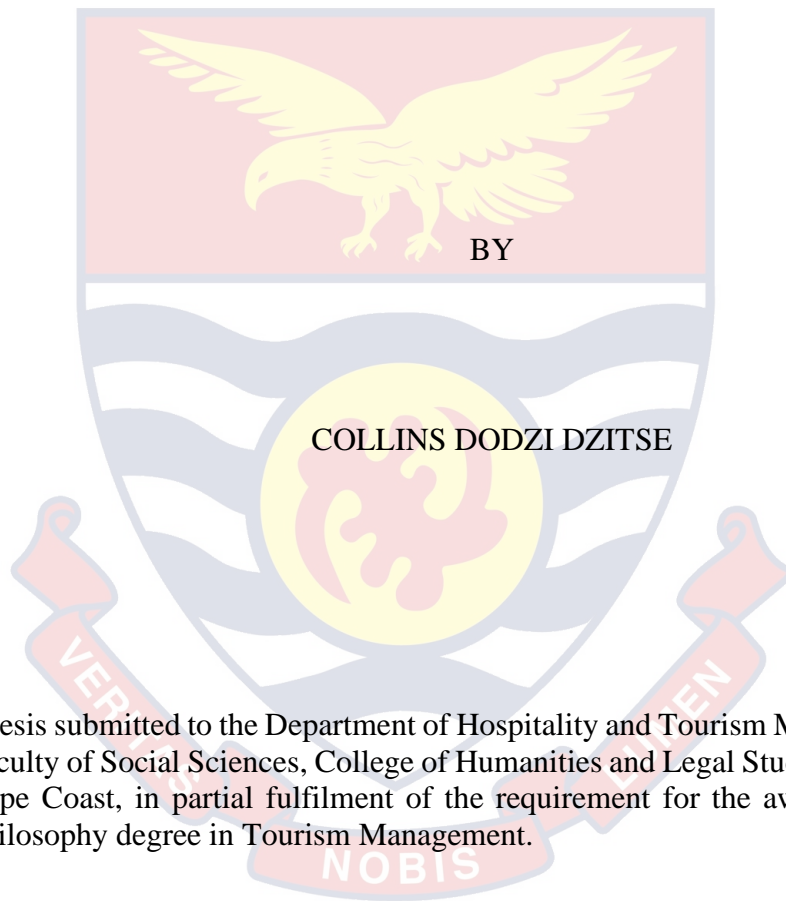UNIVERSITY OF CAPE COAST

VISITORS' PERCEPTIONS AND EXPERIENCES OF POLLUTION AT

BEACHES IN THE ACCRA METROPOLIS

BY

COLLINS DODZI DZITSE

Thesis submitted to the Department of Hospitality and Tourism Management of the Faculty of Social Sciences, College of Humanities and Legal Studies, University of Cape Coast, in partial fulfilment of the requirement for the award of Master of Philosophy degree in Tourism Management.

MARCH, 2021

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature…………………………… Date……………………

Name: Collins Dodzi Dzitse

Supervisor's Declaration

I hereby declare that the preparation and presentation of the thesis were supervised under the guidelines on supervision of the thesis laid down by the University of Cape Coast.

Supervisor's Signature……………………… Date……………………..

Name: Prof. Issahaku Adam

ABSTRACT

Beaches are valuable tourism resources in terms of natural, economic, social and recreational prospects. Yet, environmental pollution at beaches has become the foremost global challenge that continues to threaten, distress, and limit the quality of beach resources for tourism. The study, therefore, examines visitors' perceptions and experiences of pollution at beaches in the Accra Metropolis of Ghana. The study adopted a quantitative cross-sectional design. Data for the study was collected from primary sources. A questionnaire was used to collect the data from 309 visitors at beaches in the Accra Metropolis. Descriptive analysis, Factor analysis and Chi-square Test of Independence were employed in the analysis of the data. The study found that visitors perceive pollution at the beaches from two dimensions; as detractors to beach scenery and safety, and as detractors to beach health and wellness of beach users. The study also revealed that visitors' perceptions of pollution were significantly related to visitors' recreational experiences, and their post-visit behavioural intentions to the beaches.

It was concluded that visitors perceive pollution negatively as scenery and safety detractors, as well as health cum wellness detractors which directly affects/deters visitors' recreational uses and experiences at the beaches. It is recommended that all beach facilities should improve sanitation at the beaches, by establishing designated sanitation desks dedicated to regularise the cleaning of washrooms and keeping litter-free beach areas. This should be further supported and enhanced through collaborative efforts from stakeholders in the Accra Metropolis.

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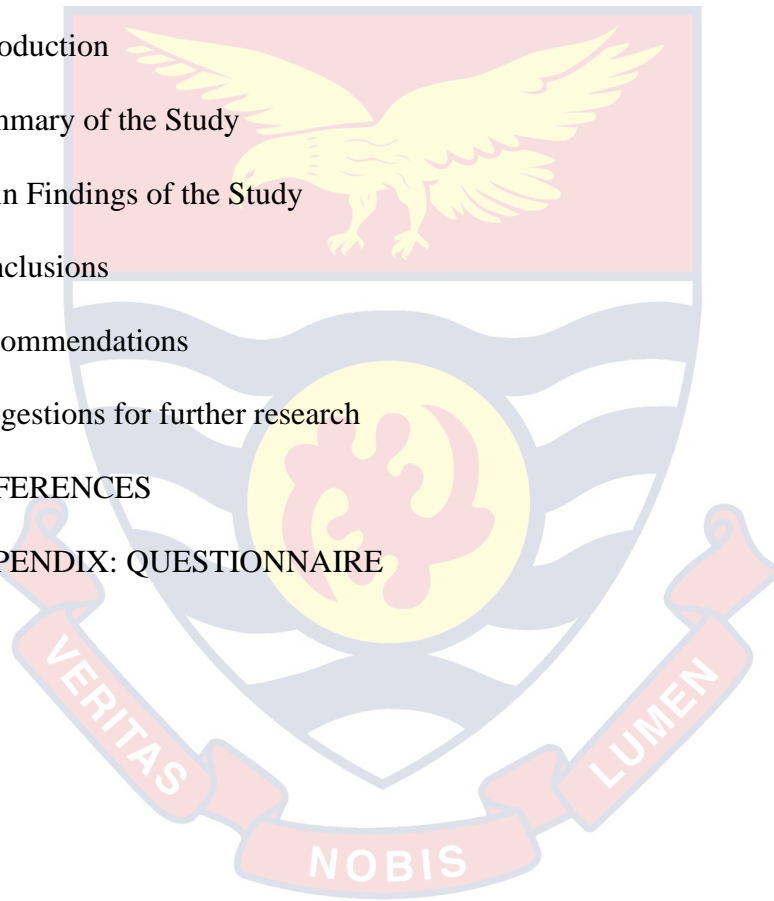
DEDICATION

To my Family

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LIST OF ABBREVIATIONS

A-GTA	Australia of Geography Teachers Association
AMA	Accra Metropolitan Assembly
DPSIR	Drivers, Pressures, State, Impact, Response
EEA	European Environment Agency
EPA	Environmental Protection Agency
GPAP	Global Plastic Action Partnership
GSDGDA	Ghana Shared Growth and Development Agenda
GTA	Ghana Tourism Authority
IISD	International Institute for Sustainable Development
KMO	Kaiser-Meyer-Olkin
MESTI	Ministry of Environment, Science, Technology and Innovation
MOTAC	Ministry of Tourism, Art and Culture
NPAP	Ghana National Plastic Action Partnership
PCA	Principal Component Analysis
SDGs	Sustainable Development Goals
STAP	Scientific and Technical Advisory Panel
UNEP	United Nations Environment Programme
UNWTO	United Nations World Tourism Organisation
US	United States
WHO	World Health Organisation

CHAPTER ONE

INTRODUCTION

Background of the Study

Africa in recent years has witnessed increasing population growth rates. This has been accompanied by swift urbanization as well as a continuous upsurge in industrial activities (Friedrich & Stahl, 2019). Such rapid changes have been associated with a substantial rise in the volume of litter and solid waste being produced in these countries. This further adds to the widespread diversification of several kinds of pollutants that gets to the coastal beaches and the ocean on daily basis (Nunoo & Quayson, 2003). This results in constant pollution of the beach and maritime areas; with various ecological, social and economic consequences especially for user health, recreational activity pursuance and the general promotion of beach tourism, which has become a widely accepted tourism segment (Friedrich & Stahl, 2019).

Tourism remains one of the world's foremost industries that heavily depend on natural resources, but more importantly in recent times, the use of coastal systems (Mestanza et al., 2019). When categorized, coastal and marine tourism represent the largest growing segment of the contemporary travel and tourism industry (Jackie-Ong & Smith, 2014). As a segment, it depends heavily on natural resources, making the coastal system, particularly the beach, such an essential resource for tourism activities. This, therefore, makes the relationship between the natural environment and tourism crucial when it comes to recreation at the coast (Andersen, Blichfeldt, & Liburd, 2016; Leijzer & Denman, 2012). Coastal tourism

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encompasses tourism activities that are preferred and can be carried out well only in a coastal environment that has specific conditions and characteristics (Tudor & Williams, 2008). It offers opportunities for recreational outdoor activities such as recreational boating, coast and marine-based ecotourism, cruises, swimming, recreational fishing, surfing, beach soccer including diving, sunbathing, sand bathing, social event, leisure, physical activities and pleasure for all age and social groupings (Andersen et al., 2016; Hall 2001).

Environmental conditions at the coast are important attributes of coastal destinations that attract tourists, influences destination image and choice, as well as long-term tourism demand (Scott et al., 2012). Among the growing number of tourists who make use of the coastal environment; safe and attractive coastal landscape such as clean and secured beaches and waters are paramount to them (Lucrezi & van der Walt, 2015). The indication is that clean beaches and water (coastal lakes and estuaries) with the necessary but basic amenities of infrastructure, and services to support recreational activities are continuously becoming preferred destinations of tourists (Lucrezi, Saayman & van der Merwe, 2016). At present, beaches are considered at the world scale as one key lure or attraction for over half of the visitors involved in the sun, sea, sand and sex (4S) experiences. As such, a clean and healthy beach is one of the five (beach safety, support facilities and services, scenery/natural landscape, and beach water quality) foremost preferences/ priorities for tourists (Zielinski, Botero & Yanes, 2019; Williams et al., 2016b; Doods & Kelman, 2008).

Tourism types including sun, sea, sand and sex tourism and all nature-based tourism are dependent on environmental conditions (Scott et al., 2012; Rutty & Scott, 2010). Current trends in tourism indicate that tourists are becoming more ecologically conscious when travelling, as they seek quality, and possess a greater desire to visit destinations that will give them a unique ecological experience (Chan, 2014; Alegre & Cladera, 2006). At the coast, however, coastal water and landforms over time have become litter receiving ends of both rubbish and waste materials from coastal towns and cities, rivers, illegal dumping, beach usages, resort operations and industrial companies.

Increasingly, plastic litter, faecal matter and solid wastes are transported by waves and currents back unto coastal landforms particularly beaches (Prevenios et al., 2018). It is such that even remote beaches have been interfaced with litter almost equal to those beaches located nearer to coastal areas that are densely populated (Bergmann, Lutz, Tekman & Gutow, 2017), thereby making marine and beach pollution a global environmental problem that is threatening marine wildlife and loss of aesthetic quality and value of beaches for tourism (Schneider et al., 2018). This is evident in the volume of plastics and waste materials on tourists' beaches, bays, and open seas across the world (Krelling et al., 2017). The phenomenon of coastal pollution has become a present century challenge globally (United Nations Environment Programme (UNEP), 2014) as it is a problem that continues to impair not only human health and causing alterations to beach ecosystems (Rochman et al, 2013; Papatheodorou, 2012), but also affects beach user experiences and serving as a threat to global beach tourism (Lucrezi, Saayman & van der Merwe, 2016).

Literature indicates that the quality of coastal sceneries such as the colour of water, clean beach and sand, as well as nearby environment devoid of litters, faecal presence and sewages attract and promote tourists activities (Wyles et al., 2016). Pollution, therefore, influences tourism directly as it is one of the major factors that affect/limit coastal destination attractiveness in terms of quality of specific ecosystems, landscapes or landscape elements, seawater and their specific general physical properties, or specific beach attributes (Nilsson & Gössling, 2013). These increasing alterations to coastal systems due to pollution over time have implications not only for their biological makeup, but culturally and socio-economically as well (Wynne et al., 2017). Poor waste disposal from coastal towns and cities along coastal landforms such as beaches and bays stress marine ecosystems by inhibiting them from performing functions or services that are important to individual activities and for local, national, and global economies (Mestanza et al., 2019). The effects of coastal ecosystem pollution are being felt worldwide, and particularly for tourism, it is threatening tourists' experiences and safety as well as important marine resources for tourism (Jambeck et al., 2015).

According to Wilson and Verlis (2017), close to eight (8) million objects of litter enters the ocean daily on a worldwide basis. Nunoo & Quayson (2003) also asserted that rubbish which is estimated to have weighed three times the weight of caught fish is dumped into the Gulf of Guinea on an annual basis from coastal areas in Ghana. It has been noted that these litter and sewage items normally persist and drift in the ocean and eventually become deposited at the coast, degrading coastal

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resources on which growing beach tourism depends (Larbi, Nukpezah, Mensah, & Appeaning-Addo, 2018; Kusui & Noda, 2003).

In Ghana, coastal tourism represents a significant part of the tourism segments in terms of visitor numbers and income generated (Gariba, 2017). Endowed with beaches in all her four coastal regions, namely Western, Central, Greater Accra, and Volta Regions, Ghana is expected to offer beach recreationists with coastal resources such as water, beaches, scenic beauty, rich terrestrial and marine biodiversity as well as diversified cultural and historic heritage along the coast (Mensah, Fosu-Mensah & Yirenya-Tawiah, 2014; Odikro, 2014).

Nevertheless, with a population of over 3 million people living within coastal towns in the Accra Metropolis of Ghana (Dyck, Nunoo & Lawson, 2016), the coastal environment especially beaches are now being heavily polluted by disposed-off litters and sewages or those abandoned that enters the coastal environment (Larbi et al., 2018). In Ghana, large quantities of litter accumulate on beaches over time particularly in the festive and rainy seasons; and in most cases, they are not attended to (Dyck et al., 2016, Mensah et al., 2014). Such litters pollutants find their way onto beaches and adjacent coastal environments. This affects the coastal system and impedes beach scenery, health, environmental quality and sanitation of beaches to support tourism (Gariba 2017; Kusui & Noda, 2003).

Although found to have been caused by sea debris, pollution at the coast has been further described as an environmental, economic, health and aesthetic problem across coastal destinations of the world which seem to be presenting huge setbacks to global beach tourism and tourists experiences (Lucrezi & van der Walt, 2015;

World Ocean Review, 2010). Given that coastal pollution also remained one of the most pervasive problems plaguing the world's coastal landforms particularly beaches in Africa and Ghana (Mensah et al., 2014), the questions that remained to be answered are: what features continue to attract visitors/tourists to Accra Metro beaches, what perceptions do these visitors hold about pollution at Accra beaches, what experiences do they get at the beach and what behavioural intentions do they have?

Problem Statement

Evidence from the literature suggests that environmental conditions in coastal destinations are the single most important factor that affects coastal recreation (Mestanza et al., 2019; Tudor & Williams, 2006). Hence, many perception studies investigating the issue of coastal environmental pollution among tourists exist. Yet, most of those studies have largely fixated on health (Tudor & Williams, 2008), offensive litter (Lucrezi et al., 2016; Tudor & Williams, 2006) and willingness to pay (Schuhmann, Bass, Casey & Gill, 2016). Limited enquiries, however, exist on understanding user perceptions of pollution at beaches, and much less on the effect of pollution on beach recreation and experiences of tourists to beaches, particularly in Africa (Mestanza et al., 2019; Lucrezi & van der Walt, 2015; Balance, Ryan & Turpie 2000). Botero et al., (2017) further argued that, at the coast different levels of pollution may exist across continents, countries and destinations.

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The indication is that, beach users' perceptions of pollution, its effects on their recreational uses and experiences at beaches may also vary based on the level of pollution they encounter at given coastal destinations (Wyles et al., 2016; Lucrezi & van der Walt, 2015). With beaches continuing to become preferred destinations for relaxation, fun, relief, personal treatments, and escape for many travelers (UNWTO, 2018; Andersen et al., 2016), visitors' perceptions of the qualities of beach destinations in terms of physical attributes, environmental conditions, comfort and services is essential for their beach choice, recreational uses and future patronage of such destinations. Likewise, increasing environmental knowledge and concern among tourists to nature-based destinations require constant elicit of environmental opinions, concerns and experiences of visitors which are relevant for the continued patronage and growth of nature-based destinations such as beaches (Rangel-Buitrago et al., 2019; Botero et al., 2017). In effect, considerably less information is available to understand visitors' perceptions of pollution, and its influence on their recreational uses and experiences at beach destinations.

Relating it to Ghana and the Accra Metropolis, the issue of beach pollution has become topical in the last decade due to the pervasiveness of environmental pollution both inland and in the coastal areas (World Bank, 2016). For the growing importance of tourism, it is increasingly becoming difficult to ignore the issues of pollution at beaches, because aside from heritage and cultural resources, the beach represents one of the most important tourism assets for Ghana (Odikro, 2014; Akyeapong, 2007). Poor environmental conditions at beaches in Ghana and Accra,

in particular, continues to take away from the ability of beach resources to meet visitors needs in terms of recreation, relaxation, fun and enjoyment (World Bank, 2016; Mensah et al., 2014). Literature suggests that, although visitors continue to patronize these beaches, they failed to get value for the scarce resources (time and money) they put into the travel processes to these beaches (Odikro, 2014; Mensah et al., 2014).

Amidst these concerns, the issue of beach environmental pollution continues to worsen to an all-time low, such that the Government of Ghana in October 2019 through the Ministry of Environment, Science, Technology and Innovation (MESTI) has partnered with Global Plastic Action Partnership (GPAP) to launch the Ghana National Plastic Action Partnership (NPAP) to develop a national roadmap to help manage and drastically reduce the country's litter and waste challenges both inland and at the coastal waters especially in the capital - Accra, to help achieve the objectives of the Ghana Shared Growth and Development Agenda (GSGDA) 2018-2022 (Ghana News Agency, 2019; IISD, 2019; NewsGhana, 2019).

Nevertheless, the problem largely remained, whereas literature continued to suggests that there is a scarcity of empirical research that has focused on beach pollution as it relates to tourism, much less attention to visitors' perceptions, beach recreational uses, experiences and intentions in relation to beach environmental conditions in Ghana. Furthermore, the focused of studies on pollution at the coast of Ghana including Dyck et al., (2016), World Bank (2016) and Tsagbey, Mensah, and Nunoo (2009) have all concentrated on litter quantity, types, and sources. Yet,

it is crucial that current studies towards pollution and litter on coastal beaches should be directed towards tourists' purposes, uses and concerns, since beaches have become major leisure resources for tourism globally (Botero et al., 2017; Krelling et al., 2017). These issues hence constitute gaps that need to be addressed in the literature.

Research Questions

- What are the perceived attractive characteristics of beaches in the Accra Metropolis?

- What are visitors' perceptions of pollution at beaches in the Accra Metropolis?

- What recreational uses are affected by pollution at beaches in the Accra Metropolis?

- What are the recreational experiences of visitors to beaches in the Accra Metropolis?

- What are visitors' post-visit behavioural intentions to beaches in the Accra Metropolis?

Research Objectives

The general objective is to examine visitors' perceptions and experiences of pollution at beaches in the Accra Metropolis. Specifically, the study seeks to:

- examine the perceived attractiveness of beaches in the Accra Metropolis;

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- examine visitors' perceptions of pollution at beaches in the Accra Metropolis;

- assess recreational uses that are affected by pollution at beaches in the Accra Metropolis;

- examine the recreational experiences of visitors to beaches in the Accra Metropolis ; and

- analyse the post-visit behavioural intentions of visitors to beaches in the Accra Metropolis.

Significance of the Study

Towards practice, a study of this nature will inform resort managers, beach developers and investors on visitors' assessment of sanitation at the beach. With this, it will give a fair idea of what visitors look for at the beach in terms of sanitation and its implications on experiences of beach goers. This will inform beach development and sanitary policies, practices and outlooks when it comes to developing, keeping and managing the beach as an integral tourism resource and product. In effect, the knowledge of visitors' perceptions regarding sanitation may help facilitate the effective performance of corporate social responsibility by practitioners. Thus, through education on the importance of coastal resources and why they need to safeguard the sanitary and health conditions of these coastal resources among coastal dwellers, industries and tourists market since the continuing prominence of coastal tourism implies more future investments in beach resorts, beach tourism and development and beach use.

Also, the Metropolitan authorities with the information on the pollution perception among visitors on beaches can aid the Accra Metropolitan Assembly (AMA), and the government to take action through the agencies of Ghana Tourism Authority (GTA) and Environmental Protection Agency (EPA) to collaborate with MESTI and resort operators to take steps in meeting their environmental, economic and social objectives rolled out for the capital city and the country at large.

The additional significance of the study is also captured in its potential to highlight issues at beaches to stimulate coordinated efforts from all stakeholders toward not only coastal tourism development, but the realisation of SDG 14 (thus, conserving and sustainably using the oceans, seas and marine resources for development for all) in Ghana, and also the realisation of the Ghana Shared Growth and Development Agenda (GSGDA) 2018-2022.

Finally, this study will help bridge the research gap on pollution perceptions and visitor experiences in relation to sanitation situations at beaches in the context of Accra Metropolis and Ghana as a whole. Most studies on pollution perception among tourists were on health concerns in particular and as such were centred on coastal destinations in developed countries of the world. In developing countries and growing destinations such as Ghana, different pollution levels may exist, as such perceptions among beach visitors may also vary based on the level of pollution encountered (Botero et al., 2017). The study will also extend its empirical evidence on coastal/beach tourism by exploring the characteristics of beaches that visitors perceive to be attractive within the context of Ghana. This study will therefore

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provide baseline data that would stimulate future research studies in the area of marine and beach tourism in Ghana.

Limitations of the Study

First, since the data for the study was collect within the period of the Corona Virus (CoVid-19) pandemic, coupled with international border closures, there was limited number and access to data from international visitors. This may result in imbalances in the results of the study, such that the full reflections of visitors' perceptions of pollution at the beaches may not have been entirely realized since domestic visitors who were dominant in the study may have been more familiar and used to the environmental conditions of the beaches in the study area and Ghana as a whole.

Secondly, the study is dovetailed in objectivism and adopts a quantitative approach to data collection. The inherent shortcoming of this method, by not allowing for probing, may prevent the researcher from a deeper understanding of visitors' perceptions of pollution at the beaches. Yet, the profiling of visitors based on socio-demographic variables and perceptions, coupled with a large sample size, suggests that in-depth interviews or other qualitative methods may not be the appropriate method to use.

Delimitation of the Study

The study is limited to two major beach stretches as far as the study of visitors' perception of pollution is concerned. The focus of the study is primarily to

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look at what beach visitors perceive pollution at the beach environment to be, and by analysing if such perceptions relate to experiences and revisit intentions among respondents. More imperatively, the study will also generally assess how these perception issues vary across the socio-demographic profiles of visitors to the beaches.

Definition of Terms

In this study, the following key terms are defined as follows:

Beach pollution: the presence of litter in the forms of solid/plastic waste materials, liquid/sewage-related debris, faecal deposits, smells/odour at the beach and its waters

Beach recreation: the performance of various activities such as swimming, sun-bathing, hiking, sitting etc at the beach

Recreational experience: the emotional feeling and psychological state that one obtains or develops out of the quality of environments they find themselves, as well as the activities they are able to perform in those environments.

Organisation of the Study

This study will be organized into five chapters. Chapter One covers the introduction and the background to the study, the statement of the problem, the objectives of the study, formulation of research questions, significance of the study and how the study is organized. Chapter Two centres on a review of the existing relevant literature concerning this study. In Chapter Three, a detailed overview of

the research methodology is provided including the study area, research philosophy and design, the target population, sample size, sampling procedure, type and sources of data to be collected, data collection instruments, the procedure for collecting the data and the techniques for gathering the data. Chapter Four explores the data analysis, data presentation and discussion. Finally, Chapter Five concludes the study by providing a summary of the major findings, conclusions, and recommendation.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter reviews related literature on beach pollution as well as the perceptions, social uses, and experiences at beaches. The issues covered include the beach as a tourism resource, the concept of beach pollution, beach pollution in Ghana, perceptions of pollution, and theories of environment and human interactions. The concluding section of the chapter presented the theoretical models and the conceptual framework that underpins this study.

The Beach as a Tourism Resource

Tourism resources are the collective term for potential and actual tourist attractions, tourist infrastructure and superstructure, agencies, tourist organisation of destinations, travel personnel and the like (Zadel, 2016). The beach has been identified as a resource that meaningfully supplements tourism offerings of nations and communities that are situated alongside oceans, larger lakes and rivers. For the advent of tourism, the conception of beaches embodies the commercial, natural, social and human (recreational) assets that are found within the coastal zones or destinations upon which coastal recreational uses depends (Zadel, Grcan & Milojica, 2018; UNWTO, 2016). Beaches have become exceptionally important assets for tourism at the coast since they are deemed as the principal intentions of tourists' trips to the coastal areas (Zadel, 2016). As such the Institute for Agriculture

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and Tourism (2016) observed that the growing increase in recreational pursuit in the coastal environment has made beaches important resources for tourism.

Beaches have therefore become the core element of packages offered to tourists' visiting beach resorts. They are used by all visitors to the coast and have now been valued as communal, national and international resources that are useful for a variety of activities, pleasures and experiences (Jurrasiccoast, 2012). As a resource for tourism, the beach has become the number one priority for more than half of the increasing number of tourists who frequent the beach in the last two decades (UNWTO, 2018). A study surveying the importance of beaches in South Wales indicates that from 624 respondents, 475 (76%) rated the beach as the single most important factor in their choice of recreation at the coast (Tudor & Williams, 2008). Beaches and their coastal waters are used for diverse recreational activities. According to Liz (2013), coastal areas including beaches also helps in the provision of foodstuff, living quarters, and breeding and nursery grounds for a wide diversity of organisms that could serve the purposes of tourism.

It is noted that beaches have fascinating landscapes, beautiful scenery and features that can make them essential maritime resources used for many tourism activities at the coast (Chen & Teng 2016). It is however observed that beaches have begun to display signals of being environmentally degraded; influencing their biological status, recreational uses and experiences of visitors, and also affecting coastal societies that depend on them (Roca, Villares & Ortego, 2009).

In Ghana, the gold colour of sand, nice vegetation (where present), adjoining sea waters and landscapes meets the touristic needs of visitors (Mensah,

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et al., 2014). There were also beach facilities that are continuously developed towards the enhancement of visitor use and enjoyment of the Ghanaian beaches (Odikro, 2014).

Characteristics of the Beach as a Tourism Resource

Beaches are resources and products that differ in type and characteristics based on their geographical location and usage. For recreational purposes, an account of a series of natural-physical, environmental and human elements are considered in the characterization of the beach as a resource for tourism. Beach characteristics including, the colour of sand and water, beach width and length, slope, stability, texture, sand, water, nature of waves docking at the beach, including breeze/wind constitute the essential physical attributes of beaches for tourism at the coast (Gonzalez & Holtmann-Ahumada, 2017; Mclachlan & Brown, 2006) and are features that are usually regarded highly among beach users (Mehranian & Marzuki, 2018; Silva et al., 2013). Human aspects of beaches involving facilities and services washrooms, food, services, safety, boats, lifeguards, litter bins and comfort are also essentials for tourists' enjoyment of beaches trips (Thompson, 2015; Roca & Villares, 2008). Other essential aspects taken into account includes accessibility, cleanliness, quality of amenities and services, image, comfort, tranquillity, aesthetics, crowd level and safety at the beach including prices of beach services which drive tourists holiday stay on beaches (Moreno & Becken, 2009; Roca, Villares & Ortego, 2009; Alipour et al., 2006). Such attributes at any beach are majorly influencing coastal leisure,

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pleasure, excitement and relief among almost all holidaymakers at beaches (Lucrezi & van der Walt, 2015: Tudor & Williams, 2003).

In a study by Villagran (2007) on beach quality and coastal recreation, he found that one essential aspect of it all beach attractive attributes include the level of naturalness and cleanliness that is associated with the beach environment, including the cleanliness of available human facilities (Thompson, 2015). Besides, McLachlan et al. (2013) observed that environmental characteristics (conditions) are the prime features that shape the qualities of good recreational beaches, and as such it impacts almost all other characteristics of any given recreational beach (Roca, Villares & Ortego, 2009), such that when the environmental characteristics are negated, all other beach features are may as well be affected (Rodella & Corbau, 2019; Chen & Teng 2016). Likewise, it is found that poor sanitary conditions remain the major limitations at beaches (Leatherman, 1997), whereas litter at the beach is noted to be easily offensive to visitors at beaches (Tudor & Williams, 2003). Hence, cleanliness of all beach elements is one most prioritized characteristic among all visiting travellers to the coast (Mehranian & Marzuki, 2018; Lucrezi, et al., 2016; McLachlan et al., 2013).

A conceptualisation of Beach Pollution

The beach is the multiple interfaces of sea, land and air (Vikas & Dwarakish, 2015) with a limited land area that lies between the sea and mainland (Nelson, 2013). Beaches as tourism resources are characterized by open accessibility for common use by the general public, leading to its pollution across

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the globe (Zadel, 2016; UNWTO, 2016), with about 4.8 to 12.7 million metric tonnes of litter entering the coastal environment annually (Xanthos & Walker, 2017). Hence, pollution continues to negatively shape the state of beaches and their ability to adequately support touristic recreations.

Pollution as defined by The Mirriam Webster Dictionary implies the making of something (particularly the environment) impure and or unclean for use. It is expressed by National Oceanic and Atmospheric Administration (NOAA) (2007) as the way to or occurrences that make water, land, air or different parts of the earth messy, undependable, undesirable and unreasonable for use. Hence, Dika (2017) considers beach pollution as the introduction of toxins or contaminants into seaside environments which may injure marine species, human wellbeing and further impede diverse human activities. Other scholars also itemized beach pollution as the result of pollutants such as objects, cargos, chemical effluents, plastics etc that enters the ocean or beach environment through the various activities of man (NOAA, 2007; STAP, 2011; US EPA, 2012).

Accordingly, The World Health Organization (WHO) abstracts beach pollution as the direct or indirect introduction of substances by man into the oceanic environment such as estuaries and beaches, which may result in or is probably going to bring about such injurious effects, including damage to living resources and aquatic life, perils to human wellbeing, interruption to beachfront recreation, angling and the likes that diminish the value and usage of ocean waters and resources (cited in Portman, 1978; Vikas & Dwarakish, 2015). As a result, beach pollution is perceived as an environmental, social, health, aesthetic and economic

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challenge that limits the use of world beaches and activities that depend on them (Qiang, et al., 2019).

Tourism at the coast however is a distinctive form of recreation and demands separate consideration in terms of quality of the environment for such purposes (William et al., 2016; Honey & Krantz, 2007) involving swimming, sand-bathing, beach sports etc at beaches. Hence, the definitions provided for beach pollution therefore serve many purposes. Concise and adequate information is therefore required to be able to define coastal pollution as per this study.

The mention of beach pollution in this study means the presence of litter in the forms of solid/plastic waste materials, liquid/sewage-related debris, faecal deposits, smells/odour at the beach and it adjoin environments that destroy or has the tendency to destroy the state and qualities of beach resources. Pollution at beaches remains the most unpleasant and instantaneous scenery information at beaches. Roca, Villares and Ortego (2009) and Lucrezi and van der Walt (2015) noted that pollution (of any pollutant) at beaches leads to negative perceptions, demotivates tourist to engage in beach activities and consequently affect beach pleasures and experiences. Beachgoers hence require clean and litter-free beach environments; concerning sand, water, landscape, facilities to freely use the beach to meet their purpose of visit. This is because tourism in nature-based settings such as the beach involves active interaction between the tourists and the destination beach environment for their pleasure and fulfilments.

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Beach Pollution in Ghana

Beach pollution across the coastal areas of Ghana have been pervasive (Jonah et al., 2015). Dika (2017) noted that, in the coastal environments of Ghana, there are heaps of plastic materials and other forms of pollutants at several parts of the beaches across the country. Landforms particularly beach within the coastal zone are continuously used as places of public convenience, rubbish and sewage dumping sites by nearby local communities, industries, medical and hotel-related facilities (Mensah et al., 2014). In most cases, residents living in coastal areas use the beach indiscriminately as places of convenience, dumping sites, while others dump their waste in waterways that lead to the coast (Tsargbey et al., 2009)

Nunoo and Evans (2007) identified that untreated sewages are discarded into the sea at the Ghanaian coast which is washed ashore by waves, leading to increasing pollution at the coastal zones. It asserted that the pervasiveness of coastal pollution within the coastal zone of Ghana is continually activated by factors such as continues increase in coastal urbanisation, inadequate funds, lack of adequate pollution of laws from the 1970s until date, and lack of enforcement of available but ad hoc policies (Adam, Walker, Bezerra & Clayto, 2020).

Beach pollution in Ghana has also been attributed to the increasing population of people moving to and living within coastal towns which intensifies the pressure of waste generation on to coastal resources, increasing recreational uses of beaches and peoples' over-all attitudes and perceptions towards waste in Ghana (Dyck et al., 2016; Quartey et al, 2015). It is generally found that open and

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uncontrolled dumping are still major features of waste disposal in most parts of Ghana with highly poor waste management (Dika, 2017; Quartey et al., 2015).

Within the coast and marine environment in Ghana, litter types commonly identified to be polluting the beaches consist of pieces of trawling meshes, foam, footwear, pieces of cloth, relics of charcoal, wood, and maize husks, sugar cane husks, used coconuts, broken glasses, single-use single-use plastics (SUPs) and polythene, sanitary pads, kenkey peels, syringe, used condoms etc (Adam et al., 2020; Dyck et al., 2016; Tsagbey, Mensah, & Nunoo, 2009) which are left on waterways or directly left in the coastal environment. Faecal deposits are frequent occurrences, particularly in coastal zones where the nearby societies have inadequate lavatory amenities. Such litters are washed by tidal cycles to offshores, which tends to degrade water quality, poses health threats to beach clients, operators as well as sea animals (Nunoo & Evans, 2007). However, it is inherently acknowledged that the tourists themselves also pollute beaches with litter items such as used bottles, plastics and cans, etc through their numerous recreational activities at the beach (Tsargbey et al, 2009).

Admissions in the literature indicate that beach litter is mostly sourced from coastal users (touristic and non-touristic users) including litter moved to the coastal zone from the land, while generally the coastal environment is predominantly polluted through land-based sources. Plastics, particularly packaging materials continue to constitute up to 80% of all beach litter (Dyck et al, 2016). Such litter items are identified to be resilient, increasing the hazard of predicament or digestion by oceanic biota. The realisation also is that coastal pollution has been pervasive in

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municipalities due to inadequate waste collection and disposal services in many coastal cities in West Africa (World Bank, 2016). This adds to the accumulation of litter in many coastlines, as it is washed from unguarded, casual waste dumps and into the coastal environment. The main challenge is that there is continues improper handling and disposal of urban solid and liquid wastes, particularly in Accra; as poor sanitation remains a widespread problem in coastal zones in Ghana (Dyck et al, 2016; World Bank, 2016).

Effects of Pollution on Beach Recreational Uses

Aesthetic and scenery loss

Aesthetics is a philosophical branch that is concerned with quintessence and attractiveness and therefore tends to give value to what it appears to qualify. Aesthetics is an important element in tourism literature, particularly where visual appreciation of an attraction or a resource comes to mind. An attraction located in a clean environment is seen as pure and valuable to tourists and commands value in any sense. Ergin, Williams and Micallef (2006) ascribe that coastal scenery has become a resource; an attraction and is not a dispensable luxury for tourist at the coast. A clean beach is appreciated across all tourists segments because it serves as an attractive aspect that drives the patronage of coastal areas. Visitors desire to visit clean beaches where both the land and water are clean, as opposed to those that contain a different type of litter (Botero et al, 2017).

The aesthetic value of a recreational beach which includes adjoining waters lies in its freedom from perceptible materials which settles to form offensive litter,

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floating trashes, lubricant, and foams etc (Ergin et al, 2006). These substances produce unpleasant colours, odours, tan substances and conditions that yield a detrimental impact on coastal users and marine life (Tudor & Williams 2008; Department of National Health and Welfare, Canada, 1992). Litter presence in any form herein impacts negatively on the aesthetic quality and perceived value of the beach. That is, pollution leads to a negative impact on beach aesthetic and value (Zhang et al., 2015) and consequently limits aesthetic appreciation and activity pursuance among tourists. The aesthetic importance and appreciation of a beach are therefore abridged by the appearance of plastics, sewages and other items of litter (Defeo et al, 2009).

Botero et al., (2017) also observed that tourists spend a significantly longer time on beaches they consider to be clean or suitable than on those they perceived as unclean. Beach Litter has been identified to be a distress to quality of life of beaches and tourists' pleasure by reducing time spent viewing and appreciation of beaches, their landscapes and sceneries (Zadel, 2016). Hence, litter is generally noted to have an effect on visual amenity at the coast and models the value that tourists attach to beaches, including the willingness to pay towards certain beach services (Rodella & Corbau, 2019).

Decreasing recreational uses

According to Holzer (2010), almost all beach tourists partake in one kind of beach and water-related recreation and expends averagely almost 10 per cent of their discretionary income on leisure activities (Qiang et al., 2019). Consequently,

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clean beaches and adjoining waters are paramount in providing varied recreational opportunities and facilitate the performance of activities including sunbathing, swimming, sand bathing, ecotourism, and an extensive variety of beach and water sports. Pollution at the beach, however, is noted as the major setback to beach recreation and tourism. Pollution is the single most important factor that affects all related recreational activities at beaches (Botero et al, 2017; Tudor & Williams, 2006). Poor environmental such as plastic and faecal pollution at the beach prevent tourist from doing active swimming, diving, walking on the beach and fun activities. This restrictive capacity towards recreational pursuit makes tourists perceive beach pollution as destruction to activities and the enjoyment of the beach resources (Zadel, 2016; Balance et al., 2000).

It reduces tourists' desire to perform certain recreational activities because visitors perceive the zone as contaminated and dangerous to their health (Sheavly & Register, 2007). The deterrence effect of pollution on tourists' activity pursuance makes tourists' avoid certain beach activities and destinations (Tudor & Williams, 2006), although Mckenna, Williams and Cooper (2011) suggest that the activity drive and motivation of visitors may be strong such that they may ignore certain environmental conditions at the destination. Yet, Duck, Phillips, Williams, and Wadham (2009), Mckenna et al. (2011), and Tudor and Williams (2008) establish that cleanliness and litter-free nature of the beach as the first most important feature among all beach characteristics that draw visitors to the beach, aside from safety. Agreeably, the presence of beach litter affects almost all beach characteristics and consequently deter tourists and almost all recreational activities. More importantly,

pollution sometimes eliminates certain activities from beach recreationists' activities schedule (Zadel, 2016; Roca & Villares 2008) as many more beach activities are only possible at a beach that is clean and inviting (Botero et al, 2014).

According to Zadel (2016), the coastal setting and beaches are often the emphasis of numerous creative arts such as paintings, literature and films. Lack of a clean beach adversely influences such uses, including the inspirational aesthetic quality of the beach on which those activities depend (Wyles et al 2016). Pollution therein tends to have strong restraining consequences and dispirits recreational users. Balance, Ryan and Turpie (2000) also found that about 85% of international and domestic tourists will not visit a beach with more than two debris substances per meter. Pollutants whether in small or large accumulation is an agent of recreational limitation.

Tourists' Perceptions of Pollution at Beaches

Tourism at the coast involves direct contact with the beach environments, implying that user perceptions will be formed based on the conditions of beaches they find themselves in. Beaches with pollutants of all forms are a common worldwide problem that is observed to be changing the human perception of any given coastal area (Williams, Pond, Ergin, & Cullis, 2013). People have diverse ways by which they approach coastal areas, and subject their perceptions of the beach environments to attributes such as clean, tidy, beautiful and safe physical environmental conditions (Williams et al, 2013; Pendleton et al., 2001). Thus, tourists' perceptions of coastal environmental pollution are intrinsically linked to

issues of cleanliness and the level of solid, liquid and other forms of wastes materials or effluent encountered at beaches (Rayon-Viñaa et al., 2018; Mckenna et al., 2011). Occurrences that affect the cleanliness of the physical, environmental and various beach aspects shape people's perceptions negatively, including the subjective and economic value that visitors attached to beaches (Pendleton et al., 2001). Beach features involving ideal sand and water colour change, lubricants, an unusual smell, visible plastics, surface foam/ scum, including other waste and solid materials are keenly considered as pollution among visitors at beaches (Wyle, Pahl, Holland & Thompson, 2017).

A study conducted by Mckenna, et al (2011) on eight (8) Irish beaches found that visitors' perceived pollution as a lack of cleanliness and safety at the beach. A similar study on the West African coastal areas also indicates that on Accra beaches coastal pollution includes the presence of human waste or faeces across the beach areas (World Bank, 2013), with plastic debris as the highest perceived form of pollution posing threats to human health, beach attractiveness and recreation (World Bank, 2016; Echart, Ghebremichael, Khatri & Vairavamorothy, 2012). Clean sand and water are therefore key priorities for every tourist to the beach (Wyles et al., 2016). Similarly, series of studies carried out on South Wales beaches revealed that most tourists perceive clean beach sand and water' devoid of the litter as lack of presence of pollution, and most importantly clean sand and water aspects influence tourists' choice of beach to go, as well as those activities they can perform (Wyles et al., 2014; Tudor & Williams, 2003).

Results from another study on 37 other English beaches also discovered that beach visitors bestow high premium on litter-free sand and water and perceives any form of litter on the beach to mean danger to their health and activity pursuance (Ergin et al, 2006). They concluded that beach pollution is the destruction of beach activities. Indeed, an association has been drawn between people's perception of beach litter affecting the physical appearance of beach water and gastro-intestinal symptoms experienced after bathing polluted beach water (Morgan, 1996). Lucrezi et al (2016) in their study along coastal regions of South Africa also found respondents' to have perceived pollution to be health threats (with foul smell/odour from accumulated waste materials) on beaches. Respondent further specified pollution to be the destruction of natural beach areas that demotivates beach use, whiles others perceive it as discomfort and a nasty feeling at the beach site (Schuhmann et al., 2016).

While, some tourists emotionally perceive beach litter as a lack of concern for beach users. Similarly, visitors also see polluted beaches as poor waste management from resort operators, coastal communities and governments (Rodella & Corbau, 2019; Chen, & Teng, 2016).

Demographics and Outlook of Visitors to Nature-based Destination

At beaches, environmental perceptions and attitudes among visitor are subjective due to differences among user groups (Roca & Villares 2008; Wolch & Zhang, 2004). For instance, in a beach survey in the US, Pendleton et al., (2001) found that visitors personality, place of origin, gender, personal upbringing,

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activities sought, motivation or expectations and social background, including past experiences, the image and destination attributes influence visitors' perceptions and behaviour at the beach (Chen et al., 2017; Bonnaito et al., 1996). An alternative survey by Lucrezi and van der Walt, (2015) further tested positive correlations between visitor demographics (travelling habits, motivation, and recreational preferences) and their beach perceptions and attitudes. Moreover, gender difference have also been noted to influence environmental perceptions and behaviour among beach goers, with a higher level of pollution awareness, and service quality reactions in female tourists than their male counterparts (Babaei et al., 2015; Slavin, Grage, & Campbell, 2013; Baysan, 2001). Lucrezi et al (2016) and Lucrezi and van der Walt (2015) again found that more youth, singles, women, and educated people are frequenting beaches in search of relief and pleasures. Visitors' choice of activities and uses of the beach is also determined by their gender, motivation, recreational preferences and perceptions of the beach conditions (Wyles et al., 2016; Lucrezi & van der Walt, 2015). Demographic variables are key contributors to visitors' perceptions, activities choices and experiences at nature-based destination and thud need to be factored in such assessments (Plessis et al., 2011; Pendleton et al., 2001; Lucrezi & van der Walt, 2015)

Tourists' Recreational Experiences

Experience remains the central form of economic benefit that is offered in tourism. The phenomenon of experience in tourism comprises of memories, consciousness and emotions that are linked to destination places (Noy, 2007), and it is perhaps this experience at places or self in places that an individual is in search

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for. Yet tourists experience is complex to define although it has received attention in many tourism studies. Smith (2003) defines experience as a sensation of fulfilment acquired that results from an individual's participation in activities. While focusing on on-site experience at destinations, Stamboulis and Skayannis (2003) also defined tourist experience as an interface between the tourist and the destination, where destination denotes the site of the experience whereas tourist becomes the actor of the experience.

Many other researchers have also examined experience from varied angles including experiential, emotional, and quality perspectives (Schmitt, 1999). The experience concept is further complicated by its subjectivity to emotional, situational, practical and personal variables (Den Breejen, 2007). Smith (1999) examined experience from experiential and emotional perspectives, and classify them into five sets; sense, feel, think, act and relate, which he named Strategic Experiential Modules (SEM). The sense has to do with sensory experiences, feel revolves around affective experiences, think for cognitive experiences, act for physical experiences, and relate deals with identity experience with a social group.

According to Smith (1999), sense refers to the sensory experiences perceived through any of the five senses of sight, sound, smell, touch, and taste. An experience in terms of *sense* includes tourists seeing pollutants and waste of all kinds at the beaches, and smelly odours from beach areas which could demotivate tourists from using the beaches for activities or purposes intended. *Feel* is experienced through emotions or inner feeling. It is the affective situation created by the level of pollution, uncleanliness encountered could create nasty feelings, and

the degree to which visitors were able or unable to use the beaches as they desire can make tourists feel good, bad, negative or positive in this context. *Think*, has to do with cognitive experiences and this creates the feeling of frustration, incitement or intrigue towards the quality of the beach areas to support their ideal desires for visiting the beaches. Beach areas that may look no different from choked or dirty city environments which visitors try to leave behind could lead to frustration and annoyance among tourists under cognitive aspect.

The *Act* has to do with physical experiences, with scenery, aesthetics and beauty of the entire beach environment including landscape. Poor aesthetics of the beach due to the event of pollution dents tourists' experiences in this regard. The event of pollution at the beaches may also lead to activities such as sight-seeing and nature appreciation being lost under physical experiences. *Relate,* deals with elements of sense, feel, think and act as well as experiences that have to do with how the individual was able to adjust and relate to the issues within the destination environment. The issues of the state, quality, purity of the beaches, activities permissible based on the beach qualities and the adjustment visitors have to make to enjoy the beaches come under this category.

The recreational experience of tourists at nature-based destinations is essential in that, the experience involved the personification of the measure of the tourist product (beach resource quality and available activities) within any given destination. Tourism product according to Medlik and Middleton (1973) is perceived by tourist as an experience, such that the tourist product is composed of tangible and intangible elements centred on specific characteristics and activities

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available at a specific destination. In examining recreational experience, Cohen (1979) postulates that it involves the feeling of relaxation and recuperative activities, physical and active use of destination entertainment and exciting experience, time-outing experience, as well as sight and appeal enjoyed by increasing number by visitors. It further reflects the desire of individuals to escape from daily routine activities, to visit and view the beauty of other places, to enjoy experiential learning and activities out of the ordinary, and to also have fun as explained by Pine & Gilmore (1998) under the four realms of entertainment, aesthetics, escapism and education.

Particularly in natural settings as the beach, the recreational experience is obtained via undertaken beach activities including relaxation at the beach and enjoyment of mental harmony on the natural beach (Jurowski, 2009); scenery or aesthetic beauty view and appreciations, sports activities (Priskin, 2003) and the use of support facilities at the destination for entertainment and related uses (Lucrezi et al., 2016). Recreation experience seekers desire the enjoyment of being able to frequently engage in desired activities in the settings they like and enjoy getting some needed physical and mental rest (Booth et al., 2011).

Tourists' recreational experiences at nature-based destinations also majorly involved visitor perceptions of the quality of the physical setting including the cleanliness of the landscape, facilities, safety, location and comfort, accessibility, the attractiveness of the destination that tourists' see around them (Nabirye, 2018; Shahrivar 2012). In effect, recreational experience involves emotional feeling and psychological outcome that result from individuals' perception of the quality of

environments, places, the landscape around them, as well as the uses and activities that they can do in those environments (Cutler, et al., 2010; Quan & Wang, 2004). At nature-based destinations it is an experience that is gained through the process of passive and active absorption as participants make use of the environment experientially, viewing scenery and aesthetics, sports, entertain/having fun, sunbathing (relaxation), and refreshing one's self – escaping from stressful poor city environments (Quan & Wang, 2004; Pristine, 2003; Pine and Gilmore, 1999).

Pollution and Recreational Experiences at Beaches

Given that beaches are recreational resources, visitors to beaches expect to see and experience quality beach areas and services. Hence, tourists tend to develop emotive and psychic reactions towards their immediate beach environment (Machleit & Eroglu, 2000), with negative environmental conditions such as sewage, plastics and debris usually and adversely affecting tourists' experiences of excitement, fun, and appreciation of beaches (Tonge & Moore, 2007; Balance et al., 2000).

In natural areas such as beaches, Plessis et al (2011) noted that tourist experiences result from a variety of sensory information found in the beach areas. Jackson, White, and Schmierer (1996) discovered that holidaymakers often associate their negative tourist experiences at the beaches to poor environmental factors. Again, Phillips (2009) and William, Leartherman & Simmons (2009) noted that perceived poor environmental qualities influence visitors' experiential outcomes at beaches.

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Tourists who visit the beach attempts to escape from the stress of city environments with all of its everyday people, dumpsites and noise to visit free going and pristine beach areas to release stress, to relax and be relieved (Lucrezi et al. 2016). Roca and Villares (2008) observed that leisure seekers, escapists and other visitors' desires to be in the beach environment refresh themselves psychologically and emotionally. They noted that tourists feel regretful when they end up at polluted beaches that they perceived to look no different from city environments which they tried leaving behind. Poorly kept beaches aspect natural/physical, environmental, facilities, as well as image, affect tourists' comfort at beaches (Schuhmann, 2012). Poor environmental/ecological aspects have been highly rated as the most central factor affecting visitor activities and experiences on beaches (McLachlan et al., 2013). Therefore, perceived environmental conditions involving waste, litter and plastics distresses beaches and have a negative influence on visitors' activities experiences (Lucrezi et al., 2016). How bad tourists perceive the effect to be, is subjected to their socio-demographics, purpose of travel and prior experiences (Alegre & Cladera, 2008; Ooi, 2005).

Larsen & Jenssen (2004) also found that the inability to use beaches for intended activities out of fear for health leaves recreationist with sadness, frustration, anger, negativity and regrets instead of excitement, affection, positive surprises, relief (Hosany & Gilbert, 2011) and nostalgia which comes with positive tourists' experiences at a destination (Kwortnik & Ross, 2007). In association with the effects of beach pollution on tourists' recreational experience, three explanations can be offered; (a) tourists exposure to a perceived filthy beach area;

(b) fears about health and that feeling of nastiness may lead to some reservations by tourists to dedicate their time to the enjoyment of their beach trips; and (c) the reduction in activities, aesthetic appreciation and consequently tourists' experience at beaches (US EPA, 2007; Lucrezi & van der Walt, 2015). These explanatory elements also show that beach litter possibly will have some major influence on recreationists' beach experience through posing health threats, as well as limiting or eliminating certain beach activities.

Tourists' Post-visit Behavioural Intentions

Intentions are perceived as plans or actions for the future. Hence behavioural intentions are an individual's supposed specific plan and course of action measured as the single utmost predictor of actual behaviour (Peter & Olson, 1999). Behavioural intentions consequently suggest tourists' behaviour before, during and after their trip (Kozak & Decrop, 2009). Relating to commendation by Cronin and Taylor's (1992), tourists' post-trip behavioural intentions have been operationalised in three dimensions; which includes re-visit intention, recommendation intention, and alternative intention. Re-visit intentions enunciate tourists' future intents to visit a tourist destination under consideration. For recommendation intentions, relates to the readiness and wiling of a tourist or guest to recommend their visited destinations to another person including family and friends (Wang, Chen, Fan, and Lu 2012). Alternative intentions, on the other hand, pertains to the tourist's decision to choose a specific destination under consideration

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in the future even when other alternatives are available (Adam & Amuquandoh, 2018)

Beeho and Prentice (1997) discovered that when tourists are pleased with destination environmental attributes, their recreational experiences are enhanced, driving the tourists to recommend their visited destinations to families and relations. In a further study, Petrick (2002) observed that three main factors influence tourists' intention to re-visit; past travel experience, on-site perceptions about the destination and its characteristics, and the experience that the tourists are seeking. Consequently, Alegrea and Garau (2011) observed that unsatisfactory or negative perceptions about destinations influence tourists' continuing intention to visit a destination. This means that post-visit intention is both a feeling and behaviour (action) that is created by the perceptive attributes of the destinations, including all activities that are actively or passively engaged in by visitors. Hence, future behavioural intention is a cumulative evaluation that an individual makes of the destination visited or product consumed, including the perceptions created at the destination and the related next course of action(s).

Pollution and Tourists' Post-visit Behavioural Intentions

A significant link has been found between the qualities of the coastal or beach environment and the demand for tourism at beaches. Thus, tourists' perception of the cleanliness of a given beach is a determinant of a repeat visit to that beach destinations as was found by Schuhmann (2012) in a beach cleanliness study on beaches in Barbados. Balance et al. (2000) also found that escapist and

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leisure seekers feel psychologically unstable and react by avoiding to spend at beach resorts that have polluted environment, and in some instances, they leave the beach and never plan to return. Laven et al. (2005) further noted that when tourists perceive that the state of the beach environments no longer meets their expectations due to ecological pollution, they either adjust their standards of quality to match the existing state of the environment or better go elsewhere. In effect, it seems apparent that pollution at the beach detracts from holiday enjoyment among tourists and potentially creates a bad image for the destination leading to a loss in repeat visitation. These visitor defections may create adverse significant economic costs for the beach operators. Laven et al. (2005) observed that tourists moving elsewhere can be disastrous for certain coastal destinations or coastal resort operators since 70% of their income is driven by tourism.

Theoretical Background

Theory helps in understanding the world around us. It permits us to explain what we see and determine how to bring about change. Ultimately theory guides research. It helps in explaining how some aspects of human behaviour is organized and facilitates predictions about human behaviour. Hence, some theories are reviewed to help guide this study.

Resource Dependency Theory

The reliance on coastal recreation on the beach as a tourism resource as considered in this study requires that the resource dependency theory (RDT) be

looked at to help shape the study. The RDT assumes that every organisation rely on resources from their environment (Fadare, 2013). These resources are under external control for organisations within the environment. The theory then explains that holders of these resources can exert power and control over organisations that require these resources. This shows that the existence and progress of such organisations are dependent on the ability to control the flow of resources (Fadare, 2013). Attributed to Pfeffer and Salancik (1978), the theory suggests that the key to organizational survival is the ability to acquire and maintain resources.

The theory has been extended and contextualized within many tourism literature, with Mihalic (2013) explaining that tourists' destinations reliance on their environmental resources is a function of its need to acquire or make use of environmental resources to meet the demands of its visitors. The resource dependency theory hence focused on the ability of nature-based destinations (eg. coastal beaches) to provide essential but quality environmental resources for the use of visitors, devoid of external environment limitations such as erosion, pollution, physical intrusions etc, owing to the dependence of coastal recreation directly on the beach environment (Moreno & Becken, 2009). Coastal recreation is largely dependent on the quality of beach resources available, as such beach tourism is solely reliant on the natural environment and the quality of beach environments (Tudor & Williams, 2008). Within the context of nature-based coastal tourism, resource dependency theory underpins the exclusive dependence of coastal activities on the quality of the beach (Zadel, 2016). The theory hence requires that quality beaches are kept at all times to ensure quality coastal recreation among

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beach users (Honey & Krantz, 2007). This also suggests that coastal destination with poor beach environmental conditions may not be able to offer quality recreation and experience to visitors.

Sheppard (1995) found significant and positive relationships between an organisation's growth and the quality of its resources. In the context of coastal tourism, the quality of beaches for coastal recreation is paramount for beach uses, user experiences and destination growth (Lucrezi & van der Walt, 2016). Clark and Levin (2010) noted that the quality of beach resources and landscapes are changing due to the influx of solid and liquid waste, which is posing threats to resource quality, user activities and health. Mihalic (2006) observed that there are destinations where tourist environmental experiences do not meet visitors' expectations, owing to poor environmental conditions including pollution and overuse of environmental resources at those destinations. This is because the "new tourists," as described over three decades ago by Poon (1989) were identified to have become environmentally conscious; and are demanding more environmental resource-based experiences, but more importantly, they are becoming sensitive to the authentic ecological quality of destinations, which is increasingly influencing price-quality ratio decisions.

There is therefore the need for environmental resources and attractions to be preserved, sustained and offered to holidaymakers in the right quantity and quality as they may demand of it (Mihalic, 2006). In this context, the assumption in this theory's application by tourism writers is that tourism at the coast is dependent on the natural coastal environment, and of much importance is that the

beach as a resource may generate impactful constraints towards coastal recreation among increasingly conscious recreationists if the quality of resources is not guaranteed on daily basis (Page & Hall, 2014). For coastal recreation to thrive and bring expected results and outcome both to visitors and to coastal economies and developers, destinations must recognize and work towards the quality, clean and serenity of coastal environmental resources particularly clean beaches, sand and water resources including general quality and safety of use which cannot be negotiated with visitors (Zhang, Hou, Li, & Huang, 2019; Mihalic, 2006).

The RDT thus shows that the survival of every organisation depends on its operation with the external environment to receive needed resources (Pfeffer & Salancik, 1978), and particularly for nature-based tourism-oriented businesses, environmental resources are key inputs to operations for survival (Mihalic, 2013). However, the original RDT did not regard the natural environment as a source of necessary organizational resources in its output, although that is the case for tourism (López- Gamero, Molina-Azorín, & Claver-Cortés, 2011). Resources, especially natural resources involving the biophysical environment is a key part of resources for most organisations. Not only human beings, but certainly all organizations, depend directly or indirectly on quality air, clean water, energy, a suitable climate, and other natural resources because natural capital or the resulting ecosystems are the source of raw materials for all physical assets (Winn & Pogutz, 2013). Thus, organisations and the natural environment represent the much alive existing dependency relationship that the RDT failed to establish by its original proponents (Mihalic, 2006). Furthermore, the proponents failed to foresee that in terms of

environment and ecosystems, organisations are embedded in them, such that organizational behaviour is not only part of social systems but also of the natural environment (Tashman, 2011). Therefore, the RDT originally does not represent/show any "function of organizational ecosystem dependence, ecological impacts of such on organizations, and organizational impacts on ecosystems rather than organizational interdependence." (Tashman, 2011, p. 62). Finally, the RDT also does not allows the examination of a direct relationship between organisations and the natural environment.

DPSIR: Human-Environment System Model

The framework developed by the European Environment Agency (1999) combines both human and natural environmental resources to show complex interactions and feedback between them (James, 2000; Stern, 2000). In studying human-environment interaction systems; the DPSIR framework with components of *drivers, pressures, state, impact, and response* is universally used. The fundamental supposition of the DPSIR model is that causal links exist between components of *driving forces* (economic sectors, human activities); *pressures* (emissions, waste, pollution); *states* (physical, chemical and biological), '*impacts*' on ecosystems, human health, activities and functions, and then '*responses*' (prioritisation, target setting, indicators). The model recognizes that human interactions, uses and activities within a natural environment put pressures on the environment as a resource (Stern, 2000).
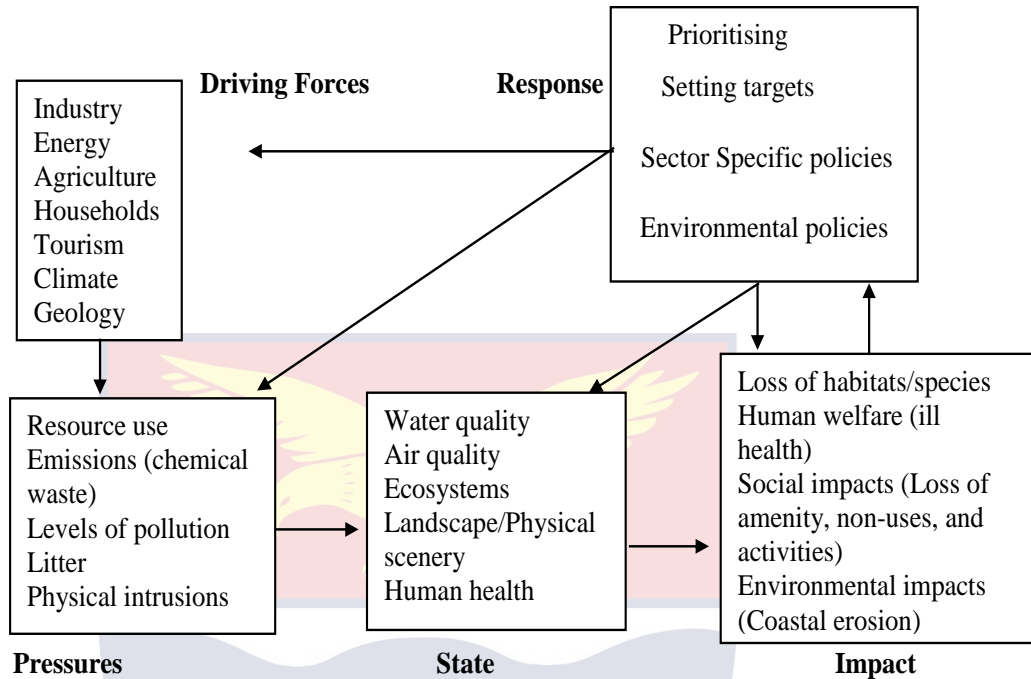
Figure 1: DPSIR: Human-Environment System Model (European Environment Agency, 1999).

These pressures modify the state of the resource (atmosphere, hydrosphere, lithosphere and biosphere). This modification to resources impact on human uses that depends on the resource. These include impacts on health, economic, ecological uses, recreational uses, tourism and human lives. The model indicates that human society attempts to problem-solve the outcome of human interference with the environment to adapt, remove, reduce or prevent the drivers and pressures, restore the state of the environment and mitigate impacts (EEA, 2004).

In the framework, the basic '*driving forces*' for individuals are the need for shelter, food, electricity, water, etc while examples of secondary driving forces are

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the need for mobility, recreation, entertainment and culture. To meet these needs, various economic and social engagements are considered and undertaken; this includes energy production, creation of industries, agrarian activities, transport systems, tourism among others (Innes et al., 2013). Petersen (2004) observed that these undertakings help to generate means to satisfy the plethora of daily human needs. These driving forces generate detrimental outcomes such as effluents from industries, fumes from vehicles, waste from household uses or hotel operations, dumpsites; and other developments that enter the environment. These outcomes, therefore, exert *pressure* on the environment through production and consumption processes. This pressure includes (i) damages to the environment due to excessive use of environmental resources, (ii) changes in land uses, and (iii) emissions of chemicals, waste, and radiation, noise into the air, water and soil (Petersen, 2004: EEA; 1999) that results in pollution.

As a result of the pressures, the *'state'* or conditions, features and qualities of the environment is directly affected. In the beach coastal environment, for instance, pressures shape and the state quality of the various beach compartments (sand, air, water quality, landscape and scenery) to the functions that these compartments fulfil. The '*state* of the environment is thus the combination of the physical, ecological and biological conditions. Essential states including the quality of air, water, sand/soil, ecosystems, scenery, and landscape are affected by these pressures (AGTA, 2013; EEA, 2004). The state and quality of the environment *impacts'* or shapes the social and economic activities that the environmental resources can support. That is, the quality of the functioning coastal ecosystem

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determines its life-supporting abilities, and social performances including recreational activities and the health of society that depends on them (EEA, 2004; Stern, 2000).

The model expounds that society (policymakers or beach management agency) then tend to respond to undesired effects that any part of the chain between driving forces through to impacts may have had on the environment or human uses that depends on the environment. An example of a response related to driving forces is the enactment of laws or regulations to limit the use of plastics materials in a coastal area or restriction of the accessibility to certain areas of the environment (EEA, 1999; 2004). Although the DPSIR is less used fully in the marine ecosystem, there has been widespread and increasing use of the DPSIR-type framework as a conduit of structuring and analysing information in management and decision-making across ecosystems. From side to side categorization of the progressive sequence of occurrences that lead to the change in state, impact, and response, the framework and its variables can/have been theoretically applied to all forms of environmental problems.

For instance, the framework has been used to link marine fisheries to environmental objectives concerning seafloor integrity (Fock et al. 2011), organize information relating to habitat change, eutrophication, chemical pollution, and fishing in several European seas (Langmead et al., 2007), the vulnerability of marine and coastal ecosystems, climate change (Hills et al. (2013), analyse coastal ecosystem changes related with offshore wind farming (Lange et al. 2010), and developing indicators for analysis and decision-making (Kelble et al., 2013; Rogers

& Greenaway, 2005). For its popularity among the scientific community, the DPSIR framework has witnessed recommendations from several international institutions (EU, EPA, EEA) for its improvement and application. Thus far, the framework still has notable weaknesses to be addressed. This is linked to the long-standing discrepancies in understanding (mainly between natural and social scientists) of the different components (mainly P, S, and I) and to the over-simplification of environmental problems such that cause-effect relationships cannot be adequately understood by treating the different DPSIR components as being mutually exclusive. It is important that more composite, tested, and models with improved clarity on the mutually exclusive variables are required to assess pressure-state change links in marine and coastal ecosystems in particular.

The Model of Beach Environments

The model involves the interactions that occur within beach resource environments. The model was by James (2000) consisting of a multidimensional nature of coastal systems and its resources with three linkages: linkages that result in changes to natural systems; linkages that affect the human and recreational use of beaches; and; linkages that provide information for management

The linkages that result in changes to natural systems encompass a range of activities by coastal users that destroys the biophysical environmental resources (sand, water, landscape, sceneries, air and ecology) of the beach to adequately support uses that depend on it (Fig. 2). Occurrences such as fishing, constructions, sand mining, resort operations, untreated sewage that enters into the beach

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environment directly result in the destruction and pollution of beach and water resources (Innes et al., 2013; James, 2000). James (2000) noted pollution presents perceptible hazards to all beach resources (water, sand, facilities, and scenery), tourists' safety, recreational uses (activities), and experiences of tourists visiting the beach.

The model stipulates that linkages affecting the human use of beaches involve the beach supplying a mix of resources and hazards to man (Fig. 2). Resources include land, natural open space, aesthetic landscapes/seascapes, surf, clean water, fish and shellfish, ecological habitat, the sand that provide for a variety of human activities and uses including tourism at the beach. The model identified hazards at the beach to include erosion, flooding, rip currents, polluted or poor sand and water quality, bad odour or smell and biological hazards to resources and users (James, 2000). Odikro (2014) documented that hazards towards coastal recreation are presented by poor physical conditions of beach resources on which coastal recreational uses depends. Hazards such as pollution primarily have a direct and indirect effect on coastal resources, increase risk perceptions among beach users, and limit human uses that depend on the beach.

Environmentally unclean beaches have been associated with hazards, creating negative perceptions among users, and posing threats and limitations to coastal scenery; tourism activities; and beach satisfaction (Odikro, 2014; James, 2000). Hazards in the form of poor sand and water quality result in poor public safety and experiences at beaches (Pendleton et al., 2001).

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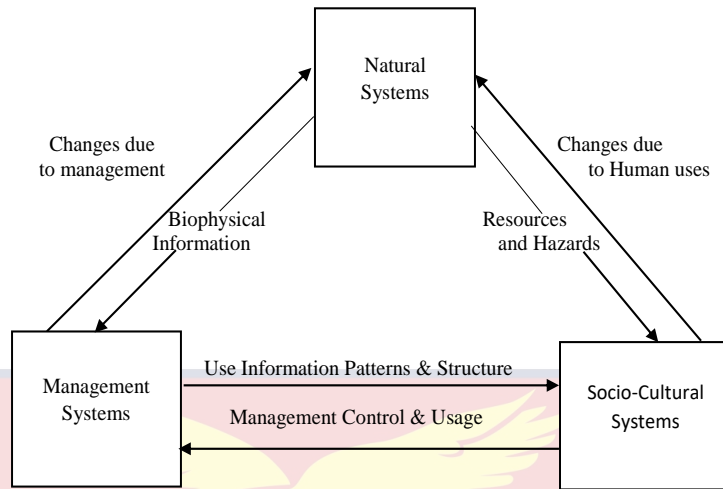
Figure 2: Model of Beach Environments (James, 2000)

Innes et al (2013) also theorize that the natural conditions of the coastal environment determine the permissible activities, whereas Clark and Levin (2010) maintained that such human uses influence beach ecosystems, and the ecosystems in effect influence human activities; such that they form a coupled human-environment system at the beach.

In effect, linkages providing information for management came up to help implement necessary regulations to protect beach resources; coastal tourism activities, and human safety. This requires knowledge of the biophysical environment and human use of beaches, especially information on any patterns in human use and impacts. That is, the knowledge of physical characteristics and human uses (exploitative and non-exploitative activities) at the beach provide information to management (Fig. 2). This aids management to institute policies and

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regulation to protect beaches, human uses, and to provide expected experiences at beach destinations.

The model is strengthened by its emphasis on the natural coastal environment as a resource for tourism, and clearly shows mutually exclusive variables that are the determinants of each of the components which was the downfall of the DPSIR framework. This which helps in its application to human-environment system situations (Innes et al., 2013). In terms of beach recreation, the model also clearly indicates how social uses may be limited by the qualities of the beach. Critical of the model however is that it does not inform users as to how and what specific management actions should help limit social intrusions, the level of acceptable change that beach environment should receive, and the extent to which recreational activities can be performed at the particular beaches (Clark & Levin, 2010).

Experience Economy Model

One main issue of this study is experience. In the tourism literature, the concept of experience harmonizes with the terms activity, perception, meaning, motivation and evaluation (Elands & Lengkeek, 2012). The study, therefore, adopts Pine and Gilmore's (1998) 'experience economy' where it considered experience as a socio-emotive and psychological outcome at destinations, which varies from one individual to another. Pine and Gilmore (2011) expound experience in two dimensions. These are the dimension of participation, which could manifest in active and passive ways, as well as the aspects of connection that shows itself as

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absorption and immersion. Whereas individuals at the absorption dimension are drawn into the created experience through a weaker connection, they establish stronger links and are confined to the experience dimension of immersion through the feeling of excitement, joy and responsiveness in the experience at an advanced level. Hence, four fragments of experience are described, which includes entertainment, education or experiential, aesthetic and escape.

According to Oh et al. (2007), tourists actively mature their knowledge and capabilities both psychologically and physically at the tourist destination they may have visited due to experiences of education. Conversely, aesthetic experience in the model only involves the pleasure (fun, joy, excitement, admirations) that the tourist derives from the environment and its features. Equally, aesthetic experience has been noted as an essential element in determining factors in the evaluation of the preferred tourist destinations among tourists, hence it is important in the experience of the tourist as a whole. The experience of the entertainment is demonstrated by tourists' excitement at watching shows and events, enjoying music and dance either in an active or passive participation mood. However, Lucrezi and van der Walt (2015) and Plessis et al. (2011) noted at beaches and nature-based destinations this experience is attributable to the excitement that is derived from various form of beach activities and visual sceneries. The experience of escape on the other hand manifests itself as an experience often cited in tourism research born out of the traveller moving away from his monotony of daily life schedules to refresh the body and mind and relax. In the context of this study, although beach destinations can show different outlooks, the expectation is that this would be able

to make individual tourists live through the four extents of experience (Stamboulis and Skayannis, 2003). Consequently, the theory suggests plurality (heterogeneity) of tourists' experiences and debunks the notion of homogeneity of tourists' experiences at tourism destinations. By employing this theory, the study demonstrates that tourists' experiences at tourists' destinations cannot be the same but differ from tourist to tourists and from context to context.

The model remains a good starting point for understanding better customers' and visitors' perceptions of a product or attraction or a destination. It is a customer valuation tool that helps to categorise and assess distinct experiences in a collective form through a unified approach-based (Plessis et al., 2011; Cutler & Carmichael, 2010). The strength of the model lies in the ability to focus on what the experience does to the customer (concerning feeling, learning, being, and doing). The model however does not focus on the processes that determine the experience (Mossberg, 2003) and the production elements that create the experience (Tarssanen & Kylänen, 2005). However, these processes and products are what delivers the experience, such that the model has not been functional thoroughly. The model also restricts visitors experience economy to "amazing experiences". It overlooks the qualities of experience that suffuse everyday life (Mehmetoglu & Engen, 2011). They follow a good-to-great philosophy that suggests that anything less than great is not good enough. This application can lead suppliers (destination marketers) to overpromise, creating anger and disappointment rather than anything "great" (Schmitt, 1999). Although, marketers may benefit when they consider the objects that they sell as representing

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experiences that have a psychological, social, and cultural context. This may not be true/applicable for products or services that are intangible/superlative qualities, as it is in tourism (Mehmetoglu & Engen, 2011).

Conceptual Framework for the Study

The DPSIR: Human-Environment System Model has been adopted as the conceptual framework for the study (Fig. 5) after a thorough review of the theories and models discussed above. The choice of this model is based on the fact that the model can easily be expanded to provide useful insight in studying how environmental event example pollution at the coast can impact social uses (coastal recreation), coastal tourism and experiences of beach users. It, therefore, provides a useful framework within which tourists' perception of beach pollution can be examined.

Consequently, modification has been made to the model to make it suitable for this study. The new framework is also made up of five (6) components comprising; beach destination (pressures > resource attributes); perceptions; recreational uses (water-dependent uses, sand-dependent uses, and facility-dependent uses); recreational experience (excitement (entertainment), experiential (education), escapism (relief and relaxation) and aesthetic), post-visit intentions (revisit, recommend, a choice among alternative) and visitors characteristics including their gender, sex, education, marital status, travel purpose, travel party, nationality and continent of origin. The framework indicates the interrelations between the various components.
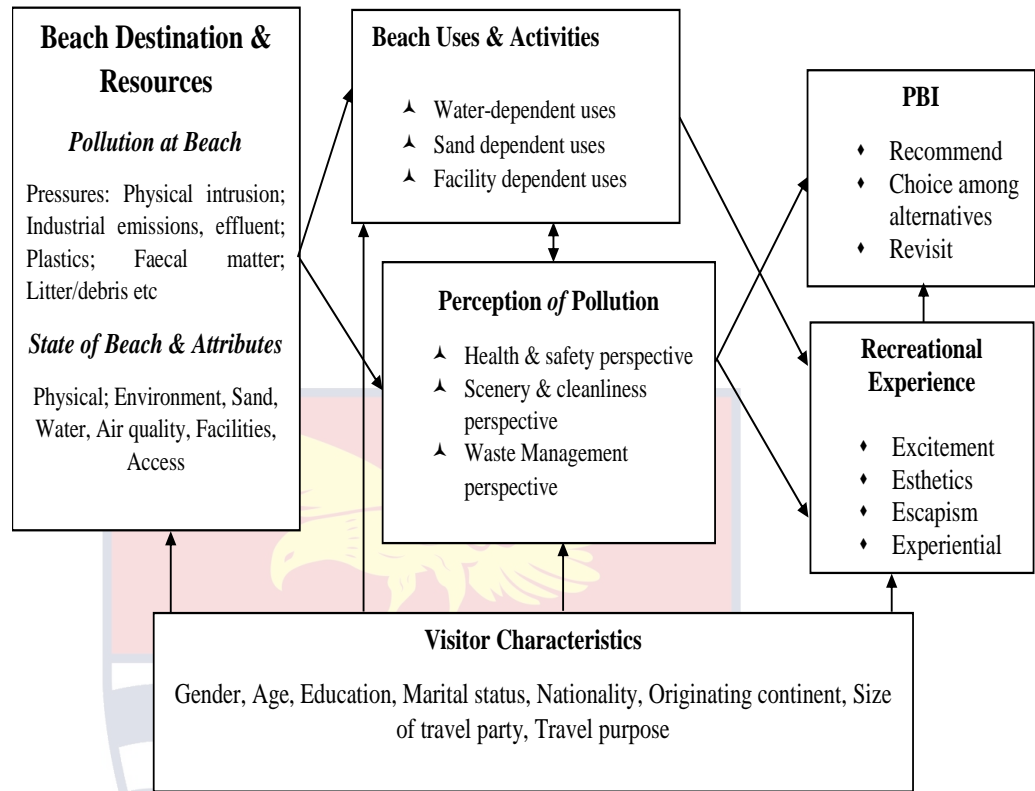
Figure 3: Conceptual Framework for the Study

Source: Adapted from DPSIR: Human-Environment System Model (EEA, 1999)

Of importance is the factor that visitors' perceptions, and experiences as identified in the framework (Fig. 3) may be distinct. This owes to the fact that at the individual level of visitors, particularly visitors to nature-based destinations, differences usually exist across their opinions on environmental, natural makeup and related services. Such differences occur due to individual uniqueness in terms of their age, gender, place of origin, educational level and travel purposes or activities that they seek at the beach. The frameworks indicates the function and link of these varied visitor characteristics on the key perceptual variables in the study.

Pollution at beaches impacts on the state of beach resources and attributes (natural/physical, environmental) as well as human dimensions (facilities, comfort, and image) through the presence of chemical waste, garbage, debris and plastics of all kinds, quantity and sizes with the beach environment. The environmental conditions and characteristics of the beach informs visitors' awareness or perceptions of the beach (Roca & Villares, 2008; Bonaiuto et al. 1996), and directly affects almost all social leisure/recreational uses that are dependent on the beach resources (Wolch & Zhang, 2004) as shown in Figure 3. Pollution at the beach thus defines the state of the beach resources (physical elements, sceneries, facilities), and also affects beach recreational uses that depend on both natural and built environment of the beach. This eventually defines user perceptions and activity choices at the beach (Wyles et al., 2016; James, 2000). As such user perceptions and recreational use of the beach is mostly based on the direct contact with the beach resource and environment. Hence, the resource dependency theory and the DPSIR: human-environment system model constitutes the underlying theoretical perspective of this study

Visitors' recreational experiences may however vary based on individual differences, and how each of them perceive the severity of pollution at the beaches (Lucrezi & van der Walt, 2015; Pendleton et al., 2001; Bonaiuto et al., 1999). Experiences obtained may be positive or negative and yet vary based on individual differences and perceptions of visitor relative to the level of pollution encountered at the beaches (Pendleton et al., 2001). Perception of pollution may as well result in tourists' discomfort, demotivation as well causing activity distress/determent that

tourists have to endure at the beach; including the possible adjustments that an individual tourist has to make to enjoy their visit to the beach could sway visitors' intentions either positively or negatively among visitors. This may as well have implications (feedback, comment and complaints) from the tourists and also the management of the beach destinations. The implication translates into future behavioural intentions (revisit, recommendation and choosing the destination again among alternatives or not) for the tourists; whereas for the management of the beach destinations the implications (feedback) constitute useful information on their performance at the beach destinations and for future actions.

Chapter Summary

The chapter reviewed the literature on; beach as a tourism resource and its characteristics, beach recreational uses, conceptualisation of beach pollution, coastal pollution, social effects of pollution on coastal recreation, perceptions of pollution, tourist recreational experiences, and tourist post-visit intentions. In furtherance, the concluding part looked at the resource dependency theory, DPSIR: human-environment model; beach environment model, Pine & Gilmore experience economy model, and finally a conceptual framework for the study. The next chapter discussed the methodological issues of the study.

CHAPTER THREE

METHODOLOGY

Introduction

This chapter describes the research philosophy adopted and the methods that were used to collect the data towards the realization of the objective of the study. It also describes the study area, the philosophy and study design, data sources target population, sample size, sampling procedure, research instrument, recruitment of field assistant and pre-test of the instrument, fieldwork and challenges, ethical issues and data processing and analysis.

Study Area

The study was conducted in the Accra Metropolis, situated in the Greater Accra Region of Ghana. The Accra Metropolis receives the majority of tourists that travel to and through Ghana and equally sees huge numbers of tourists visiting its beach facilities (GTA, 2011) The Accra Metropolis received in excess of over a million (1, 130, 307) international visitors in 2019, and about 335, 108 international visitors in 2020 due to Covid-19 pandemic (GTA, 2020). Notwithstanding, the Accra Metropolis with its coastal areas, however, have been identified as the 2nd and 7th dirtiest zone in Africa and the world respectively (WHO, 2018) with high pollution and poor sanitation both inland and along the coastal stretches.

Specifically, the study area has a vast beach area with two main stretches of beach destinations (Guinea Mensah Beach and Korle Gonno Beach). These stretch

of beaches remain the two recognized and most visited tourist beach ends but with increasing high environmental pollution occurrences (Dyck et al., 2016, Himans, 2013). The study sites have been identified to differ in socio-economic settings as well as tourist categories (Tsagbey et al., 2009; Himans; 2013), with heavily populated local communities located nearby. Available data from studies conducted on these two beaches indicated that an increasingly huge amount of beach litter docks at the Accra coastal beaches on daily basis, resulting in constant pollution along the beach stretches in the Metropolis (Dyck et al. 2016, Himans, 2013; Tsagbey et al. 2009; World Bank, 2016). Considering that Accra Metropolis includes the capital city of Ghana, the number of tourists it receives on weekly basis including visitors to its beaches are huge; the phenomenon of poor sanitary beaches hence present major threats, bad taste and setback to coastal tourism and recreation in the Metropolis (Echart et al., 2012; World Bank, 2013; 2016); which has informed the choice of this study area.

The Guinea Mensah Beach stretch is mainly a tourist beach area. It lies a few distances away from the centre of the city of Accra – the capital of Ghana. This beach stretch lies directly between the major tourist district of the capital (thus between Christianborg Castle, The Centre for National Culture) all through to the James Fort – in Jamestown, Ghana. Part of that coastal stretch is now marked for the Ghana Marine Drive Project (N 05˚32.594'W 000˚11.823'; N 05˚32.599'W 000˚11.825'; N 05˚32.609'W 000˚11.771'; N 05˚32.615'W 000˚11.773') and is visited by tourists from a wide variety of social and economic backgrounds. The area rarely sees fishing activities, yet witness high volumes of litter daily which

affects or limits visitors use of the beaches along the stretch (Tsagbey et al., 2009). This beach stretch is predominantly sandy with a rock cliff at the back of the shoreline and has a low to moderate slope.
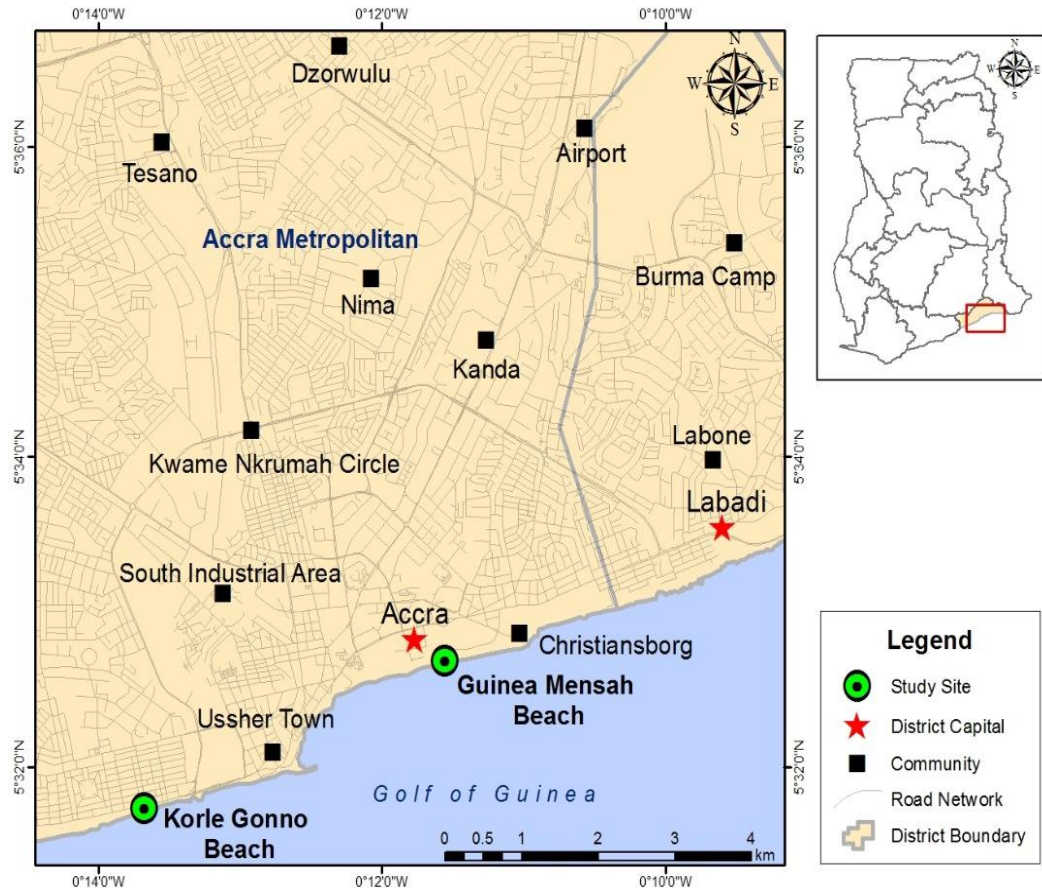
Figure 4: Map of Accra Metropolis showing Study Sites

Source: Department of Geography and Regional Planning, University of Cape Coast (2020)

The other stretch - Korle Gonno beach stretch is located on the western side of Accra (2km away) (N 05˚31.733'W 000˚13.537'; N 05˚31.738'W 000˚13.538'; N 05˚31.744'W 000˚13.480'; N 05˚31.752'W 000˚13.481') in the densely populated

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community of Korle Gonno. Beach visitors are mostly domestic tourists, with a small number of foreigners who go there mostly on holidays and weekends (Tsagbey et al., 2009). The Korle Gonno beach is characterized by sandy and intermingled with rocky coverings. Structures for enjoying the ocean view and leisure are identified to mark the rearmost of the shoreline where tourists are normally found, however, there is a degrading environmental condition and odour that influence tourists to stay, use and enjoyment the beach areas (Dyck et al., 2016; Tsagbey et al., 2009).

Research Philosophy

The research philosophy guiding this study is positivism. The positivist approach is based on the belief that reality is stable and can be observed and described from an objective point of view without influencing or interfering with the problem under investigation (Chen & Hirschheim, 2004). This research approach hence believes that to test for reality or theory, research should take a value-free position. Basing on this, a quantitative method of data collection and analysis was adopted for the study. Quantitative research is the numerical representation of observations to explain the phenomena those observations reflect. It is an approach that is widely used in the natural and social sciences. Descriptive, experimental, surveys and trend analysis are common approaches to quantitative research.

The advantages of this approach include the provision of results that can be condensed statistically and statistical comparison between various groups

(Saunders, 2012), yet, it cannot be used in situations where in-depth information is required (Cresswell, 2010). Epistemologically, the researcher is independent of the phenomenon being researched which makes it value-free and unbiased. Consequently, issues regarding respondents' perceived attractive characteristics of Accra beaches, perception of pollution, recreational uses affected by pollution, beach recreational experience, post-visit behavioural intentions and the test for relationships between variables were quantitatively measured and analysed.

Research Design

The research adopted the cross-sectional research design. In cross-sectional studies, either the entire population or a sample of the population is selected (sample survey), and from these subjects, data for a study is collected at one point in time to answer research questions of interest (Cresswell, 2010). In this study, the transient nature of the target population (beach visitors) made the use of this design appropriate in collecting a one-off data from them. Accordingly, the study employed the sample survey, and by that, it selected a proportion of beach visitors to examine their perception of beach attractiveness, beach usage, beach pollution, experiences and post-visit intentions. The adoption of this design is also validated by the help it offers in comparing different population groups or variables at a point in time (Saunders, Lewis & Thornhill, 2012). The design was adopted mainly because this study intended to understand the perceptions of visitors toward beach pollution, and to estimate these perceptions across populations in this study.

Data and Sources of Information

The data for the study was primarily sourced from self-administered questionnaires to captured data on perceived beach characteristics that are attractive to visitors, perception of pollution, recreational uses affected by pollution, recreational experiences and visitors' post-visit intentions to beaches in the Accra Metropolis. Other relevant information including geographic and physical information on the study area, and estimated visitor numbers at the beaches were obtained from published articles, reports, online journals, beach facility operators and the Ghana Tourism Authority.

Target Population

The target population comprised both international and domestic visitors at the beaches in the Accra Metropolis. These include all visitors that visited the beach within the period of data collection for the study. This enabled the study to sample views from varied sets of visitors to widen the scope and perspective of responses. A visitor was deemed fit for the study once the individual is 18 years and was using the beach for recreational purposes.

Sample Size for the Study

The sample size for the study was determined using the proposed formulae by the International Fund for Agricultural Development (2009) formula. The sample size (n) for the study is therefore calculated by:

$n = t^{2\,*}\,p\,(1\text{-}p)$

m^2

Where:

n = desired sample size

t = confidence level set at 95% (standard value = 1.96)

p = proportion of the target population that has similar characteristics (set at 75% or 0.75);

m = the margin of error set at 5% (standard value = 0.05)

Substituting into the formula, the desired sample calculate is:

$n = \dfrac{(1.96)^{2\,*}(0.75)\,(1-0.75)}{0.05^2}$

n = 288.12

To cater for non-response that might occur during the data collection, an extra ten (10) per cent of the desired sample size has been calculated which is approximately 29 respondents and is added to the sample making a total of 317. This sample size for the study is appropriate and would generate reliable results given that the sample size is adequate for the estimations techniques to be used for data analyses. Thus, a sample size of 100 to 150 respondents is permitted to be sufficient for reliable inference using parametric techniques (Brida & Scuderi, 2013; Hair, Anderson, Tatham & Black, 2013). Based on this, it suggests that at least 288 beach visitors on beaches in Accra Metropolis should be involved in the survey.

Sampling Procedure

The study made use of all six GTA licensed hospitality/tourism service facilities situated along these two beach stretches in the Accra Metropolis data collection sites from a sample size of 317 respondents. These facilities include, Akuma Village, Osekan Beach Resort, Rising Phoenix Magic Resort – along Guinea Mensah Beach stretch; and Oceanic Resort, Nordsee Beach Resort and Royal Dede Beach Resort – along the Korle Gonno Beach stretch (GTA, 2016) in Table 1.

Table 1: Average Monthly (December 2019 to March 2020) Visitors' Turnover

Beach Facilities	Average Visitors Numbers	Proportional Sample Allocation
Akuma Village	276	276/1,051*317 = 83
Osekan Beach Resort	85	85/1,051*317 = 26
Rising Phoenix Magic Resort	68	68/1,051*317 = 21
Oceanic Resort	263	263/1,051*317 = 79
Nordsee Beach Resort	197	197/1,051*317 = 59
Royal Dede Beach	162	162/1,051*317 = 49
Total	1,051	317

Source: Field Recognisance Survey (2020)

In attempt to examine human dimensions/characteristics (facilities, services, comfort, accessibility, and related activities and experiences) it is practical to use facilities that are officially recognized/licensed, so as to be help in generalization of the outcome of this study. And so, beach samples were also tied to these licensed facilities since data generated for tourists/visitor numbers to Accra Metro and consequently it beaches were partly drawn from these facilities (GTA, 2020).

Since these facilities received different visitor numbers, sub-samples were proportionally allocated based on the average number of visitors to each of these facilities in Table 1. Subsequently, a number from the first 4 potential respondents at the beach was picked at random using convenience sampling due to the unavailability of a sampling frame. Counting at convenience of the researcher, respondents (visitors) were given the questionnaire to answer. In instances where groups were encountered, only one (1) person was given the questionnaire to answer among groups of three, and two people were chosen from groups of four or more. The aim/reason for this, is to not collect data from more than two respondents from any group of visitors regardless of the group size. This was done until the desired sample size was obtained for each chosen study site. It was also done to offer representativeness to the sample and to ensure the data gathered for the study is not skewed to one end of the population (Leiner, 2014). Since the study was quantitative but without a sampling frame, the use of the convenience sampling technique while exercising thoughtfulness in gathering the relevant data was appropriate given the time of the study and the fact it also allowed for the gathering

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of responses from beach visitors with varied background for over a three month period (Dornyei, 2007; Leiner, 2014; Morse & Niehaus, 2009; Tailor, 2005)

Data Collection Instrument

In consonance with the quantitative method, a questionnaire was the instrument adopted for this study. The adoption of the questionnaire method was based on Cresswell (2010) assertion that the use of questionnaire best suits the collection of quantitative data and guarantees respondents' confidentiality, anonymity and convenience. A structured questionnaire divided into six parts was then used. The questionnaire was structured using closed-ended questions to solicit information from respondents for the study. This is because the closed-ended question is easier to code and quicker for respondents to answer. Moreover, answers are easier to code and statistically analyse (Gariba, 2017).

The questionnaire for the study was divided into six (6) main parts. Part One looked at the perceived beach attractiveness, with measurement items drawn from Mehranian and Marzuki (2018), Gonzalez and Holtmann-Ahumada (2017), Mensah et al. (2014), Roca et al. (2009) and Alipour et al. (2007). Part Two was on visitors' perceptions of pollution at the beaches, with item drawn from Botero et al. (2017) Krelling et al. (2017), Schuhmann et al. (2016), Dyck et al. (2016), Schuhmann (2012), Mckenna et al. (2011), as well as Tudor and Williams (2003). Part Three was centered on beach recreational uses (activities) affected by pollution, with items sourced from Gariba (2017), Wyles et al. (2016), Wyles et al. (2014), Hall & Page (2014) and Roca and Villares (2008). Part Four was on beach

recreational experiences (Schuhmann et al., 2016; Lucrezi & van der Walt, 2015; Schuhmann, 2012; Plessis et al., 2011). Part Five looked at visitors' post-visit intentions at the beaches (Adam & Amuquandoh, 2019). For each of the parts, a five (5) Likert scale was used to measure respondents' extent of agreement on the issues or otherwise. Part Six looked at the socio-demographic profile of the respondents including, sex, age, educational level, nationality, purpose of travel, travel party size and continent of origin.

Recruitment of Field Assistant and Pre-Testing Instrument

Studies that involve the use of more than one study site or facility is usually a difficult task for just one individual to do. Particularly, in the acquisition of data from respondents for studies that involve large samples (Brida & Scuderi, 2013). Hence, there a need for the recruitment of field assistants to help in the process. Consequently, the researcher recruited and equally trained one field assistant who was a graduate of the Department of Hospitality and Tourism Management of the University of Cape Coast. Of importance is the fact that the field assistant also had fundamental knowledge in processes and procedures involved in survey data collection in a quantitative study such as this.

Pre-testing of the instrument was conducted on fifteen (15) visitors to the La Pleasure on the 24th March, 2020. This was necessary because it allowed the study to present concise variables that addressed the objectives of the study. Such that, it helped do away with irrelevant and improperly worded questions. It also helped to remove questions items that seemed not to be applicable within the

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context of Ghana, which would have affected the content validity of the study. Besides, it threw light on some of the probable problems that were to be encountered during the actual survey.

Fieldwork and Challenges

The main fieldwork lasted for three months (30th April to 30th August 2020). The field assistant helped with the administration of the questionnaires at the beaches of the six beach facilities. The purpose was clearly explained to the respondents before the questionnaire was handed over to those that were willing to partake.

The study had some challenges worth mentioning including the unwillingness on the part of some respondents to respond to the set of questionnaires. As some of the respondents indicated that they did want to respond to the questionnaires because they were busily releasing stress and therefore were not interested in answering the questionnaire, whilst others simply stated that they should not be disturbed. Some others also complained that the questionnaire was too bulky such that items on the questionnaire were just too many. This resulted in the partial completion of some of the questionnaires. Hence, such incomplete questionnaires were filtered and discarded.

Despite the difficulties, a great deal of explanation was used to discuss the importance and rationale behind the study to each respondent, which was able to satisfy most respondents who willingly participated and provided responses to the questionnaires.

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Ethical Issues

This study considered and maintained laid down ethical tenets such as informed consent, anonymity and confidentiality at every point in the data collection period. This is because a researcher must not coerce anyone into participating in research (Neuman, 2007). Informed consent was therefore sought from respondents before undertaking the survey. Respondents were approached and the purpose of the research was explicitly made known to them. Their consent was then sought to participate in the study. Respondents who declined to participate in the study were not be pressured to do so while those who willing agree were given questionnaires to complete.

The respondents to the study were as well assured of the anonymity of their responses and identities. To do this, no personal information such as telephone number, name, or address was gathered as part of the socio-demographic information of the respondents. Moreover, respondents were assured that any information provided towards the study is kept confidential (Neuman, 2007), such that on no account will another person have access to the data collected from them, except for the researcher and the supervisor of this academic study. The respondents were further assured that the study was a purely academic exercise and under no circumstances will their background information be associated with specific responses given or disclosed to a third party.

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Data Processing and Analysis

Out of the 317 questionnaires delivered, 309 were completed and returned, representing a 97.5 per cent response rate. Data from the field were analysed using IBM Statistical Package Service Solution (SPSS) version twenty-two (ver. 22). The IBM SPSS software package serves as a powerful tool that is used generally for transforming survey responses from the population of a study into figures through coding. The data was therefore coded and entered in the SPSS software for the analyses after necessary cleaning of the data was done. The analysis was done using descriptive statistics, which involved the descriptive presentation, organisation and summarization of data as it relates to the objectives of the study. Some of the descriptive statistics included frequencies and averages that were presented to display various socio-demographic characteristics of respondents among the objectives for the study.

Inferential statistical measures included Factor analysis (a data reduction technique) was used to group the data set, which was rotated using the Principal component analysis (PCA) since almost all the measurement items were individual piecemeal items are drawn from large/varied sources in literature and hence were incoherent to be used it were. The Chi-square test of independence was used to determine differences in the perceived attractiveness of beach characteristics across socio-demographic characteristics of visitors. Factorial analysis was also used to structure the data set, while the Chi-square test of independence was used to assess variation in beach visitor's perception of pollution; as well beach recreational uses affected by pollution across demographic variables. Furthermore, a Factorial

analysis was conducted to structure the dimensions of recreational experiences of visitors to the beaches. A Chi-square test of independence was then performed to determine variations in experiences across visitors' socio-demographic profiles. Chi-square test of independence was also used to analyse the relationship between perceived pollution (explanatory variable) and recreational experience (response variable) as well as visitors' post-visit behavioural intentions (response).

Chapter Summary

This chapter discussed the methodology used in the study. The chapter discoursed on issues relating to the study area. The study used the positivist approach to research, hence it used the quantitative method of data collection and analysis. The chapter indicated the data sources, target population, sample size and sampling procedures for the study. The instrument for data collection and the way the data was processed and analysed were also considered in this chapter. Lastly, the fieldwork and challenges that emanated from it were addressed as well as ethical considerations and how they were carried out. The next chapter is the presentation of the results and discussion.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter presents the analysis, results and discussion of the study. It starts by describing the socio-demographic characteristics of visitors at beaches in the Accra Metropolis. It also examines the perceived attractive characteristics of beaches in Accra, visitors' perceptions of pollution, and visitors' recreational activities affected by pollution. The final part analyses the relationships between perceived pollution and recreational experiences of visitors, as well as visitors' post-visit behavioural intentions at beaches in Accra.

Socio-Demographic Profile of Respondents

Various writers such as Lucrezi and van der Walt (2015), Mihalic (2013) Pendleton et al (2001) have advanced knowledge on visitor awareness and reaction towards environmental conditions at destinations. Most of such studies have examined environmental perceptions of visitors either based on gender, age, education, travel characteristics, marital status and/or places of origination. Consequently, this section describes the socio-demographic characteristics of visitors to beaches in Accra.

Table 2 indicates there were more females (58.5%) than males (41.8%) in the study. This finding contradicts Mensah et al (2014) findings which indicate

male dominance over females in their studies on Krokrobite beach in the Greater

Accra Region of Ghana.

Table 2: Socio-demographic Profile of Respondents (N=309)

Variables	Frequency	Percentage
Gender		
Male	129	41.7
Female	180	58.3
Age		
18-25	112	36.2
26-34	124	40.1
35+	73	23.7
Educational level		
High school	48	15.5
Tertiary	261	84.5
Marital status		
Single	244	79.0
Married	39	12.6
Divorced	26	8.4
Nationality		
Domestic	223	72.2
International	86	27.8
Continent of origin		
Africa	237	76.7
Europe	45	14.6
North America	20	6.5
Australasia	7	2.2
Travel party		
Individual travel	229	74.1
Group travel	80	25.9

Source: Fieldwork, 2020

Table 2 continued

Purpose of travel		
Business	19	6.1
Leisure	209	67.6
Education/research	26	8.4
Volunteering	18	5.9
VFR/others	37	12.0

Source: Fieldwork, 2020

However, Lucrezi and van der Walt (2015) further observed female dominance over males in their study on South African beaches. Lucrezi et al. (2016) further observed that there is a growing number of female who is taking day trips to beaches. Besides, evidence suggests that women are increasingly making the most of their independence and beginning to identify and satisfy their own needs when it comes to tourism and pleasure trips (Pearce et al., 2009).

Age distribution for the study shows that about 40.1% were between 26-34 years of age, 18-25 years of age (32.6%) and those of age 35 above (23.7 %). This result affirms the observation that beach visitors are mostly youthful and between the ages of 20-35, wild and seeking time out (Lucrezi & van der Walt, 2015).

As regards the educational level of visitors to the beaches, tertiary graduates are in majority (74.5%) and the remaining had secondary/high school qualification (15.5%). Also, more singles (79%) than married (12.6%) and divorced (8.4%) were established in the study. This is consistent with findings by Lucrezi and van der

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Walt (2015) in South African. Cooper et al. (2008) also assert that young adults are compensated by free time and oddity for exploring and freshness, whereas the arrival of children, married couples, represents another crisis which coupled with the duty of a home may imply that constraints of time and finance dampen travel propensity.

The survey further shows that domestic visitors were in the majority (72.2%) than international visitors (27.8%) in the study. This is because the period of the study coincided with the outbreak of the Corona Virus (CoVid-19) pandemic with almost all international borders closed. Besides, during pandemics and border restrictions, international visitors to destinations are but few to find and access (Mckercher & Chon, 2004). Whereas, Africans dominated (76.7%) the sample, and Australasians were the least (2.2%) represented (Table 2). With regards to travel characteristics, about 74.1% of the visitors were individuals who travelled alone whilst the remaining 25.9% travelled in the company of others (Table 2). More visitor travelled for leisure (67.6 %) compared to visiting friends and relatives (VFR) (12%), education or research (8.4 %), business (6.1%), and volunteering (5.9%). Most visitors to the beaches hence travelled for leisure and recreational purposes to break away from everyday life (Wyles et al. 2016).

Perceived Attractiveness of Beaches in the Accra Metropolis

Beaches have become environmental resources that meaningfully supplements tourism offerings of any country that have them (Zadel et al., 2018). Beaches thus have become principal intentions for coastal recreation, hence, the

resource dependency theory stipulates that nations and businesses offering beach products must ensure that the quality of beaches in terms of cleanliness, appeal, and attractiveness (Mihalic 2013) are not negotiated in any form (Zhang et al. 2019). With the beach as the principal tourism resource, this section of the study examines perceived attractiveness of beaches in the Accra Metropolis.

Table 3: Perceived Attractiveness of Beaches in Accra

Beach characteristics	N	A (%)	U (%)	NA (%)
Physical characteristics				
Beach sand	309	83.8	4.5	11.7
Colour of beach sand	309	78.6	8.1	13.3
Texture of beach sand	309	77.7	14.2	8.1
Landscape/scenery	309	69.0	11.7	19.3
Beach water	309	51.7	11.3	35.0
Colour of beach water	309	43.4	12.3	44.3
Sea waves	309	92.2	3.9	3.9
Wind/sea breeze	309	90.6	4.2	5.2
Overall Score	309	73.5	8.9	17.6
Environmental characteristics				
Cleanliness of beach sand	309	36.5	10.7	52.8
Cleanliness of beach water	309	29.8	10.7	59.8
Litter-free state of the beach area	309	28.5	10.4	61.1
Smell from the beach area	309	16.5	39.8	43.7
Overall Score	309	27.8	17.9	54.3
Facilities and Services				
Design of beach toilets and urinals	309	16.5	26.5	57.0
Cleanliness of beach toilets and urinals	309	13.3	25.9	60.8
Food services available	309	72.2	19.1	8.7
Litter bins at the beach	309	17.2	32.3	50.5
Lifeguards at the beach	309	17.5	54.7	27.8
Overall score	309	27.5	31.7	40.8
Accessibility and Comfort				
Access to beach	309	85.1	6.8	8.1
Prices of beach services	309	65.7	15.9	18.4
Level of beach crowd	309	70.6	9.4	20.0
Level of beach noise	309	66.6	16.2	17.2
Safety at beach	309	44.7	22.7	32.6
Overall Score	309	66.7	14.1	19.2

A= Attractive,   U= Undecided,   NA= Not Attractive

Source: Fieldwork, 2020

Physical attributes of beaches as tourism resources have been identified in the literature to have in most instances meet the specifications of beach goers overtime (Mehranian & Marzuki, 2018; Zadel, 2016) including landforms, sand quantity and depth (Hall & Page, 2014). From Table 3, the result shows that the majority of respondents (73.5%) perceived the physical attributes of the beaches to be attractive. Specifically, 92.2% perceived sea waves, sea breeze (90.6%), beach sand (83.8%), the colour of sand (78.6%), the text of sand (77.7%), scenery (69%), and beach water (51.7%) as attractive (Table 3). The results also show that the colour of beach water (44.3%) and beach water (35%) were considered not to be attractive. The issue of beach water may however be due to the situation of easy susceptibility of beach waters to strong waves that carry beach litters to and fro the shores of the beach (Mckenna et al. 2011).

On the whole, the results show that visitors consider the physical characteristics of the beaches to be the most attractive attributes of the beaches. The result is consistent with the findings of Roca and Villares (2008) and Silva et al. (2013) who reported that beach users at urban and semi-natural beaches find the physical and morphological aspects as satisfying and attractive enough. The finding could be explained by the fact that physical features and seascapes of Accra beaches may have shown signs of desired resource quality (Sheppard, 1995), and an ideal natural spot or setting that visitors may have desired/expected to see while taking their trips to the coastal areas (Zadel et al., 2018; Moreno & Becken, 2009).

The resource dependency theory in its advancement by Mihalic (2013) also emphasises the essentiality of the qualities and uniqueness of environmental

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resources that must be present for tourism purposes at nature-based destinations. However, environmental attributes of beaches in Accra Metropolis were in the opposite. The results indicate that only about a third of the respondents (27.8%) environmental attributes to be attractive (Table 3). Specifically, only 36.5% considered the beach sand to be clean, 29.8% for the cleanliness of beach water, 28.5% perceived the beaches to be litter-free while only 16.5% considered the smell from the beach area as good. The findings on the whole reveal that most visitors did not find the environmental attributes of the beaches to be attractive. This is contrary to what has been expected from the literature (Mehranian & Marzuki, 2018; McLachan, 2013). This result appeared so because Accra beaches might have generally been polluted with polythene bag, plastic bottles, broken bottles, and human excreta since nearby communities use the beach areas as dumps sites, and as places of convenience at nights as found by Dyck et al. (2016) and World Bank (2016). Such litter items at the beaches might have created an offensive outlook to most visitors, which has led to the negative visual perceptions displayed by most visitors to beaches in the Accra Metropolis. The result is therefore in line with Leatherman's (1997) assertion that poor environmental conditions remain a major drawback at beaches.

Concerning facilities and services, Table 3 indicates that less than (27.5%) of visitors considered it to be attractive. Yet, for visitors to appreciate the appeal of beach facilities, the quality and cleanliness of such facilities are major factors (Thompson, 2015; Roca et al., 2009). Apart from food services which were attractive to 72.2% of the visitors, all other features were considered not attractive

(Table 3). Hence, the facility and service dimensions at the beaches were the least attractive characteristics of the beaches. The result is consistent with that of Mensah et al (2014) who found that visitors were satisfied with food and accommodation aspects but were highly dissatisfied with the toilet facilities. This finding could be attributed generally to the low numbers or poor maintenance of available beach facilities in the Accra Metropolis and Ghana. Implying that visitors may not have been able to reliably enjoy the beach resources with their facilities as it were, since facilities such as food, clean washrooms and places of convenience, and user comfort are essentials inputs for tourists' enjoyment and appreciation of beaches destinations (Roca & Villares, 2008; Alipour et al., 2007).

According to Alipour et al. (2007), tourists' appreciation of access, security and comfort at beaches injects some sense of safety and increases their length of stay. Regarding accessibility and comfort attributes, over two-thirds of respondents (66.7%) considered it to be attractive. Specifically, 85.1% of the respondents were pleased with the accessibility to the beaches. Implying that, visitors were able to easily walk-in to beaches whether enclosed or open and as such have unlimited access to the vast beach areas which is generally associated with most beaches in the Accra Metropolis and Ghana. Again, 67.7% indicated that the prices of beach services were attractive. This could mean that most visitors were able able to afford goods and services being sold at the beaches (Roca et al, 2009). For the crowd level at the beach, 70.6% of visitors reported that it was attractive, whereas the desirability of noise level at the beach was attractive to 66.6% of the respondents. This result implies that visitors may have enjoyed tranquillity at Accra beaches.

Visitors' appreciation of the reduced level of noise could also be because the majority of the visitors to the beaches came from bigger cities and communities with larger population sizes where noise levels are high due to daily commercial activities (Mensah et al, 2014; Alipour et al, 2007).

With safety, 44.1% of the respondents considered the beach to be safe. Sense of destination safety is an essential concern for almost all travellers to places. The findings may, however, be due to the reason that most of the resort facilities do not have security kiosks or signposts present at the beaches which could have communicated a negative sense of safety at the beach to visitors (Roca & Villares, 2008; Alipour et al., 2007) Again, though lifeguards are available, they were not visible enough to be identified and this might have accounted for the feeling of insecurity among visitors, leading to more than half (54.7%) of visitors being indifferent about security at the beaches (Table 3).

The beach as a resource for tourism in the frame of the resource dependency theory as advanced by Mihalic (2013) and Clark and Levin (2010) remains a major environmental resource for tourism at the coastal destinations in the Accra Metropolis. The results indicates that qualities and attributes of the beach resources in Accra have not met requirements as the theory suggests. The implication is that human actions and inactions continues to impact negatively on state of these resources adequately support tourism and touristic use on the need-to-use basis. To ensure resource quality, particularly with environmental attributes, swift management responses is needed as ascribed by the DPSIR (EEA, 2004; 1999) and the beach environment model (James, 2000).

Dimensions of Perceived Attractiveness of Beaches in Accra

After the assessment of respondents' reaction to the 22 variables measuring beach attractiveness using descriptive statistics, the variables were further analysed using Principal Component Analysis (PCA) with Varimax Rotation. The reasons that informed the decision for factor analysis include; first, to identify dimensions of the beach attribute index (scale) and secondly to ascertain relatedness of the measurement items to appropriate underlying latent constructs.

The Bartlett's test of sphericity was significant (χ^2 (86) = 3878.141, p<0.000) which indicated that it was appropriate to use the factor analytic model on the data. This was further confirmed by the Kaiser-Meyer-Olkin measure of sampling adequacy which indicated that the strength of the relationships among variables was high (KMO = .883). This shows that it was appropriate to proceed with factor analysis (Kaiser, 1974). Eigenvalues greater than one (Eigenvalue >1) was used as the criterion for extracting the factors, and the threshold for including a variable was 0.50 (Hair, Anderson, Tatham & Black, 2010). The suitability of the factors in effectively measuring the constructs was then examined using Cronbach's alpha coefficient of 0.7 or more as recommended by Pallant (2007).

The result indicates that four (4) factors: beach sanitation, facility and services, physical characteristics and accessibility and comfort at the beaches collectively explained 62.9% of the perceived beach characteristics that visitors considered attractive at beaches in the Accra Metropolis.

Table 4: Structure of Factors for Perceived Attractiveness of Beaches

Latent constructs and observed variables	Factor Loading	Eigen Values	Variance Explained (%)	Cronbach Alpha
I Beach Sanitation		7.602	34.566	0.839
Beach water	0.823			
Colour of Beach water	0.796			
Cleanliness of Beach water	0.750			
Landscape/scenery	0.664			
Cleanliness of Beach sand	0.577			
Litter-free state of the beach	0.563			
II Facility & Service		2.940	13.362	0.840
Cleanliness of toilet and urinal	0.979			
Toilet and Urinal facilities	0.783			
Lifeguards	0.743			
Litter bins	0.696			
Food	0.535			
III Physical features		2.152	9.784	0.869
Sea waves	0.798			
Sea breeze	0.787			
Beach sand texture	0.765			
Beach sand colour	0.733			
Beach sand	0.726			
IV Accessibility & Comfort		1.148	5.218	0.837
Crowd level at the beach	0.840			
Noise level at the beach	0.811			
Prices	0.752			
Access to beach	.645			
Beach safety	0.529			
Total variance explained			62.92	

Source: Fieldwork, 2020   Bartlett's Test of Sphericity (Approx. Chi-square) =

3878. 141,   p-value= 0.000   Kaiser-Meyer-Olkin (KMO) Measure of

Sphericity = 0.883

Factor I, beach sanitation, consists of six (6) items including beach water, the colour of beach water, cleanliness of beach water, landscape, cleanliness of beach sand and litter-free state of the beach. With an eigenvalue of 7.60, the factor accounted for over 34.6% of the variance in the visitors' perceived attractive characteristics of beaches in Accra. The result appeared so because sanitation conditions at any given beach is an essential component that can influence other factors at the beach (Botero et al., 2017). This factor yet thrives on scenery and

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cleanliness at the beach. Moreover, this factor represents a high area of sensitivity to beach users due to its ability to offer an offensive outlook and health concerns to visitors (Mehranian & Maruki, 2018). In an ideal way, the cleanliness of landscape/scenery, sand and water resources of beaches in Accra Metropolis cannot or should not be negotiated (Zhang et al., 2019; Mihalic, 2006). This will help present beach environmental features that are attractive and can be appreciated by users (Silva et al, 2013).

The second dominant factor (II) was the facility and services. It consists of attributes such as the cleanliness of toilet and urinals, design of toilet and urinal facilities, lifeguards, litter bins, and food services at the beach (Table, 4). The importance of this observation is the reinforcement that facilities and services play important roles in visitors' enjoyment of their trips to the beaches (Roca & Villares, 2008). For visitors, places of convenience are essential facilities required and used during their trips, whereas food is a crucial aspect that keeps the body and mind together. Accordingly, user-friendliness of beach facilities in terms of design, coupled with the cleanliness and hygienic state of beach toilet and facilities are an essential factor indeed when the idea of beaches trips considered (Thompson, 2015). Together, they explain 2.94 (13.4%) of the total variance.

Factor III, physical characteristics, is constituted by natural features of the beaches such as sea waves, sea breeze, the texture of beach sand, the colour of beach sand, and the beach sand. Physical characteristics explained 9.8% of the variance in the visitors' perceived attractive characteristics of beaches in Accra. As indicated by Zadel et al. (2018), physical conditions are believed to provide

essential resource attribute at beaches that appeal to tourists. This is an ideal factor because, for nature-based resources and destinations such as the beach, physical characteristics and outlook constitute the experiential elements that form one most important aspects of visitors' experiences at the beach (Mihalic, 2013; Plessis et al., 2011).

The last factor (IV) that resulted from the factor analysis explaining visitors' perception of beach attractiveness is accessibility and comfort. With an Eigenvalue of 1.15, it explained 5.22% of the variance in visitors' perceptions of attractive characteristics of beaches in the Accra Metropolis. At the beaches, this involves crowd, price, access and safety at the beach. The reduced crowd and noise level at beaches, as well as easy accessibility to beach areas, enhances the tranquillity and comfort of beach users, which is what visitors look for at nature-based destinations (Roca et al., 2009; Roca & Villares, 2008). Moreover, ease of access and safety of visitors' forms a critical component of coastal recreation and visitors stay at beaches (Alipour et al., 2007).

Perceived Beach Attractiveness by Visitors' Socio-demographic Profiles

Previous studies indicate that visitor's perceptions at beaches are related their background characteristics (Lucrezi & van der Walt, 2015). This section of the study, therefore, examines whether or not visitors' perceptions of beach attractiveness is related to their socio-demographic variables as indicated by the framework (Fig. 3) for the study. The chi-square of independence was adopted and used for this purpose.

Table 5: Perceived Beach Attractiveness by Socio-demographic Profiles

Characteristics	N	Environmental Characteristics %				Facility & Services %			
		Attractive	Undecided	Not Attractive	χ² statistic p	Attractive	Undecided	Not Attractive	χ² statistic p
Sex									
Male	129	39.5	14.7	48.7	8.55	25.6	48.8	25.6	8.91
Female	180	33.9	28.9	37.2	0.141	17.8	40.6	41.7	0.012*
Education									
Secondary	48	37.5	14.6	47.9	2.48	25.0	60.4	14.6	10.45
Tertiary	261	36.0	24.5	39.5	0.290	20.3	41.0	38.7	0.005*
Nationality									
Domestic	223	23.3	26.5	31.5	29.87	23.3	20.6	42.5	30.25
International	86	18.6	16.3	65.1	0.000*	15.1	68.6	16.3	0.000*
Travel party									
Individual	229	39.3	24.5	36.2	7.57	21.4	41.9	36.7	1.69
Group	80	27.5	18.7	53.8	0.023*	20.0	50.0	30.0	0.429
Age									
18-25	112	37.5	22.3	40.2	0.56	19.6	37.5	42.9	19.44
26-34	124	37.1	23.4	39.5	0.967	25.8	43.5	30.6	0.065
35+	73	32.9	23.3	43.8		15.1	54.8	30.1	

Source: Fieldwork, 2020   *Significance level at p≤0.05

Table 5 continued
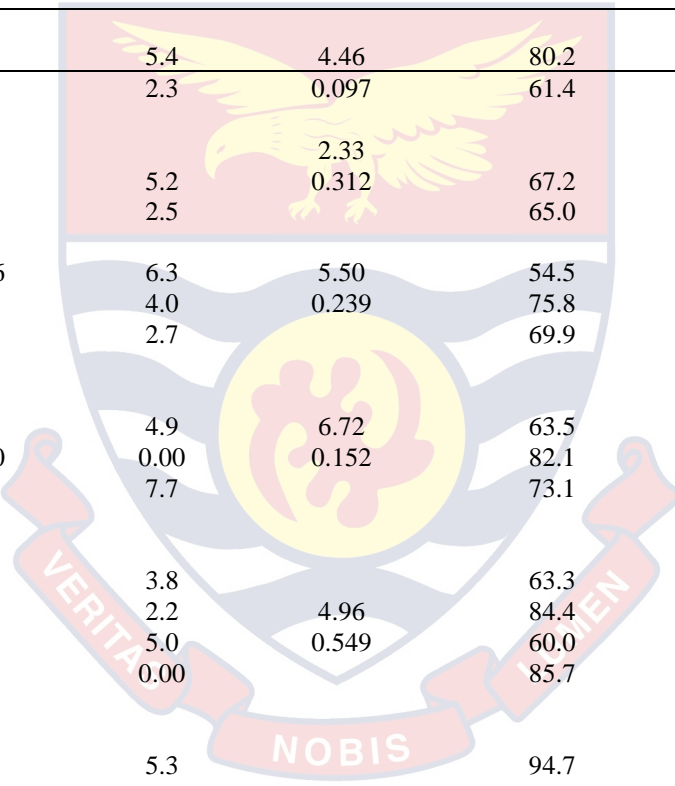
	N	Attractive	Undecided	Not Attractive	χ² statistic p	Attractive	Undecided	Not Attractive	χ² statistic p
Marital status									
Single	244	39.3	25.9	34.8	20.31	39.8	17.6	42.6	13.28
Married	39	25.6	4.6	69.8	0.001*	28.2	5.1	66.7	0.10*
Divorced	26	23.1	23.1	53.8		23.1	20.4	56.5	
Continent									
Africa	237	40.5	23.6	35.9	19.42	36.7	19.8	43.5	32.09
Europe	45	22.2	15.6	62.2	0.004*	40.0	22.2	37.8	0.000*
North America	20	10.0	30.0	60.0		27.7	25.0	47.3	
Australasia	7	57.1	28.6	14.3		57.1	42.9	0.0	
Travel purpose									
Business	19	21.1	15.8	63.2	28.94	42.1`	30.9	27.0	35.80
Leisure	209	43.5	23.9	32.5	0.002*	36.4	20.1	43.5	0.000*
Educ./research	26	11.5	19.2	69.2		30.8	36.4	28.8	
Volunteering	18	24.3	32.4	43.2		50.0	0.00	50.0	
VFR & others	37	27.8	5.5	66.7		35.1	16.2	48.6	

Characteristics		Physical characteristics %				Accessibility & Comfort %			
	N	Attractive	Undecided	Not Attractive	χ² statistic p	Attractive	Undecided	Not Attractive	χ² statistic p
Sex									
Male	129	94.5	3.9	1.6	9.85	79.1	15.2	5.4	17.37
Female	180	82.8	10.6	6.7	0.007*	57.8	23.9	18.3	0.000*
Education									
Secondary	48	87.9	12.1	0.0	5.61	85.4	12.5	2.1	9.91
Tertiary	261	85.8	8.8	5.4	0.060	63.2	21.8	14.9	0.007*

Source: Fieldwork, 2020   *Significance level at p≤0.05

Table 5 continued

	N								
Nationality									
Domestic	223	85.2	9.4	5.4	4.46	80.2	12.8	7.0	9.94
International	86	94.2	3.5	2.3	0.097	61.4	23.3	15.2	0.007*
Travel party					2.33				
Individual	229	86.0	8.7	5.2	0.312	67.2	18.8	14.0	1.89
Group	80	92.5	5.0	2.5		65.0	25.0	10.0	0.388
Age									
18-25	112	82.1	11.6	6.3	5.50	54.5	26.8	18.8	13.09
26-34	124	91.1	4.8	4.0	0.239	75.8	14.5	9.7	0.011*
35+	73	90.4	6.9	2.7		69.9	20.5	9.6	
Marital status									
Single	244	86.1	9.0	4.9	6.72	63.5	21.7	14.8	7.29
Married	39	100.0	0.00	0.00	0.152	82.1	10.7	7.7	0.122
Divorced	26	84.6	7.7	7.7		73.1	23.1	3.8	
Continent									
Africa	237	85.7	9.0	3.8		63.3	21.5	15.2	
Europe	45	93.3	4.4	2.2	4.96	84.4	11.1	4.4	10.6
North America	20	95.0	0.0	5.0	0.549	60.0	30.3	10.0	0.101
Australasia	7	100.0	0.0	0.00		85.7	14.3	0.0	
Travel purpose									
Business	19	89.5	5.2	5.3		94.7	5.3		
Leisure	209	85.6	9.1	5.3	10.42	62.7	22.5	14.8	13.52
Educ./research	26	96.2	3.8	0.0	0.237	69.2	23.1	7.7	0.095
Volunteering	18	100	0.0	0.0		88.9	5.5	5.6	
VFR & others	37	86.5	8.1	5.4		62.2	21.6	16.2	

Source: Fieldwork, 2020   *Significance level at $p \leq 0.05$

The results suggests that five socio-demographic variables namely, nationality, travel party, marital status, continent of origin, and purpose of travel are significantly related to visitor perception of attractiveness of the beaches. Respondents sex and the issue of attractiveness of beach sanitation are not significantly related (χ^2 (2) = 8.55, p= 0.141). Level of education also has no significant relationship with visitor perceived attractive beach sanitation (χ^2 (2) = 2.48, p= 0.290). The nationality of visitors had a significant relationship impact on their perceptions of the attractiveness of beach sanitation (χ^2 (2) = 17.22, p= 0.000). More domestic visitors (43.0%) perceived beach sanitation as attractive compared to international visitors (18.6%) (Table 5). Conversely, international visitors (65.1%) compared to domestic visitors (31.4%) viewed the sanitary characteristics of the beach as not attractive. This result could be attributed to the fact that differences exist in the environmental conditions observed by both domestic and international visitors' in their respective place countries or places of stay (Bonaiuto et al., 1996).

Again, the attractiveness of beach sanitation is significantly related to visitors travel party size (χ^2 (2) = 7.57, p= 0.023). Furthermore, no significant relationship was observed in visitors' perception of beach sanitation by their age (χ^2 (4) = 0.561, p= 0.967). Yet, the result shows that the older visitors get the lesser they tend to see the attractiveness of sanitation of the beaches (Table 5). This could be explained by the fact that the older people get the more they favour and appreciate nonintrusive environments (Lucrezi & van der Wat, 2015).

A further verification shows a significant relationship between visitors' perceived attractiveness of beach sanitation and their marital status (χ^2 (4) =

20.31, p= 0.000). With a higher percentage of singles (39.3%) compared to married (25.6%) and divorced (15.4%) respondents who considered beach sanitation as attractive. Whereas, 69.8% of married, divorced (53.3%) and singles (34.8%) indicating that beaches sanitation was not unattractive. The result may be because married visitors might have travelled together with their spouses or children and as such may have been influenced by their significant others on certain factors such as the sanitation at the destination (Lucrezi et al, 2016).

Additionally, a significant relationship exists between visitors' perceived attractiveness of beach sanitation and visitors' continent of origin (χ^2 (6) = 19.42, p= 0.004). A higher proportion of visitors from Australasia (57.1%), Africa (40.5%), Europe (22.2%) and North America (10.0%) observed environmental characteristics of the beach to be attractive (Table 5). Generally, the difference in environmental practices, values and attention across continents may account for such percentage differences in perceptions among visitors. As such, better environmental and sanitary conditions may exist in some continents and countries than others which can as well influence the difference in their thinking, views and consideration (Bonaiuto et al., 1996).

The purpose of travel also had a significant relationship with the perceived attractiveness of beach sanitation (χ^2 (8) = 28.94, p= 0.005). The sanitary characteristics of the beaches were attractive to more leisure travellers (53.6%), compared to those for VFR (27.8%), volunteering (24.3%), business travels (21.1%) and education and research (11.1%). Otherwise, 69.7% of those who travelled for education, VFR (66.7%), and business (63.2%) compared to volunteering (43.2%) and leisure (32.5%) indicated that beach sanitation was

not attractive. For visitors who are more driven for beach leisure and activities, beach conditions that allow them to engage in certain activities easily please them at the beach (Chen, Lin, & Hsu, 2017). That may have accounted for over half of the visitors who travelled for leisure considering the beach sanitary conditions as attractive compared to those who travelled for other purposes.

Similarly, the result indicates that sex, educational, marital status, continent of origin and purpose of travel are significantly related to perceived attractiveness of facility and services at the beaches in Accra (Table 5). Perceived attractiveness of beach facility and services is significantly related to visitors sex (χ^2 (2) = 8.91, p= 0.012). A higher proportion of male visitors (25.6%) perceived beach facilities and services to be attractive compared to their female (17.8%). This can be explained by the fact that females are presumed to be more be concerned about hygiene and quality of food and services than males who are more free going and considerate with such issues at destinations (Baysan, 2001). Again, visitors level of education had a significant relationship with their perception of the attractiveness of beach facility and services (χ^2 (2) = 10.64, p= 0.005). More visitors with secondary education (25.0%) than those with tertiary education (20.3%) perceived facility and services at the beaches to be attractive. Highly educated people are more knowledgeable and exposed to standards and quality of services. With more exposure, tertiary graduates may have assessed facility and services more knowledgeably at the beaches relative to those with secondary qualification. This might as well account for more visitors (38.7%) with tertiary education regarding facility and services at the beaches as not attractive, compared to those with secondary education (14.6%).

Visitors nationality had a significant influence on their perceptions of the attractiveness of beach facility and services (χ^2 (2) = 30.25, p= 0.000). The result shows that more (23.3%) of domestic visitors than international visitors (15.1%) considered beach facility and services to be attractive. International visitors are travellers to different destinations both in their native country and elsewhere and probably might have witnessed better facilities and services at those places than they may have witnessed on Accra beaches. Such experiences may have resulted in a less proportion of international visitors appreciating the beach facility and services as compared to domestic visitors who might have been more used to the nature and conditions of facilities and services at these beaches (Bonaiuto et al., 1996). Furthermore, 68.6% of international visitors relative to 34.5percent of domestic visitors were indifferent towards the attractiveness of beach facility and services.

However, no significant relationship exists between the travel party and the perceived attractiveness of beach facility and services (χ^2 (2) = 1.69, p= 0.429). Again, visitors age does not influence their perception of the attractiveness of beach facility and services (χ^2 (4) = 8.84, p= 0.065). On the other hand, visitors' perceptions of the attractiveness of beach facility and services are significantly related to their marital status (χ^2 (4) = 13.28, p= 0.010). More visitors who were single (39.8%) than married (28.2%) and divorced (23.1%) considered beach facility and services as attractive. Again 66.7% of visitors who were married, divorced (56.5%) and singles (42.6%) of those who were single observed beach facility and services not to be attractive. This difference is understandable since single visitors are noted to be more easily pleased with facility and services at destinations, relative to married visitors

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who are often concern about the kids or partners and are sceptical about the facilities at the destination they have less knowledge about (Lucrezi et al., 2016)

Furthermore, a significant relationship occurred between visitors' perceived attractiveness of beach facility and services and their continent of origin (χ^2 (6) = 32.09, p= 0.000). Continental differences, quality of facility and services across such continents or countries, including varied customer safety regulations across countries might have influence visitors expectation towards the quality of services at destinations they travel to (Baysan, 2001). Discrepancies in expectation and what visitors have encountered on Accra beaches appears to have resulted in the variations in perceptions regarding the attractiveness of beach facility and services. The result shows that visitors from Australasia (57.1%) observed facility and services at the beaches as attractive, compared to those from Europe (40.0%), Africa (36.3%) and those from North America (27.7%). It is however important to know 43.5% of tourists from Africa, North America (43.3%) and Europe (37.8%) stated that the facility and services at the beach were not attractive.

More to it, visitors' perceptions of attractive beach facility and services is significantly related to their purpose of travel (χ^2 (8) = 35.80 p= 0.000). Visitors travelling for volunteering (50.0%), business (42.1%), leisure (36.4%), VFR (35.1%) and those for education (30.8%) considered beach facility and services as attractive. Different travel purposes may lead to different uses that visitors require of beach resources. This can account for differences in how visitors perceive different aspect of the beach including facilities and service dimensions because different desires and experiences influence people's

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perceptions differently about certain destination characteristics (Ariza et al., 2014).

Regarding physical characteristics, the Chi-square test indicates that a significant relationship exists between visitors' perception of the attractiveness of physical characteristics and their sex only (χ^2 (2) = 9.85, p= 0.007). With a higher majority (94.9%) of males than females (82.8%) indicating that the physical characteristics of the beach were attractive. Some visitors are easily pleased and usually appreciate their environment as reflected in the findings. Yet, males tend to find the physical features of beaches to be more appealing than female visitors (Williams et al., 1993), which is also evident in the findings of this study.

No significant relationships occurred between educational level and visitors' perception of the attractiveness of beach physical characteristics (χ^2 (2) = 5.61, p= 0.060), yet Table 5 shows that visitors with tertiary education have perceived the physical characteristics of the beaches the way they do due to their higher sense of ecological awareness than those with secondary education. In continuity, no significant relationship was found between visitors perception of the attractiveness of physical attributes and their nationality (χ^2 (2) = 9.94, p= 0.097). Again, visitors' perceptions of the attractiveness of the beach facility and services were not influenced by age (χ^2 4) = 5.5, p= 0.239). More to it, no significant relationship occurred between visitors' perception of the attractiveness of physical characteristics and their marital statuses (χ^2 (2) = 6.7, p= 0.152).

Again, no significant relationship was obtained between visitors perception of the attractiveness of beach physical characteristics and their

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continent of origin (χ^2 (6) = 4.96, p= 0.549). This can be explained by the fact that there might be a similarity of physical characteristics of beaches across continents, or yet physical characteristic the Accra Metropolis may not have look any different compared to other places. The result further indicates that there is no significant relationship existing between the purpose of travel and attractiveness of physical characteristics at the beaches (χ^2 (8) = 5.51 p= 0.702).

With regards to the attractiveness of accessibility and comfort at beaches, it has significant relationship with visitors'' sex, educational level, nationality and age. Higher proportion of males (79.1%) compared to female visitors (57.8%) at (χ^2 (2) = 17.37, p= 0.000) considered accessibility and comfort of the beach to be attractive. This outcome of the study could be clarified by the point that male visitors commonly have a higher sense of safety at destinations, while females feel less safe at beaches while seeking comfort resorts (Wyles et al. 2016). Again, men usually may not be aligned towards so much comfort at nature-based destinations such as the beaches.

A significant relationship was recorded for visitors' perceptions of the attractiveness of beach accessibility and comfort and their level of education (χ^2 (2) = 17.34, p= 0.007), with more visitors with secondary education (85.4%) compared to those with tertiary education (63.2%). A higher sense of security and desire for a stress-free beach environment that is usually associated with the highly educated could have resulted in their assessment of the beaches. It may also be that convenience, comfort, certain service prices, and safety as expected were not essentially met at Accra beaches given the results. The result however corroborates Lucrezi and van der Wat (2015) assertion that highly educated

visitors are more concern about security and convenience at coastal destinations.

More so, a significant relationship exists between visitors' perceptions of the attractiveness of beach accessibility and comfort and their nationality (χ^2 (2) = 9.94, p= 0.007). A greater proportion of domestic visitors (80.2%) than international visitors (61.4%) regarded the accessibility and comfort of the beaches as attractive. Familiarity and knowledge of the beach destination or the general Accra coastal setting may have been a factor in the majority of domestic visitors considering access to the beach more attractive than others. This confirms Bonaiuto et al.'s (1993) assertion that in terms of destination (place) identity and access, local visitors who are knowledgeable about the destination feel safer and more comfortable in accessing and using the destination resources.

No significant relationship exists for visitors' perceived attractiveness of beach accessibility and comfort and their purpose of travel (χ^2 (2) = 1.89, p= 0.388). A significant result was however obtained for visitors perceptions of the attractiveness of beach access and comfort and their age (χ^2 (4) = 13.09, p= 0.011). The result indicates that the older visitors get the higher they consider accessibility and comfort the beaches as attractive. Indicatively, a higher proportion of visitors between ages 26-34 (75.8%) considered accessibility and comfort at the beaches as attractive, compared to visitors of ages 35 and above (69.9%) and those of ages 18-25 (54.5%). Younger visitors may be more adventurous and agile and may try to explore different part or uses of the beaches yet might have been limited by the state of the beach which may have resulted in the perceptual differences observed in this case.

In continuance, visitors' perceptions of accessibility and comfort have not a significant relationship with their marital status (χ^2 (2) = 7.29, p= 0.122). Again, no significant differences exist in terms of visitors' perception of beach accessibility and comfort across their continent of origin. The result further indicates that no significant relationship exists between perceived attractiveness of beach accessibility and comfort and visitors purpose of travel (χ^2 (8) = 13.52 p= 0.095).

In short, unlike environmental characteristics (Lucrezi & van der Walt, 2015), facility and services, and accessibility and comfort, visitors' perception of the attractiveness of physical characteristics of the beaches was less influenced by socio-demographic variables. This suggests that to a far extent socio-demographic variables influence visitors' perceptions of attractive characteristics of beaches in the Accra Metropolis as signposted by the framework (Fig. 3) for this study. As contained in the framework, perceptions observed across demographic variables need to be considered by beach facilities, and destination managers to be able to meet the needs of the varying visitors that visit the beaches on daily basis. Essentially, keeping clean, health and attractive beaches (water, sand, air) and facilities and services must be highly considered by beach management as the resource dependency theory and beach management proposed (Mihalic, 2013; James, 2000). This is because these aspects represent indispensable attributes or characteristics that visitors' desire of beaches, and helps to drive and enhance visitors uses of beaches which further aids to grow and sustains coastal tourism at any given destinations (McLachlan et al., 2013; Roca & Villares, 2008).

Visitors' Perceptions of Pollution at Beaches in Accra

As depicted by the framework (Fig. 3) pressures and state of beach characteristics provide sensory information which tends to determine the perceptions of visitors to the beach (James, 2000). Yet, these perceptions of environmental events at recreational beaches are more than likely to be diverse among visitors at the beaches. The study objective, therefore, examines what visitors' considers as pollution at the beaches in the Accra Metropolis.

Table 6: Visitors' Perceptions of Pollution at Beaches in Accra

Perception statement	N	A (%)	NA/D (%)	D (%)
Plastic litter on the beach	309	86.7	5.5	7.8
Liquid waste materials at the beach	309	52.4	22.7	24.9
Dead fishes/wildlife at the beach	309	50.8	17.1	32.1
Animal or human excreta/faeces on the beach	309	31	26.3	42.7
Change in the ideal colour of beach sand	309	60.9	26.5	12.6
Change in the ideal colour of beach water	309	71.8	17.2	11.0
Uncleanliness at the beach areas	309	78.0	7.8	14.2
presence litter/trash at the beach area	309	79.3	12.3	8.4
Odour/smell at the beach area	309	69.0	16.8	14.2
Floating debris/trash in the beach water	309	84.9	4.9	10.2
Poor waste handling at the beach	309	79.3	11.0	9.7
Dirty/impure beach scenery	309	75.7	13.9	10.4
Overall scores	309	68.3	15.2	16.5

A= Agree, NA/D= Neither Agree/Disagree, D= Disagree

Source: Fieldwork, 2020

The results in Table 6 show that responses from over two-thirds of respondents (68.3%) fit well with patterns literature; for instance, at the beaches in Accra, pollution has been considered mainly as the presence of plastic debris

on the beach by the majority (86.3%) of the visitors, whereas 84.1% of respondents perceived it to be "floating litter/trash in the beach water". A finding that is congruent with that of the World Bank (2016) which reported plastics as the common, dominant and visible form of pollution at the coastal areas of Accra, Ghana. The finding shows that plastics which may be in the form of beverage bottles, straws, food wrappers, plates and cups and single-use polythene bags etc remain the dominant beach pollutants within the beach environment in Accra (Dyck et al, 2016; Himans, 2013).

Similarly, about 52.4% of respondents considered pollution to be the presence of liquid waste materials on the beaches. This is could mean that untreated sewage and liquid wastewater and materials from near and far communities usually docks at beaches in Accra (Dyck et al., 2016; Nuno & Evans, 2007). This tends to affect beach resources and leisure as designated by the framework (Fig. 3).

Cleanliness and transparency in the colour of beach sand and water are unique attributes of a good recreational beach. The literature recognizes that changes in the ideal or looked-for colours of beach sand and beach water are seen as contamination and pollution (Nelson et al., 2013; McKenna et al., 2011). This is affirmed by the results of the study in which about two-thirds (60.9 %) of visitors at the considered changes in the colour of beach sand whereas 71.8% perceived changes in the colour of water to mean the beaches are polluted (Table 6).

Changes in the ideal colour of beach sand and water are, therefore, a determinant of perceived beach pollution among beach visitors as expressed through the framework (Fig. 3) for the study. Yet, changes in the colours of

beach water and sand may not necessarily mean the beach is polluted (Mckenna et al. 2011), however, since environmental perceptions are usually based on sensory information of the visitors' immediate the environment, changes in the ideal colour of beach sand and water was inferred to be pollution among respondents in the survey (Tudor & Williams, 2003; Wyles et al., 2016).

The result further shows that the majority (75.7%) of respondents' perceived pollution on the beaches to be "the dirtiness of beach scenery". This could be because the scenery is the most visible part of the beach that is open to all visitors, hence the presence of litter of any form on the beach has been considered as pollution (Pendleton et al., 2001). A similar finding was obtained by Schuhmann et al. (2016) on beaches of Barbados where tourists perceived beach pollution as the dirtiness of coastal sceneries. Again, about 78% of respondents perceived pollution to be "an overall uncleanliness" at the beaches, whereas about 79.3% also observed it to be "the presence of litter/trash cans on the beaches". These findings may perhaps be because various litter items were on the beaches, making the beaches untidy and nasty to visitors (Schuhmann et al., 2016). The result, however, appears to validate the position of Ergin et al. (2006) that visitors' bestow premium on litter-free sand and water at the beach and perceives any form of litter on the beach to mean he beach is polluted.

More to it, Table 6 shows that about 69.0% of visitors recognized pollution as the presence of odour and smell at the beaches. Such responses were probable since the presence of waste materials, liquid and faecal matter at the beaches in Accra can result in poor air quality which can make visitors uncomfortable (Wyles et al. 2016; Schuhmann, et al. 2016). Such can also directly affect visitors' health at beaches. This conclusion is in link with that of

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Morgan (1996), Valavanidis and Vlachogianni (2011) and Devine (2014) that beach pollution is a health risk involving foul smell/odour from accumulated waste materials that undermine tourists' sense of safety at beaches.

In the same result, only a third (30.8%) of the respondents observed pollution as "human/animal faecal matter (faeces)" on the beaches. The result is contrary to what has been indicated in the literature (Dyck et al. 2016). More so, literature indicated rare incidences of dead animals/wildlife on Accra beaches, yet the result seems to differ as it shows that about half of the respondents (50.5%) indicated pollution to be the presence of dead animal/wildlife on beaches in the Accra Metropolis (Table 6). On the whole, the result consolidate the position of the study's framework (Fig. 3) that perception of pollution is a function that permeates most components of the study. Particularly when majority (79.3%) of the beach goers consider pollution to be a scenery and health issue which are outcomes of poor waste handling issues at the beaches (Table 6). An inference that ratifies Chen and Teng (2016) conclusions that at most coastal destinations poor waste management persists.

Dimensions of Visitors' Perceptions of Pollution at Beaches in Accra

The variables involved in the perception of pollution among visitors were passed through to PCA using varimax rotation. A KMO of 0.903 was reached which verified the sampling adequacy for the analysis (Kaiser, 1974), and Bartlett's test of sphericity (χ^2 (66) = 2553.811, p=0.000) indicated the appropriateness of factorial analytic model on the observed variables. Two factors were therefore extracted based on Eigenvalues greater than one

(Eigenvalues >1), explaining 66.4% of the variance in the pollution perception among beach visitors.

The Cronbach's alpha scores also showed that each of the explored factors had attained convergent validity (internal consistency), as none was below 0.7 (Pallant, 2007). The two factors include scenery-safety detractors and health-wellness detractors.

Table 7: Structure of Factors for Visitors' Perceptions of Pollution at the Beaches

Latent constructs and observed variables	Factor Loadings	Eigen Value	Variance Explained (%)	Cronbach Alpha
I Scenery-safety detractors		6.055	55.548	0.915
Change in the ideal colour of beach water	0.848			
Dirty beach scenery	0.804			
Floating litter/trash in beach water	0.767			
Presence of litter/trash on the beach	0.755			
Presence of plastic debris	0.750			
Change in ideal sand colour	0.746			
Loss of cleanliness at beach	0.718			
Poor waste handling at the beach	0.615			
II Health-wellness detractors		1.296	10.847	0.806
Dead animals/wildlife at the beach	0.867			
Faeces/Excreta at beach	0.857			
Odour and smell at the beach area	0.621			
Liquid waste at beach	0.543			
Total Variance Explained			66.395	

Source: Fieldwork, 2020   Bartlett's Test of Sphericity (Approx. Chi-square) = 2553.811, p-value= 0.000   Kaiser-Meyer-Olkin (KMO) Measure of Sphericity = 0.887

Factor I, scenery-safety detractors is made up of change in ideal colour of beach water, dirty beach scenery, floating trash in beach water, presence

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litter/trash at the beach, presence of plastic debris, and change in ideal colour of beach sand, uncleanliness and poor waste handling at the beach. The presence of various pollutants docking the beaches takes away the cleanliness, purity, beauty and safety of the beach (Ergin et al, 2006). The scenery is the first impressions of a good beach when visitors get there. Loss of environmental cleanliness at beaches have been noted to have a negative influence on almost all other characteristics of a beach, particularly scenery which is environmentally driven (Zhang et al., 2015; Roca & Villares, 2008). A beach that is considered dirty may have the presence of plastics, liquid or waste forms of litter items which can even result in changes in the ideal colour of the beach water and sand. This may keep the beach from being admired, which can further deter visitors from using it due to issues safety (Bonaiuto, et al., 1996).

The factor is therefore driven by the presence of visible litter items which could alter visitor perceptions at Accra beaches. Litter presence hence curtails beach aesthetic, beach safety and such as broken glass, medical waste, rope and fishing line and nets lead to instant risks to human safety (Valavanidis & Vlachogianni, 2011; Cheshire et al., 2009). Besides, accumulated litter at the beaches could be a result of poor waste management from beach operators and authorities. This component has therefore explained 55.6% of the variance that account for visitor perceptions of pollution at beaches in Accra

Factor II, health-wellness detractors accounted for 11.8% of the variance in perception of pollution among beach visitors and has been constituted by variables such as dead wildlife/animals on the beach, faeces/excreta at the beach, odour and smell at beaches, and liquid waste materials at the beach. According to James (2000) and Botero et al. (2014) the constituents of this

factor are can pose serious health threats to both the beach ecosystems and human health and well-being; not only that, it can as well pose offensive odour and outlook at the beaches. Text references also point to the fact that visitors/beach users coming into contact with such waste liquid material, human or animal faeces as well as dead birds or animals could lead to serious health effect such as pinkeye, skin rashes, respiratory infections, stomach flu, meningitis and hepatitis (Devine, 2014; Mouat et al. 2010; Morgan, 1996). The factor is therefore driven by the notion that the sight and encounter with such items could generate perceptions that are directly or implicitly towards health concerns, where litter cause illness to beach organisms and to human users.

Perception of Pollution by Socio-demographic Profiles

As explained by the framework (Fig. 3), environmental perceptions among visitors to nature-based areas are subjective due to differences in personality, place of origin, gender, personal upbringing, experience/activities sought, motivation or expectations and social background, including past experiences as well as the characteristics of environment encountered (Lucrezi & van der Walt, 2015; Pendleton et al., 2001). Similarly, the study explored the relationship between visitors' perceptions of pollution and their socio-demographic variables of visitors. Again, the Chi-square test (χ^2) of independence was employed.

With regard to pollution as scenery-safety detractors, it has significant relationship with only the marital status of respondents. The result shows that it has no significant relationship with visitor gender ($\chi^2 (2) = 3.42$, p= 0.181).

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Table 8: Perception of Pollution by Socio-demographic Profiles

Characteristics	N	Scenery detractors %				Safety-health detractors %			
		Agree	Neutral	Disagree	χ^2 statistic p	Agree	Neutral	Disagree	χ^2 statistic p
Sex									
Male	129	87.7	6.1	6.2	1.97	45.0	17.0	38.0	14.50
Female	180	83.9	7.2	8.9	0.373	66.7	10.5	22.8	0.001*
Education									
Secondary	48	70.6	11.1	18.3	1.28	33.3	15.3	51.4	23.50
Tertiary	261	86.2	6.1	7.7	0.526	62.1	14.2	23.7	0.000*
Nationality									
Domestic	223	89.6	6.3	8.5	1.67	66.3	4.7	29.1	1.89
International	86	90.7	3.5	5.8	0.432	70.4	8.7	18.4	0.388
Travel party									
Individual	229	84.7	7.0	8.3	4.28	55.5	14.4	30.1	1.88
Group	80	92.5	1.2	6.3	0.118	63.7	10.0	26.3	0.391
Age									
18-25	112	85.7	6.3	8.0	1.01	72.3	19.8	8.9	20.74
26-34	124	87.9	5.6	6.5	0.908	43.5	40.4	16.1	0.000*
35+	73	86.1	4.1	9.6		58.9	26.0	15.1	
Marital status									
Single	244	88.9	6.1	7.4	15.19	61.5	11.9	26.6	7.69
Married	39	80	20.0	0.0	0.004*	43.5	20.3	35.9	0.104
Divorced	26	49.2	20.7	23.1		42.3	15.4	42.3	

Source: Fieldwork, 2020   *Significance level exist at p ≤ 0.05

Table 8 continued

Continent									
Africa	237	86.1	5.9	8.0	2.90	58.2	14.3	23.6	9.62
Europe	45	88.9	6.7	4.4	0.821	62.2	13.3	20.0	0.196
North America	20	90.0	0.0	10.0		38.5	25.0	36.5	
Australasia	7	85.7	0.0	14.3		42.9	0.0	57.1	
Travel purpose									
Business	19	94.7	0.0	5.3		36.8	26.3	36.8	
Leisure	209	82.8	7.7	9.6	14.50	55.4	15.1	26.5	10.38
Educ./research	26	88.5	0.0	11.5	0.115	57.7	3.8	38.5	0.251
Volunteering	18	100.0	0.0	0.0		59.5	5.4	35.1	
VFR & others	37	97.3	2.7	0.0		66.7	11.1	22.3	

Source: Fieldwork, 2020   *Significance level exist at p ≤ 0.05

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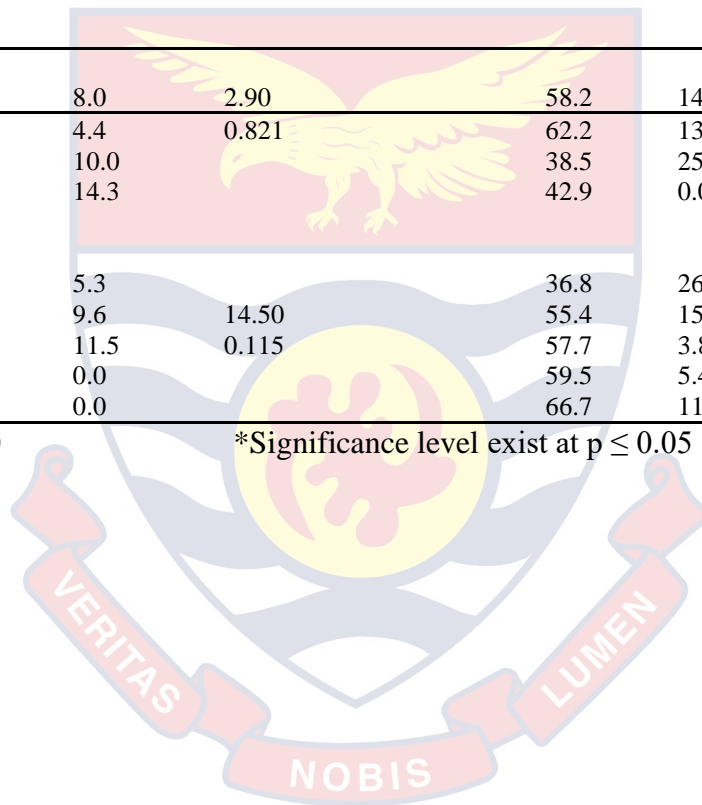
The result again indicates that no significant relationship exists in visitors' perceptions of pollution as scenery-safety detractors and their educational level (χ^2 (2) = 1.28, p= 0.526). Again, no significant relationship was recorded between visitors' perception of pollution as scenery detractors and their nationality (χ^2 (2) = 1.67, p= 0.432). Yet, more international visitors (90.9%) compared to domestic visitors (85.2%) see pollution as scenery-safety detractors at the beaches. With foiled beach sceneries relative to environmental conditions in their home countries, more international visitors may have been more distressed than domestic visitors as shown by the result (Hill et al., 2000). In furtherance, the travel party size of visitors is not significantly related to their perceptions of pollution as scenery detractors (χ^2 (2) = 4.28, p= 0.118).

Visitors age is not significantly related to pollution as scenery-safety detractors at the beaches (χ^2 (4) = 1.01, p= 0.908). On the contrary, visitors' marital status has an impact on their perceptions of pollution as scenery-safety detractors at the beaches (χ^2 (4) = 15.19, p= 0.004). More singles (86.5%) compared to married (80.0%) and those who were divorced (49.2%) perceived pollution as scenery-safety detractors at the beaches. Singles have the freedom to engage themselves in any or all kinds of beach use (Lucrezi & van der Wat, 2015), however, with the beaches being polluted and with poor sceneries, these singles with their exuberances may be curtailed due to the poor sceneries of the beaches.

Conversely, no significant relationship exists in the perceptions of pollution as scenery-safety detractors across visitors continent of origin (χ^2 (6) = 2.90, p= 0.821). The results further indicate that there is no significant relationship between

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pollution as scenery-safety detractors at the beaches and visitors purpose of travel (χ^2 (8) = 12.90, p= 0.115). All visitors who travel for the purposes of volunteering (100.0%), VFR (97.3%), business (94.7%) compared to education (88.5%) and leisure (82.8%) were all in agreement that pollution is detracts from the scenery of the beaches.

Regarding pollution as health-wellness detractors at the beaches, it has a significant relationship with the sex, educational level and age of visitors. Pollution as safety-health detractors is related to sex of visitors (χ^2 (2) = 14.50, p= 0.001). Consequently, a higher percentage of females (66.7%) considered pollution as health-wellness detractors at the beaches relative to visitors who were males (45.7%). This result can be explained by the fact that female visitors are usually health-conscious, and usually desire to travel to and be in settings they consider healthy, safe and appealing (Harris et al., 2015; Kontogianni et al, 2014).

The Chi-square result further indicates that visitors' perceptions of pollution as wellness and health detractors at the beaches is influenced by their level of education (χ^2 (2) = 23.50, p= 0.000). The result shows more visitors with tertiary education (62.1%) than visitors with secondary education (33.3%) to have considered pollution as health-wellness detractors at the beaches. As such, visitors with secondary education (51.4%) and those with tertiary education (23.7%) did not consider pollution as health-wellness detractors at the beaches. As such, visitors with secondary education (51.4%) and those with tertiary education (23.7%) did not consider pollution as health-wellness detractors at the beaches. The environmental knowledge among the more educated visitors might have made them

better informed about the health implication of polluted beaches where faecal items, used sanitary and chemical wastes are present (Devine, 2014). Those with tertiary education are therefore well aware of the health effects of a polluted beach compared to visitors with secondary education. The results confirm Lucrezi and van der Walt (2015) conclusion that highly educated tourists are more sensitive to environmental conditions and personal health at recreational beach destinations.

On the other hand, no significant relationship was realized between the nationality of visitors and their perception of pollution as safety-health detractors at the beaches (χ^2 (2) = 1.89, p= 0.388). Yet, more international visitors (70.4%) compared to domestic visitors (66.3%) considered pollution as safety-health detractors at the beaches. Likewise, travel party have no influence on visitors perception of pollution as safety-health detractors (χ^2 (2) = 1.88, p= 0.390). All the same, a significant relationship exists between visitors age of their perception of pollution as safety-health detractors at the beaches (χ^2 (4) = 20.74, p= 0.000). The proportion of visitors of ages 18-25 (72.3%), and those of ages 35 and above (58.9%), as well as those of ages 26-34 (43.5%), specified pollution as safety-health detractors at the beaches. The result implies that younger visitors are more concerned about their safety at the beaches as well as the biological health of the beaches (Table 8). The finding is in contrast with that of Harris et al. (2015) who observed that older tourists are more health and environmental concerned than young and agile tourists at destinations.

On the other hand, no significant relationship was realized between the nationality of visitors and their perception of pollution as safety-health detractors

at the beaches (χ^2 (2) = 1.89, p= 0.388). Yet, more international visitors (70.4%) compared to domestic visitors (66.3%) considered pollution as safety-health detractors at the beaches. Likewise, travel party have no influence on visitors perception of pollution as safety-health detractors (χ^2 (2) = 1.88, p= 0.390). All the same, a significant relationship exists between visitors age of their perception of pollution as safety-health detractors at the beaches (χ^2 (4) = 20.74, p= 0.000). The proportion of visitors of ages 18-25 (72.3%), and those of ages 35 and above (58.9%), as well as those of ages 26-34 (43.5%), specified pollution as safety-health detractors at the beaches. The result implies that younger visitors are more concerned about their safety at the beaches as well as the biological health of the beaches (Table 8). The finding is in contrast with that of Harris et al. (2015) who observed that older tourists are more health and environmental concerned than young and agile tourists at destinations.

Regarding marital status, it has no significant influence on visitors' pollution as safety-health detractors at the beaches (χ^2 (4) = 8.67, p= 0.104). No significant result was obtained for the relationship between visitors continent of origin and their perceptions of pollution as safety-health detractors at the beaches (χ^2 (6) = 9.62, p= 0.196). Furthermore, no significant relationship occurred between visitors' perceptions of pollution as safety-health detractors and their purpose of travel (χ^2 (8) = 10.20 p= 0.251).

The result overall indicates that only marital status influences visitors perception of pollution as scenery-safety detractors at the beach, whereas sex, education and age accounted for visitors perception of pollution as health-wellness

detractors at the beaches in the Accra Metropolis. This suggests that to some extent the socio-demographic profiles of visitors have influences on their perceptions of pollution, particularly as a health concern at the beaches (Morgan, 1996). Young, singles and educated visitors see pollution as scenery, safety and health detractors at beaches in Accra. This group of visitors continues to remain at the core of visitors that mostly patronize beach destinations in Accra, as was established in literature in other countries. Hence their perception needs to be critically considered relative to socio-demographics as indicated by the framework.

Recreational uses affected by Pollution at Beaches in Accra.

The literature recognizes that coastal recreations require a beach environment with certain characteristics and appeal. As indicated by the framework (Figure 3), beach pollution situations destroy the resourcefulness of beaches and can have restrictive capacities for beach use (Levin & Clark, 2010). Pollution has thus become a barrier that can affect on-site recreational uses of beach resources (Wolch & Zhang, 2004; James, 2000). Visitors' recreational uses that are affected by pollution at beaches in Accra have therefore been assessed in this study under three (3) different domains as per the framework.

On water-based recreational uses, the result indicates that the majority of respondents (66.7%) had their water-related beach activities affected by pollution at the beaches (Table 9).

Table 9: Recreational uses affected by Pollution at the Beaches

Statements	N	A (%)	NA/D (%)	D (%)
Water-based recreational uses				
Swimming or bathing	309	86.4	6.5	7.1
Water sports activities (eg, surfing, bodyboarding)	309	70.9	16.8	12.6
Walking/hikes along the beach waterfront	309	43.3	12.6	44.1
Fun-running barefooted on the seashore	309	65.7	9.1	25.2
Overall Score	309	66.7	11.3	21.0
Sand-based recreational uses				
Sitting (relaxing) on the beachfront	309	48.5	13.3	38.2
Sand-bathing at the beach	309	80.6	8.7	10.7
Skipping /playing on the beach	309	43.0	14.6	42.4
Beach sports activities (eg. volleyball)	309	62.1	16.5	21.4
Overall Score	309	58.6	13.3	28.1
Facility-assisted recreational uses				
Sun-bathing/relaxing on the beach	309	49.2	11.0.	39.8
Admiring features of the beach	309	62.8	12.6	24.6
Taking photographs on the beach	309	41.4	11.0	47.6
Picnicking /eating at the beach	309	46.6	13.3	40.1
Overall Score	309	50.0	12.0	38.0

A= Agree, NA/D= Neither Agree/Disagree, D= Disagree

Source: Fieldwork, 2020

Specifically, almost all visitors (86.4%) had their swimming or bathing at the beaches deterred, 70.9% of them were deterred from performing water-related sports such as surfing and bodyboarding, 65.7% were deterred from fun running barefooted on beach shore whereas 43.3% were dissuaded from walking/hiking on the beach due to pollution at the beaches. The findings overall show that visitors had their water-related recreational uses affected the most due to pollution events at the beaches (Table 9). This finding corroborates the findings of Godbey (2009) and Lucrezi and van der Wat (2015) who reported that water-dependent beach uses

including swimming, bathing, and related water sports as the most destabilized beach uses in the event of poor beach water conditions. The finding of this study can however be explained by the fact that there may have been visible pollutants or litter items of different shades that were present in the beach waters in Accra. Such sensory information may give visitors the impression that the beach water is polluted or unhealthy and therefore avoid using it for intended purposes (Wyles et al. 2014; McKenna et al., 2011). Besides, visitors have become more knowledgeable, aware and concern about the health issues that are attributable to using, bathing, and touching contaminated beach water. This is also because such uses involve direct contact with the beach water (Wyles et al., 2016)

Sand-based recreational uses are the most dominant activities at beaches (Marguire et al., 2011). Yet over half (58.6%) of the respondents had their sand related beach activities affected by pollution events at the beaches. Specifically, 80.6% of respondents were deterred from sand-bathing, 62.1% from doing beach sports activities, 48.5% from sitting/relaxing on the beachfront, and 43% were deterred from skipping/playing actively on the beaches. On the whole, the majority of visitors had their sand-related activities affected by pollution on the beaches. Hence, pollution at beaches in Accra affects visitors' use of the beach sand as a resource for beach recreation. This conclusion is consistent with Wyles et al. (2016) position that pollution discourages visitors from pursuing sand and water recreation at beaches. This finding could be due to the issue of liquid waste, faecal matter, pins, and single-use plastic materials etc that are present in the beach sand, or

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change in the ideal colour of the beach sand which may have serves as demotivation towards the use of the beach sand for recreational uses (Schuhmann et al., 2016)

On facility-assisted uses, the results show that about half (50.3%) of the respondents their facility-related uses affected. Precisely, 62.1% of visitors were deterred from admiring features of the beach, 49.2% from sun-bathing, 46.6% from picnicking/eating at the beach, and 41.4% were deterred from taking photographs. Pollution, therefore, affects visitors' aesthetic and facility-related uses at beaches in Accra as well. This result can be explained by the fact that scenery is a crucial part of a given beach, as such, it can entice visitors towards beach use (Botero et al., 2017; Lucrezi et al., 2016). Therefore poor beach environmental conditions in Accra might have permeated or lowered the aesthetics of beaches hence this finding (Table 9). Likewise, the issues of offensive litter and smells can put visitors off from attempting to buy food items or even eat at the beaches they consider dirty or unhygienic (Rodella & Corbau, 2019; Ballance et al., 2000).

General observation from the results shows that pollution events at the beaches in the Accra Metropolis have affected visitors' recreational uses or activities at the beaches. As discussed through the DPSIR model (EEA, 1999) and beach environment model (James, 2000), it appears that pollution has much restrictive influence on the performance of beach recreational activities among beach users, hence pollution at the beach resource very much affected or limited visitors' enjoyment of the beach as a resource for tourism (Innes et al., 2013; Clark & Levin, 2010). The findings, therefore, indicate that water, sand and facility-related use/activities can be heavily and directly affected by pollution at the beaches

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as the framework for the study (Fig. 3) sought to demnstrate. Pollution thus majorly affects, deters and limit visitors' on-site recreational uses at beaches in the Accra Metropolis (Wyles et al., 2016; Wyles et al., 2014)

Dimensions of Beach Recreational use affected by Pollution

Similar to the beach attribute index, the variables measuring beach recreational uses that are affected by pollution were subjected to PCA using varimax rotation. The KMO equalled 0.884 verified the sampling adequacy for the analysis (Kaiser, 1974), and Bartlett's test of sphericity (χ^2 (66) = 2681.804, p=0.000) showed the factorability of the observed variables as appropriate.

Two factors were therefore extracted based on Eigenvalues greater than one (Eigenvalues >1) which explained 68.8%of the variance in beach activity deterrence among visitors. The two includes: facility assisted activities and water and sand assisted activities (Table 10).

The factor I is facility-assisted recreation. This relates to statements that ascertain visitors' uses of beaches that fairly depends on the use of beach facilities. This includes fun-playing, beach walks/hikes, sunbathing, photography, sitting on the beachfront, eating/buying food, and barefooted beach running. Beach facilities enhance visitors' enjoyment at beaches and are useful for towards delivering quality recreational experiences on beaches (Maguire et al., 2011). They support the performance of entertainment, picnics, relaxation and sunbathing, provides food and places of rest and therefore have been noted as recreational facilities that deliver primary value for beach users (Roca & Villares, 2008; James, 2000). The

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component with it seven (7) observed variable explained 53.8% of the variance, validating the importance of the state of beach facilities in beach recreation among tourists to coastal areas.

Table 10: Structure of factors for Recreational uses affected by Pollution

Latent constructs and observed variables	Factor Loadings	Eigen Value	Variance Explained (%)	Cronbach Alpha
I Facility -assisted recreation		6.455	53.79	0.934
Dancing-fun playing at the beach	0.889			
Beach walks/hikes	0.884			
Sunbathing	0.845			
Photography	0.823			
Sitting along the beach shore	0.816			
Picnicking/eating at the beach	0.801			
Barefoot beach runs	0.628			
II Water & Sand-based recreation		1.801	15.011	0.815
Water sports	0.824			
Swimming/bathing	0.818			
Sand bathing	0.730			
Beach sports	0.613			
Admiring of beach scenery	0.515			
Total Variance Explained			68.78	

Source: Fieldwork, 2020   Bartlett's Test of Sphericity (Approx. Chi-square) = 2681.804, p-value= 0.000   Kaiser-Meyer-Olkin (KMO) Measure of Sphericity = 0.884

Water and Sand-based recreation constituted Factor II (15.0%) and drew recreational activities such as watersports, swimming, sand bathing, beach sports and admiring scenery and beach that had been discouraged through environmental

pollution at Accra beaches. At beaches, the most patronized and undertaken beach recreational activities are those that are water and sand-based (Qiang et al., 2019; Holzer, 2010). Consequently, the majority of visitors that go to beaches engage in either one or more water and sand-based activities before they end their trips. Beach sand and water are therefore essential resources that are required for recreational pursuits at beaches (Lucrezi et al., 2016), hence, this is a central factor towards beach recreational pursuits at coastal destinations. Pollution implies that the beach as resource was not in the prerequisite state and conditions for use, hence, limiting all recreational uses that depends on it.

Beach Recreational Uses that are affected by Pollution across Visitors' Socio-demographic Profiles

The study further explored the extent to which beach recreational uses are affected by pollution relates to socio-demographic variables of visitors. This was done using the chi-square test (χ^2) of independence.

The Chi-square test found a significant relationship between visitors' sex, educational level, nationality, age and marital status of visitors and their facility-assisted recreation affected by pollution. Sex of visitors and their facility-assisted recreation affected by pollution at the beaches were significantly related ($\chi^2(2) = 23.52$, p= 0.000). More females (58.9%) appears to have their facility-assisted recreation deterred by pollution at the beach than males (38.8%). The result suggests that females are may have been more involved in facility-assisted recreation at the beaches.

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Table 11: Beach Recreational uses affected by Pollution across Socio-demographic Profiles

Characteristics	Facility-assisted recreation %				Sand & Water-based recreation %			
	N (309)	Agree	Neutral	Disagree	χ^2 statistic p	Agree	Neutral	Disagree	χ^2 statistic p
Sex									
Male	129	31.0	15.5	53.5	23.52	72.1	17.8	1.1	3.82
Female	180	58.9	10.1	31.0	0.000*	75.6	20.0	4.4	0.148
Education									
Secondary	48	20.8	12.5	66.7	18.05	70.8	20.8	8.4	0.37
Tertiary	261	52.1	12.3	35.6	0.000*	74.7	18.8	6.5	0.831
Nationality									
Domestic	223	55.6	11.2	33.2	23.08	71.7	21.5	6.7	3.09
International	86	25.6	15.1	30.8	0.000*	80.2	12.8	7.0	0.214
Travel party									
Individual	229	47.6	11.4	41.0	0.74	72.1	20.5	7.4	1.97
Group	80	46.3	15.0	38.7	0.690	80.0	15.0	5.0	0.374
Age									
18-25	112	65.2	9.8	25.0	29.79	75.0	17.9	7.1	0.44
26-34	124	30.6	16.9	52.4	0.000*	73.4	19.4	7.3	0.979
35+	73	47.9	8.2	43.8		74.0	20.5	5.5	
Marital status									
Single	244	54.9	9.8	35.2	34.99	73.4	19.7	7.0	2.66
Married	39	5.1	25.6	69.2	0.000*	82.1	15.3	2.6	0.617
Divorced	26	38.5	20.3	41.2		69.2	19.2	11.5	

Source: Fieldwork, 2020   *Significant level at p≤ 0.05

Table 11 continued

Continent									
Africa	237	52.3	6.3	36.3	5.44	71.7	21.1	7.2	5.01
Europe	45	31.1	15.9	53.0		84.4	8.9	6.7	
North America	20	25.0	25.0	50.0	0.489	80.0	15.0	5.0	0.543
Australasia	7	58.7	14.3	28.6		71.4	28.6	0.0	
Travel purpose									
Business	19	42.1	0.0	57.9		73.7	23.6	0.00	
Leisure	209	63.6	7.7	28.7	16.01	70.8	20.1	9.1	9.48
Educ./research	26	42.3	3.8	53.8	0.070	80.8	15.4	3.8	0.303
Volunteering	18	66.7	0.0	33.3		94.4	5.6	0.0	
VFR & others	37	54.1	2.7	43.2		78.4	18.9	2.7	

Source: Fieldwork, 2020   *Significant level at $p \leq 0.05$

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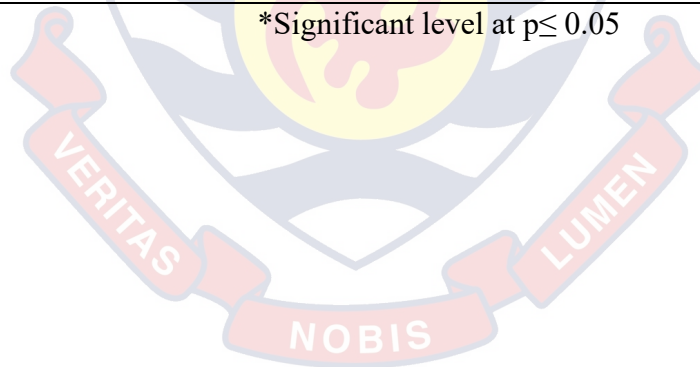
This is because such activities are less physical or less demanding of self-input and the environment (Wyles et al. 2014). Since females are less attracted to physical activities, they may be found to be engaged in facility-assisted activities. Therefore, distractions caused by pollution to facility-assisted recreation may have more influence on female visitors as shown by the findings. Besides, females are environmentally conscious, hence, accord superior importance to beach ecosystem (Morgan et al., 1996) which is why they may favour non-intrusive beach activities such as facility-assisted recreation that put less pressure on the environment (Lucrezi & van der Walt, 2015).

Educational level is significantly related to visitors' facility-assisted recreation affected by pollution. More visitors (52.1%) with tertiary education than those with secondary education (20.8%) had the performance of their facility-assisted recreation affected by pollution at the beaches. This finding confirms Lucrezi and van der Walt (2015) assertion that the more educated people are the more they prefer to relax and take up their recreation in quiet, serene, and tranquil environments. This could also mean that the more educated visitors may have been more ecologically sensitive and health-conscious (Lucrezi & van der Walt, 2015).

Therefore, females may be more involved in facility-assisted recreation where they may feel safer, able to relax and have fewer imprints on the environment. In effect, the impacts of pollution on facility-assisted recreation implies that more of those with tertiary education will have their activities affected, just as shown by the results (Table 10).

Again, a significant relationship has been recorded between visitors' facility-assisted recreational activities that are affected by pollution and their nationality (χ^2 (2) = 23.08, p= 0.000). A significant share of domestic visitors (55.6%) compared to international visitors (25.6%) had their facility-assisted activities at the beach deterred by pollution. However, 59.2% of international visitors compared to 33.2% of domestic have not had their facility-assisted activities at the beaches affected by pollution. This is because domestic visitors may be more familiar with the beach areas than international (Balance et al., 2000) and thus may be more willing and likely to use the beach for various activities but due to pollution might have been limited and therefore were not able to do so. This appears to confirm Beerli and Martin (2004) position that barriers to beach facility and recreational uses may affect domestic and local beach users than international visitors who may be occasional visitors

Visitors travel party size did not influence their facility-assisted activities being deterred pollution at the beach (χ^2 (2) = 0.74, p= 0.690). In furtherance, a significant relationship occurred between visitors age and their consideration of facility-assisted activities being deterred by pollution at the beaches (χ^2 (4) = 29.79, p= 0.000). The growth in coastal recreation has witnessed more young visitors involved in the patronisation of beach services (Lucrezi van der Walt, 2015). Consequently, more young visitors are involved in recreational activities at the beaches. Pollution at the beaches, therefore, affect the activities of young visitors compared to others, whether these activities are based on beach facilities or the natural environment (Table 10).

Regarding marital status, more singles (54.9%) compared to divorce visitors (38.5%) and married (5.1%) had their facility-assisted recreation at beach affected by pollution at the beaches. The result was significant (χ^2 (4) = 34.99, p= 0.000). This may be because more young visitors implies more singles, who have the liberty to engage in any activities at the beaches, and yet have been dissuaded by the polluted nature of the beaches. Again, no significant relationship was established for facility-assisted recreational activities affected by pollution at the beaches and visitors continent of origin (χ^2 (6) = 5.44, p= 0.489). Again, visitors purpose of travel did not influence their consideration of facility-assisted recreation that was affected by pollution at the beaches (χ^2 (8) = 16.01, p= 0.070).

Water and sand-based recreation affected by pollution at the beach is not significantly related to visitors sex (χ^2 (2) = 3.82, p= 0.148). Yet the result indicates that more females (75.6%) than males (72.1%) had their sand-based recreation affected by pollution. Females are more aware and sensitivity to pollution at a nature-based destination and as such easily put off by uncleanliness on the beach (Babaei et al., 2015; Lucerzi & van der Walt, 2015) which may have accounted for this result (Table 10).

The study shows that visitors with tertiary education (74.7%) than those with secondary education (70.8%) had their water and sand-based recreation deterred by pollution events at the beaches, although no significant relationship exists between the educational level of visitors and their water and sand-based recreation affected by pollution at the beaches (χ^2 (2) = 0.37, p= 0.831). Pollution makes the beach dirty, and it deters almost all visitors from using the beach,

particularly the more educated and environmentally informed visitors (Pendleton et al., 2001). Again, no significant relationship between visitors nationality and their water and sand-based recreation that are affected by pollution at the beaches (χ^2 (2) = 1.21, p= 0.547).

Likewise, visitors travel party size has no significant relationship with their water and sand-based recreation affected by pollution at the beaches (χ^2 (2) = 1.97, p= 0.374). More to it, no significant relationship occurred between visitors age and their water and sand-based recreation that are affected by pollution at the beach (χ^2 (4) = 0.44, p= 0.979). Yet, young and active visitors who like to engage in nature-based recreational at destinations had their water and sand-based activities deterred by pollution at the beaches (Table 11). This can be explained by the fact that young visitors like to actively engage in beach recreations that require the use of beach sand and water, hence the event of pollution is likely to affect these young visitors as compared to any other group at the beaches.

No significant relationship was also observed between the marital status of visitors and their water and sand-based recreation that are affected by pollution at the beaches (χ^2 (4) = 2.55, p= 0.636). In continuance, visitors water and sand-based recreation affected by pollution is not determined by their continent of origin (χ^2 (6) = 5.89, p= 0.435).   Notwithstanding, visitors from Europe (84.4%) and North America (80.0%) than those from Africa (71.7%), and Australasia (71.4%) agreed that pollution had deterred them from performing water and sand-assisted activities at the beach. Different visitors from different continents may consider their activities affected differently by the environmental conditions at a given destination

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(Baysan, 2001). This disparity may be expected since visitors responses may relative to the environmental conditions present in their home continent or countries. Finally, no significant relationship was recorded between the purpose of travel and water and sand-assisted activities that were affected by pollution at the beaches (χ^2 (8) = 10.12, p= 0.204).

Most people who travelled to beaches engage in recreational activities in one way or the other, with such activities usually dependent on the human facilities at the beach, or on the natural environment involving the beach sand and water (Gonzalez & Holtmann-Ahumada, 2017; Alipour et al., 2006). Pollution at the beaches can however influence or affect the performances of such recreational activities at the beach (Wyles et al., 2016). It is realized that socio-demographic variables such as sex, educational level, age, nationality and marital status influenced the way visitors consider their facilities-assisted recreation to be affected by pollution is influenced. Sandy and water-based recreation being affected by pollution are not influenced by the socio-demographic backgrounds of visitors, which implies that it primarily depends on beach management and authorities to ensure quality and clean beach conditions at all times. This affirms the position of the beach environment model, such that clean beach and water are required by all visitors regardless of their background to enhance their activities and uses of these beaches (James 2000).

Recreational Experiences of Visitors at Beaches in Accra.

Poor environmental conditions at nature-based destinations have been rated higher as the central factors that inform visitor experiences (Plessis et al., 2011; Honey & Krantz, 2007), since, visitors usually tend to develop emotive and psychic reactions towards their immediate environment (Ooh et al., 2007; Machleit & Eroglu, 2000). At nature-based destinations, poor environmental conditions infers poor resource characteristics for adequate recreational use, which subsequently limit user recreational experiences (Moreno & Becken, 2009). Hence, tourists usually tend to visit beaches perceived as clean to escape from the stress of poor and congested city environments to be able to refresh their bodies, minds and souls, have fun, enjoy beaches, and have nature experiences (Roca & Villares, 2008). This part of the study thus examines visitors' recreational experiences at beaches in the Accra Metropolis. The recreational experiences were structured under four experience dimensions determined by the framework for the study (Figure, 3).

As regards excitement experiences, the result shows that only a little above a third (37%) of visitors had this experience at the beaches. Specifically, 68.6% had fun, 63.7% felt cheerful, 44.7 had comfort, whereas and 16.1% were enthused at the beaches, 13.6% had pleasure, and 11.7% expressed delight at the beaches (Table 12). Overall, the finding shows that majority of visitors had no excitement experience at the beaches. This suggests that most visitors were not excited at the beaches as it were. This can be explained by the fact visitors were not able to use the beaches for recreational purposes they intended due to the level of litter and other pollutants that were on the beaches.

Table 12: Visitors' Beach Recreational Experiences

Statement	N	A (%)	NA/D (%)	D (%)
Entertainment (Excitement)				
I am delighted at the state of this beach	309	11.7	16.5	71.8
I had the pleasure of being on a beach of this kind	309	13.6	13.9	72.5
I feel enthused in using this beach for my activities	309	16.2	26.5	57.3
I feel cheerful undertaking various activities on this beach	309	67.3	20.4	12.3
I had a lot of fun with every activity I did on this beach	309	68.6	20.4	11.0
I feel comfortable at the beach as I use it for my various activities	309	44.7	32.4	22.9
Overall Score	309	37.0	21.7	41.3
Experiential (Affection)				
I had a sustained fondness for this beach and its leisure activities	309	38.9	28.5	32.6
This beach offers special recreational opportunities to me	309	51.1	27.8	21.1
I have developed an interest in using this beach for my beach activities	309	73.1	17.5	9.4
I will not substitute the recreational opportunities on this beach for any other	309	25.2	35.0	39.8
Overall Score	309	47.1	27.2	25.7
Aesthetics (Admirations)				
This beach looks so appealing to me	309	62.1	25.6	12.3
I feel fascinated by the cleanliness of this beach for recreational activities.	309	30.1	24.0	45.9
I had sustained motivation using the beach for recreational activities	309	51.8	28.8	19.4
I feel a sense of amazement at the quality of this beach for various activities	309	52.3	25.6	22.1
I feel a sense of inspiration from this beach to do beach activities	309	46.3	21.4	32.3
Overall Score	309	48.5	25.1	26.4
Escape (Relief & Relaxation)				
The hygiene of this beach got me relieved from built-up mental pressure out there	309	69.3	17.5	13.2
The state of this beach was emotionally refreshing for me	309	59.2	22.3	18.5
The state of the beach made me enjoyed mental (perceptual) harmony here at the beach.	309	55.0	26.2	18.8
Overall Score	309	61.2	22.0	16.8

A= Agree, NA/D= Neither Agree/Disagree, D= Disagree

Source: Fieldwork, 2020

An indication that the perceived state of the beach affects visitors' excitement adversely at the beaches (Table 12). This conclusion is consistent with Tonge and Moore (2007) assertion that poor beaches with sewages, debris and plastic adversely affects and reduces tourist experience of excitement and fun at coastal destinations.

According to Leatherman and Simmons (2009), the state of beach environments can have an impact on the experiential (practical) experiences of seaside users. The result shows that about half (47.1%) of the visitors had experiential experience at the beaches. Specifically, 73.3% had developed an interest in using the beaches for various activities, 51.1% encountered special recreational opportunities in terms of activities and functional uses of the beach. Also, about 38.9% had a fondness for the beach, whereas only about a third (25.2%) will not substitute the recreational opportunities on the beaches for any others.

The result generally point out that the majority of visitors did not have experiential involvement at the beaches. This is because visitors were not impressed with the quality of the beach environments, as most of them are willing and likely to switch to other beach destinations that could offer them better experiential outcomes through the provision of cleaner, beautiful and quality beaches (Table 12).

Aesthetically clean and serene beach settings are what beachgoers desire to experience at coastal destinations (Krelling et al., 2017). The result shows that less than half of the respondents (48.5%) had aesthetic experience at the beaches (Table 12). Precisely, about two-third (62.1%) of respondents experienced appealing

beaches, 52.3% felt a sense of amazement at the state of beaches for their various beach activities, about 51.8% felt motivated at the beaches, whiles 46.5% were inspired by the state of the beaches and only a third (30.1%) were fascinated about the ideal cleanliness for their recreation. The result also indicates about half 45.9% were not fascinated by the beaches. The result overall indicates that the majority of visitors were indifferent or did not have aesthetic experience at the beaches. This suggests that the aesthetic quality of the beach environment was perceived as poor and not attractive and it has thus affected visitors' aesthetic experience at the beaches (Table 12). This conclusion is consistent with that of Balance et al. (2000) and Phillips (2009) that when tourists perceive beach environments as unclean, it tends to affect their visual (aesthetic) appreciations and experiences.

Visitors' escape to beach destination daily to relax, refresh and relieve themselves from the stress of everyday work (Roca and Villares, 2008). The result shows that about 61.2% of visitors indicated that they had an escapism experience at the beaches. The observation suggested that Accra beaches were able to afford beach visitors the opportunity stay away from home, to relax, release stress and unburdened themselves from the pressures, stressful daily routines of life, family and work. Specifically, about seventy per cent (69.3%) indicated that the beach got them relieved from mental pressure, 59.3% had emotional refreshment (59.3%) and mental harmony (55%) to visitors. The majority indication from the result suggests that Accra beaches offer obtainable relaxation, enjoyment of mental harmony to coastal users away from home (Jurowski, 2009).

Pine and Gimlore (1998) suggest a plurality of experiences and as such, an individual can experience all four at a destination. As per the theory, it is apparent in the findings that visitors 'experiences at the beaches differ from one person to another. The findings shows that over two-thirds (62.1%) of the visitors had escapism experience, about 48.2 % had an aesthetic experience, 47.1% had experiential experience and 37 % had excitement experienced at the beaches. Literature indicates that clean and tidy beaches offer visitors the opportunity to enjoy beach scenery, and boosts recreational activity pursuits (Wyles et al., 2016; James, 2000). However, for lesser numbers of visitors live through majority of the experience dimensions show perhaps that they accumulated negative perceptions and as such were not able to perform and immerse themselves in desired beach activities. This is because these activities enhance visitors' enjoyment of fun, tranquillity and ultimately delivers desired recreational experiences to visitors (Plessis et al., 2011). This shows that perceived pollution at the beaches might have affected the quality of Accra beaches to be used for activities. This consequently had bearings on the recreational experiences of these visitors as defined through framework for study. It means that, to ensure improve visitor recreational experiences at beaches in Accra; the beaches an environmental resources for tourism must be kept clean and serene from all sort of offensive litters or pollutants as advanced through the resource dependency theory (Mihalic, 2013; Moreno & Becken (2009). This is because beach recreational experiences are created out of beach activities which mostly have linkages with the quality of beach resources (Wyles et al., 2016).

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Dimensions of Visitors' Recreational Experiences at beaches in Accra

Again, factorial analysis with using PCA and varimax rotation on variables involved in recreational experiences among visitors at the beaches. A KMO of 0.921 was reached which verified the sampling adequacy for the analysis (Kaiser, 1974), and Bartlett's test of sphericity (χ^2 (153) = 3951.71, p=0.000) showed the appropriateness of the use of the factorial analytic model on the variables determined. Three factors were therefore extracted based on Eigenvalues greater than one (Eigenvalues ≥1), explaining 67.8% of the variance in the recreational experience of tourists at Accra Metro beaches (Pallant, 2007).

Factor I, this factor relates to the feeling of inspiration, comfort, emotional and mental refreshment at the beaches. The factor was therefore considered as the escapism experience of visitors at the beaches. It is constituted by fascinated at the beach, sense of inspirations from the beach, state of the beach is emotionally refreshing, state of the beach gives mental harmony, will not substitute activities on the beach for another, had sustained affection towards the state of the beach using this beach and had sustained motivation this beach for recreation. In this factor, visitors attempt to escape from the stress of every life, leaving behind the people, and noise of their busy cities to go and enjoy the free space of quiet beaches so to release stress, relax, and get relieved (Booth et al., 2011; Jurowski, 2009). The factor explained 47.2% of variance that accounts for visitors' recreational experiences at beaches in Accra.

Table 13: Structure of Factors for Recreational Experiences of Visitors

Factors and observed variables	Factor Loading	Eigen-value	Variance Explained (%)	Cronbach's alpha
I Escapism Experience		8.50	47.21	0.915
I feel fascinated by the cleanliness of this beach for my recreational use	0.826			
I got a sense of inspiration from the cleanliness of this beach for my various beach activities	0.816			
The state of the beach is emotionally refreshing	0.740			
The state of this beach gave me mental harmony here	0.737			
I would not substitute the recreational opportunities on this beach for another beach	0.688			
I feel a sense of comfort using this beach for my beach activities	0.658			
I had sustained motivation to use this beach	0.648			
I had sustained attachment towards the state of this beach for my use	0.578			
II Aesthetic Experience		2.51	13.94	0.883
I had a lot of fun with all activities I did on this beach	0.808			
I feel cheerful undertaking various recreation on this kind of beach	0.789			
I got a lot of interest in this beach for my beach activities	0.747			
This beach looks so appealing to me	0.742			
I feel a sense of amazement at the quality of this beach for various activities	0.629			
This beach feel like a special destination to me	0.596			
The state of the beach got me relieved from mental pressure out there	0.570			
III Excitement Experience		1.20	6.68	0.901
I feel a sense of delight at this beach	0.933			
I got pleasure from everything I did on this beach	0.918			
I feel enthused about using this beach for my beach activities	0.881			
Total variance explained			67.82	

Source: Fieldwork, 2020. Bartlett's Test of Sphericity (Approx. Chi-square) =

3951. 132, p-value= 0.000 Kaiser-Meyer-Olkin Measure of Sphericity = 0.921

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Factor II is underpinned by beach views, amazement at the sight and admiration of the beach. Beach scenery, nature appreciations and superior landscapes help to deliver aesthetic experiences at nature-based destination such as the beach (Plessis et al., 2011). The aesthetic experience factor accounts for 13.94% of the variance in visitors' recreational experiences. Information in the factor was elicited on variables such as I had fun at the beach, I had so much interest in the conditions of the beach for my activities, I had so much pleasure, amazement at the various activities available to me, I had on the beach, it is a special recreational destination for me, and it gives me mental relief away from the city.

Factor III, this factor was captured as excitement and is made up of variables such as feel a sense of delight on this beach, I had the pleasure on this beach, and I was enthused to be on this beach. Excitement involvements are key output for recreational experiences (Cohen, 1979). Tourists travel to nature sites to engage in practical activities that will make to feel happy whiles also enjoying natural pleasure from such activities. Tonge and Moore (2007) also observed that at beaches, experiences of excitement are key indicators of the appreciation of the beach as a whole. The excitement component contributed to the explanation of 6.68% of the variance in the visitors' recreational experiences at the beaches of Accra.

The result stipulates that not all the experiences indicated by Pine and Gilmore (1999) and the framework (Fig. 3) can stand independently as a dimension on their own in every real-world situation. In that some experiences may fuse with

others and so although the theory suggest plurality of experiences, there is also the issues of mutual unexclusiveness in many situations, such as this.

Beach Recreational Experiences by Socio-demographic Profiles

The relationships between socio-demographic variables and the recreational experiences of visitors were explored using the chi-square test (χ^2) of independence.

With the escapism experience, it has significant relationships with visitors' nationality, travel party and marital status (Table 14). A significant relationship between visitors nationality their escapism experience at the beaches ($\chi^2 (2) = 12.90$, p= 0.002). The results show that more domestic visitors (58.3%) compared to international tourists (40.7%) had escapism experience at the beaches. Whereas, about 48.8% of international visitors relative to 27.4% of domestic visitors have not had experienced escapism at the beaches. This outcome could be as a result of place identity and familiarity which gives an advantage to domestic visitors who may have come from home environments with similar or worse conditions compared to those which were the beaches and so it could not have affected their relaxation more than international visitors who are presumed to be coming from cleaner cities and more informed the environment (Lucrezi & van der Walt, 2015; Baysan, 2001) which might have resulted in the differences.

Similarly, a significant relationship occurred between escapism experience at the beaches and visitors travel party ($\chi^2 (2) = 11.66$, p= 0.003). With the bigger proportion of visitors who travelled alone (58.1%) than to those who travelled in the company of others (40.0%) having had escapism experience at the beaches.

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Table 14: Beach Recreational Experiences by Socio-demographic Profiles

Characteristics		Escapism Experience %				Aesthetic Experience %			
	N	Agree	Neutral	Disagree	χ^2statistic p	Agree	Neutral	Disagree	χ^2statistic p
Sex									
Male	129	49.6	14.0	36.4	1.31	78.3	15.5	6.2	4.66
Female	180	56.1	12.8	31.1	0.519	71.7	14.4	13.9	0.097
Education									
Secondary	48	54.2	2.1	43.8	7.24	76.3	10.4	12.3	14.10
Tertiary	261	53.3	15.3	31.4	0.271	73.2	15.7	11.1	0.494
Nationality									
Domestic	223	58.3	14.3	27.4	12.90	73.1	14.8	12.1	1.73
International	86	40.7	11.3	48.8	0.002*	73.9	15.1	11.0	0.422
Travel party									
Individual	229	58.1	14.3	27.9	11.66	76.0	14.0	10.0	1.12
Group	80	40.0	11.3	48.8	0.003*	70.0	17.5	12.5	0.573
Age									
18-25	112	50.9	17.0	32.1	4.15	66.9	18.8	14.3	6.14
26-34	124	56.5	12.9	30.6	0.386	77.4	14.5	8.1	0.189
35+	73	52.1	8.2	39.7		80.7	9.6	9.7	
Marital status									
Single	244	58.2	14.8	27.0	21.86	73.8	14.3	11.9	3.21
Married	39	33.3	13.1	53.5	0.000*	79.5	29.9	7.6	0.524
Divorced	26	38.5	11.5	50.0		73.1	12.4	14.5	

Source: Fieldwork, 2020   *Significant level at p ≤ 0.05

Table 14 continued

	N				χ² p				χ² p
Continent									
Africa	237	56.5	13.1	30.4	8.91	71.5	13.3	15.2	9.70
Europe	45	44.4	13.3	42.2		78.0	11.0	11.0	
North America	20	30.0	15.0	55.0		60.0	20.0	20.0	
Australasia	7	71.4	14.3	14.3	0.179	100.0	0.0	0.0	0.138
Travel purpose									
Business	19	36.8	15.8	47.4		80.2	19.8	0.0	
Leisure	209	57.4	7.7	30.6	13.43	71.8	15.8	12.4	13.32
Educ./research	26	38.5	7.7	46.1	0.098	70.3	15.5	14.2	0.101
Volunteering	18	44.4	16.7	38.9		72.2	16.7	11.5	
VFR & others	37	54.1	2.7	43.2		73.0	13.5	13.5	

Characteristics	Excitement Experience %			
	N	Agree	Neutral	Disagree	χ² statistic / p
Sex					
Male	129	13.2	6.2	80.6	1.28
Female	180	17.7	6.7	75.6	0.528
Education	48	6.3	8.3	83.4	4.05
Secondary					0.132
Tertiary	261	17.6	6.1	76.2	
Nationality	223	16.6	5.8	77.6	0.79
Domestic					0.675
International	86	14.0	8.1	77.9	

Source: Fieldwork, 2020   *Significant level at p ≤ 0.05

Table 14 continued

Travel party					
Individual	229	15.3	7.0	77.7	0.55
Group	80	17.5	5.0	77.5	0.761
Age					
18-25	112	14.3	10.7	75.0	6.40
26-34	124	18.5	3.1	78.4	0.171
35+	73	13.7	10.5	53.9	
Marital status					
Single	244	15.6	6.1	78.5	2.89
Married	39	12.8	5.1	82.1	0.577
Divorced	26	23.1	11.5	65.4	
Continent					
Africa	237	16.9	6.3	76.8	
Europe	45	6.7	8.9	84.4	6.53
North America	20	20.0	0.0	80.0	0.366
Australasia	7	28.6	14.3	57.1	
Travel purpose					
Business	19	26.3	15.8	57.9	
Leisure	209	17.2	30.1	76.6	11.1
Educ./research	26	11.5	0.0	88.5	0.227
Volunteering	18	10.8	2.7	86.5	
VFR & others	37	5.6	5.6	88.9	

Source: Fieldwork, 2020   *Significant level at $p \leq 0.05$

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Group travel and activities may have influenced the escapism experience in this instance since group influences exist on the escapism experience at nature-based destinations (Plessis et al., 2011). Visitors marital status is also significantly related to their escapism experience at the beaches, with more singles (58.2%) than divorced (38.5%) and married (33.3%) indicating that they had escapism experience at the beaches (χ^2 (4) = 21.86, p= 0.000). Singles can have lone moments at the beach and as such concerned about themselves only whereas married may have been concerned about their partners hence may have such moments alone (Rodella & Corbau, 2019). As such married couples experiences could have been influenced by their partners' reactions or experience to issues at the beaches. No significance relationship occurred between escapism experience and visitors sex (χ^2 (2) = 1.31, p= 0.519), escapism experience and across age (χ^2 (4) = 4.15, p= 0.386), escapism experience and continent of origin (χ^2 (6) = 8.91, p= 0.179), as well as escapism experience and visitors purpose of travel (χ^2 (8) = 13.43 p= 0.098),

Regarding aesthetics experience, the result indicates that it has no significant relationships with any of the socio-demographic variables (Table14). Yet, more males (78.3%) compared to female tourists (71.7%) agreed that they had aesthetic experience at the beaches (χ^2 (2) = 4.66, p= 0.097). Whereas, visitors with secondary education (81.3%) compared tourist with tertiary education (73.2%) agreed that they had pleasure and fun during their trip to the beaches (χ^2 (2) = 14.10, p= 0.494).

Also, concerning excitement experience, the result indicates it has no significant with any of the socio-demographic variables (Table14).

In short, the framework (Fig. 3) for the study suggested that visitors' profiles are linked to their experiences at the beach. Conversely, the results indicate that apart from the escapism experience, visitors across all backgrounds characteristics mostly disagreed on having excitement and aesthetics experiences at the beaches. Besides, no relationship exists between excitement and aesthetic experiences at the beaches across the various background profiles of visitors. Escapism experience had only three background profiles of nationality, travel party and marital status). Hence, it can be concluded that the background characteristics of beach visitors do not have impacts on their recreational experiences at the beaches. And that beach experience is generally determined by the quality of the beach environment, health, scenery and cleanliness, for visitors use and enjoyment (Balance et al. 2000).

Relationship between Perceived Pollution and Visitors' Recreational Experiences

This part of the analysis examines the relationship between perceived pollution (scenery-safety detractors, health-wellness detractors) beach recreational experiences (escapism, aesthetics, excitement) of visitors at the beaches as put out in the framework (Fig. 3). A Chi-square (χ^2) test of independence was used to determine the relationships between the variables.

The results show that there is a negatively weak association between visitors' perceptions of pollution as scenery-safety detractors and their escapism experience at the beaches (tau-b= -0.145). This indicates that the more visitors' perceived pollution to be scenery-safety detractors the fewer the number that had escapism experiences at the beaches (Table 15). For instance, more visitors (66.7%) had escapism experience when they did not perceive pollution to be "scenery-safety detractors" at the beaches, compared to when they perceive pollution as scenery detractors at the beaches (50.4%). The result is however statistically significant (χ^2 (4) = 8.46, p=0.076).

Table 15: Relationship between Perceived Pollution and Escapism Experience

Perception of pollution	N	Escapism Experience			χ^2 p	Tau-b value
		D	N A/D	A		
Scenery detractors						
Disagree	24	25.0	8.3	66.7	8.46	-0.145
Neutral	17	11.8	5.9	82.4	0.076	
Agree	268	35.4	14.2	50.4		
Overall	309	24.1	9.4	66.5		
Safety-health detractors						
Disagree	90	30.0	5.6	64.4		-0.068
Neutral	41	36.6	17.1	46.3	9.15	
Agree	178	34.4	16.3	49.4	0.058	
Overall	309	33.7	13.0	53.3		

A=Agree; NA/D= Neither Agree/Disagree; D= Disagree

Source: Fieldwork, 2020

This finding of the study, however, can be explained by the fact that visitors to the beaches might have been desiring to escape from the pressures, stress and

monotony of every work and family life (Schmitts, 1999), hence, they may not have been concern about the state of the beach as it were, other than enjoying their time out alone on the beach nonetheless.

Again, the relationship between visitors perception of pollution as health-wellness detractors and their escapism experience at the beaches was not statistically significant (χ^2 (4) = 9.15, p= 0.058), although the result shows that a negative weak association exist between the variables (tau b = - 0.086). The pattern of findings show what is depicted in literature, yet the result was not statistically significant, implying that visitors' perceptions of pollution as health-wellness detractors have not influenced their escapism experience at the Accra Metro beaches (Table 15).

On the other hand, Table 16 indicates that there was a statistically significant but weak negative relationship between pollution as scenery-safety detractors and visitors aesthetics experience at the beaches (χ^2 (4) =4.34, p= 0.036; tau-b= -0.053). This shows that visitors' perception of pollution as scenery detractors had an impact on their aesthetics experience at Accra Metro beaches. The result indicates that out of 268 respondents who viewed that pollution as scenery detractors only 61 (22.8%) of them agreed to have had aesthetic experience at the beaches. The result can be explained by the fact that pollution at the beaches might have destroyed the serenity and scenery that constitute the aesthetic beauty of the beaches to which visitors did not appreciate. The finding is however congruent with Plessis et al (2011) conclusion that at nature-based destinations perceived

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uncleanliness of the environment influences tourists' aesthetic experience and appreciation of such destinations.

Table 16: Relationship between Perceived Pollution and Aesthetic Experience

Perception of pollution	N	Aesthetic Experience			χ^2 p	Tau-b value
Scenery detractors		D	N A/D	A		
Disagree	24	66.7	20.8	12.5	4.34	-0.053
Neutral	17	64.7	29.4	5.9	0.036*	
Agree	268	53.7	23.5	22.8		
Total	309	61.7	24.7	13.7		
Safety-health detractors						
Disagree	90	71.1	17.8	11.1	19.65	-0.198
Neutral	41	65.9	14.6	19.5	0.001*	
Agree	178	44.9	28.7	26.4		
Total	309	60.6	20.4	19.0		

*Significance level at $p \leq 0.05$ A=Agree, NA/D= Neither Agree/Disagree, D= Disagree

Source: Fieldwork, 2020

Furthermore, the results show that there is a statistically significant but weak relationship between visitors perception of pollution as safety-health detractors and their aesthetic experience at the beaches (χ^2 (4) =19.65, p=0.001; tau-b= -0.198). Hence, visitors perceived pollution as a safety and health issue influence their aesthetics experience at beaches in Accra. This finding is consistent with the findings of Lucrezi et al. (2016) on the South African coast where visitors' perceptions of the unclean beach as a safety and health threat had influenced their visual appreciation and use of the beach.

Regarding excitement experience (Table 17), a weak negative association was recorded between pollution as scenery-safety detractors and visitors excitement experienced at the beaches (tau-b= -0.166) and that was statistically significant (χ^2 (4) =11.50, p= 0.021) (Table 18). This indicates that visitors' perceptions of pollution as scenery-safety detractors influence their excitement experience at Accra beaches. This finding can be explained by the fact that the presence of litter affects the attractiveness of the beaches and thus limits visitor desires to use such places for their activity pursuits. This finding, therefore, affirms the assertion that when visitors observe the beach environment to be polluted with sewages debris and plastics it can adversely impact their use, excitement and fun experiences at the beach (Balance et al, 2000).

Table 17: Relationship between Perceived Pollution and Excitement Experience

Perception of pollution	N	Excitement Experience			χ^2 p	Tau-b value
		D	N A/D	A		
Scenery-activity detractors						
Disagree	24	70.8	12.5	16.7	11.50	-0.116
Neutral	17	70.6	23.5	5.9	0.021*	
Agree	268	78.7	4.9	16.4		
Total	309	77.7	6.4	15.9		
Safety-health detractors						
Disagree	90	75.6	10.0	14.4		-0.029
Neutral	41	78.0	4.9	17.1	2.69	
Agree	178	78.7	5.1	16.3	0.611	
Total	309	77.7	6.4	15.9		

*Significance level at p ≤ 0.05;   A=Agree, NA/D= Neither Agree/Disagree, D= Disagree

Source: Fieldwork, 2020

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On the other hand, although an inverse relationship exists between the variables (tau-b= -0.029), pollution as health-wellness detractors had no significant association with excitement experiences at the beaches (χ^2 (4) =2.69, p= 0.611). Indicating that perceptions of pollution as health-wellness detractors' has no significant impact on visitor excitement experiences at Accra beaches. Yet, only 16% of visitors agreed that they had excitement experience when they considered pollution as health-wellness detractors at the beaches. Visitors are much more concerned about their health at the beaches and therefore may avoid using the beaches since they perceive it as dirty (Morgan, 1996). Yet, it did not significantly influence their feeling of excitement at the beaches.

As premised by the DPSIR model, poor environment affects human uses of the environment. It can adversely affect scenery health, security of people, and many uses that depends on the environment (Stern, 2000; EEA 1999). Using the model, the environmental attributes of Accra beaches have been observed as being and polluted, poor and detrimental to health, safety, scenery and activity pursuit of visitors. What it means is that visitors' activities and enjoyments that are dependent on these beaches may have been curtailed by insanitariness at the beach resources as obtainable through Moreno and Becken (2009) assertion on resource features. These findings establishes a linkage between the pressures-states-impacts in the DPSIR framework (Fig. 3). In confirming the stands of the framework (Fig. 3), the results of the study indicate that poorly perceived coastal resource settings have

direct and negative influences on visitor uses and experiences at the beaches (Moreno & Becken, 2009; James, 2000; Balance et al., 2000).

Visitors' Post-visit Behavioural Intentions at Beaches in Accra

Alegre and Garau (2011) observed that visitors' experiences of nature-based destinations influence their intentions towards those destinations. The framework (Fig. 3) expressed that environmental perceptions, activities and experiences are conduits through which visitors post-visit intentions can be centred. This is because experiences environmental cleanliness and scenery have become a determinant of their post-visit intentions about destinations (Schuhmann, 2012; Laven et al., 2005). Visitors' post-visit behavioural intentions gathered for the current study have been presented in Table 18.

The result shows that a little over half (53.6%) of the respondents have positive post-visit behavioural intentions towards Accra beaches. Specifically, almost seventy per cent (68.3 %) of the respondents were likely to revisit Accra beaches as repeat visitors in the future. This could mean that visitors' expectations towards the beaches were met to some extents. However, the result also implies that nearly about 30% of the respondents are not likely coming back to Accra beaches as repeat visitors. Also, about sixty per cent (57.9%) of respondents were more likely to recommend the beaches of Accra Metropolis to other friends, family and relatives at home. This could be due to the fact visitors may have been pleased with some environmental attributes and experiences at the beaches hence may recommend to family, friends and relations (Schuhmann, 2012; Laven et al., 2005).

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Table 18: Beach Visitors' Post-visit Behavioural Intentions

Variables	N	A	N A/D	D
I would love to revisit Accra beach (es) in the future	309	68.3	20.7	11.0
I would recommend Accra beach (es) to friends and relatives	309	57.9	28.5	13.6
I will choose Accra beach (es) amid other alternatives	309	34.6	16.5	48.9
Overall Score	309	53.6	21.9	24.5

A=Agree; NA/D= Neither Agree/Disagree; D= Disagree

Source: Fieldwork, 2020

Again, the result also suggests that over 40% of the respondents are likely not to recommend Accra beaches to families, friends, and relatives. Such an outcome is likely to affect beach destinations in Accra, because new customers may not be introduced to the destinations and their facilities as a result poor environmental experiences (Fig. 3) due to pollution.

Furthermore, a little over a third (34.6%) of the respondents are more likely to choose beaches in Accra Metropolis amid other alternatives. This finding seems to further establish the fact that Accra beach destinations may lose out on repeat visitors in the future (Laven et al., 2005). The result indicates that almost 60% of respondents are willing to travel to alternative beach destinations with better environmental conditions that are likely to offer cleaner beach settings and more or better recreational opportunities and experiences. This finding is congruent with

that of Balance et al. (2000) in which tourists and residents are willing to travel as far as 50km away from their home beaches to visit other beaches that they consider clean and aesthetically pleasing.

Poor environmental condition have thus affected visitor activities, experiences and their revisit intentions (Fig. 3) because the environmental have not been in the required state and quality (Honey & Krantz, 2007). Beach destinations in Accra Metropolis may lose substantial number of their visitors since at nature-based destinations tourism significant association continues to exist between destination growth and quality of environmental resources therein (Sheppard, 1995).

Relationship between Perceived Pollution and Visitors' Post-visit Behavioural Intentions

In accordance with the framework (Fig.3) for the study, this part of the analysis examines the linkage/relationship that exist between perceived pollution and post-visit behavioural intentions (PBIs) of visitors to Accra Metro beaches.

The results in Table 19 show there is a weak inverse relationship between visitor perception of pollution as scenery-safety detractors their PBIs towards Accra beaches (tau b= -0.093) although the variables are not statistically significantly related (χ^2 (4) =3.47, p= 0.489). Visitors' perceptions of pollution as scenery detractors have therefore not significantly influence their PBIs towards Accra beaches. Yet, unclean and unattractive beach areas can lead to negative future behavioural intentions among tourists to beaches (Laven et al., 2005). This is

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depicted in the pattern of result in Table 19 which indicates that the higher the number of visitors who perceive pollution as scenery-safety detractors the lesser the number that agreed to have had positive PBIs towards Accra beaches.

Table 19: Beach Post-visit Behavioural Intentions by Perceived pollution

Perception of pollution	N	Post-visit Behavioural Intentions			χ^2 p	Tau-b value
Scenery-activity detractors		D	N A/D	A		
Disagree	24	12.5	12.5	75.0	3.47	-0.093
Neutral	17	17.6	5.9	76.5	0.489	
Agree	268	25.0	13.1	61.9		
Total	309	23.6	12.6	63.8		
Safety-health detractors						
Disagree	90	11.1	11.1	77.8		-0.189
Neutral	41	24.4	12.2	63.4	13.25	
Agree	178	29.8	13.5	56.7	0.010*	
Total	309	23.6	12.6	63.8		

*Significance level at p≤ 0.05; A=Agree; NA/D= Neither Agree/Disagree; D= Disagree

Source: Fieldwork, 2020

Finally, the relationship between visitors perception of pollution as health-wellness detractors and their PBI towards beaches in Accra was statistically significant (χ^2(4) =13.25, p= 0.010). There is a weak negative association between the variables (tau b = - 0.189). When visitors consider pollution as a threat to their health, it affects their post-visit behavioural intentions toward the beaches. Thus visitors' health concerns determinant of whether or not to recommend, revisit and or choose Accra beaches among other alternatives in the light environmental conditions. As assumed by the framework, actually, on-site perceptions that visitors developed towards the beach environments relative to their health and safety have

impacts on their post-visit behavioural intentions towards these Accra beaches (Petrick, 2002).

Chapter Summary

Most beach visitors were active, young and educated. They mostly visited the beaches for leisure activities and perceived physical characteristics and accessibility and comfort to the beaches as attractive. Two (2) main dimensions of factors (scenery-safety detractors, health-wellness detractors) accounted for visitors' perceptions of pollution at beaches in the Accra Metropolitan Area. Visitors' water and sand related uses (activities) were mainly affected by pollution at the beaches. Moreover, relationships were established between perceived beach attractiveness, visitors' perceptions of pollution, pollution affected recreational uses across socio-demographic profiles of respondents. Visitors' perceptions of pollution were also related to some recreational experiences, as well as visitors' post-visit behavioural intentions toward beaches in the Accra Metropolis.
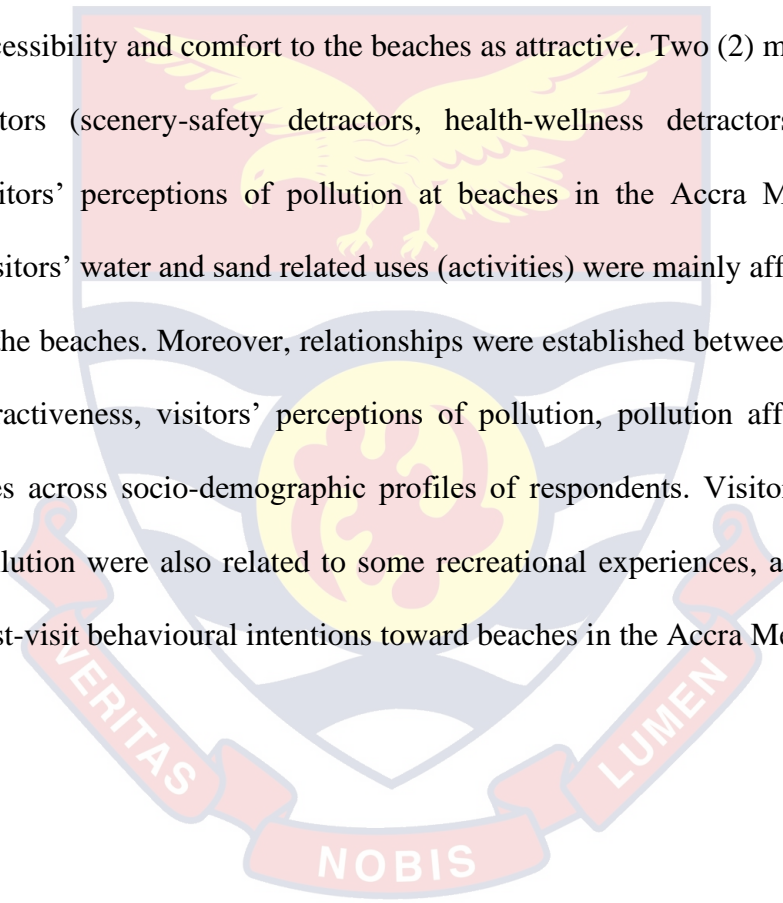
CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Introduction

The chapter presents the summary of findings in consonance with the stated objectives and draws conclusion and recommendations from the findings.

Summary of the Study

The study was to assess tourists' perception of coastal pollution at Ghanaian beaches in the Accra Metropolis. Specifically, the study sought to:

- examine the perceived attractiveness of beaches in the Accra Metropolis;

- examine visitors' perceptions of pollution at beaches in the Accra Metropolis;

- assess recreational uses that are affected by pollution at beaches in the Accra Metropolis;

- examine the recreational experiences of visitors to beaches in the Accra Metropolis ; and

- analyse the post-visit behavioural intentions of visitors to beaches in the Accra Metropolis.

The conceptual framework that guided this study was adapted from the European Environmental Agency (1999) DPSIR: Human-Environment Model. The framework identifies six (6) main components which include beach destination characteristics, visitor characteristics, perception of pollution, recreational uses,

recreational experiences and post-visit behavioural intentions. The conceptual framework for the study also establishes some linkages between the six main issues, of which visitors' pollution perception is a function.

The study adopted a descriptive cross-sectional research design, using the quantitative method for data collection and analysis. Questionnaires were administered to 309 beach visitors through a systematic sampling procedure. Census was used to consider all six (6) GTA licensed visitor facilities along the beaches of Accra Metropolis, from where visitors to the beach were engaged to complete the survey.

The data from the field was edited, coded and analysed using SPSS version 22. Descriptive statistical presentations included frequency tables, averages and cross-tabulations. Inferential analyses involved the use of Factorial analysis to group variables while the Chi-square test of independence was used to test for relationships between perceptions of pollution and socio-demographic profiles of visitors. Chi-square test of independence was also employed to analyse the relationships between visitors' perceptions of pollution and their recreational experiences, as well as visitors' post-visit behavioural intentions.

Main Findings of the Study

Based on the specific objectives set for this study, the main findings are as follows:

Physical characteristics and accessibility and comfort at the beaches were considered attractive among 73.5% and 66.7% of visitors respectively. Alternatively, only 27.8% of the visitors' considered environmental sanitation as

attractive, whereas only 27.5% regarded facility and service as attractive. Significant relationships was recorded between perceived attractiveness beach sanitation and visitors nationality (p= 0.000), travel party (p= 0.038), and purpose of travel (p= 0.002). Facility and services is significantly related with visitors' sex (p= 0.046), education (p= 0.009), nationality (p= 0.000), age (p= 0.001), marital status (p= 0.023), and continent of origin (p= 0.003). For physical characteristics it was significantly related to sex of visitors (p= 0.016), whereas beach accessibility and comfort was related to sex of visitors (p= 0.000), educational level (p= 0.003), nationality (p= 0.005) and age of visitors (p= 0.021).

Two main underlying factors accounted for visitors' perception of pollution at the beaches. Pollution as beach scenery-safety detractors accounted for the highest variance of 55.6% whereas pollution as health-wellness detractors accounted for 10.9 per cent of the variance. Cumulatively, 66.8% of the total variance was explained by the two factors. There were significant relationships between perceptions of pollution and the socio-demographic profiles of visitors. Perception of pollution as scenery-safety detractors was related to the only marital status of visitors (p= 0.004). Alternatively, pollution as health-wellness detractors relates to sex of visitors (p= 0.001), level of education (p= 0.000) and age (p= 0.000) of respondents.

With regards to recreational uses affected by pollution; more visitors (66.7%) had their visitors water-related recreational uses; than their sand-related uses (56.7%) and facility–assisted activities (50.3%). Two underlying factors, facility-assisted recreation (53.8%) and water and sand-based recreation (15.0) were determined, with an accumulated 68.8% variance explained by the factors. Only visitors' facility-assisted recreations that are affected by pollution was

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influenced by respondents' background profiles. This occurred across visitors sex (p= 0.000), level of education (p= 0.000), nationality (p= 0.000), age (p= 0.000) and marital status (p= 0.000) of respondents.

Three main underlying factors accounted for visitors' recreational experiences at the beaches in the Accra Metropolis. Escapism experiences accounted for the highest variance (46.9%), aesthetic experience (14.8%) and excitement experience (6.5%) of the variance. Cumulatively, 68.3% of the total variance was explained by these three factors. The only experience dimensions influenced by the socio-demographic profile of visitors was escapism. Escapism experience is related to the nationality of visitors (p= 0.002), travel party (p= 0.003) and marital status (p= 0.000).

In analysing the relationship between perceived pollution and recreational experiences; visitors' perceptions of pollution as scenery-safety detractors (tau-b= -0.053; p= 0.036) and health-wellness detractors (tau-b= -0.198; p= 0.001,) were all significantly related to aesthetic experience at the beaches. Similarly, visitors' perceptions of pollution as scenery-safety detractors is significantly related to excitement experience (tau-b= -0. 116; p= 0.032) at the beaches, whereas perception of pollution as health-wellness detractors did not.

On the whole, only 34.6% of visitor were in agreement that they may choose Accra beaches amidst other destinations. Thus, the majority of visitors are likely to choose other beach destinations with better environmental conditions over those in the Accra Metropolis in the future. Visitors are more concerned about their health and wellness at the beaches, such that the more the number of visitors who perceived pollution as health-wellness detractors, the less the number that had

positive revisit behavioural intentions toward Accra beaches. This is because visitors' perceptions of pollution as health-wellness detractors is significantly related to their post-visit behavioural intentions towards Accra beaches (tau-b= -0.189; p= 0.010).

Conclusions

Based on the objectives of the study and the ensuing findings presented, the following conclusions were drawn:

It is concluded that beaches in Accra Metropolis are attractive in terms of their physical features, accessibility and comfort, whereas, they are not attractive in terms of environmental sanitation, facilities and their services.

Secondly, visitors perceived pollution as a highly negative phenomenon at the beach, and most importantly for the purposes of tourism. They perceived pollution as scenery, safety and health detractors at the beaches. There is also sufficient evidence to conclude that visitors' perceptions of pollution are influenced by their socio-demographic characteristics. Pollution as scenery-safety detractors is related to visitors' marital status. Pollution as health-wellness detractors also related to sex, level of education, and age of visitors. It is concluded that visitors' perception of pollution is also influenced by their socio-demographic profiles.

Also, compared to facility-related and sand-related uses, visitors' water-related recreational uses are mostly affected by pollution events at Accra beaches. Generally, almost all visitors at the beaches have some or all of their recreational

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activities at beaches affected or deterred in one way or another by the presence of various forms of pollutants at the beaches.

Also, visitors' had three main experiences namely escapism, aesthetics and excitement. Visitors' perceptions of pollution is significantly related to recreational experiences at beaches. Perceived pollution is significantly related to visitors' aesthetic experiences; whereas perceived pollution (scenery detractors) is also significantly related to visitors' excitement experienced at the beaches, while others did not.

Finally, visitors are willing to revisit and recommend Accra Metro beaches to others, yet the majority may not choose Accra beaches amidst competing destinations. Also, visitors' perceptions of pollution as safety-health detractors is significantly related to their post-visit behavioural intentions to Accra beaches.

On the whole, beach resource characteristics as generally concluded in the study have resulted in negative perceptions with several adverse effects on the beach recreational uses, experiences and revisit intentions among beachgoers to Accra beaches. The implication is that, continues patronage, usage and development of these beach destinations is dependent on the quality of beach resources daily as the RDT sought to suggest. In line with that, the pressure-State-Impact link postulated in the DPSIR model became evident, as pressures and poor state of the beach environmental attributes have been found to have negatively impacted on perceptions, recreational uses and experiences as defined and illustrated by the conceptual framework for the study. This suggests the applicability of the RDT and the DPSIR model put together in ascertaining

environmental concerns in nature-based settings/destinations. However, further applications of the RDT is required to establish its usability in studies that involve natural environments, whereas, mutual exclusivity is required for each component of the DPSIR framework to better establish its uniqueness and effectiveness in the assessment of marine environmental conditions.

Recommendations

Based on the major findings and the subsequent conclusion drawn, the following recommendation are made:

- The fact that beach sanitation as well as facilities and service were very much considered to be unattractive at licensed facilities, suggests poor beach upkeep and a lack of supervision as well as weak enforcement by the regulating bodies. Beach facility operators should be regularly supervised by AMA and GTA into keeping good beach hygiene. The AMA and GTA as the regulating bodies should engage in regular checks and constant evaluation of beach sanitary conditions, and the quality of facilities and services that are delivered by beach these hospitality operators. This will also help them to offer further directions that will help beach operators on how to maintain proper sanitation and service standards. Beach operators must themselves must put in measures which ensure that that their staffs deliver quality services at all times. They should also ensure that there are regular cleaning activities, places of convenience (washrooms) must be

clean at consistent but given intervals of every four hours on less busy days and three hours on busy days/periods.

- Since it was revealed that pollution create negative perceptions, particularly, scenery and safety distresses, as well as health and wellness scares among beach users, it is recommended that all beach facility operators must establish sanitation protocol desks that must attend litter issues at the beaches at designated times of the day. The protocol desk must also be responsible for public education at their beach areas with the task of ensuring that visitors do not leave their trashes in beach environment which accumulates and become offensive. They must as well ensure signposting that direct visitors on where leave or dump their trashes at the beaches. To enhance the effectiveness of this exercise, the AMA, Zoom Lion Ghana, tourism ambassadors in collaboration with environmental NGOs should assist to provide litter bins at the beaches. These must be placed at vantage points and should be kept clean and litter-free at short intervals by the sanitation desks at the various facilities. In addition, public announcements must be made from time to time towards keeping the beaches clean during major events or festive periods. This must be done with acknowledgement of some sponsors (preferably environmental NGOs or agencies) that can be identified with this initiative will go a long way to achieve expected results.

- Beach recreations are a key factor in beach visits, to make sure pollution does not become recurrent phenomenon does not affect/deter visitors' recreational activities at Accra beaches, GTA with the new regulation LI.

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2393 of 2019 is required to license and grade tourist attractions. Particular attention must be paid to beaches with regards to enforcement of this regulation since beaches operation are quite different from other attractions and the current level of pollution is worrying and need grave attention. The regulators must be bold to close down beaches that do not meet minimum sanitation, safety, and security requirements. This is to ensure that Accra beach destinations can offer value for money to those who patronize the beaches and their facilities. Regulators must ensure that with their support, beach operators should be dedicated to keeping beaches free from all forms of offensive litter that are usually present in beach sand and water which affect/deter visitors' recreational pursuits at the beaches.

- To ensure positive beach destination experiences among beach visitors, there must be an establishment of a clean beach campaign "keep Accra beaches clean" and an awards scheme by AMA, in association with the GTA, tourism ambassadors in Ghana and environmental NGOs (eg. McKingtorch Africa, and Environment 360). This can be extended to social media with pictures of the cleanest and dirtiest beaches. The clean beach campaign should be organised every three months and should involve the use of volunteers (including students) in the cleaning and keeping of clean and quality beaches that can enhance recreational pursuits and experiences among visitors to beaches in Accra. The award will ensure that beach facility operators will show continuity to the campaign by keeping their beach areas and facilities clean to deliver quality experiences that are

centred on environmental conditions. Beach facilities must be awarded strictly by visitors' (users) ratings of their performance in terms of beach cleanliness, beach safety, and services, among other factors. There should also be the formation of Tourist Clubs in schools along the beach areas (schools in Korle Gonno, James Town, and Osu) to create awareness about the importance of the beaches and the need to keep them clean. Similarly, to be involved in the campaign is the traditional rulers and opinion leaders in these communities.

- Given that visitors' perceptions of pollution have linkages with post-visit intentions, beach operators, tourism ambassadors and the Waste Management Department of AMA, in particular, should continue to make extra efforts (investment in terms of personnel and provision of sanitation gears, building enhanced places of convenience, regularize inspections) at ensuring that beaches in Accra and their service facilities are always kept tidy to help create and increase positive perceptions, assurance of safety among beach visitors.

Suggestions for further research

The study explored perceived beach characteristics, perceptions of pollution, recreational uses affected by pollution, beach recreational experience and visitors' post-visit behavioural intentions at beaches in Accra. A further study can focus on the implication of pollution perception on visitors' environmental behaviour and willingness to pay for beach cleaning services. Also, studies should focus on stakeholders' challenges toward addressing beach pollution in Ghana.

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APPENDIX: QUESTIONNAIRE

UNIVERSITY OF CAPE COAST

COLLEGE OF HUMANITIES AND LEGAL STUDIES

FACULTY OF SOCIAL SCIENCES

DEPARTMENT OF HOSPITALITY AND TOURISM MANAGEMENT

QUESTIONNAIRE FOR VISITORS' PERCEPTIONS OF POLLUTION

AT BEACHES IN THE ACCRA METROPOLIS.

Dear respondent,

Thank you for agreeing to take part in this survey on Visitors' Perceptions of Pollution at Beaches in the Accra Metropolis. The study aims to examine the perception of visitors concerning sanitation concerns at beaches in Accra. The study is being conducted by an Mphil candidate in Tourism Management, of the University of Cape Coast, Ghana. This research is part of academic requirements for the completion of the Mphil Programme. The study is for academic purpose only, therefore all responses provided shall be treated with utmost trust, anonymity, and confidentiality.

Forward all concerns to the candidate on 0553095831/collins.dzitse@stu.ucc.edu.gh

This survey will take up to ten (10) minutes to complete.

SECTION A: PERCEIVED BEACH ATTRACTIVENESS

The following statements are intended to identify the characteristics of Accra beaches that are attractive to visitors. The responses range from Not Attractive at All (NAA), Not Attractive (NA), Undecided (U), Attractive (A) and Very Attractive (VA). Please **tick (√) only one option** for each of the statement.

Statements	NAA	NA	U	A	VA
How attractive are the following features of this beach to you:					
Physical Features					
1 beach sand					
2 colour of beach sand					
3 texture of beach sand					
4 landscape/scenery					
5 beach water					
6 colour of beach water					
7 sea waves					
8 wind/sea breeze					
Environmental features					
9 cleanliness of beach sand					
10 cleanliness of beach water					
11 litter-free state of the beach area					
12 smell from the beach area					
Facilities and Services					
13 beach toilet and urinals					
14 cleanliness of toilet and urinals					
15 food services available					
16 litter bins at the beach					
17 lifeguards at the beach					
Access and Comfort					
18 access to the beach					
19 price of beach services					
20 level of the crowd at the beach					
21 noise level at the beach					
22 safety at the beach					

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SECTION B: TOURISTS' PERCEPTION OF POLLUTION AT THE BEACH

The following statements are intended to evaluate visitors' perception of pollution at the beach. The responses range from Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A) and Strongly Agree (SA). Please **tick (√) only one option** for each of the statement.

Statements	SD	D	N	A	SA
I perceive/see beach pollution on this beach as:					
1 plastic litter on the beach area					
2 liquid waste materials at the beach					
3 anima/human excreta or faeces at the beach					
4 dead fishes/animal at the beach					
5 change in the ideal colour of beach sand					
6 change in ideal colour of beach water					
7 dirty/impure beach scenery					
8 loss of cleanliness at the beach					
9 lack of litter-free beach area					
10. odour/smell at the beach					
11 floating debris/trash in the beach water					
12 poor waste handling activities at the beach					

SECTION C: BEACH RECREATION USE AFFECTED BY POLLUTION

The following statements are intended to measure visitors' use of the beach that are affected by pollution. The responses range from Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A) and Strongly Agree (SA). Please **tick (√) only one option** for each of the statement.

Statements	SD	D	N	A	SA
Pollution/ beach litter has deterred me from:					

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Water-related Activities					
1 swimming or bathing					
2 doing water sports activities (eg. surfing, bodyboarding)					
3 walking/hikes along beach waterfront					
4 fun-running barefooted on the seashore					
Sand-related activities					
5 sitting (relaxing) on the beachfront					
6 sand-bathing at the beach					
7 skipping /playing on the beach					
8 doing beach sport activities (eg. volleyball)					
Scenery & Facilities related					
9 sun-bathing/relaxing on the beach					
10 admiring beautiful features of the beach					
11 taking photographs on the beach					
12 picnicking/eating at the beach					

SECTION D: VISITORS' BEACH RECREATIONAL EXPERIENCE

The following statements are intended to measure the effect of perceived pollution on visitors' recreational experience at the beach. The responses range from Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A) and Strongly Agree (SA). Please **tick (√) only one option** for each of the statement.

Statements	SD	D	N	D	SD
Recreational Experience (Excitement)					
1 I am delighted at the state of this beach					
2 I had pleasure for being on this beach					
3 I feel enthused in using this beach for my activities					
4 I feel cheerful undertaking various activities here at this beach					
5 I had a lot of fun with every activity I did on the beach					
6 I feel a sense of comfortable at the beach as I use it for my various activities					
Recreational Experience (experiential/ affection)					

7 I had a sustained fondness for this beach and it leisure activities					
8 This beach offers special recreational opportunities to me					
9 I have develop interest in using this beach for my recreational activities					
10 I will not substitute the recreational opportunities on this beach for any other					
Recreational Experience (admiration/aesthetics)					
11 This beach looks so appealing to me					
12 I feel fascinated by the cleanliness of the beach for recreational uses					
13 I had sustained motivation using the beach for recreational activities					
14 I feel a sense of amazement at the various activities I have undertaken on this beach					
15 I feel a sense of inspiration from the cleanliness of this beach to do beach activities					
Recreational Experience (relief & relaxation)					
16 The hygiene of this beach got me relieved from built-up mental pressure out here					
17 The state of the beach was emotionally refreshing for me					
18 The state of the beach made me enjoyed mental harmony here.					

E: POST-VISIT BEHAVIOURAL INTENTIONS AMONG BEACH VISITORS

The following statements are intended to analyse the influence of perceived pollution on post-visit behavioural intentions' among visitors to Accra beaches. The responses range from Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A) and Strongly Agree (SA). Please **tick (√) only one option** for each of the statement.

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Statements	SD	D	N	A	SA
1. I will recommend Accra beach (es) to friends and relatives					
2. I would love to revisit Accra beach(es) in future					
3. I will choose Accra beach(es) in the midst of other alternatives					

SECTION F: SOCIO-DEMOGRAPHICS OF VISITORS

*Please **tick only** [√] **one option** where appropriate and write where it is required.*

1. Nationality ………………………………………….

 2. Sex   1. Male   [ ]

                  2. Female   [ ]

3. Age ……………………………..

4. Marital status   1. Single   [ ]   2. Married   [ ]

                        3. Divorced   [ ]   4. Other (Please specify)….. …

5. Educational level   1. High school   [ ]   2. Tertiary   [ ]

                            3. Other please specify …………

6. What is the main purpose of your travel?

            1. For Business [   ]   2. For Leisure [   ]

            3. Education// Research [   ]   4. Other, please specify …………

7. Country of origin ………………………………..

8. Did you travel/visit this beach alone?   1. Yes   [ ]

                                              2. No   [ ]

Thank you for your time.

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