

## Exploring Recreational Activities on Ghanaian Beaches: A Socio-demographic Analysis

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### ABSTRACT

Beach resources, facilities, and environmental conditions play critical roles in shaping recreational activities and opportunities for beachgoers. Thus, this study explores the dimensions of recreational activities undertaken at tourist beaches in Ghana, while also examining the disparities in activities among beach users. Employing a quantitative approach, data were collected from 315 beach users between November 2020 and February 2021 at tourist beaches in the Accra Metropolis. An exploratory factor analysis was conducted to discern the dimensions of beach recreational activities engaged by the users. Three primary dimensions emerged: water-dependent, sand-dependent, and beach facility-based activities. The findings revealed that beach facility-based activities ( $M = 2.81$ ), such as photography and enjoying snacks with a scenic beach backdrop, were the most preferred and pursued by users. Conversely, water-dependent activities ( $M = 3.76$ ), such as swimming, freediving, and sand-dependent activities ( $M = 3.68$ ), such as beach relaxation and sand bathing, were less preferred and pursued due to prevailing beach conditions. Furthermore, the analysis examined variations in recreational activities across visitors' demographic profiles using statistical methods such as t-tests and analysis of variance. The findings revealed that gender, nationality, age, marital status, education, and purpose of visit significantly influence tourists' recreational pursuits. Coastal and tourism managers should prioritize initiatives aimed at enhancing water and sand quality, including regular monitoring, pollution control, and sustainable waste management practices. Additionally, tailored interventions should be designed based on the preferences and sensitivities of different demographic groups to ensure a more inclusive and gratifying beach experience for all visitors.

**Keywords:** Beach conditions, Recreational activities, Coastal tourism, Socio-demographic characteristics, Ghana

### Introduction

Globally, beaches stand as natural iconic destinations, attracting millions of tourists, offering numerous desirable sought-after recreational activities and opportunities, and making significant contributions to local economies. These sought-after recreational activities, ranging from boating to sunbathing thrives in beach environments with specific desirable conditions (Tudor & Williams, 2008). The quality of coastal sceneries, including factors such as water and sand cleanliness, and the absence of litter, exerts a positive influence on tourist activities, shaping the nature, extent, and duration of beach engagement among tourists (Pascoe, 2019; Wyles et al., 2014). Consequently, the environmental quality of beaches can either enhance or detract from recreational activities. This nuanced impact of beach quality, contingent upon factors like water and sand cleanliness and the absence of litter, significantly shapes tourist activities (Ghermandi et al., 2015). Globally, coastal tourism stands as the fastest-growing segment of the tourism industry, with beaches ranking among the most frequent tourist destinations. This trend is projected to persist, even in emerging destinations (Jackie-Ong & Smith, 2014). Importantly, nearly all beachgoers engage in passive and active activities, with the beach conditions and quality profoundly influencing these engagements. Furthermore, on average, each tourist spends approximately 10% of their discretionary income on recreational activities (Qiang et al., 2019), particularly in coastal locales where the majority (75%–80%) of recreational travelers converge (Daher, 2018). Moreover, recreational activities at beaches usually involve direct interaction with beach water and sand components. Therefore, the quality of the beach environment, which encompasses factors such as air and water quality, noise levels, aesthetic appeal, safety, and security, plays a pivotal role in shaping overall beach preferences, activities, and user experiences. As such, beach environmental quality (conditions) drives individual-specific activities and determines the recreational opportunities available to beach users. Consequently, it has emerged as a critical area of recent tourism research (Qiang et al., 2019; Chen et al., 2018) and appears to represent an underexplored research area in Ghana, despite beaches constituting the country's third most vital tourism resource (Akyeampong, 2006).

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West Africa has a rich coastal heritage, particularly evident in Ghana's four coastal regions: Volta, Greater-Accra, Central, and Western regions. Consequently, Ghana is poised to offer beach tourists and visitors coastal resources including water, beaches, visual beauty, abundant marine, and terrestrial wildlife, and a diverse range of cultural and historical sites along the coast for leisure and tourism. Coastal areas of Ghana witness high levels of tourism and recreational activities (Tsagbey et al., 2009). However, less attention has been given to exploring the recreational activities type, form, and nature, most pursued by tourists at Ghanaian beaches. Furthermore, little is known about the condition and quality of beach resources that facilitate such activities, and how beach conditions or tourism resources influence recreational activities among users, with potential implications for the development and sustainability of coastal tourism in these regions. Therefore, this study addresses this gap by exploring the dimensions of recreational activities pursued by visitors, such as aesthetic viewing, swimming, beach sports, and sunbathing, at tourist beaches in Ghana. Additionally, it examines variations in beach recreational activity pursuits across the socio-demographic profiles of beach users. With increasing reports of deteriorating environmental conditions at many of Ghana's tourist beaches (Mensah, 2021; Eshun et al., 2019), this study identifies the specificity and dimensionality of beach activities that are most and/or least accessible and pursued at the beaches based on the overall prevailing environmental conditions or quality. By exploring, identifying, and offering practical implications for coastal and tourism managers and management, this study provides valuable insights for recreational enhancement, fostering sustainable coastal development, and informing policymaking in the region. Importantly, the limited scope of recreational studies on West African beaches underscores the urgency and significance of this research endeavor in enhancing our understanding of beach tourism dynamics and environmental management in the region.

## **Literature Review**

### ***Beach Environmental Conditions***

Environmental conditions on beaches consist of natural and human components. Natural elements include air, sand and water purity, biodiversity, aesthetic attributes, as well as consideration for health and safety. Beyond these natural elements, human-induced factors such as pollution and land use significantly impact ecosystem health (Boyle, 2018; Thomsen et al., 2017). Key indicators such as air, sand and water quality, noise levels, and aesthetic appeal are essential for understanding the ecological integrity of natural settings and their suitability for recreational activities. Within the context of beach recreational pursuits, environmental conditions entail factors like air, sand and water cleanliness, absence of pollutants, and preservation of the coastal landscape. Understanding the diverse dimensions of environmental conditions as enablers for beach recreational activity pursuits is essential (Vosoughi et al., 2021; Saeedi et al., 2019). Research on beach conditions has primarily focused on assessing the well-being of beachgoers, emphasizing aspects such as aesthetic appeal, hygiene, and cleanliness. Additionally, evaluating the physical safety of beach users, particularly concerning health risks associated with water and sand contact, has been a key consideration. Environmental factors are crucial in determining visitor satisfaction and health during recreational activities. Poor air quality, characterized by pollutants such as particulate matter and ozone, can adversely affect visitor health and comfort. Conversely, clean and safe sand and water enhances the appeal of the beach, while managing noise pollution is essential for preserving natural tranquility (Chen et al., 2018). Managing noise pollution is essential for maintaining an optimal recreational environment. Existing literature emphasizes the significance of beach environmental qualities, highlighting the important role of beach facilities (Peña-Alonso, 2018). These facilities are crucial in shaping visitors' experiences and perceptions of coastal areas. Factors such as cleanliness, accessibility, and available amenities significantly influence user satisfaction and the likelihood of engaging in recreational activities (García-Morales, 2018). Thus, comprehending and upholding high standards for beach facilities are crucial for promoting tourism, ensuring visitor safety, and conserving coastal environments for future generations. Aesthetic appeal represents another vital aspect of environmental conditions contributing to the perceived quality of recreational spaces (Morales, 2018; Morgan, 1999). Moreover, safety and security are crucial for facilitating activities, fostering positive visitor perceptions, and encouraging return visits. Positive environmental attributes, such as clean air, pristine water, and visually pleasing landscapes, consistently correlate with heightened visitor satisfaction (Magura et al., 2010). Integrated assessments of environmental quality are positively associated with the enjoyment and perceived quality of recreational spaces (Williams & Micallef, 2009).

### ***Components of Beach Recreational Activity Performance***

The enjoyment and feasibility of beach activities, such as sunbathing, beach sports, and sandcastle construction, are significantly influenced by beach scenery, sand quality, and waterfront stability. Accessibility stands out as another crucial factor, involving considerations such as parking spots, pathways, and facility accessibility (Ghermandi et al., 2015). Water quality and the presence of lifeguards are crucial determinants of beach safety. Clean and safe water facilitates swimming and water sports, while the presence of lifeguards enhances overall confidence and safety (Daher, 2018). Social variables, such as visitor behavior and crowd density, also impact the quality of beach recreational activities. Natural attractions and clean, sanded beaches provide a conducive environment for various recreational activities such as creating elaborate sandcastles, engaging in beach volleyball or soccer,

creating sand art, taking photos, participating in sandcastle-building competitions, enjoying barefoot beach walks, seaside picnics, sandboarding or sledding, hosting beach bonfires, and relaxing on sandy shores (Koens et al., 2018). The physical infrastructure of the beach, comprising well-maintained boardwalks, restrooms, picnic places, and parking facilities, enhances the convenience and comfort of beachgoers. Activities such as yoga classes, jet skiing, paddleboarding, dining in restaurants or cafés, organized beach games, and facility-based activities are further enriched by the presence of well-maintained beach facilities. Social factors, such as crowd size and safety precautions, also considerably influence beach recreational activities. User satisfaction may be compromised by crowded beaches, which highlights the importance of implementing effective management strategies to maintain a visitor's balance. A sense of safety during beach activities, including personal security and the implementation of environmental conservation measures, is crucial (Wilson & Verlis, 2017; Manning, 2011). Recreational beach activities are intricately linked to a combination of physical, environmental, and social factors. Understanding and integrating these components are essential for the comprehensive assessment and optimization of beach recreational activity performance.

### ***Beach Environment and Recreational Activity Performance***

The quality of beach environments and facilities plays a critical role in determining recreational performance. This intricate relationship underscores the interconnectedness of beach facilities, environmental conditions, and recreational pursuits. Environmental indicators are crucial for assessing the suitability of beach environments for recreational activity. The environmental conditions of beach resources and facilities significantly contribute to the overall recreational experience of beachgoers. Pristine water, along with clean and aesthetically pleasing surroundings, enhances the appeal of beaches and promotes various activities such as swimming, sunbathing, and beach sports (Papadopoulou & Mimikou, 2019; Chen et al., 2018). Research indicates that visitors are more inclined to engage in and derive satisfaction from recreational activities when they are conducted in beach environments characterized by high environmental quality indicators (Saeedi et al., 2019). Conversely, poor beach conditions can impede recreational activities. Contaminated water, visible pollution, and compromised air quality pose health risks and deter visitors from participating in activities, ultimately diminishing the overall recreational experience (Pascoe, 2019). Regarding air quality, studies emphasize the importance of clean air in promoting a healthy and enjoyable recreational experience. Poor air quality can adversely affect visitors' comfort during beach activities and undermine their satisfaction level (Saeedi et al., 2019). Water quality represents another essential indicator, especially for coastal areas. Pristine water is indispensable for activities such as swimming and water sports, influencing visitor preferences and overall satisfaction levels at beaches (Chen et al., 2018). Consequently, monitoring and maintaining water quality emerge as paramount tasks for sustaining the recreational value of coastal environments.

Aesthetic degradation, characterized by littered shorelines and deteriorating natural features, can negatively impact visual appeal, consequently affecting visitor satisfaction and participation in beach activities. Cleanliness, visual attractiveness, and the absence of pollution are key factors influencing the perception of environmental quality along beaches (Magura et al., 2010). A well-maintained and aesthetically pleasing environment significantly enhances the overall recreational experience. However, the relationship between environmental quality and recreational activity performance is complex and subject to moderation by various factors. Effective waste disposal, pollution control measures, and habitat preservation strategies are vital management interventions that can mitigate the negative impacts of poor environmental quality (Ditton et al., 2017). Moreover, visitor education and awareness programs can influence behavior, fostering a sense of responsibility and stewardship among beachgoers. Social and economic factors also come into play, with overcrowding posing a significant strain on the environment and diminishing the quality of recreational experiences (Manning, 2011). Therefore, maintaining a balance in visitation rates through effective management practices is essential for sustaining environmental quality and positive aspects of recreational activities at beaches. The interplay of these factors highlights the complex dynamics that influence beach recreational activity, emphasizing the importance of comprehensive and sustainable management strategies for tourism and recreation within the coastal environment. Noise levels contribute to the recreational ambiance, with excessive noise from human activities disrupting the tranquility of beach settings and compromising the visitor experience (Vosoughi et al., 2021). Hence, managing noise pollution is crucial for preserving the natural soundscape and enhancing the overall quality of recreational activities.

Research on beach facilities and their impact on recreational activities has revealed a range of factors influencing the quality of beach experience. Peña-Alonso (2018) identified accessibility, environmental and water quality, comfort, scenic quality, human activity, and infrastructure as the key indicators of recreational quality. García-Morales (2018) emphasized the importance of user perceptions in assessing beach quality, stressing the need for tailored management programs. Morgan (1999) underscored the significance of landscape, bathing safety, and environmental quality, albeit placing lower priority on beach facilities. Morales (2018) further emphasized the need for an integrated approach, combining assessments of recreational quality and carrying capacity to guide beach management efforts.

Safety and security indicators are paramount for ensuring a positive recreational performance and experience. Manning (2011) highlighted the importance of a secure environment in fostering positive visitor perceptions and encouraging repeat beach use

and visits. A clean and safe environment significantly contributes to the overall quality and enjoyment of recreational activities on beaches. In many coastal West African countries, including Ghana, where tourist activity is increasing, beaches are swiftly becoming integral parts of local economies targeting the “3S” market. Consequently, the sense of user safety following beach water, sand, and facility usage is largely driven by user perception, with emphasis placed on aesthetic values such as hygiene and cleanliness. However, social and economic components also play an important role when considering the value of beaches (Micallef & Williams, 2002; Morgan, 1999). This is because the level of physical security for beach users can be determined by assessing the risk of sand and water conditions to human health.

### ***Recreation Opportunity Spectrum***

The Recreation Opportunity Spectrum (ROS) stands as a conceptual framework crucial for understanding the intricate relationship between beach environmental quality and recreational activity performance. It classifies outdoor recreational settings based on variables such as remoteness, facility development, and environmental quality, thereby offering a nuanced approach to assessing diverse opportunities and constraints within natural environments (Stankey, 2020; Manning, 1985). This framework empowers nature-based tourism managers to align resource characteristics with the appropriate types and levels of recreational activities, often guiding management decisions based on user feedback. In the context of beach environments, the ROS framework holds particular relevance, facilitating systematic categorization of beaches according to their environmental attributes. Factors like remoteness, facility development, and environmental conditions play crucial roles in determining the types of recreational activities feasible at a given beach (Koens et al., 2018; Manning, 2011). Applying the ROS framework to beaches allows researchers to classify and understand varying degrees of environmental conditions and their impacts on recreational opportunities. Such categorization offers insights into how different levels of environmental conditions influence the recreational preferences and behaviors of beachgoers, illuminating which recreational activities are more likely to thrive in specific beach settings. Thus, the ROS framework serves as a valuable tool for investigating the nuanced connection between beach facilities, environmental conditions, and recreational activities. Considering factors such as accessibility, facilities, and desired user experience, it aids in ensuring sustainable outdoor recreation practices and management strategies.

### ***Leisure Constraint Theory***

The “leisure constraints model” introduced by Crawford and Godbey (1987) offers a structured framework for understanding the factors that may hinder individuals’ engagement in recreational activities. These constraints include intrapersonal, interpersonal, and structural. Intrapersonal constraints pertain to personal factors such as motivations, preferences, and physical abilities, whereas interpersonal constraints arise from interactions with others such as family, friends, or social groups. Structural constraints involve external factors such as the nature and quality of the physical environment, as well as the availability, safety, and cleanliness of facilities. Together, these constraints highlight the myriad influences individuals face when making leisure choices and participating in recreational activities. In the context of beach recreational activities, personal preferences, social interactions, and the physical environment can significantly impact leisure performance. Substandard beach environments or facilities, marked by unclean areas, changes in water and sand quality, the presence of plastics and litter, and unpleasant odors, can significantly diminish tourists’ leisure experiences (Jackson, 1994). Environmental degradation further reduces beaches’ aesthetic appeal, contributing to negative leisure performance. Hazards posed by litter, plastics, dead mammals, and human waste/feces also limit tourists’ sense of safety, thereby dampening their willingness to engage in beach activities (Driver et al., 1991). Addressing these structural constraints is crucial for fostering positive beach recreational experiences and sustaining tourism.

In the domain of leisure and recreational marketing, the overall condition and quality of a beach are measured based on visitors’ perceptions of how the environment influences their leisure activities. Positive indicators of a high-quality beach environment include increased enjoyment, participation, and overall positive experiences (Driver et al., 1991). Conversely, unfavorable feedback often signals subpar beaches characterized by unsanitary conditions. Analyzing tourists’ feedback regarding the beach environment’s suitability for engaging in recreational activities yields valuable insights into the average quality and cleanliness of Ghanaian beach environments for recreation and tourism. This data can inform strategies for enhancement and sustainable tourism management, thereby optimizing the leisure experiences of beachgoers.

### ***Socio-demographic Determinants of Beach Recreational Activity Performance***

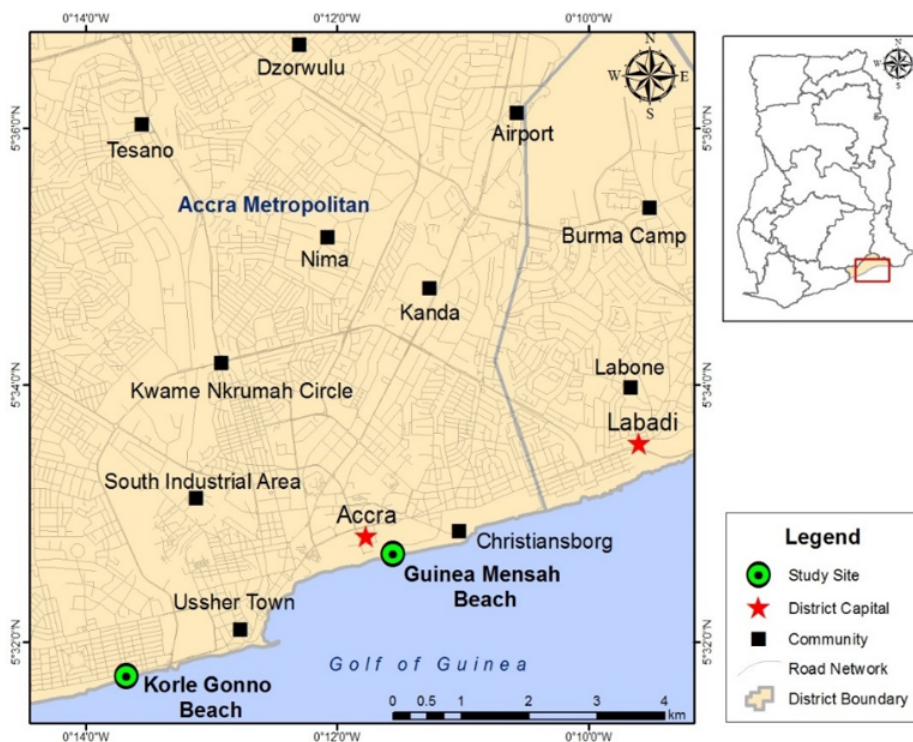
The engagement of travelers in beach enjoyment activities is profoundly influenced by their socio-demographic characteristics. Age, gender, income, and cultural background serve as crucial factors shaping individuals’ environmental perceptions, preferences, and level of activity participation in natural settings (Lucrezi & van der Walt, 2015). While elderly individuals may prefer calmer pursuits such as sunbathing or beach walks, younger demographics often gravitate toward more energetic activities like water



sports and beach games (Lucrezi et al., 2016; Wyles et al., 2014). Gender differences can also play a role in determining activity preferences and environmental considerations (Wyles et al., 2016). Moreover, income levels may impact access to specific recreational facilities and services, thereby influencing participation rates. Cultural/geographical backgrounds further contribute to the diversity of preferences and participation rate in beach leisure activities, as tourists from different cultural origins may find varying activities pleasurable or culturally relevant (Pascoe, 2019). This research highlights the need to understand how socio-demographic characteristics such as age, gender, income, and cultural background influence travelers' engagement in beach enjoyment activities. A notable lack of comprehensive understanding exists regarding how these factors shape individuals' recreational choices and their levels of participation in natural environments, particularly at beach destinations (Manning, 2014; Wyles et al., 2014; Morgan, 1999). Users in the natural environment are inherently responsive to their immediate environment, which significantly influences their recreational activities and preferences, especially at beaches where such activities involve direct and active interaction with beach sand, water, facilities, and the overall environment (Daher, 2018; Jackie-Ong & Smith, 2014; Jackson, 1994). Addressing these complexities is crucial for tailoring beach tourism experiences and ensuring inclusivity across various travelers' demographics. However, beach conditions provide an underlying basis for user desires, choices, and participation.

### Study Setting

This research holds particular significance due to the dearth of studies examining the influence of environmental quality on the specific dimensions of recreational beach activities at tourist beaches in Ghana and West Africa. The study was conducted at two main tourist beaches (Figure 1), Guinea Mensah Beach and Korle Gonno Beach, located in the Accra Metropolitan Area of Ghana. Guinea Mensah Beach, primarily designated for tourism, boasts a predominantly sandy terrain with a rock cliff behind the shoreline. At a short distance from Accra, the capital city, and spanning approximately 220m, the beach lies within Ghana's primary tourist region. The coordinates for the beach are approximately N 05°32.594' W 000°11.823', N 05°32.599' W 000°11.825', N 05°32.609' W 000°11.771', and N 05°32.615' W 000°11.773'. Characterized by a low-to-moderate slope, this beach attracts tourists from diverse socioeconomic and demographic backgrounds. Conversely, Korle Gonno Beach, located 2 km west of Accra, is situated in the densely populated Korle Gonno neighborhood, with coordinates of approximately N 05°31.733' W 000°13.537', N 05°31.738' W 000°13.538', N 05°31.744' W 000°13.480', and N 05°31.752' W 000°13.481'. This 200-m-long beach features a combination of rocky and sandy surfaces and is frequented by domestic and occasional foreign tourists on weekends and holidays. Along most shorelines, facilities enhancing ocean views and leisure activities are strategically positioned, catering to tourists.



Source: GIS Unit, University of Cape Coast 2021.

Figure 1. Map of the study sites.

## Methodology

This study employed a quantitative research method to systematically investigate recreational beach activities and evaluate the association between socio-demographic variables and activity pursuits. Quantitative methods offer statistical rigor in analyzing relationships among variables, as highlighted by Creswell (2014). This approach facilitates the quantitative depiction of the prevalence and trends of the phenomenon by sampling the population. It is acknowledged for its effectiveness in examining social phenomena, as noted by Creswell (2016) and Saunders et al. (2012). Through surveys and statistical analyses, this study aimed to quantify the prevalence of various beach activities and statistically assess how factors such as age, gender, income, and cultural background influence activity preferences. This quantitative approach provides valuable insights into the dynamics of beach recreation and its interactions with socio-demographic characteristics.

### Research Instruments and Measurements

A two-part survey questionnaire was specifically developed for this study. The first part consisted of eight items focusing on beach visitor characteristics, including gender, age, marital status, education, nationality, continent of origin, travel party, and purpose of the visit. The second part of the questionnaire comprised 23 items addressing beach recreational activities pursued in coastal Ghana, measured on a five-point Likert scale. The instrument was developed based on the relevant literature, particularly studies by Pascoe (2019), Qiang et al. (2019), Papadopoulou and Mimikou (2019), Daher (2018), Wyles et al. (2014) Tudor and Williams (2008), and Morgan (1999). To ensure the appropriateness of the measurement instrument, it was particularly developed for this study. To ensure measurement appropriateness, a pilot study involving 22 participants who visited La Pleasure Beach in Ghana in February 2020 was conducted. Following the pretest and consultation with two experts (one professor and one professional), minor adjustments were made to the questionnaire. The final survey comprised 31 items, and the scale interpretation for the items assessing beach recreational activities is presented in Table 1.

Table 1. Measurement Scale

Survey Responses	(Interpretation)	Five-point Scale	Three-point Scale
<i>Based on the overall resource, facilities, and environmental conditions here at this beach, I participated or prefer to participate in this beach activity:</i>			
Strongly Agree	Highly performed activity	1.0–1.49	1.0–1.49
Agree	Performed activity	1.50–2.49	
Indifferent	Moderately performed activity	2.50–3.49	1.50–2.49
Disagree	Underperformed activity	3.50–4.49	
Strongly Disagree	Highly underperformed activity	4.50–5.00	2.50–3.00

Source: Author

### Sampling and Data Collection

Due to the challenges associated with mobility and the scarcity of data on beach visitors and tourists in Ghana, convenience sampling was utilized to gather data for this study. This approach has been commonly employed by researchers facing similar logistical challenges when studying dynamic and migratory populations (Su et al., 2021; Khairi & Darmawan, 2021). Self-administered questionnaires were distributed by the researcher directly on both beaches. The questionnaires were exclusively offered to visitors who had spent at least an hour on the beach and were actively engaging in beach activities or utilizing beach facilities. This selection process was conducted randomly at various convenience intervals between November 16, 2020, and February 3, 2021. In total, 317 surveys were carefully distributed across the two beaches over three months. Following the exclusion of two incomplete questionnaires from the analysis, 315 completed responses were used in this study. For a quantitative study like this, a minimum of 100 respondents is generally considered sufficient and appropriate for statistical estimation (Hair et al., 2013; Brida & Scuderi, 2013). Therefore, the sample size of 315 respondents was deemed adequate for this study, ensuring robust statistical analysis and reliable findings.

### Data Analysis and Results

This study utilized SPSS version 25.0 for data analysis. Initially, descriptive statistics were employed to outline the socio-demographic profiles of beach visitors. Subsequently, a factor analysis employing principal components with varimax rotation was conducted to ascertain the factorial dimensions of recreational activities pursued by the visitors. An assessment of data

normality was performed, followed by a mean analysis of individual and dimensional aspects of beach recreational activities. Finally, t-tests and analysis of variance (ANOVA) were employed to examine differences in recreational activities across various socio-demographic profiles.

### *Socio-demographic Profiles*

This study presents a comprehensive overview of participants' characteristics, including travel-related and demographic information. The gender distribution leaned slightly toward women, comprising 57.4% of participants, while men accounted for 42.6%. Age distribution was diverse, with 39.4% of the sample falling between 25 and 34 years old (Table 2). The majority of respondents held a first degree, with 16.2% having graduated from high school and 14.6% possessing postgraduate qualifications.

In terms of nationality, 71.1% of the participants were domestic tourists, while 28.9% were foreign visitors. A considerable proportion of the participants were single (75.8%), with married individuals representing 14.6% (Table 2). Most participants hailed from Africa, while Asia, North America, and Europe accounted for 4.4%, 7.6%, and 14.6%, respectively. Solo travelers were prevalent, constituting 72.3%, while 27.7% traveled in groups. Leisure and recreation emerged as the primary reasons for beach visits (65.4%), with 15.8% spending time alone or seeking solitude and 18.8% engaging in social interactions. The results offer comprehensive insights into the travel-related and demographic characteristics of the participants, indicating a diverse and well-informed population with varied travel objectives typically associated with beach destinations (Pascoe, 2019; Lucrezi et al., 2016; Lucrezi & van der Walt, 2015).

**Table 2.** Socio-demographic Profiles

Characteristics	N	Per cent
<b>Gender</b>		
Male	134	42.6
Female	181	57.4
<b>Age</b>		
<25	113	35.8
25–34	124	39.4
35+	78	24.8
<b>Educational level</b>		
High school	51	16.2
First degree	218	69.2
Postgraduate	46	14.6
<b>Tourist type (Nationality)</b>		
Domestic	224	71.1
International	91	28.9
<b>Marital status</b>		
Single	239	75.8
Married	46	14.6
Ever-married	30	9.6
<b>Continent of origin</b>		
Africa	231	73.4
Europe	46	14.6
North America	24	7.6
Asia	14	4.4
<b>Travel party</b>		
Individual visitors	228	72.3
Group visitors	83	27.7
<b>Purpose of travel</b>		
Escape/Spend time alone	50	15.8
Leisure /Recreation	206	65.4
Meeting others	59	18.8

Source: Author

### Factor Analysis of Beach Recreational Activities

To conduct the Factorial Analysis, the scale underwent reliability testing, resulting in a Cronbach's alpha value of 0.831 for recreational activities, surpassing the 0.70 internal consistency threshold (Pallant, 2007). Factors with eigenvalues (eigenvalue  $\geq 1$ ) and variables with loading factors of 0.50 or higher were considered. The Kaiser–Meyer–Olkin (KMO) measure was 0.894, exceeding the 0.6 threshold set by Kaiser (1974), with Bartlett's test of sphericity yielding 3,242.814 at  $p = 0.000$ . The principal component analysis identified three factors, collectively explaining 65% of the variance in recreational activities pursued by beach patrons (Table 3).

The first factor, labeled water-dependent activities, possessed an eigenvalue of 9.09 and explained 34.21% of the variance. It includes various water-related activities such as beach swimming/bathing, freediving or breath-hold diving, surfing, fun-running barefooted on the seashore, in-water tug-of-peace, and hiking barefooted on the beaches. A Cronbach's alpha of .894 indicated high internal consistency among the variables. The second factor, termed sand-dependent activities, had an eigenvalue of 6.26, explaining 17.32% of the variance. This factor comprised activities such as sitting (relaxing) on the beachfront, sunbathing on the beach, sand bathing at the beach, dancing/playing on the beach, beach soccer activities, sandcastle building, beach volleyball, beachcombing, sitting by beach bonfires, and beach frisbee/beach throws. A Cronbach's alpha of .789 suggests good internal consistency. The third category, identified as facility-based activities, possessed an eigenvalue of 3.31, explaining a variance of 13.44%. It includes activities such as beach admiration (aesthetics), beach photography, enjoying/snacking from a beach view, beach barbecue/picnicking, beach yoga, reading/browsing, and beach partying. A Cronbach's alpha of .812 indicated high internal consistency (Table 3).

The reliability of the identified constructs was confirmed by the factor analysis, which revealed three primary factors underlying beach recreational activities, each accompanied by a range of associated activities and varying levels of explained variance. These data and findings offer valuable insights for beach management and researchers, enabling them to identify and understand the underlying framework of beach activities pursued and preferred by beach users in coastal Ghana, particularly in Accra.

**Table 3.** Factorial dimensions of beach recreational activities

Recreational Activities	Factor Loading	Eigenvalue	Variance Explained (%)	Cronbach Alpha
<b>Water-dependent Activities—Factor 1</b>		9.09	34.21	.894
Beach swimming/bathing	.921			
freediving or breath-hold diving	.845			
Surfing	.711			
Fun-jogging barefooted on the seashore	.893			
In-water tug-of-peace	.852			
oceanfront hiking	.831			
<b>Sand-dependent Activities—Factor 2</b>		6.26	17.32	.789
Sitting (relaxing) on the beachfront	.931			
Sunbathing on the beach	.741			
Sand bathing at the beach	.731			
Dancing /playing on the beach	.811			
beach soccer activities	.709			
Sandcastle Building	.825			
Beach Volleyball	.723			
Beachcombing	.911			
Sitting by Beach Bonfires	.505			
Beach Frisbee/Beach throws	.892			
<b>Facility-based activities—Factor 3</b>		3.31	13.44	.812
Beach admiration (aesthetics)	.892			
Beach photography	.891			
Enjoying/snacking with a beach view	.652			
Beach Barbecue/Picnicking	.731			
Beach Yoga	.619			
Reading/browsing	.504			
Beach Partying	.894			
<b>Total variance explained</b>			64.97	(.831)
Bartlett's Test of Sphericity = 3,242.814; p-value = 0.000				
Kaiser–Meyer–Olkin (KMO) Measure of Sphericity = 0.894				

Source: Author



### Descriptive Values of Scales for Beach Recreational Activities

The outcomes concerning the beach recreational activities pursued an overall mean score of 3.76, indicating a reluctance or inability among visitors to engage in water-based recreational activities due to beach conditions. Specifically, users reported difficulties participating in beach swimming/bathing (mean = 4.39), free or breath-hold diving (mean = 3.96), in-water tug-of-peace (mean = 3.72), fun-jogging barefooted on the seashore (mean = 3.68), and oceanfront hiking (mean = 3.63) (Table 3). These findings imply that the perceived beach water and environment may have hampered users' involvement and enjoyment of water-based activities on beaches.

**Table 4.** Descriptive values of scales for beach recreational activities

Beach Recreational Activities	Mean	Std. D	Skewness	Kurtosis
<b>Water-dependent activities</b>				
Beach swimming/bathing	4.39	.91		
freediving or breath-hold diving	3.96	1.06		
Surfing	3.16	1.26		
Fun-jogging barefooted on the seashore	3.68	1.21	-0.731	-0.481
Water-in-Tug-of-peace	3.72	0.81		
oceanfront hiking	3.63	1.12		
<b>Overall Score</b>	<b>3.76</b>		<b><i>p = 0.0629</i></b>	
<b>Sand-dependent activities</b>				
Sitting (relaxing) on the beachfront	4.11	1.24		
Sunbathing on the beach	3.11	1.29		
Sand bathing at the beach	4.03	.98		
Dancing /playing on the beach	3.11	1.22		
beach soccer activities	3.58	1.09	-0.645	1.598
Sandcastle Building	3.98	1.01		
Beach Volleyball	3.55	1.04		
Beachcombing	3.67	0.98		
Sitting by Beach Bonfires	3.56	0.99		
Beach Frisbee/Beach throws	2.14	1.23		
<b>Overall Score</b>	<b>3.68</b>		<b><i>p = 0.0593</i></b>	
<b>Facility-based activities</b>				
Beach admiration (aesthetics)	3.74	1.24		
Beach photography	2.40	1.37		
Enjoying/snacking with a beach view	2.12	1.31		
Beach Barbecue/Picnicking	2.41	1.16		
Beach Yoga	3.89	0.96	-0.422	1.884
Reading/browsing	2.65	1.12		
Beach Partying	2.43	1.23		
			<b><i>p = 0.0723</i></b>	
<b>Overall Scale</b>	<b>2.81</b>		<b>-0.599</b>	<b>1.033</b>

Source: Author

Similarly, the average score (mean = 3.68) for sand-dependent activities indicated an overall subpar performance of recreational activities within this dimension, attributed to the general state of beach conditions. Notably, activities such as sitting (mean = 4.11), sand bathing (mean = 4.03), building sandcastles (mean = 3.98), beachcombing (mean = 3.67), beach soccer (mean = 3.58), sitting by beach bonfires (mean = 3.56), beach volleyball (mean = 3.55), and sunbathing (mean = 3.11) were among the least preferred or participated in. This poses critical concerns because these activities are fundamental and highly sought after by coastal travelers (Daher, 2018). Conversely, beach frisbee/throw activities were the sole activities that participants engaged in or expressed a willingness to partake in within this sand-dependent subdimension. However, the mean score (2.81) for facility-based activities indicated a generally positive performance or willingness to engage in recreational activities associated with beach facilities. In particular, activities such as enjoying/snacking with a beach view (mean = 2.12), beach photography (mean = 2.40), barbecue/picnicking (mean = 2.41), beach partying (mean = 2.43), and reading/browsing (mean = 2.65) were well-received. This indicates that beaches provide safe, clean, and basic amenities that facilitate tourists' engagement in these activities without environmental concerns. However, activities such as beach yoga (mean = 3.89) and beach admiration (mean = 3.74), which are closely tied to beach sand and water cleanliness/conditions, had minimal participation or willingness to participate, underscoring the need to address beach conditions and aesthetic qualities.

Additionally, the normality of the data was assessed for further analysis. This revealed skewness and kurtosis values (z-values) within the -2 to +2 range (Table 4) at  $p > 0.05$  (Shapiro-Wilk test), indicative of a normal distribution of the dataset. Based on the

subdimension means, it can be inferred that the most influential factors driving individual choices and participation in recreational activities on beaches involve activities personally suited to individuals made largely available by the quality of facilities, and environmental conditions at the beaches.

### *Differences in Recreational Activities Across Visitors' Profiles*

This study also investigated differences in beach recreational activities pursued or preferred across user profiles. To achieve this objective, the original five-point Likert scale was transformed into a three-point Likert scale to facilitate the analysis and interpretation of the results. Employing an independent t-test and one-way ANOVA, the analysis revealed significant associations between user profiles and their preferences and pursuits of recreational activities, particularly regarding gender, nationality, age, marital status, education, and purpose of travel. The findings indicated significant gender disparities in the inclination toward water-dependent recreational activities ( $p = 0.012 < 0.050$ ). Male visitors exhibited a moderate inclination (mean = 2.42) toward such activities, whereas females displayed reluctance (mean = 2.85) (Table 5). Additionally, local/domestic visitors displayed a moderate inclination toward water- (mean = 2.42,  $p = 0.046$ ) and sand-dependent activities (mean = 2.57,  $p = 0.038$ ), whereas international visitors expressed disinclination toward these activities. Conversely, international visitors displayed a strong inclination toward facility-based activities (mean = 1.51,  $p = 0.010$ ), while domestic visitors demonstrated a moderate inclination (mean = 2.09). These findings suggest that contingent upon the facilities and beach conditions, international visitors are disinclined toward water- and sand-dependent activities but favor engagement in facility-related beach recreational activities compared with domestic visitors.

**Table 5.** Differences in recreational activities across visitors' profiles

Characteristics	Water-dependent Activities			Sand-dependent Activities		Facility-related Activities	
	N	Mean	<i>p</i> -value	Mean	<i>p</i> -value	Mean	<i>p</i> -value
<b>Sex</b>							
Male	134	2.42	0.012*	2.45	0.778	1.14	0.021*
Female	181	2.85		2.66		1.48	
		t = -4.60		t = -0.288		t = -1.14	
<b>Visitor-type (Nationality)</b>							
Domestic	224	2.42	0.046*	2.57	0.038*	2.09	0.010*
International	91	2.68		2.71		1.51	
		t = -4.85		t = 2.18		t = 3.11	
<b>Travel party</b>							
Individual	228	2.32	0.270	2.40	0.440	1.89	0.121
In a Group	87	2.44		2.45		1.78	
		t = 1.12		t = 0.780		t = 2.16	
<b>Age</b>							
18–25	113	2.78	0.004*	2.56	0.097	1.51	0.071
26–34	124	2.69		2.57		1.71	
35+	78	2.55		2.66		2.12	
		F = 17.53		F = 0.087		F = 1.23	
<b>Marital status</b>							
Single	239	2.10	0.210	2.44	0.025*	2.12	0.061
Married	46	2.09		2.73		2.31	
Ever-married	30	2.55		2.32		2.21	
		F = 4.73		F = 3.72		F = 1.33	
<b>Education</b>							
High school	51	2.51	0.000*	2.46	0.712	2.12	0.033*
Tertiary	218	2.69		2.71		2.64	
postgraduate	46	2.81		2.64		2.67	
		F = 8.12		F = 3.10		F = 12.10	
<b>Travel purpose</b>							
Escape	50	2.63	0.017*	2.14	0.020*	1.41	0.021*
Leisure/Recreation	206	2.84		2.81		1.51	
Meeting others	59	2.65		2.61		2.23	
		F = 10.06		F = 13.97		F = 77.61	
<b>Continent</b>							
Africa	231	2.44	0.067	2.85	0.073	2.10	0.241
Europe	46	2.76		2.77		2.41	
North America	24	2.72		2.66		2.31	
Asia	14	2.19		2.54		1.41	
		F = 3.41		F = 6.35		F = 2.11	

Source: Author; Significant level at \*  $p < 0.05$

The ANOVA test revealed a notable difference ( $p = 0.004$ ) in the pursuit of water-dependent recreational activities across visitors' age groups. Specifically, visitors aged 18–25 displayed a higher level of reluctance to participate (mean = 2.78) compared with those aged 26–34 (mean = 2.69) and 35+ years (mean = 2.55). These findings imply potential age-related variations in preference or sensitivity to environmental conditions during beach activities. Younger individuals may perceive water quality negatively, indicating a divergence in preferences based on age. Targeted interventions are necessary to address these age-specific differences and enhance beachgoer satisfaction. Furthermore, considering marital status, significant differences in the mean scores for sand-dependent activities were observed between the groups ( $p = 0.025$ ). Married individuals exhibited a higher reluctance to participate (mean = 2.73) compared with single individuals (mean = 2.44) or others (mean = 2.32), suggesting varying levels of willingness based on marital status. Additionally, significant differences were found across visitors' educational levels regarding participation in water-dependent (postgraduate = 2.78, tertiary = 2.69;  $p = 0.000$ ) and facility-based activities (postgraduate = 2.67, tertiary = 2.64;  $p = 0.033$ ). Highly educated individuals may demonstrate greater environmental consciousness and higher expectations of nature-based destinations, leading to reluctance to participate in activities directly dependent on beach conditions and facilities.

Furthermore, visitors' travel purposes significantly influenced participation in water-dependent activities ( $p = 0.017$ ), sand-dependent activities ( $p = 0.020$ ), and facility-based activities ( $p = 0.021$ ). The findings revealed that individuals primarily visiting the beach for recreational purposes demonstrated a lower inclination to engage in water-dependent activities compared with those visiting for other purposes, with mean scores of 2.65 for those meeting others and 2.63 for those visiting escapism purposes. Regarding sand-dependent activities, while recreational visitors were more reluctant to participate (mean = 2.81), those seeking escapism expressed a greater willingness to engage (mean = 2.14). Conversely, individuals visiting for recreational purposes (mean = 1.51) and escapism (mean = 1.41) exhibited a higher propensity or willingness to participate in facility-based activities, whereas those visiting to meet others displayed only a moderate willingness (Table 5).

## Discussion

Factorial analysis revealed three-dimensional factors of beach recreational activities pursued by coastal Ghanaian visitors. The results delineate the primary factors of water-dependent activities, emphasizing the importance of clean and clear beach water in beach users' experiences. These factors include activities such as swimming, surfing, and in-water tug-of-peace, all facilitated by pristine water conditions (Daher, 2018). This component, representing the highest proportion of explained variation (34.21%), emphasizes the paramount importance of water-related elements and qualities in influencing individuals' engagement in water-dependent recreational activities and their pleasure at beaches. The second factor is sand-dependent activities (with variance explained = 17.32%), which further illuminates how sand quality can shape recreational activities such as tanning, beach sports, beachfront lounging, and sand castle building. This highlights the significant contribution of sand quality factors to the overall recreational experience and satisfaction of beach users (Ghermandi et al., 2015). The third component, which focuses on beach facility-based activities, highlights the value of well-maintained infrastructure and facilities in enhancing leisure activities. These include taking pictures (beach photography) at the beach and eating/snacking meals while viewing the ocean. With an explained variance of 13.44%, this factor signified the substantial importance of quality beach facilities and the overall environment in enhancing the performance and enjoyment of beach recreational activities.

A meticulous examination of the empirical findings, dimension by dimension, sheds light on the degree of recreational activity pursuits, collectively and individually, contingent upon beach conditions, offering nuanced insights into various leisure pursuits. The results revealed that individuals exhibited minimal participation or willingness to engage in sand- and water-dependent activities at the beach due to prevailing beach conditions. This emphasizes the significant role of environmental conditions as facilitators of beach recreational performance and overall experience (Chen et al., 2018; Saeedi et al., 2019). Most pursued beach activities, such as swimming/bathing, diving, sand bathing, sunbathing, and beach sports, inherently rely on direct interaction with the beach environment. Consequently, the most critical factors that could prevent willing, eager, and recreation-seeking beach users in coastal regions are instances where users perceive the present coastal environmental conditions as unfavorable or uninviting. Implicitly, beach visitors' reluctance to engage in water- and sand-dependent activities largely stems from unfavorable beach conditions in coastal Ghana. This finding aligns with existing research indicating that clean and pristine water quality is fundamental for activities such as swimming, bathing, and various water sports, significantly influencing visitor preferences and overall satisfaction at beaches (Chen et al., 2018). The notably high mean score for beach swimming/bathing (4.39) underscores the severity of visitors' reluctance to engage in such activities, emphasizing the urgent need for attention to address and improve the water quality of tourist beaches. Even surfers exhibited reluctance to engage in their desired activities (mean = 3.16). These findings resonate with the literature highlighting the importance of clean and aesthetically pleasing surroundings in promoting beach sports and recreational activities (Saeedi et al., 2019). The lack of willingness to partake in sand-dependent activities, such as sitting on the beachfront and sand bathing, further underscores the broader issue of unfavorable environmental conditions at Ghanaian beaches that can deter recreational activities (Mensah, 2021; Eshun et al., 2019). Conversely, facility-based activities

exhibited moderate to positive levels of overall acceptance and willingness from respondents, with certain activities being actively pursued, such as beach photography and enjoying/snacking with a beach view, picnicking, and reading. This observation aligns with existing research emphasizing the positive contribution of well-maintained and aesthetically pleasing facilities to visitors' overall recreational experiences (Magura et al., 2010). However, the reluctance to engage in beach yoga and beach admiration further suggests that the condition and aesthetics of the physical environment of the beach in the Accra Metropolis require management attention.

The factors examined—water, sand, and facility-based activities, offer a structured understanding of the primary beach and diverse leisure activities pursued in coastal Ghana. The significant proportion of explained variances supports the reliability of the outlined constructs and indicates that these factors reflect the essential elements of beach users' recreational preferences in Ghanaian and sub-Saharan African regions. This classification aligns with research that acknowledges the geographical and spatial uniqueness of beach recreational activities pursued by tourists in specific locations. Consequently, there is a pressing need for comprehensive management plans that consider the various factors affecting recreational activities in different regions (Saeedi et al., 2019; Koens et al., 2018).

This study also revealed significant gender disparities in water-dependent activities, with females exhibiting reluctance to engage in these activities. This phenomenon may stem from women's heightened sensitivity to destination environmental conditions and their preference for less intrusive beach activities, such as facility-based recreation (Lucrezi van der Walt, 2015). International visitors reported reluctance to engage in water- and sand-dependent activities, whereas domestic visitors demonstrated some degree of willingness, possibly due to differences in environmental orientation between international tourists and locals (Wyles et al., 2014). Age-related distinctions were also identified, with younger beach users expressing a greater lack of desire to engage in water-dependent activities, likely because they are adventurous and inclined to engage in beach activities, but are reluctant to do so under unfavorable beach conditions (Lucrezi et al., 2016). Marital status and education level similarly influenced sand-dependent activities, suggesting that families and more educated visitors may exhibit greater ecologically sensitive and health consciousness, leading them to avoid participating in water- and sand-dependent activities under perceived unfavorable beach conditions. Water- and sand-dependent activities were considered less appealing to participants visiting for leisure/recreation purposes, whereas facility-based activities were highly considered by this group (Lucrezi & van der Walt, 2015). These findings underscore the need to consider diverse visitor profiles when managing beach environments to ensure visitor satisfaction and environmental conservation.

Overall, the findings revealed the primary dimensions of beach recreational activities that are most pursued in coastal Ghana include water-dependent, sand-dependent, and beach facility-based activities. However, reluctance to engage in activities that most drive them to the beach underscores the importance of the ROS framework in aligning environmental/beach resources with appropriate types and levels of recreational activities. This entails considering factors such as accessibility, facilities, environmental quality, and desired user experience (Stankey, 2020; Manning, 2011; Manning, 1985). Implicitly, when mismatches occur, constraints emerge, which impacts recreational outcomes. This study elucidated instances where visitors, despite traveling to the beaches, were reluctant to pursue their desired beach recreational activities due to the beach conditions. The reluctance to engage in water- and sand-dependent activities sheds light on the constraints individual beach users face when engaging in recreational activities (Crawford & Godbey, 1987). These findings align with leisure constraint theory, which recognizes various constraints, particularly intrapersonal and structural constraints that limit recreational activity pursuits among beach users. Structural constraints related to beach conditions and cleanliness, such as plastics, litter, and unpleasant odor, can limit the leisure performance of beachgoers. This mirrors the ROS framework's approach to evaluating diverse opportunities and constraints in natural environments (Drivers et al., 1991). Furthermore, factors such as gender, age, marital status, preferences, and education contribute to differences in the impact of environmental quality on beach activities among users, underscoring the importance of intrapersonal constraints in determining the type and extent of recreational pursuits in natural environments like beaches (Crawford & Godbey, 1987). This highlights the need to consider diverse tourist profiles in the development and maintenance of recreational environments.

## **Conclusion and Implications**

This study explores recreational activities available to beachgoers in Ghana, focusing on the influence of beach conditions. The findings reveal that three main recreational activities, water-dependent, sand-dependent, and facility-based, are pursued at beach destinations based on the resources, facilities, and prevailing beach conditions. Among these, facility-based activities such as enjoying/snacking with a beach view, photography, and picnicking emerged as the most desired and moderately pursued. In contrast, water- and sand-dependent activities, including swimming/bathing and freediving or breath-hold diving, beachfront relaxation, sunbathing, and sandcastle building, are less pursued due to suboptimal beach conditions. However, these activities are the primary reasons for tourists visiting beaches (Wyles et al., 2014). The empirical results highlight the importance of

beach conditions, encompassing water quality, cleanliness, aesthetics, and facilities quality, in shaping tourists' perceptions and preferences regarding beach recreation. The leisure constraints model provides a theoretical basis for comprehending the factors that might impede individuals' engagement in recreational pursuits, including beach activities. These factors may encompass poor beach conditions, safety concerns, and other environmental factors. Safety perceptions are intimately linked to aesthetic values and cleanliness, both of which are crucial factors in attracting tourists and supporting local economies. Therefore, the empirical findings offer a structured framework for recreational activities that are predominantly pursued or overlooked based on prevailing beach conditions. These identified factors can serve as a valuable foundation for beach management to develop targeted interventions for sustainable management. By prioritizing interventions based on the specific needs of each factor, tailored strategies can be implemented to enhance beach conditions and optimize visitor experiences in Ghana and its subregions.

### ***Theoretical Implications***

This study used the ROS framework to elucidate the recreational activities pursued by beach users based on beach conditions. Thus, it provides insights into the types of recreational activities that thrive in specific beach settings, offering a nuanced understanding of the opportunities and constraints within natural environments. Additionally, this study integrates the leisure constraint theory, identifying intrapersonal, interpersonal, and structural constraints that may influence individuals' participation in recreational beach activities. This study sheds light on how personal preferences, beach conditions, and facilities shape recreational activity choices and pursuits. The findings reveal the dimensions and extent to which beach recreational activities, such as water, sand, and facility-based activities, are performed based on beach conditions. This structured understanding serves as a foundation for future research on coastal tourism and recreation, encouraging further exploration of the intricate relationship between environmental factors and leisure pursuits. Moreover, this study explored demographic differences in the impact of environmental quality on beach activities, highlighting factors such as gender, age, nationality, marital status, and education level as influential determinants. This examination of diverse tourist profiles offers theoretical insights into the intersectionality of perceptions regarding beach recreational activity preferences, underscoring the importance of tailored management strategies based on beach visitor characteristics.

This study fills a notable gap in the literature, particularly concerning West African beaches. Despite the rapid growth of coasted tourism globally, there has been a lack of focus on the recreational activities pursued by tourists on Ghanaian beaches, which have been plagued by poor beach conditions. This study pioneers the exploration of this critical aspect, providing valuable insights into the state of recreational activities pursued in coastal Ghana and offering pathways to enhance such activities for sustainable tourism development in the subregion. The scarcity of research on recreational studies on West African beaches underscores the urgency and significance of this research endeavor to improve our understanding of beach tourism dynamics and environmental management. By identifying the specificity and dimensionality of beach activities pursued in coastal Ghana, this research not only addresses the existing literature gap but also lays the groundwork for future studies in similar contexts. The utilization of applied theoretical frameworks such as the ROS framework and leisure constraint theory further contributes to theoretical advancements in the field. These findings provide a foundation for the development of informed policies and management strategies aimed at enhancing beach recreation, promoting sustainable coastal development, and addressing environmental challenges faced by Ghanaian beaches. Consequently, this study serves as a foundation for bridging this gap in the literature and advancing our understanding of the interplay between beach conditions and the recreational activities pursued in the West African context. It offers a roadmap for future endeavors aimed at fostering sustainable tourism development and conservation along the coastline of West Africa.

### ***Practical Implications***

This study evaluated recreational activities pursued at beaches in Accra, Ghana, identifying three main factors, water-dependent activities, sand-dependent activities, and beach facility-based activities, and provided a structured understanding of beach activities in coastal Ghana. However, it also sheds light on the challenges faced by beach users in pursuing desired recreational activities, particularly those dependent on water and sand. This limitation predominantly stems from the absence of necessary and desired beach conditions that would facilitate the pursuit of such recreational activities. The findings of this study offer valuable insights into enhancing recreation and informing policymaking. They underscore the urgent need to address and improve water quality at Ghanaian tourist beaches, given the apparent reluctance of beach users to engage in water- and sand-based activities such as swimming, bathing, sand bathing, and sunbathing, despite these being the primary reasons for visiting beaches. As most beachgoers expect to engage in some form of water and sand activity, their inability to do so can leave a negative impression on visitors, emphasizing the need for immediate attention and intervention.

Furthermore, this study highlights the importance of considering diverse visitor profiles in beach management strategies. The notable differences observed in recreational activities based on gender, nationality, age, marital status, and educational level



highlight the need for tailored approaches. Coastal tourism managers should devise targeted initiatives that take into account the preferences and sensitivities of different demographic groups to ensure a more inclusive and satisfactory beach experience for all visitors. This research represents a critical step toward fostering responsible tourism practices in the region and safeguarding its coastal heritage for future generations. It highlights the importance of sustainable management strategies that address specific concerns regarding water quality, sand cleanliness, and facility maintenance. By implementing such strategies, stakeholders can contribute to the preservation of Ghana's coastal resources while simultaneously promoting tourism development and economic growth in the region.

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