there are more female inhabitants. Additionally, the research inquired on the frequency of tourist visits to identify repeat visits to the site. From the study, majority (72.3%) of the tourists visited Abono very frequently while 20.2% of them rarely visited the site see Chart 1. Considering this, it is assumed that most tourists visited the Lake frequently.

3.3 *Key health issues of tourists at the lake*

The study identified some key health issues tourists are open to on the lake. From the results, most (35.6%) of the residents revealed that tourists who swim at the other side of the lake are exposed to cholera. Other tourists (23.4%) testified that skin infections are the most common hazards tourists

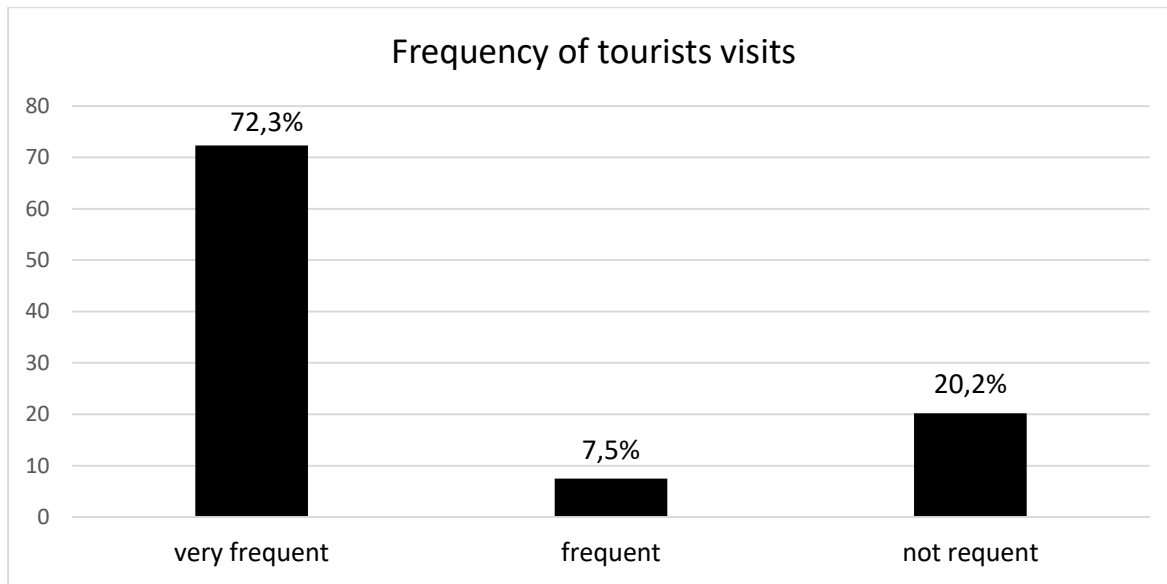
may be exposed to due to dumping by some locals. Agreeably, (25.5%) of locals and (10.4%) tourists believed headache was the next health issue some tourists face upon visiting the lake according to their interaction with some tourists who visit the site see Chart 2.

Table 1: Demographic factors of respondents.

Elements of respondents	Type of respondents	Frequency	Percentage (%)
Gender of respondents			
Female	Tourists	85	51.1
	Locals	128	39.9
Male	Tourists	89	48.9
	Locals	85	60.1
Educational level			
Educational level	Tourist		
	None	3	1.7
	Primary	22	12.6
	Lower secondary	0	0
	Upper secondary	62	35.6
	Tertiary	87	50
	Total	174	100
Educational level	Locals		
	None	40	18.8
	Primary	61	26.8
	Lower secondary	50	23.5
	Upper secondary	27	12.7
	Tertiary	33	15.5
	Total	213	100
Length of stay in Abono			
Length of stay in Abono	Locals		
	Less than a year	11	5.2
	1-2 years	23	10.8
	3-5 years	21	9.9
	6-9 years	33	15.5
	Above 9 years	125	58.7
	Total	213	100

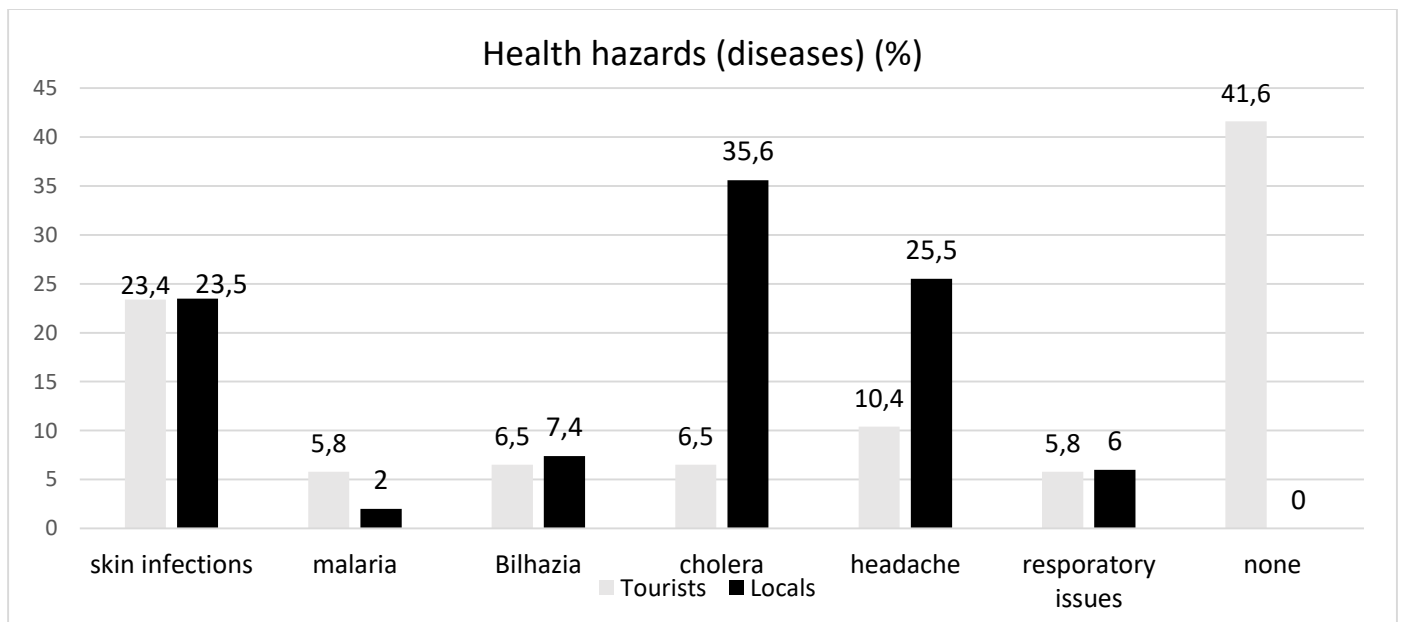
Source: Field Survey March 2018

Chart 1: Frequency of tourists visits to Lake Bosomtwe



Source: Field Survey March 2019

Chart 2: Key health hazards at lake Bosomtwe



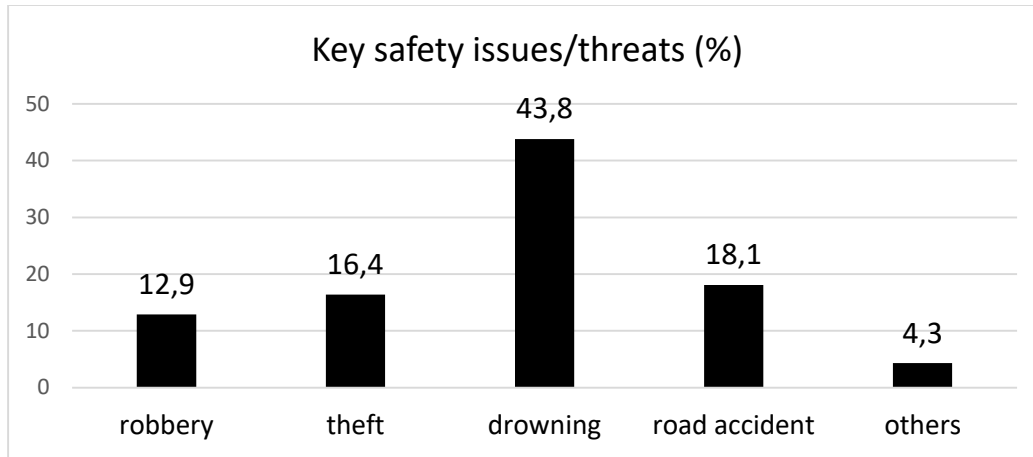
Source: Field Survey March 2019

From the results, some common health issues tourists face at the lake are cholera, headache and skin infections. According to a respondent (an officer) *“The washing away of weedicides and fertilizers from farm activities into the lake pollutes it and causes cholera”*. This was further verified by an interviewee from the Bosomtwe District during an interview. Among the three major health issues, cholera was pointed to have occurred most. Locals indicated that this disease emanates from the dirt tourists make during their activities in the lake. Again, some tourists also believed that skin diseases may be caused by the urine and faeces from animals from the near forests. This was confirmed by a respondent who said, *“Due to the inadequate provision of KVIP (toilet facility) in some nearby small villages, most of the children from such villages defecate along the banks of the lake”*.

3.4 Key safety issues of tourists at lake Bosomtwe

On respondents' perception of safety issues tourists may face at the lake, most (43.8%) stated that drowning was a safety challenge tourists face when participating in tourism activities at the lake see chart 3. They attributed this catastrophic incident to overexcitement, inadequate lifeguards and carelessness. A respondent from the community lamented, *“There is no official and permanent lifeguards at the lake to help tourists during swimming”*. Another tourist also stated, *“There is lack of life jackets that tourists are supposed to wear when they want to cruise on the Lake. This prevented most of the tourists from cruising on the lake when they visit the site”*. Similarly, A respondent from Friends of Water and River Bodies disclosed that *“There is no organized structure in protecting the tourists whilst they swim in the lake. We do not have life jackets for inexperienced swimmers neither do we have experienced guards who can rescue drowning tourists”*.

Chart 3: Key safety issues that tourists face at Lake Bosomtwe



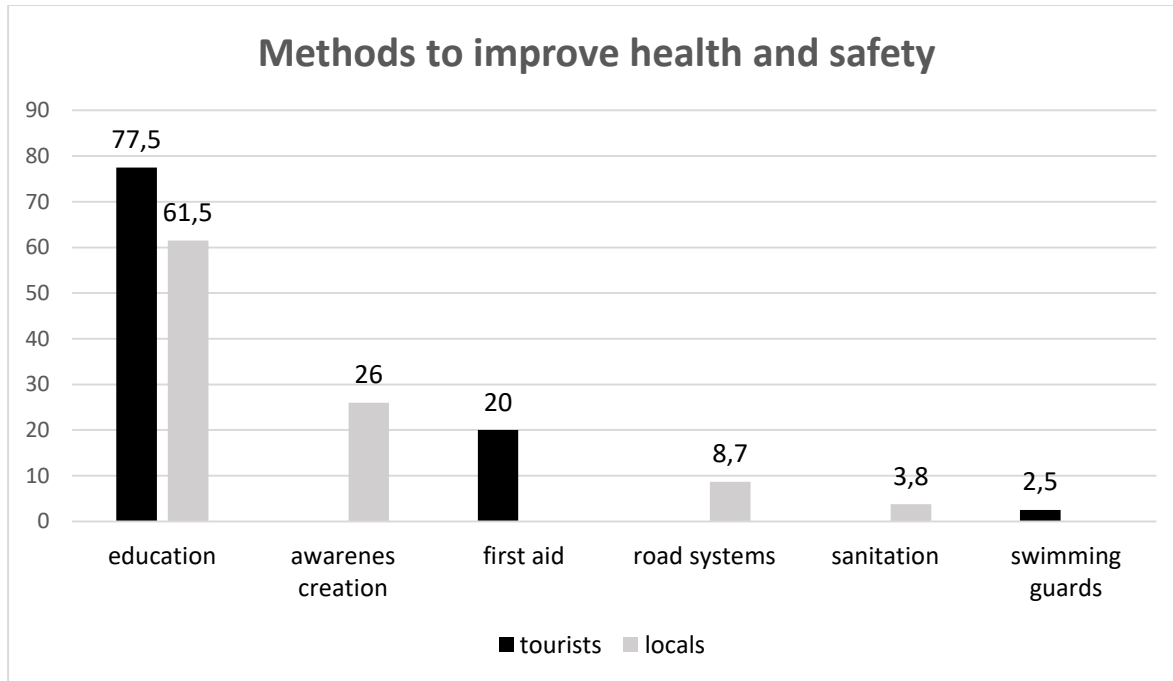
Source: Field Survey March 2019

Additionally, tourists' arrival at the site reaches its peak during festive seasons including Easter, Christmas and Valentine's Day. Consequently, accidents are mostly recorded during these periods (Joy, 2018). As a result, road accidents are recorded mainly because of the congestion and the bad road network within and around the destination. According to a respondent, *"the curvy nature and bad road network leading to the site causes frequent road accidents."* Finally, robbery and theft have been noted as other security challenges at Lake Bosomtwe. It was discovered that tourists' belongings get missing as a result of insufficient security procedures. This happens especially when tourists over drunk and become careless or unknowingly misplaced their items due to over-joy.

3.5 Suggested methods of improving health and safety issues at Lake Bosomtwe

This section discussed the mechanisms that can be implemented to improve on health and safety of tourists and the local communities of the site. In identifying this, respondents were asked to express views on methods like education, awareness creation, first aid, good road systems, vaccination and swimming guards.

Chart 4: ways of improving safety at Lake Bosometwe



Source: Field Survey March 2018

On education, 61.5% of local respondents suggested that tourists should be educated about the safety hazards of the lake before and during their visits. Tourists constituting (77.5%) also suggested that they should be educated on safety precautions at the site to help reduce insecurity at the site see Chart 4. Moreover, to others, tourists should also be pre-informed on the ‘dos and don’ts’ to reduce their vulnerability to safety challenges like robbery, theft and accidents at the site. This was corroborated by an official at Bosomtwe District Assembly who said: *“The curvy nature and bad road of the site cause frequent road accidents. Hence, the district has instigated road ramps on the road to help improve the quality of the road and avoid accidents.”*

To help reduce drowning, a respondent said that “we have instigated training programmes for people to acquire swimming experiences to save drowning tourists, also there is signage in the lake which is used as a sign to warn tourists from swimming to dangerous zones, however, more should be provided”. Moreover, some respondents also registered their concern for the application of first aid and the implementation of rules and regulations - (soft measures) to manage risks at the site and (hard) measures like punishments if the rules are not obeyed.

Furthermore, majority of the respondents suggested that cleanliness can help reduce diseases and improve health systems at the site. One of them said, “There are inadequate waste disposals/dustbins

here which may result in cholera and other diseases". However, an officer added, *"There is an occasional clean up exercise done by community members as one of the tools to combat diseases, we are soliciting funds through individual investors and Non-Governmental Organisations (NGOs) to improve sanitation at the site"*. The study identified that there was no official rule deterring locals from improper sanitation practices. On this note, a respondent suggested that *'rules and regulations should be implemented to help reduce health and safety hazards at the lake'*.

4. CONCLUSIONS AND RECOMMENDATIONS

The results of the study have confirmed major security and health concerns in lake Bosomtwe. On this note, the study has discussed these challenges and have recommended adaptable measures to help reduce them to promote local tourism development and economic resilience at Lake Bosomtwe.

The research discovered that there are three major health challenges at Lake Bosomtwe. Among them are cholera, headache and skin infections. The study has proven that skin infection is a health hazard that is common at the site, and it is caused by open urination and defecation in and around some parts of the lake. This happens because indigenes of the communities believe that mere rubbish will not pollute the lake because of its size as the third-largest closed lake in the world (Amu-Mensah et al., 2019). Due to this, there is a belief that mere rubbish will not pollute the entire lake. Another health-related identified at the site is cholera. It is worth noting that the bacteria *Vibrio cholerae* can rapidly move from one person to another, making cholera contagious. At the lake, the spread may occur from drinking contaminated water while swimming or engaging in the same activity with infected people as noted in (UNWTO, 2010). If so, then the infection may even become more when tourists number increases at the site.

On security issues, theft, robbery, burglary and aggravated assaults are widely known as a danger to tourism growth (Matakovic & Mataković, 2019). Overwhelmingly, it was identified that some of these acts especially theft and robbery were big threats to security at Abono as corroborated by most of the locals. The study understood that they happened because of the inadequate security systems like a security guard who will provide a spy on potential and actual criminals at the site. Subsequently, some locals and tourists take advantage of vulnerable tourists and loot their items.

Furthermore, (43.8%) of the respondents were of the view that drowning was another safety issue they people exposed to at the site see Chart 3. Drowning is accidental but sometimes they occur

due to inadequate extensive care during swimming and other activities on the lake. Drowning appears to be one of the dangers faced by tourists who participate in water-based activities. For instance, due to water insecurity in Europe, the 'FTO Code' was established to provide detailed guidance for swimming pool managers to regulate the risk of drowning among European travellers (Wilks et al., 2003). This means that drowning at lake Bosomtwe is not a new thing. From the results, drowning mostly occur at the site during peak periods of the year. During such times, visitors number increases to a point that swimmable areas become over-populated. Consequently, people relocate to other sites of the lake which are deeper, leading to more drowning cases as notified by the respondents.

On suggested methods to help limit health and safety challenges at the site, respondents were of the view that tourists should be educated on the available health hazards at the Lake. Locals constituting (61.5%) they should be well-informed about the safety risks, thus, the infections and other threats they may be exposed to at the site. This is because the 'certainty about tourism risks' demands that at least tourists should have a certain amount of knowledge about the destination they visit (Cui et al., 2016). On this note, the local authorities should make available relevant information on how tourists should spend their holidays to lessen their vulnerability to diseases and properties lost at the site.

Additionally, respondents suggested that the key tourism management at the site should provide enabling environment to support the local communities to keep the place clean. Subsequently, wastes and other pollutants that cause bacteria such as *Vibrio cholerae* growth at the site will be minimized to reduce infestations. Other respondents also opted for the provision of health facilities like clinics and hospitals that will handle accidents and emergencies cases, to help reduce health-related incidence from becoming worst. This is because due to the absence of a clinic at the site, emergencies cases are transferred to other nearby places which sometimes delay the health treatment needed for immediate recovery.

Tourist health and safety are critical areas of concern in the tourism industry. For this reason, it was important to undertake an evidence-based study that deeply discusses the various health hazards and insecurity in the industry. By so doing, this study aimed to produce evidence-based knowledge on how to ensure good public health and safety at Lake Bosomtwe. Specifically, by revealing the level of safety, the available safety measures and methods of ensuring health and safety at lake Bosomtwe. From the findings, the study has come out with evidence-based facts on some health and security

hazards that threaten the lake. Among them, diseases like cholera, skin diseases, headaches have been recorded at the site for the dumping of materials like rubbers. Aside from this, the study also identified some common safety situations including the continuous increase in road accidents, theft and robbery cases at the site, which is a result of low-security systems in the site. In conclusion, the BHM upon which the study is formed has been confirmed with a clear understanding that public perceptions, attitudes, and behaviours related to health determine their compliance and decisions to travel. The adapted framework upon which the study was built has been confirmed that the perception of the health and safety challenges, will call for actions to ensure local tourism growth, economic development and repeat visits.

The main goal of the study was to identify public health and safety hazards at Lake Bosomtwe and offer some solutions and ideas for dealing with them. On key public health and safety issues, the study recommends that education must be given to the entire communities around the site on keeping the environment clean and hygienic. This will help reduce pollution in the lake to avoid diseases like cholera, skin infections, malaria among others. Specifically, all relevant stakeholders, especially, Ghana Tourism Authority should inculcate intensive education in the communities about the need to protect the lake and advise locals and tourists to refrain from dumping refuse and urine in and around the lake. Importantly, they should provide trash collectors, vans and bins at the bank of the lake, scenic sites around the lake, sporting areas at the lake and any other space close to the lake. According to the UNWTO (2010), unprocessed food carried by travellers may also contain diseases like cholera, therefore, a proper inspection must be carried out by the local tourism management at the site to reduce the carry of such infected food items to the site.

Moreover, the government should help in the construction of a good road network to and within the site. Road signs should be installed along the roads to reduce the occurrence of accidents. Also, road safety awareness should be initiated by the National Road Safety Commissions to educate both locals and tourists about reckless driving and the dangers associated with it. Though, accidents happen despite preventive measures; therefore, safety and health-associated institutions in the region should collaborate with the local authorities to provide medical treatment, hospitalization and emergency services to tourists. Such medical services can be given per normal national schemes such as free-of-charge, covered by health insurance or other arrangements. Importantly, visitors should be

informed about the existence and modalities of such services at the destination sooner rather than later, in order to improve the area's safety image to boost their visits.

Again, the study recommends that the site management, tourism practitioners, travel agencies and other service providers at Abono should be given the needed education with regards to their mode of operation to avoid any hazardous incidents at the site. This will be done when there is an organised compulsory health and safety training course for management. For instance, in Europe, Article 5 of the Package Travel Directive (1990/314/EEC) places a considerable burden on tour operators to ensure that their suppliers at each destination deliver safe products and services to the clients (EU, 1990). In the same way, there should be a provision of policies and programs that will oblige managements to concentrate on identifying and responding to tourist offences, securing the safety of everyone at the site and enforcing tough regulations against unlawful interference.

Lastly, emergency systems and health facilities like clinics/hospitals are encouraged to be built to help in case of cataclysmic incidence to relieve trauma patients. Again, tourists should be informed about the site's health, safety and security risks and these emergency facilities. Also, during an emergency, there should be a system that will guide tourists on how to get first-aid or emergency services. Moreover, tourists' safety may also be protected when a limit is set to certain locations in and around the lake.

Study limitations

A major limitation of the study was the unwillingness of some respondents. This happened because some locals did not see the relevance of conducting the study, Others also said, "*Much research is done here but we have not received anything from the government up till now*". In that regard, the researchers explained the impact of the study and its benefit to them. Subsequently, the necessary information needed for the study was attained.

Recommendations for further studies

The study only used data from random tourists during the sites peak season due to the number of respondents required for the study. Considering this, future studies can consider the views of tourists visiting the site on any other day. Moreover, researchers who will study this topic or other related fields at the site or in other locations can use different methodologies and approaches like observation methods to verify responses of health and safety incidence/issues from victims. Thus, they can observe

it in a broader scope aside from the views and perceptions of tourists and locals that this study mainly made use of.

Conflict of Interest: The authors have no conflicts of interest to declare.

Funding: The authors declared that this study had received no financial support.

References

- Akadiri, S.S. Eluwoleb, K.K. Akadiric, A.C. and Avcib, A.C. (2020). Does causality between geopolitical risk, tourism and economic growth matter? Evidence from Turkey. *Journal of Hospitality and Tourism Management* 43 (2020) 273–277.
- American Public Health Association, (2021). *What is public health?* Retrieved 25 November, 2021, <https://www.apha.org/what-is-public-health>.
- Amira, F. (2015). The potential of Tourist Zones in the Maldives: Obscured behind the "sunny side of life"? Dans G. Baldacchino, *Archipelago Tourism: Policies and Practices* (pp. 212-225). Ashgate.
- Amu-Mensah, K.F. Amu-Mensah, M. Akrong, M., Addico, G. and Darko, H. (2019). Hydrology of the major water sources of Lake Bosomtwe in Ghana. *West African Journal of Applied Ecology*, vol. 27(1), 2019: 42 – 51.
- Andrew, T.S. (2016). ‘Consumer behaviour in digital and social media marketing: A review of recent findings and directions for future research,’ “current opinion in psychological: Special issue in consumer Behaviour, forthcoming.
- Babbie, E. (2007). *The practice of social research*. Belmont, CA: Thomson Wadsworth.
- Battaglia. P.M. (2008). *Encyclopedia of Survey Research Methods*. 2008 SAGE Publications, Ltd.
- Becker, G. (1968). Crime and Punishment: An Economic Approach. *Journal of Political Economy*, 76 (2),169–217.
- Binns, C. and Low, W.Y. (2015). What Is Public Health? *Asia-Pacific journal of public health/Asia-Pacific Academic Consortium for Public Health*. 27. 5-6.
- Boakye, K. (2012). Tourists’ views on safety and vulnerability. A study of some selected towns in Ghana. *Tourism Management-Tourism Manage*. 33.
- Breda, Z. and Costa, C. (2005). Safety and Security Issues Affecting Inbound Tourism in the People's Republic of China. 10.1016/B978-0-7506-7898-8.50017-5.
- Brenner, M. (2017). *Six examples of genius brand storytelling you have to see*. Retrieved 12 January, 2020, <https://marketinginsidergroup.com/content-marketing/6examples-genius-brand-storytelling-see/>.
- Cohen, L.E. and Felson, M. (1979). Social Change and Crime Rate Trends: A Routine Activity Approach. *American Sociological Review*, 44 (4), 588–608.
- Commission on Human Security (CHS) (2003). *Human Security Now: Protecting and Empowering People Commission on Human Security, New York*. Retrieved 2 January, 2022, <http://www.humansecurity-chs.org/finalreport/outline.html>.
- Cui, F. Liu, Y. Chang, Y. et al. (2016). An overview of tourism risk perception. *Nat Hazards* 82, 643–658 (2016). <https://doi.org/10.1007/s11069-016-2208-1>
- Dosoo, F. Kuuder, C. and Adongo, R. (2020). Medical tourism potentials of Tamale Teaching Hospital in Ghana. *International Journal of Health Management and Tourism*. 10.31201/ijhmt.740557.

- European Union (1990). *Package Travel Directive (1990/314/EEC)*. Retrieved 5 January, 2022 <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A31990L0314>
- Goeldner, C.R. and Ritchie, J.R. (2002). Brent; McINTOSH, Robert W. Turismo: princípios, práticas e filosofias. Trad. Roberto Cataldo Costa, 8.
- Goodrich, J.N. and Goodrich, G.E. (1987). Health-care tourism—An exploratory study. *Tourism Management*, 8(3), 217-222.
- Goodwin, H. (2011). *Taking Responsibility for Tourism*. Goodfellow Publishers Limited, Oxford.
- Gotovac, P. (2007). Tourism And Health: What successful managers in tourist destinations should know about health security as a key factor in establishing and promoting a reliable, safe tourist industry. *Acta turistica nova*, Vol. 1. No. 1., 2007.
- Hamarnah, I. and Jeřábek, I. (2018) The Impact of The Security Situation On Tourism In The Countries Of The Former Yugoslavia Ing. *International Scientific Journal "Security & Future"* Year Ii, Issue 3, P.P. 111-115 (2018).
- Hindley, A. and Marmion, M. (2019). Tourism and Health, Risks, and Challenges. 10.1007/978-3-319-69627-0_10-1.
- Islam, M.T. Talukder, A.K. Siddiqui, M.N. and Islam, T. (2020). Tackling the Pandemic COVID-19: The Bangladesh Perspective. *Preprints 2020*, 2020040384
- Joy, (2018). *Lake Bosomtwe gets safety and emergency services team*. Retrieved 3 July, 2019, <https://www.myjoyonline.com/lake-bosomtwe-gets-safety-and-emergency-services-team/>
- Ji, Z. Yang, S-H. S. Cao, Y. Wang, Y. Zhou, C. Yue, L. and Zhang, Y. (2021). Harmonizing safety and security risk analysis and prevention in cyber-physical systems. *Process Safety and Environmental Protection Volume 148*, April 2021, Pages 1279-1291.
- Khajuria, S. and Khanna, S. (2014). Tourism risks and crimes at pilgrimage Destination a case study of Shri Mata Vaishno Devi. *International Journal of Event Management Research*, Vol. 8(1), pp. 77-93.
- Kovari, I. and Zimanyi, K. (2011). Safety and security in the age of global tourism (the changing role and conception of safety and security in tourism). *Applied Studies in Agribusiness and Commerce* 5: 59–61.
- Lawrence A.P. Carla, A.G. Jennifer, P.W. and Kimberly, E.H. (2013). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Research Gate*.
- Lu, J.G. Lee, J.J. Gino, F. and Galinsky, A.D. (2018). “Polluted Morality: Air Pollution Predicts Criminal Activity and Unethical Behavior.” *Psychological Science* 29 (3): 340-55.
- Matakovic, H. and Mataković, I. (2019). The impact of crime on security in tourism. *Security and Defence Quarterly*. 27. 1-20. 10.35467/sdq/115539
- McIntosh, R.W. Goeldner, C.R. and Ritchie, J.B. (1995). *Tourism: Principles. Practices, Philosophies*.
- Mihalic, T. (2016). Sustainable-Responsible Tourism Discourse – Towards ‘Responsustable’ Tourism. *Journal Of Cleaner Production*. 111. 461-470.
- Novelli, M. Burgess, L.G. Jones, A. & Ritchie, B.W. (2018). “No Ebola: Still doomed”- the Ebola-induced tourism crisis. *Ann. Tour. Res.* 2018, 70, 76–87.
- Nwokorie, E.C. Everest, D.A. and Ojo, O.O. (2014). Emerging security challenges for tourism development: Effect on the Nigerian economy. *Journal of Women in Technical Education*, 7(2), 33–40.

- Okan, S. (2010). The Importance of Environment for the Tourism Sector of Trnc Within The Context of Environmental Issues of the Mediterranean Region. *Ege Academic Review*. 1. 11-19.
- PASGR. (2013) ‘*Political economy of universal social protection policy uptake in Africa.*’ Draft Research Framework Paper. Nairobi: PASGR.
- Matthew V.P. and Sreejesh, S. (2017). Impact of responsible tourism on destination sustainability and quality of life of community in tourism destination. *Journal of Hospitality and Tourism Management* 31 (2017) 83e89.
- Peng, Y. and Wu, M. (2017). Research on the Theory and Practice of Tourism Security —A Case Study for Jiangxi Province. *Advances in Social Science, Education and Humanities Research, volume 119*
- Pizam, A. (1999). "A Comprehensive Approach to Classifying Acts of Crime and Violence at Tourism Destinations and Analyzing their Differential Effects on Tourism Demand" (1999). *Faculty Scholarship and Creative Works*. 130. Retrieved 12 November, 2021, <https://stars.library.ucf.edu/ucfscholar/130>
- Poku, G. (2016). *Safety And Security of Tourists at The Kakum National Park, Ghana*. Digitized by UCC, Library.
- Renata, S.M. (2007). The service quality of Māori tourism operators: a gap analysis (Thesis, Master of Commerce). University of Otago. <http://hdl.handle.net/10523/518>
- Sandilands, D. (2014). *Bivariate Analysis*. In: Michalos A.C. (eds) *Encyclopedia of Quality of Life and Well-Being Research*. Springer, Dordrecht.
- Sedgwick, P. (2013). *Convenience sampling*. *BMJ: British Medical Journal (Online)*, 347.
- Wyse, S.E. (2011). What is the Difference between Qualitative Research and Quantitative Research? 15 December, 2021, <http://www.snapsurveys.com/blog/what-is-the-difference-between-qualitative-research-and-quantitative-research/>.
- Turker, N. Alaeddinoglu, F. and Can, A. (2016). The Role of Stakeholders in Sustainable Tourism Development in Safranbolu, Turkey.
- Tuclea, C. Vranceanu, D. and Nastase, C. (2020). The Role of social media in Health Safety Evaluation of a Tourism Destination throughout the Travel Planning Process. *Sustainability*. 12. 6661. 10.3390/su12166661.
- Wall, G. and Mathieson, A. (2006). *Tourism – change, impacts and opportunities*, Harlow, UK: Pearson Education Limited.
- Wilks, J. Pendergast, D. and Wood, M. (2003). Accidental deaths of overseas visitors in Australia 1997–2000. *Journal of Hospitality and Tourism Management*, 2003, Vol. 10, pp. 79–89.
- Wæver, O. (1995). *Securitization and Desecuritization*. In: Lipschutz RD (ed.) *On Security*. New York: Columbia University Press, 46–86.
- William, A. (2015). Conducting Semi-Structured Interviews. Retrieved 12 December, 2021, 10.1002/9781119171386.ch19.
- United Nations World Tourism Organisation, (2010). *WHO statement relating to international travel and trade to and from countries experiencing outbreaks of cholera*. 12, December, 2021, <https://www.who.int/cholera/technical/prevention/choleratravelandtradeadvice231110.pdf>.
- World Travel and Tourism Council, (2015). Retrieved 1 December, 2021, https://caribbeanhotelandtourism.com/wp-content/uploads/data_center/global/WTTC-WorldEconomicReport2015.pdf.

WHO, U. and Mathers, C. (2017). Global strategy for women's, children's and adolescents' health (2016-2030). Organization, 2016(9).

West Virginia Department of health and human Resources, WVBPH. (2012). *Workforce Assessment Survey Final Report*. Retrieved 12 November, 2021, <https://sph.unc.edu/wp-content/uploads/sites/112/2015/07/nciph-sphtc-wvreport1.pdf>.