INFLUENCE OF WATERFALLS AS TOURIST DESTINATIONS ON THE LIVELIHOOD OUTCOME OF RURAL HOUSEHOLDS IN SOUTHWESTERN NIGERIA

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ABSTRACT

Waterfalls offer scenic attractions which are exploited in most instances as tourist destinations to diversify livelihood activities. However, the extent to which waterfalls as tourist destinations contributes to the livelihood outcome of rural households has not been adequately documented. Therefore, this study investigated the influence of waterfalls as tourist destinations on the livelihood outcome of rural households in Southwestern Nigeria.

Sustainable livelihood approach was adopted as the framework of the study. Multistage sampling procedure was used. Osun and Ekiti states were purposively selected for the study due to the presence of renowned waterfalls. Simple random sampling was used to select 312 respondents from five communities within 10km radius of the waterfalls [Olumirin (110), Ayikunugba (101) and Arinta (101)]. Interview schedule was used to collect data on respondent's socio economic characteristics (age, household size, years of residence and educational attainment), livelihood status (livelihood assets, livelihood activities and livelihood abilities), perceived effects of waterfalls on economic growth, socio-cultural values and environmental conservation as well as derived benefits from waterfalls, constraints to the use of waterfalls and livelihood outcome (improved food security, reduced vulnerability and more sustainable use of natural resource base). Data were analysed using descriptive statistics, correlation, ANOVA and logit regression at $\propto_{0.05}$

Respondents' mean age was 40.5±16.5 years with a mean household size and years of residence of 6.1±3.3 and 24.0±19.2, respectively. Also, 78.5% of the respondents were married and 87.5% were literate. Most (63.1%) of the respondents had low livelihood assets, activities (52.6%) and abilities (61.5%). On the overall, 59.6% had low livelihood status. More than half (59.6%) of the respondents perceived waterfalls to have less effects on economic growth, while 53.8% and 51.3% perceived that waterfalls had more effect on socio-cultural values and environmental conservation, respectively. Maintenance of biodiversity (2.98±1.30) and preservation of cultural values (2.94±1.22) were major benefits derived from waterfalls. Lack of financial capital to invest in tourism business (1.67±0.65), insufficient employment opportunity in tourism (1.66±0.61) and seasonality of tourism activities (1.61±0.73) were constraints to the use of waterfalls for livelihood. Most (75.0%) of the respondents were food secure, while 52.6% were more vulnerable to livelihood shocks and 53.5% had low sustainable use of natural resources. On the overall, 57.7% of the respondents had low livelihood outcomes. Age (r=-0.183), years of residency (r=-0.163) and livelihood status (r=0.126) were significantly related to livelihood outcomes. Livelihood outcomes varied significantly across the waterfalls destinations (F=13.73) and was higher in Arinta waterfalls ($F_{(13.73)}$=46.8), than Olumirin ($F_{(13.73)}$=40.5) and Ayikunugba waterfalls ($F_{(13.73)}$=34.3). Perceived environmental effects (β =1.194) and perceived socio-cultural effects ($\beta = 1.175$) of waterfalls, livelihood assets ($\beta = 0.710$), household size (β =-0.131) and benefits of waterfalls ($\beta = 0.089$) were determinants of livelihood outcome.

Socio-cultural effects of waterfalls as well as livelihood assets increased livelihood outcome, while environmental effects of waterfalls and household size reduced livelihood outcome of rural households around waterfall destinations in Southwestern Nigeria. Therefore, there is a need to improve the livelihood assets of rural households around waterfall destinations and create environmental awareness on sustainable use of natural resources.

Keywords: Tourist destinations, Livelihood, Natural resources, Environmental conservation

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BLP-	Better Life programme
CAPPA-	Community Action Programme for Poverty Alleviation
CBNRM-	Community Based natural Resource Management
CPR-	Common Pool Resources
DFID-	Department for International Development
DFRRI-	Directorate for Food, Roads and Rural Infrastructure
FANTA-	Food and Nutrition Technical Assistance
FAO-	Food and Agriculture Organisation
FGD-	Focus Group Discussion
GMR-	Global Monitoring Report
KII-	Key Informant Interview
LGA-	Local Government Area
MDG-	Millenium Development Goals
MEA-	Millenium Ecosystem Assessment
NAPEP-	National Poverty Eradication Programme
NPC-	National Population Commission
NTFPs-	Non-Timber Forest Products
PAP-	Poverty Alleviation Programme
PO-	Participant Observation
PPT-	Pro-Poor Tourism
SDG-	Sustainable Development Goals
SLF-	Sustainable Livelihood Framework
SLTF-	Sustainable Livelihood Tourism Framework
ST-EP-	Sustainable Tourism Eliminating Poverty
UNDP-	United Nations Development Program
UNWTO-	United Nations World Tourism Organisation
WTD-	World Tourism Day

CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter describes the background of the study by introducing the concept of tourism and rural destinations as a means of examining the livelihood outcome of rural householdsaround waterfall destinations in southwestern Nigeria. At first glance it may appear that tourism will always benefit the local residents or that at least the benefits will outweigh its cost. A closer inspection to evaluate the effect of tourism across all domains in the society is a better approach to the study of tourism. Therefore, this section introduced the concept of sustainable livelihood framework to view the effect of waterfalls on the livelihood outcomes of rural households around waterfall destinations. This section focuses on the problem statement, research objectives and the hypotheses of the study. Furthermore, the justification of the study as well as the operational definition of terms were presented in this chapter.

1.1 Background of the study

In 2015, the world transited from Millennium Development Goals (MDGs) to Sustainable Development Goals (SDGs). This shift emphasises the holistic development for all through the 17-point agenda of United Nations Development Programme (UNDP) and United Nations World Tourism Organisation [UNWTO] (UNDP and UNWTO, 2017). The first goal of SDG is to end poverty in all its forms globally. Countries are therefore developing and implementing strategies to alleviate poverty by diversifying their economic activities instead of operating a mono-economy (UNWTO, 2017).

Rural communities have numerous natural and cultural resources that are harnessed for livelihood in their environment. Some examples of these resources include land for agriculture, water resources for domestic and agricultural uses and scenic landscape

for aesthetic view (Acharya, 2006; Bronisz and Jakubowski, 2017). Although rural dwellers

are predominantly farmers, non-farm livelihood activities are increasingly being practiced to improve their standard of living (Esu, 2008; Eneyew and Mengistu, 2013; Fox and Sohnesen, 2016).

Waterfalls are natural endowments that provides functional and aesthetic benefits to people (Hudson, 2006). Bennett and Dearden (2014), describe natural assets as the primary stock through which resources that are useful for livelihood are derived. Mountains, valleys, tablelands, water bodies and ecological features (flora and fauna) are attributes of waterfalls that generate benefits to residents of the community. Therefore, some features such as water, forest and arable land which surround waterfalls serve as a means to eke out a living in most rural communities. Furthermore, most waterfalls have spectacular scenery and possess a combination of features such as valleys, mountains, lakes and waterfalls from various heights that are not widely distributed in nature (Hudson, 2006). In addition to being a basic resource for livelihood, waterfalls also provide people with the pristine and natural resources for relaxation, leisure, and tourism. Hence, the natural environment is ascribed collective value based on the people's daily experiences, history, decisions for settlement, government institutions, and available infrastructure (Andereck and Nyaupane, 2011; Méndez-Lemus and Vieyra, 2017).

1.1.1 Benefits of natural resources to livelihood

The environment creates the materials necessary for man to sustain livelihood in all its forms and people have sourced for livelihood from the natural resources around their communities (Carvalho Ribeiro, Filho, Costa, Bachi, and Ribeiro de Oliveira et al.,2018). The numerous benefits provided by the natural environment to support the existence of humanity on earth are referred to as ecosystem services. Ecosystem services refer to the process through which the environment provides material and non-material assets needed to support life on earth. According to the Millennium Ecosystem Assessment (MEA) report, the ecosystem provides four major categories of services which are supporting (existence), regulating (climate), provision (food) and preservation of culture (MEA, 2005).

Supporting services provide the basis for all other services provided by the ecosystem such as nutrients cycling, soil formation and primary production while regulating

services include pollination, climate regulation, purification of water and air, and diseases and pests control (MEA, 2005; Egoh, O'Farrell, Charef, Gurney and Koellner, 2012). These services are very important to rural areas as most of the benefits are linked to sustainable agricultural production in farming communities. Likewise, provisioning services offer resources for the cultivation and extraction of food, medicinal plants, ornamental plants, water, and other raw materials needed to construct shelter and crafts. Finally, cultural services present the ecosystem as a resource for the experience of culture, recreation, science and education as well as spiritual and historical knowledge (Morrison, and Aubrey, 2010; Tengberg, Fredholm, Eliasson, Knez and Saltzman et al., 2012; Clough, 2013). Cultural services signify different aspects (social, cultural and economic) of community wellbeing which can at the same time serve as attraction sites to tourists.

The ecosystem provides the resources required for livelihood and recreation. Livelihood activities evolved from hunting and gathering, agriculture, manufacturing, to the current service economy (Schroth and McNeely, 2011). Nevertheless, the basic resources necessary for the sustenance of life on earth are still derived from the ecosystem. Ecosystem services encompass the provision of food, water, clean air and other materials needed for survival on earth (Biggs, Bruce, Boruff, Duncan and Horsley et al., 2015). Similarly, the ecosystem also provides cultural services which are non-material and are derived from the interaction between man and his environment known as Cultural Ecosystem Services (Tengberg, *et al.*, 2012). Cultural ecosystem services (CES)refers to landscape that provide aesthetic appeal, recreational activities, and spiritual enrichment for people. Tourism activities generated from CES include mountain climbing, sightseeing, fishing, hunting, camping, swimming, and sailing (FRN, 2006; Dalat, 2010; Bronisz and Jakubowski, 2017).

1.1.2 Waterfalls as a livelihood resource

Waterfalls offer a unique landscape that provides a suitable environment for recreational activities required by tourists (Hudson, 1998). The development of waterfalls for tourism provides benefit as well as poses threats to a community's livelihood. However, most waterfalls are located on rugged landscapes in rural communities. The average slope of the landscape makes accessibility and cultivation of farmlands a tedious task (Donohue and Biggs, 2015). Waterfalls are often

associated with ecotourism that helps rural communities to diversify their economic activities from the traditional agricultural activity to a manufacturing and service economy where other industries apart from agriculture are accommodated (Barrett, Reardon, and Webb, 2001; Gautam and Andersen, 2016). The diversification of economic activities contributes to the commercialisation of natural environment and the culture of the host community. Hudson (1998; 2000) identified tourism activities and hydropower generation as the economic benefits of waterfalls to the host communities and society. Some of these developments have defaced the pristine environment and landscape of waterfall communities for tourism experience (Hudson, 1999; 2006).

Livelihood comprises of the assets, abilities, and activities a person needs to secure a living (Chambers and Conway, 1991; Scoones, 1998; DFID, 1999). It entails how an individual or a household attain a better standard of living using the available resources within their community. Department for International Development [DFID] (1999), states that sustainable livelihood depends on the ability of people to cope with, recover from stress, shocks and other livelihood risks while maintaining the resources that are within their environment to prevent resource extinction. This definition emphasises people, planet and prosperity, three popular words used to express the pillars of sustainability. Sustainable livelihood framework focuses on people's development to ensure their well-being. Sustainable livelihoods are analysed using five key indicators namely contexts, livelihood assets, institutional and organisational factors, livelihood strategies, and livelihood outcome (Chambers and Conway, 1991; Cleveland, Ayres, Castaneda, Costanza and Daly et al., 1999).

People's livelihood activities are constructed using five keys of assets acknowledged in Sustainable Livelihood Framework (SLF) as resources for achieving livelihood (DFID, 1999;Gilling, Jones and Duncan, 2001; Shen, Hughey and Simmons, 2008). These are natural, human, social, physical and financial assets. An individual's livelihood outcome is influenced by access to land, cultural practices, social networks and institutional frameworks. Although income generating activities have evolved overtime from agricultural based activities to industrial activities, service-oriented economy are the contemporary livelihood strategies adopted by people to meet their needs. Livelihood diversification is an important aspect of the SLF as the central

thought is based on poverty reduction. Individuals can combine two or more livelihood activities to achieve their desired livelihood outcome.

In nature-based tourism destination, the ecosystem supplies residents with a rich resource base to meet their needs. Apart from the primary attraction (natural environment), other features such as culture, hospitality, and infrastructure in the community contribute to the attractiveness of tourism destination (Truong, Lengleta and Mothe, 2017). These attributes play a major role in the host community's everyday life and establish tourism as a shared industry between the guest and the host communities. As tourists interact with the host, the livelihood activities and lifestyle of residents change to accommodate tourism as an economic activity to complement the traditional livelihood activities of the host community (Mbaiwa, 2011).

Natural resources are commodified for visitors' use through user-fee or gate-fee charged to visitors (Hudson, 2006; Lee and Pearce, 2002). Residents expect that a fair share of tourism revenue will be used to provide their communities with necessary facilities. There are several strategies such as community-based tourism and Pro-Poor tourism aimed at managing tourism in such a way that the host communities continue to benefit from tourism development (Harrison, 2008). The revenue generated from tourism is expected to improve the standard of living when compared to agricultural activities which dominate rural communities where most nature-based attractions are located (Andereck and Nyaupane, 2011; Kim, Uysal, and Sirgy, 2013). However, continuous reliance on natural resources for livelihood also poses threat to sustainable livelihood. Tourism contributes to rural-urban linkages by providing an urban market for rural tourism to be consumed in the host communities. Hence, the visitor or tourist travels from their home environment to experience tourism in the host's community. This service characteristic of tourism is known as the inseparability of the production and consumption component of the tourism products. This means that the host community are an integral part of the tourism production process since the resources in their community are the attractions on which the tourism industry is built.

Rural dwellers directly benefit from the natural resources in their community as a means for sustenance (Bryceson, 2000). Like farming experience, tourism destinations are also susceptible to various risks, which may contribute to livelihood vulnerability (Iorio and Corsale, 2010; Mbaiwa, 2011; Hoefle, 2016). The main attraction spots

marked as tourism destinations may no longer be easily accessible to the residents of the host community. Another example of the risk is the seasonality of tourism activities. Tourist inflow fluctuates during peak and off-peak seasons. Hence, residents whose livelihoods depend on tourism activities may experience unstable income based on the traffic flow of tourists to the destination. The low level of tourism infrastructure and superstructure restrict tourism activities in most rural destinations in Nigeria. The implication of this is that tourists spending is reduced as facilities and services that encourage visitors to spend more at destination regions are not available. Waterfalls are one of the unique features of the natural landscape that are used as tourist destinations. In line with this, the studyinvestigated the influence of waterfalls as tourist destinations on the livelihood outcome of rural households in Southwestern Nigeria.

1.2 Statement of the problem

Rural communities possess abundant natural resources that can be harnessed for economic development. Most people in rural areas depend on common pool resources such as forest, water and land for their livelihood (Gilling et al., 2001). Despite the rich natural environments in rural areas, these areas are reported to be the worst hit by poverty. Reports indicate that the most affected regions in Africa is Sub-Saharan Africa (Global Monitoring Report, 2013). Although there are numerous poverty alleviation programmes channelled towards enhancing the well-being of the rural dwellers in Nigeria (Ibietan, Chidozie, and Ujara, 2014), most rural residents still livein poverty. Rural areas are often vulnerable to shocks and seasonality associated with agriculture and livestock production. Ellis (1999) opines that farming alone is insufficient to combat poverty in rural households. Productivity from agriculture as a livelihood activity has been negatively affected by soil infertility, limited access to credit facilities, shrinking land, poor agricultural yield and non-availability of labour. This has limited agricultural practices to subsistence farming in rural areas. Further evidence of how marginalised these areas are is the dearth of sufficient social amenities such as electricity, education, healthcare and water supply.

Waterfalls along with its associated landscape directly influences the livelihood of rural residents by serving as water source, irrigating land for agriculture, and aiding the production of timber and other materials necessary for living (Oduntan, 2014).

Nevertheless, contemporary studies on waterfalls focused on the economic benefit directly derived from the commercialization of waterfalls for recreation and tourism (Hudson, 2006; Tunde, 2012). In the case of livelihood studies of rural communities, most studies have focused on agriculture as the major livelihood activity. Extrapolating from both trajectories of previous studies, the effect of waterfalls as a livelihood asset with the potential of serving as a means for deriving multiple livelihood strategies is identified as the major gap that informs this present study. Since there are limited studies that have adopted the sustainable livelihoods framework to understand the influence of nature-based tourism asset on the livelihood of rural dwellers in Nigeria, the study adopts the sustainable livelihood framework as the theoretical perspective to provide fresh insights into the identified gap in the field of tourism studies.

Studies on the effects of nature-based tourism destinations on rural communities have focused on the positive and negative contributions of tourism development in developed nations (Andereck and Nyaupane, 2011; Kim et al., 2013; Bennett and Dearden, 2014; Hoefle, 2016). Some of the benefits of nature-based tourism development include improved quality of life, income diversification, preservation of resources, and improved community pride (Mathew and Sreejesh, 2017). Also, the negative effects accruing from the use of nature-based resources for tourism development includes displacement, pollution and economic leakages. Most of these studies have focused on evaluating the general opinion and behaviour of residents about tourism development. Nevertheless, an evaluation of the asset base of local communities which will enable them to achieve a better standard of living has been rarely investigated in Nigeria. Majority of the studies on livelihood in Nigeria have centred on agriculture, forestry and mining (Akinyemi, 2016; Etuk, 2016; Oyegbile, 2016; Ademola, 2016). The potential of waterfalls as an agricultural resource and tourist attraction that can enhance the livelihood of rural residents have been under-researched. This study thus aimed at understanding how rural communities derive their livelihood in the light of tourism as an economic activity. To this end, the following research questions were raised:

a) What are the socio-economic characteristics of the respondents?
b) What is the livelihood status of rural households around waterfalls as tourist destinations in Southwestern Nigeria?

c) What are the perceived effects of the waterfalls as tourist destinations on the livelihood outcome of rural households?
d) What are the benefits derived by the rural households around waterfalls as tourist destinations in Southwestern Nigeria?
e) What are the constraints to the use of waterfalls as tourist destinations for livelihood among rural households?
f) What is the livelihood outcome of rural households in communities located around the waterfalls?

1.3 Research objectives

The general objective of this study is to determine the influence of waterfalls as tourist destinations on the livelihood outcome of rural households in Southwestern Nigeria. The specific objectives were to:

1. describe the socio-economic characteristics of respondents in the study area
2. evaluate the livelihood status of the rural households around waterfalls as tourist destinations
3. ascertain the perceived effects of waterfalls on the livelihood of rural households in the selected waterfalls as tourist destinations
4. identify the benefits derived from waterfalls as tourist destinations by residents
5. ascertain the constraints to the use of waterfalls as tourist destinations by rural households
6. assess the livelihood outcome of rural households in the study area

1.4 Research hypotheses

The hypotheses of the study are:

$H_0$1: There is no significant relationship between socio-economic characteristics and livelihood outcome of rural households around waterfall destinations.

$H_0$2: There is no significant relationship between livelihood status and livelihoods of rural household outcome around waterfall destinations.

$H_0$3: There is no significant relationship between residents' perceived effects of waterfall and livelihood outcome around waterfall destinations.

$H_0$4: There is no significant relationship between benefits derived from the waterfall and livelihood outcome of rural households around waterfall destinations.

$H_0$5: There is no significant relationship between constraints to the use of waterfalls and livelihood outcome of rural households around waterfall destinations.

$H_0$6: There is no significant difference in the livelihood outcome across the waterfall destinationsin Southwestern Nigeria.

$H_0$7: Factors that influence waterfalls as tourist destinations do not significantly contribute to livelihood outcome of rural household around waterfall destinations.

1.5 Justification of the study

Livelihood studies have adopted the sustainable livelihood framework approach (Ellis, 1999; Shen et al., 2008; Tao and Wall, 2009; Iorio and Corsale, 2010; Trædala and Vedeld, 2018) to describe the process of improving the livelihood outcome of people. The livelihood asset of most rural communities is based on their natural resources which are expressed as farm and non-farm livelihood strategies. In rural communities, residents mostly practiced diversification of economic activity to boost their sources of income. Ewebiyi and Meludu (2013) recommend non-farm livelihood diversification as a means for rural communities to enhance their livelihood. This study adopted the tourism sector as non-farm livelihood activities for rural communities. The findings from this study provide empirical evidence for the contributions of tourism to rural livelihoods in nature-based tourism destinations.

This study could be useful for tourism planners and managers to propose tourism as a poverty reduction strategy for rural communities. Residents support for tourism is determined by the relative benefit derived from tourism activities. Similarly, the acceptance of tourism by the host community is a measure of the sustainability of the tourism industry. Information gathered from rural households' perception of the effect of waterfalls on livelihood outcome could serve as a useful policy document for rural-urban linkages to encourage rural residents to seek better living standards in their communities. Non-governmental organisations and interest groups can monitor

livelihood preferences of rural communities through community-driven development of natural resource base for sustainable development.

1.6 Operational definition of terms

i. **Assets:** Resources or capital stock from which livelihoods are constructed. It includes all resources such as natural environment (example: land, water, air and regulatory processes); knowledge and skills to perform daily tasks; social networks for support in pursuit of livelihoods; built environment (examples: infrastructures); cash, savings and credit; cultural values and traditions that determine acceptable practices within a community; and institutions that provide rules and governance to regulate the utility and distribution of other assets.

ii. **Livelihoods:** The different strategies by which rural dwellers combine their assets to construct a living.

iii. **Livelihood status:** This is determined by evaluating the assets, ability and activities engaged by individuals or household to meet their needs.

iv. **Livelihood outcome:** This is the effect of rural dweller's livelihood activities and choices. Livelihood outcome reflect the various ways through which the living standards of rural households have been shaped as a result of their livelihood strategies. Indicators of livelihood outcome according to the SLF include sustained well-being, minimised vulnerability, more income, food security and more responsible use of natural resource base.

v. **Ecosystems services:** The tangible (material) and intangible (non-material) benefits derived from the operation of the ecosystem that support life on earth. For tourism purpose, ecosystem services are further identified as Cultural Ecosystem Services(CES) and Recreational Ecosystem Services (RES) to describe the interaction between man and the aesthetic features of the ecosystem for pleasure, relaxation and leisure activities.

vi. **Tourism:** The activities and services required to create visitor experience to people who are away from their usual place of residence. This could be for activities such as leisure, business, events, recreation and other purposes. Tourism requires the combination of attraction, accessibility, accommodation and amenities to create leisure experience.

vii. **Nature-based attractions/destinations:** A place visited by a tourist whose main motivation is to experience natural environment. The natural environment is designed for tourism when activities and amenities have been designed to

complement the scenic view of nature. Sight-seeing, mountain-climbing, swimming, walking and camping are examples of tourism activities in nature-based attractions.

viii. **Waterfalls:** A unique natural feature that exists in the landscape with water and other resources to provide for man's basic needs. It provides a combination of supplies which include vegetation, water for domestic and agricultural purposes, ecosystem for hunting, fishing as well as commercial potentials such as tourism and electricity generation.

ix. **Waterfall destinations:** The waterfalls in Southwestern Nigeria identified as tourist destinations are referred to as waterfall destinations in this study.

CHAPTER TWO
LITERATURE REVIEW

2.0 Overview

This chapter covers the concept of livelihood which uncovers the complex process of making a living. The context of livelihood study in this chapter focuses on rural livelihoods which uncovers the production and consumption patterns of rural households and how they construct their livelihoods with the resources at their disposal. The sustainable livelihood framework is adopted as the main lens with which this study is viewed because of its multi-disciplinary approach. This framework helps to identify the complex realities and choose the extent to which the researcher is going to explore the subject of livelihood. Thus, this study explored the livelihood status of rural households around waterfall destinations which was operationalised by exploring the concept of livelihood asset, livelihood activities and livelihood abilities.

Furthermore, the various ways through which rural households conduct their livelihoods to achieve a desired outcome with the awareness of an alternative industry apart from agriculture was also explored and presented as the conceptual framework. Bourdieu's theory of practice was proposed as a philosophy to reveal the various ways through which actions and resources are transformed by people to achieve various goals. In conclusion, a few methodological and empirical issues were reported from relevant literature to explain livelihood issues.

2.1 The concept of livelihood

Livelihood encompasses the assets, capabilities and activities that a person is able to integrate to sustain a living (Chambers and Conway, 1991; Scoones, 1998; Bryceson, 2000). It is influenced by the production and consumption of livelihood assets as well as time allocated to daily activities. Ellis (2000) opines that the concept of livelihood contains both economic and non-economic assets necessary for survival. Hence, a household's livelihood outcome is determined by the resources and strategies the household can control to meet its peculiar needs. Livelihoods are constructed with

resources such as environment and biodiversity; relationships between individuals and institutions within a society; education and skills which contributes to the workforce of the society; built environment and basic infrastructures; and financial resources such as savings, loans, and remittances (Bennett and Dearden, 2014). These resources are utilised to create livelihood outcome through poverty alleviation and improved well-being in the society.

Livelihood assets are identified as capitals which enable individuals to meet their daily needs. Although financial capital is seen as the requirement to meet most human needs, the assets identified as livelihood pentagon indicates that there are other forms of resources necessary to earn a living. According to DFID (1999), the five major livelihood assets identified are human, social, natural, economic and financial capital. Livelihood assets are converted from one form to another to support the livelihood of residents in the community (Stone and Nyaupane, 2018). For example, an increase in access to natural resources without corresponding skills to maximise the use of the land or health to engage in economic activities increases the vulnerability of an individual or household to poverty. This implies that a relationship exists between the various types of capital.

The livelihood ability of rural residents depends on their level of education, or the skills acquired to run their daily activities. Low educational attainment and lack of skills contribute to poverty in rural areas. Consequently, the diversity of employment opportunities available to people with low human capital is limited when the opportunities are available in rural areas. This causes employment leakages which means that available job opportunities are shared with non-residents of the community who have the necessary skills to match the job roles. Sandbrook (2010) opines that tourism is an important means of revenue generation in rural communities despite the considerable leakage that may be recorded.

An individual's choice of livelihood activity depends on human asset which encompasses knowledge, education, skills and well-being. It is typical of rural households living around tourist destinations to engage in more than one livelihood activities to generate income. A study on livelihood by Ellis (1999) reported that rural households diversify their livelihood activities by engaging in traditional crop farming and animal rearing. These activities may be categorised as non-farm and off-farm

livelihood activities. As rural dwellers seek to enhance their living standard, activities including trading, processing as well as formal and informal employment are sought by rural dwellers. Migration in search of employment is a common diversification practice in rural communities (Thieme, 2008). Although farm labour has reduced as an agricultural activity practiced by rural people, the activities of visitors and non-resident employees in tourism destinations generate economic activities for households to initiate and grow their own enterprises.

2.1.1 Livelihood assets

Livelihood assets consists of various types of resources which are referred to as capital. Five of these resources have been identified as natural, physical, human, financial and social capital. Capital is the currency of exchange for goods and values within a society. It refers to all forms of resources that are required to earn a living. Capital describes the exchange of resources which humans use to construct or alter their experiences or the opportunities available to them. In many instances, capital is not quantified in monetary terms. This is because the various types of capital can translate to financial resources for livelihood. However, all forms of capital serve as indicators of wealth as well as inequalities inherent in achieving livelihood outcome among members of a community.

Similarly, Sustainable Livelihood Tourism Framework (SLFT) by Shen et al. (2008) acknowledges five capital assets similar to the SLF. However, unlike the SLF, the SLTF considers financial and physical capital as economic capital while institutional capital is added to reflect the tourism actors and stakeholders who influence the tourism system. The justification for institutional capital is that tourism uses natural resources often regarded as common resources in the community (Tang, 1991). Another justification for institutional capital is that the immediate environment of rural residents is organised to take advantage of the natural asset in their community for tourism. Rural residents therefore are acknowledged as stakeholders of tourism development. Hence, institutional capital could also serve as a means of managing conflicting interests of various stakeholder groups to ensure a win-win situation.

2.1.1.1 Natural capital

Natural capital denotes land, water, biodiversity, and natural resource flow and services (Shen et al., 2008; Donohue and Biggs, 2015). The ecosystem provides four categories of services for the benefit of man (Millennium Ecosystems Assessment (MEA), 2005). The various services include supporting, provisioning, regulating, and cultural services. Provisioning services refer to products derived from the ecosystem such as food, water, timber, and non-timber forest products. Regulating service are benefits which accrue from the regulatory processes of the ecosystem. Examples of such services are water regulation, pollination, climate regulation, and disease control. Additionally, cultural services are the non-material benefits derived from the ecosystem. Examples of cultural services are the aesthetic, spiritual and cultural benefits of the ecosystem to man. Supporting services in terms of nutrient cycling, soil formation and photosynthesis are important functions that regulate all other services of the ecosystem.

Agricultural production which is a major driver of growth and development in rural areas relies on ecosystem services (Schroth and McNeely, 2011). Studies on people in developing countries by Egoh *et al.,* (2012) submit that people rely on the 'provisions' of the ecosystem for survival. Some of the resources people heavily depend on are forest, water and agricultural land. The dependence on ecosystem varies from agricultural land to the harvesting of forest products. This creates conflicts and trade-offs for ecosystem services in comunities that rely heavily on natural resources.

As users desire to maximise the extraction of benefits from the ecosystem, ethical responsibility of conserving biodiversity also exist in the community for a balanced resource management approach. Reduced dependence on nature-based resources for livelihood can be advocated for to enhance the conservation of natural resources. The availablity and distribution of natural resources vary from one region to another (Mavrotas, Murshed, and Torres, 2011; Huijbens and Lamers, 2017). This affects the variety of activities among rural households.

The livelihood of rural dwellers in forest regions are influenced by various forest and non-timber forest products. Timber is a major forest product harvested for domestic and economic reasons. It is further processed into wood for furniture, carvings and construction materials. Hence, an income-generating activity may be derived from

cultivation and harvesting of timber forest products. Furthermore, Non-Timber Forest Products (NTFPs) refer to forest resources that sustain the daily living of people by providing goods and services required for their survival. Non-Timber Forest Products consist of allied products obtained from forest resources. They include vegetation for food and beverages; animals such as birds, fish, and other forms of meat; wild vegetables; biochemical derived from plant and animal sources; fur, feathers, bark, roots, stems, and sap required for processing into further products; medicinal plants; edible insects; firewood; and crafts (mats, brooms, brushes, baskets and other weaved or carved items).

Forest products have been reported to contribute significantly to the livelihood of the rural economy (Hoefle, 2016; Trædala and Vedeld, 2018; Kibria, Costanza, Groves, and Behie, 2018). The use of forest resources for income generation and subsistence by rural population raises concern for sustainable use and conservation. Such concerns have been raised on the sustainability of forest products if uncontrolled harvest, use, and sale of forest products persist (Fasona, Adeonipekun, Agboola, Akintuyi and Bello et al., 2019). Recent studies have emphasised the importance of revenue generation for rural households through natural resources (Sandbrook, 2010). However, where the resources are consumed unsustainably, it could lead to poverty on the short term or over a long period of time (Olowa and Adebayo, 2012)

Considering the characteristics of rural places with low employment opportunities and income generation, rural population often engage in harvesting, hunting and gathering forest products for sustenance or sales. The prices of forest products are subject to the availability of the desired product and seasonality. This comprises the major risk facing forest products as a source of livelihood for rural dwellers. The quantity and price of NTFPs are often determined informally through the availability of produce, and the experience of sellers and buyers (Mugido and Shackleton, 2018). Therefore, the market price is eventually determined by the negotiation skills and years of experience of the buyer and the seller.

2.1.1.2 Social capital

Social capital refers to the networks which facilitate the attainment of livelihood goals. Individuals who interact in a group tend to have a collective cultural identity. This can be identified as value, belief, power, money, influence or other forms of cultural identity. Power or influence holds an important function in the creation and redistribution of resources among members of a group. Unavailable resources can be obtained through formal and informal social institutions. In rural communities, interpersonal relationships are important livelihood assets because people live in knitted communities where their social status is determined by the perception of others (Endris, Kibwika, Hassan, and Obaa,2017). Social capital is dependent on social networks that provide support and safety net for rural households to address livelihood vulnerabilities (Endris et al., 2017). In order to be empowered, people join various social institutions or groups for better chances of achieving other livelihood assets through their network with other people. Acceptance to a social group depends on the acceptance or rules set by existing members. These relationships are forged through personal interactions or inherited relationships such as family or other formal institutions. Social capital therefore provides the human connections necessary to improve or increase other means of capital. Other types of social capital create opportunities to maintain and build on social capital and connections.

2.1.1.3 Physical capital

Physical capital such as material belongings vary with cultural significance across communities. For instance, in rural communities' ownership of farm tools and machinery for communal use may be considered more valuable than luxurious cars or other personal items; whereas, in urban societies, personal affluence is accorded more significance than communal belongings. Hence, the community of reference determines the wealth and poverty value of capital ownership as opposed to an individual's view of the capital.Su, Aaron, Guan and Wang (2019) opine that agricultural households often report high natural capital than microbusiness and tourism-related households. Business related households on the other hand tend to develop their physical capital as it constitutes the production resource used to generate other forms of capital.

2.1.1.4 Human capital

Human capital signifies the knowledge, skills, labour and ability of people which enables them to pursue a livelihood. Human capital increases individual potential to achieve set livelihood goals. Educational attainment, skill acquisition, health status and other forms of competencies influence livelihood activities and choices towards achieving livelihood outcome. Human capital is a form of social prestige. People often differentiate themselves from others using their occupation, preferences, and behaviours as yardstick.Kamwi, Chirwa, Graz, Manda, Mosimane and Kátsch, (2018) noted that increased skills or physical ability increases household's portfolio of livelihood activities. This means that households are able to develop strategies to aid the diversification of their activities for improved livelihood outcome.

2.1.1.5 Financial capital

It refers to rural residents' sources for funds through various earnings and non-earning activities. In order to complement employment earnings, rural residents accrue income through remittances, gifts, and loans. The social structure of rural communities has shown that their income is sourced from various means; donations from family members, thrifts and cooperatives, loans from social groups and local banks, and personal savings (Banki and Ismail, 2015).

2.1.1.6 Institutional capital

Sustainable Livelihoods Tourism Framework (SLTF) identified institutional capital as a livelihood asset (Shen et al., 2008). With the identification of financial and physical assets as economic capital by Scoones (1998), SLTF incorporates the fifth asset of tourism livelihood as institutional capital. Institutional capital also refers to people's access to tourism as a livelihood activity. Mbaiwa (2011) asserts that tourism leads to transformation in traditional livelihood activities of rural households from agriculture-based activities to tourism-related services. The institutional assets include tourism participation, decision-making, policy-making, governance and management of tourism resources for livelihood outcome. SLF aims at addressing livelihood processes and outcomes that have been applied in the study of rural households where agriculture is the major livelihood activity (Ellis, 1999).

On the contrary, Sustainable Livelihood Framework (SLF) recognises institutional arrangements and policies as intervening variables and not as assets. However, Institutional capital and institutional arrangements are applicable in the SLFT but not interchangeable. In SLTF, institutional arrangements are recognised as governments, local community, NGOs and tourists who are otherwise known as stakeholders of tourism (Byrd and Gustke, 2007; Beritelli and Laesser, 2011). Individuals or groups who are directly or indirectly influenced by operations of tourism are regarded as its stakeholders (Line and Wang, 2017). These stakeholders exert power and influence at various levels and with such magnitude to influence the outcomes of tourism as an activity as well as an industry.

2.1.2 Livelihood activities

Livelihood activities in rural areas are either farm or non-farm based. Farm-based livelihood can be further classified as on-farm and off-farm engagements. Agriculture is key livelihood for most rural households. Rural households rely on land-based processes involving cropping, livestock production, collection of forest products and animal rearing for livelihood (Shackleton, Shackleton, and Ben, 2001). Farm productivity and agricultural income depend on farm size and the form of labour adopted by the household. Land tenure regimes determine on-farm livelihood because large land allows households to intensify cropping and engage in large-scale farming (Zinda and Zhang, 2018). Access and ownership of land is a major factor influencing farm-based livelihood activities. Furthermore, labour and agricultural tools are important factors that can influence agricultural output.

Non-farm livelihood strategies require the transfer of assets to goods and services which can be exchanged for income. They are often regarded as secondary activities which supplement income from farm activities. Seasonality in agricultural practices is a factor which prompts rural dwellers to engage in secondary activities. Since farming involves a lot of risks that cannot be controlled by small farm holders, alternative livelihood activity is a means of adapting to agricultural shock and seasonality.

Non-farm livelihood activities of rural dwellers are influenced by push factors rather than pull factors (Nagler and Naude, 2014). This means that unfavourable farm productivity is a major factor that influences non-farm enterprises rather than the

profitability or projected income of non-farm activities. Barrett et al. (2001) distinguished between push and pull factors as 'limited risk bearing capacity' and 'diversification in production- and expenditure-linkage activities.' In Nigeria, distance to market and transport infrastructure determine resident's participation in non-farm businesses.

2.1.3 Livelihood ability

Livelihood ability (livelihood capability) is the knowledge and skill which individual applies to transform livelihood assets to desired livelihood outcome. Individuals seek to constantly improve the knowledge or skills required in their respective fields to secure wealth and prestige. Identities and positions in our social field changes with the level of capital at an individual's disposal. For example, the educational qualification of an individual can increase the chance such an individual has for gainful employment compared with someone who does not have similar qualification.

2.1.4 Livelihood strategies

Livelihood strategies involve the variety of activities combined to attain livelihood goals. Rural livelihood strategies can be classified into three main groups: agricultural intensification, diversification and migration (Scoones, 1998). Agricultural intensification are the interventions directed towards the agricultural sector to improve food security and agricultural-related earnings. On the other hand, diversification involves the livelihood pathways constructed by an individual or household to attain livelihood. It typically involves both farm and non-farm activities (Ellis, 2000). Likewise, rural dwellers can migrate from one place to another to search for livelihood.

In order to accommodate farm and non-farm livelihood strategies, individuals in rural areas attain livelihood through a combination of production, labour, sales, and support from social organisations or from government (Acharya, 2006). Production is usually attained through the cultivation of land for agricultural purposes (Chand, Prasanna and Singh, 2011). People also sell their labour for wages and earnings which provide them with economic power to purchase necessary goods and services. Furthermore, the sale of surplus agricultural and non-farm goods can be transformed into cash earnings for survival. Finally, individuals may rely on social or government schemes for livelihood.

A household may combine two or more of these activities to improve their livelihood. Among rural households, diversification is a usual livelihood practice. It may be pro-active or reactive. Ellis (2000) presented the two reasons for diversification as either by choice or by necessity. This implies that an individual may realise the need to secure an alternative source of income to support his existing income. On the other hand, diversification is reactive if an individual is forced to embrace alternative livelihood activity due to stress or shock on the existing livelihood activity. Although the traditional livelihood activity practiced by most residents is related to agriculture, the use of natural capital for recreation and tourism has presented rural communities with alternative livelihood choices.

Rural households diversify their assets, incomes, and activities (Barrett et al., 2001) as a poverty reduction strategy. Most rural households in low income or developing countries are considered poor. Therefore, diversification is aimed at improving employment, income and the livelihood outcome of households. In the rural context, diversification is mostly related to the incorporation of other income activities to complement agricultural earnings (Barrett et al., 2001). Several studies have concluded that diversification makes households less vulnerable to the shocks associated with traditional livelihood activity such as farming (Ellis, 2000; Gautam and Andersen, 2016). The ability of rural dwellers to diversify their income base depends on their level of education, land ownership and social connections (Nielsen, Rayamajhi, Uberhuaga, Meilby, and Smith-Hall, 2013).

2.2 Rural areas

Rural area is a difficult term to describe like most multi-disciplinary concepts. The definition varies widely from across nations in relation to the context of use and the level of development (Dalat, 2010; Iorio and Corsale, 2010; Bronisz and Jakubowski, 2017). Developing countries are regarded as low or middle-income countries when compared with other countries that rank as high income (Brockerhoff and Brennan, 1998). This is yet another reason why rural area cannot be measured generally across countries. A region can only be regarded as rural based on their location and level of development. Hence, a rural area in Norway will be significantly different from a rural area in Nigeria since both countries rank differently on the development ladder using per capita income for assessment. According to the WYE Group (2007), rural areas

can be described based on population and migration; economic structure and performance; social wellbeing and equality; and environment and sustainability.

Rural areas are identified by their population density and that is determined by the spread of the dwellers per square kilometre of land area. These sparsely populated areas with abundant land mass incline most rural dwellers to agricultural activities such as cropping, livestock production, and animal husbandry either for subsistence or commercial purposes. Similarly, the low level of income generated from agriculture discourage the youth from participating in agricultural activities and propel them to seek improved standard of living in activities other than agriculture. The need to migrate from the rural areas leaves some rural communities with older people and children while the working population (especially young adults) seek livelihood in other communities. Agriculture is known as the primary livelihood activity with little or no industrial development and minimal growth in socio-economic development in rural areas. Farm size and farm income are socio-economic determinants of wealth in agricultural communities in Nigeria (Ojiako, Manyong, Ezedinma and Asumugha, 2009). Hence, the agricultural productivity of farmers or rural households determines the affluence and social status of rural dwellers.

Over the years, several factors such as soil fertility, population growth, and improved technology have altered agricultural productivity among farmers in rural areas (Ojiako et. al., 2009; Tittonell and Giller, 2013; Apata, 2016). Soil fertility has been adversely affected by continuous cropping as competition for scarce land restricts the practice of a fallow system of cropping. This results in low economic performance and negative perception of residents about their quality of life and eventually leads to migration or diversification from agriculture to other economic activities. The dwindling agricultural produce has required various initiatives to improve the agricultural output of farmers in rural areas through agricultural intensification and yield improvement (Pretty, Toulmin, and Williams, 2011; Ray, Mueller, West and Foley, 2013).

Recent focus on rural development has emphasised diversification to cover other economic, environmental and social factors that indicate improved well-being for the rural populace (The WYE Group, 2007). Farm-related income may be insufficient for rural residents to earn a living if their expenditure is higher than their income. Since residents depend on land and natural resources to create income and livelihood, other

non-farm activities have been embraced by rural residents to sustain their livelihood. Other service sectors such as tourism and small-scale manufacturing industries are being promoted to rural residents as a strategy to diversify their economic activities. The rich natural resource base of rural areas acts as a pre-condition for residents to diversify into crafts from forest resources and small-scale food production as well as other cultural items which can be sold to tourists.

Rural areas are also classified by economic structure and performance. Agriculture, forestry, and fishing are the traditional and predominant economic engagements of rural dwellers in most developing nations. In addition, social amenities such as the availability and accessibility to housing, education, electricity, fuels for cooking, information and communication, health and safety are used to differentiate rural from urban areas. As a developing nation, the record in Nigeria shows a disparity in access to social amenities across rural and urban areas. In developed countries, the rural and urban populace can be argued to have access to the same basic amenities although with a difference in levels of technology. For example, people commute between urban and rural areas in Japan where urban areas have rapid rail transportation systems, rural dwellers may rely on bus routes. However, in Nigeria a developing country, there is a high record of unavailability or capacity to access basic social amenities by rural dwellers.

Also, the extent of natural resource use is another parameter to identify a rural area. The prosperity of rural households is determined by agricultural income. Such income is directly related to ownership and access to arable farmlands. Agricultural activity in rural communities determines the economic, social and environmental values of rural dwellers. Decisions on time management, land use, and conservation, production, and consumption of agricultural produce are all indicators of a community's culture. The WYE group (2007) opine that the income and wealth of rural households are linked to the economic, social and environmental units of a community. The environment is the asset which supplies the necessary resources such as food, shelter and other materials needed to sustain life. Natural resources are further utilised as economic goods to achieve growth and development of countries.

Social equity refers to the opportunity available for each member of the society – now and in the future to meet their needs. This means that if everyone is allowed to

determine what their needs are, without any regulation from fellow owners/users (stakeholders/community), the chances of people depleting the natural resource base on which the earth depends will be uncontrollable, eventually destroying the earth (Hurni, 1999; Alao, 2007; Recanati, Castelletti, Dotelli and Melia, 2017). In the same vein, the Brundtland report (1987) on sustainable development initially identified environmental importance in achieving improved livelihoods, but subsequently embraced a triad approach of people, planet, and prosperity to ensure the reasonable use of nature's resources to achieve economic gains in an equitable manner (Clough, 2013). The argument for sustainable development is that human needs should be met in a way that is fair and just to future generations with the capacity to meet their needs. Hence, the community as a social institution presents the acceptable practice of resource use by community residents. This can be seen in traditional conservation strategies such as the establishment of sacred groves and taboos employed to curtail access to certain resources of the community to ensure their availability for the future generations.

2.3 Sustainable rural development

Sustainability has been adopted as a measure of assessment for development. Sustainable Rural Development (SRD) will ensure environmental conservation, social equity and economic development among rural residents. Rural development aims to enable rural residents to shape their lives and improve their quality of life (Madu, 2007). Like all development initiatives, the improvement should cut across the social and economic sectors of the society. The level of development in rural communities is assessed by evaluating the availability and accessibility of residents to social amenities such as education, health, transportation network, electricity, religious/social institutions, transportation and communication development, political and administrative leadership.

Over the years, there has been a considerable shift in the social and economic pattern adopted by people in addressing their livelihood needs (Bryceson, 2000). The clear distinction between rural and urban economic activities is gradually fading as the diversity of economic activities among rural and urban dwellers continue to increase. In Nigeria, residents of urban and peri-urban communities practice large-scale agriculture (Zezza and Tasciotti, 2010). Hence, the burden of food security is not

exclusive to rural areas with abundant farmlands. Similarly, rural dwellers seek to provide non-farm goods and services such as the sale of timber and non-timber forest products and service delivery in other sectors of the economy such as transportation.

Rural development studies have recommended an integrated development approach to rural development (Madu, 2007). This approach was based on the multidimensional feature of rural communities that requires the coordination of communal life and governance to achieve development. Although development paradigms tend to be goal-oriented, the integrated approach offers the opportunity to manage all facets of growth to ensure sustainability. For example, economic diversification to tourism activity emphasises the development of tourism along with traditional economic activities. Arising from multiple economic options, households have a range of activities to choose from without compromising their cultural values and norms while ensuring that their economic and social needs are accomplished.

2.4 Rural tourism development

In tourism studies, the countryside is recognised as a type of destination depending on the level of development and activities obtainable in different geographical locations (Cooper, Fletcher, Fyall, Gilbert, and Wanhill, 2008). These categories of destination are classified as urban, rural/countryside, and coastal destination. Rural tourism refers to tourism activities within rural geographical area. Examples of rural tourism activities are agri-tourism, eco-tourism, sightseeing, walking, hunting, fishing, climbing, festivals and events, camping and adventure activities (Irshad, 2010). Rural tourism can be farm-based or non-farmbased activities. The tourist's motivation for visiting rural destinations includes escape from urban lifestyle, the desire to learn about the environment, culture, and heritage of the people; the need to experience the serenity of nature, and for the purposes of relaxation, rest and health. Tourists seek diverse experiences in the unique features of the natural environment (Phillips and Reichart, 2000). As a result, rural tourism is often a choice of destination for tourists who desire to explore and engage in recreational activities.

As visitors' flow to an area increases, residents become aware and are conscious of the benefits associated with tourism. Generally, the economic benefit attached to tourism activity in terms of the increased need for products and services becomes more

obvious as residents of the community engage in trade and entrepreneurial activities. With increased tourism development, residents anticipate other benefits such as infrastructural development in terms of road network, communication and technological advancement, electricity, improved water supply and healthcare facilities. These developments are more obvious in rural destinations of developing nations because the regions are characterised by low social and economic development (Dalat, 2010).

In some destination communities, residents are tasked with the development of tourism. This approach is known as community-based tourism development. Residents' existing amenities such as housing and cultural values serve as the basis of tourism development. In some cases, residents' welcome tourists into their homes and charge a fee for the services rendered. This allows the tourists to experience the culture of the community first-hand through direct guest-host interaction. In other cases, the management and decision-making relating to tourism development is simply facilitated by residents of rural communities while there is a funding body or partnership with other interest groups. Furthermore, some communities practice rural tourism by encouraging community-owned enterprises and tourism investment (Iorio and Corsale, 2010; Mbaiwa, 2011). This allows the adequate management and control of tourism activities within the acceptable limit of local customs and traditions.

Tourism is a positive force of development in rural communities. Employment opportunities in the transportation sector, trade (farm produce, souvenir production and sales), food and beverage sector, farm and ranch excursion and activities, and other tourism specific services create social and economic development in rural communities. This provides the economic justification for tourism development through increased job opportunities and provision of social infrastructure. Tourism also enhances socio-cultural development through community pride. The host community has the opportunity to display to tourists the material and non-material elements of the community's culture: arts and crafts, conservation of natural and cultural heritage.

2.5 Waterfalls as tourist attractions

Hills and mountain regions are difficult agricultural terrains (The WYE Group, 2007). The rugged mountains and hills make access to farmland and tilling for cultivation tedious. However, the topography also provides other benefits such as waterfalls, streams and timber products from the vegetation of the waterfall environment. With what can be regarded as a pleasant mixed fate, hills and mountain areas that prove to be disadvantaged agricultural farmland also contain qualities that make the community a suitable one for communal residence. The geological process of mountains and waterfalls presents the scenery as a viable attraction site for people to visit and relax.

Tourism has several positive contributions to the economy of its host community (Banerjee, Cicowiez, Morris, and Moreda, 2018). Increased household income, better employment opportunities, foreign exchange earnings, increased Gross Domestic Product (GDP) are some of the economic derivatives of tourism. As a service industry, tourism has continued to gain recognition in facilitating the growth of rural communities. While some developed economies rely on manufacturing industry and technological advancement as livelihood strategies, marginal economies rely on natural resource base and services for their livelihood. Unlike development facilitated by the agricultural and manufacturing sector, tourism encourages development across several sectors of a country or community (Cooper et al., 2008; Tao and Wall, 2009).

The magnitude of tourism benefit in a community depends on the various forms of tourism activities, the nature of economic activities residentsparticipate in, and the existing infrastructure to support tourism activities. The impact of tourism is determined by social, economic, political and institutional factors of the receiving community (Tang, 1991; Briedenhann and Wickens, 2004; Yu, Cole, and Chancellor, 2018). For example, a community whose main economic activity is tourism will feel the impact of tourism activities more than a community with diversified economic activities. Hence, an integrated development approach which integrates several sectors of the economy is a preferred development approach than a mono-economic development.

Despite the positive impacts and benefits accruing to local communities, there are also some negative economic impacts associated with tourism (Zafra-Calvo, 2018). Tourism industry competes for the shared use of resources with other economic and

lifestyle activities. For example, the promotion of a scenic environment such as waterfalls for tourism is competing with the domestic need for farmland and water resources for livelihood (Hudson, 2000). Similarly, the waterfall can be developed as a power station to provide electricity for the host community (Adegboyega, 2015). Hence, there are trade-offs and opportunity cost associated with the development of tourism when compared to the alternative potential of the resource base.

Economic diversification can be adopted as a strategy to achieve a sustainable livelihood. Several economic activities are adapted to achieve better living standard and poverty alleviation. This approach will ensure that 'new' livelihood strategy such as tourism complements traditional livelihood activities of rural residents. The goal of tourism is to facilitate sustainable development by enhancing positive social, economic and environmental impacts on tourism destinations (UNWTO, 2017). WTO has continued to celebrate the World Tourism Day (WTD) with development themes that emphasize the goals of tourism as: development, prosperity, and well-being of tourism communities.

Like all natural resources, waterfalls are subject to over-exploitation in a bid to achieve development through commercialisation (Hudson, 1999). Although tourism is associated with economic growth and infrastructural development, unsustainable tourism development has also been reported to attract negative support from rural communities. Resident's support for tourism or otherwise is influenced by the perceived impact of tourism on the various facets of the lives of the host community (Muresan, Oroian, Harun, Arion and Porutiu etal., 2016). Hence, tourism is regarded as a mechanism for development while minimizing the threat to rural community's culture and lifestyle. However, despite the evident positive contributions of tourism to local communities, tourism still has negative effects on local communities. Residents in local communities may experience rapid negative changes in traditional socio-cultural values, undesired environmental changes as well as low wages and seasonality of employment (UNEP and WTO, 2005).

Some of the changes in tourism destinations include a shift in traditional livelihood activities of rural communities from crop farming, fishing, hunting, and livestock production among rural communities in Okavango Delta in Botswana (Mbaiwa, 2011). Livelihood activities of the rural communities include participation in Community-

Based Natural Resource Management (CBNRM), sales of crafts to tourists, traditional beer brewing, and remittances. The study showed that most residents now engage in CBNRM and Safari companies which leaves little time to engage in subsistence farming, hunting and gathering as livelihood activities.

Tourism development requires the protection and conservation of attraction sites. The conservation of biological diversity such as national parks is ironically located in poor communities where natural resources are required to earn a living. Although tourism benefits are acclaimed as enough reasons for rural communities to embrace tourism, residents of rural communities are often marginalised from the proceeds of tourism development. Studies in tourism have reported that poor planning and development can cause environmental deterioration which threatens the traditional livelihood activities of rural communities. Bennett and Dearden (2014) reported that protected areas have negative impacts on fisheries and agricultural livelihoods as a result of inaccessibility to livelihood assets stock by the rural communities.

Tourism support by local communities also depends on the management and governance system in operation at tourism destinations (Carlisle, Kunc, Jones, and Tiffin, 2013). The sustainable livelihood framework recognizes that policies, institutions, and processes through which the assets are controlled influence livelihood strategies and outcomes. Wilson, Fesenmaier, Fesenmaier, and van Es (2001) reported that the importance of community leadership, local support and leadership, and coordination and cooperation among stakeholders are prerequisites for local tourism success.

2.6 Poverty reduction

Poverty is a policy issue in sustainable development discourse. Development goals such as MDG and SDG clearly state the need to reduce and/or eliminate poverty in all its forms (MDG report, 2015; UNWTO and UNDP, 2017). Urban and rural poverty are examined within the context of geographical location and asset (Usman and Olagunju, 2017; Olajide, Agunbiade and Bishi, 2018). While urban dwellers seek to develop human capital to improve their chances of poverty reduction, rural dwellers have an advantage of natural asset and social cohesion to address poverty and vulnerable situations. Farmland is important for food security and capital

transformation for rural dwellers. An individual can engage in commercial farming to transform natural capital to financial capital through the sale of farm produce.

In Sub-Saharan Africa, poverty is a common research discourse. Dang and Dabalen (2018) observed that there could be a difference between permanent and transient poverty. Transient poverty implies that lack and inadequacy of meeting livelihood need is based on a temporary inability to access livelihood resources. Drawing from the Sustainable Livelihood Framework (SLF), vulnerabilities and shocks such as access to capital, government or political institutions and health can affect an individual's wealth status. Similarly, natural disasters, environmental conditions, cropping seasons and the fluctuating demands of services in the tourism industry can pose livelihood risk to rural residents.

Sustainable livelihood framework was designed to analyse poverty and well-being (Gilling et al., 2001). Hence, it adopts a systems approach to identify all probable elements that are capable of influencing livelihood outcome towards well-being or poverty. Rural communities have been the focus of development interventions towards poverty reduction as well as poverty eradication programmes. In most countries, agricultural communities often receive reliefs to cope with vulnerabilities. To achieve livelihood among individuals in rural communities, several poverty alleviation strategies have been adopted in the major economic sectors that determine the livelihood of rural people. They include agricultural-based poverty alleviation strategies such as intensification, development of rural infrastructures, provision of credit and loans, social welfare schemes, cottage industries and investment in education (Tittonell and Giller, 2013).

In Nigeria, there are several poverty-alleviation programmes that cut across all sectors of the economy. Among these are agriculture, health, education, transport, housing, financial, manufacturing and small-scale enterprises. Specific programmes to address the poor living conditions in Nigeria since 1980's include initiatives such as Directorate for Food, Roads and Rural Infrastructures (DFRRI) and Community Action Programme for Poverty Alleviation (CAPPA), Better Life Programme (BLF), Poverty Alleviation Programme (PAP), and National Poverty Eradication Programme (NAPEP). However, the programmes and strategies employed so far have made little impact in alleviating the poverty level of rural residents.

The combination of two or more kinds of activities and the choice of an individual to invest his labour time in such activities is a factor of livelihood outcome. Although the abundance of resources in rural areas is rarely contested. Conflicts often exist between the use and conservation of resources for economic purpose. Over time, the worth and cost of capital supply have continued to receive significant attention in development discourse. Sustainability is being emphasised in resource consumption.

Tourism is a widely accepted tool for enhancing rural well-being. Shen et al. (2008) identified two major poverty alleviation programmes currently adopted by UNWTO namely Pro-Poor Tourism (PPT) and Sustainable Tourism Eliminating Poverty (ST-EP). Pro-poor tourism aims at addressing poverty by defining the net income residents can obtain from tourism activities in the host community (Ashley, Goodwin and Roe, 2001; Akyeampong, 2011). The approach is to encourage rural residents in tourism destination to participate in tourism activities to earn income. However, PPT has been criticised for not considering the consequence of unsustainable business activity on the local economy (Gascón, 2015).

Tourism has been promoted as a primary source of export commodity for eradicating poverty in some developing nations. Since tourism facilitates the development of projects and infrastructure, most low-income countries embraced the possibility of economic development from the return of tourism. Unlike the PPT, ST-EP embraces the pillars of sustainability to ensure that social equity, environmental protection, and economic benefits through the tourism industry for the host community. Although Nigeria chaired the working group to supervise the preparation of the ST-EP initiative, the country still lacked the institutional capacity to support the tourism sector.

For example, after Nigeria embraced the ST-EP initiative, an evaluation of the tourism infrastructure showed that the country does not have the capacity to effectively develop and manage tourism to maximise the benefits therein (Federal Republic of Nigeria, 2006). Hence, rural residents who rely on tourism as an alternative livelihood strategy need to address a greater deal of issues such as tourism policy, tourism infrastructure and superstructures, and adequate marketing among other issues to take advantage of the benefits of the tourism industry. Community-based initiative is also practiced in nature-based tourism destinations to promote a fair distribution of tourism benefits to rural residents (Stone and Nyaupane, 2018).

2.7 Livelihood vulnerability

Trends, shocks, seasonality, and institutions are factors influencing livelihood vulnerability (Shen et al., 2008). Vulnerability can be induced by internal or external factors. Internal factors include personal attributes which makes livelihood difficult to achieve due to a person's ability to cope with risks and shocks. For example, a person's level of education or health status may aggravate their risk to poverty and make it difficult to cope in vulnerable situations. Households may be vulnerable due to external factors which include economic fluctuations, natural disasters, irregular employment and income from tourism, seasonality of farm produce and markets; crop failure, climate change, social and political institutions, and demography (Tao and Wall, 2009; Nagler and Naude, 2014; Afriyie, Ganle, and Santos, 2017). In other words, livelihood security suggests ownership of assets, access to resources, ability to engage in income-generating livelihood activities, capacity to minimise risks and resilience to shocks (Chambers and Conway, 1991). To achieve livelihood security, households design strategies which help them cope with vulnerable situations. Farming households develop strategies such as sale and lease of land and physical assets while support from social relations including family, friends and organisations can also create avenues for households to cope with vulnerability (Freyssinet, 2009; Obasi and Kanu, 2014).

2.8 Livelihood outcome

Several studies related to natural resource use have identified various but related livelihood outcome (Shen et al., 2008; Tao and Wall, 2009; Bennett and Dearden, 2014; Donohue and Biggs, 2015). Sassi (2018) identifies increased income, well-being, food security and environmental sustainability as desired livelihood outcome. There is a central theme of sustainability across the identified outcomes as most of the contexts for the studies were drawn from the SLF. The domains and elements adopted in the study are:

2.8.1 Food security

Food security relates to the availability, affordability and accessibility of quality and nutritious food in the right quantity and preference of people who require a healthy life (FAO, 1996 in Pérez-Escamilla, 2017). Food security as a livelihood outcome is derived from the assets and strategies adopted by a household. As observed earlier in this study, agriculture is the mainstay of rural households. However, food security does not depend solely on farm productivity, but rather emphasises sustainability through the provision of other assets being made available to the rural poor (Gulliford, Nunes and Rocke, 2006). The assets owned or controlled by households confer direct and indirect impact on food security and other indicators of livelihood outcome.

2.8.2 Reduced vulnerability

Vulnerability refers to situations where there is a diminished capacity for an individual or household to manage risks, shocks and threat to their livelihood. Households may face a risk of not being able to meet their livelihood needs. This is not usually the case because households may have already experienced shocks or may entertain the fear of being disposed to risk in the future. Initially, the concept of vulnerability was linked to natural disasters (Afriyie et al., 2017). However, social and economic practices such as level of income and access to social infrastructure have also been linked to vulnerability (Wang, Wan and Song, 2018). Makura-Paradza (2010) suggests that vulnerability is a combination of relationship between livelihood assets and power distribution to utilise the resources. Hence, people experience livelihood risk and threats differently and enact various strategies to cope with such situations.

Reduced vulnerability seeks to measure the extent of exposure of individuals or households to situations that may enhance or threaten their livelihood. This means that the more they experience negative or unwanted social and economic situations, the higher their livelihood vulnerability. In order to achieve positive livelihood outcome, the risks and shocks experienced in achieving daily needs must be reduced.

2.8.3 Sustainable use of natural resources

Lin, Chen, and Filieri (2017) opine that tourism is a process of resource exchange between actors and the object of exchange. The natural environment which is a community resource is the major object of exchange while the actors are the host communities. Forests, water, air and wildlife resources are categorised as Common-

Pool Resources (CPR) because of the collective action required from local communities regarding access, usage and management of these resources (Altrichter and Basurto, 2008). Whitford (2002) posit that the use of natural resource demands collective choices to control overexploitation and ensure generational equity.The exploitation of forest resources for economic development poses both positive and negative image on the livelihoods of rural households (Inoni, 2009).

In most rural communities, the appropriation of natural resources is considered a communal responsibility (Shen et al., 2008; Saunders, 2014). However, Olorunfemi, Fasona, Oloukoi, Elias and Adedayo (2016) reported that the management of CPR sometimes does not entrench social values such as local people's traditions and beliefs. These traditional views and approach to resource management have been identified as sustainable pathways to the effective use of natural resources. There is a need for balanced perspective between the present use of the resources and what is fair for the next generation to meet their needs. Hence, the perceived benefit and cost of the use of the resource transcends an individual's interpretation of a social equity approach. Therefore, the sustainable use of resources often consider indicators like conservation, access and use of resources, engagement in the process of decision making, equitable distribution of revenue, and the support for tourism.

The trade of natural resources such as timber or non-timber forest product affects livelihood and conservation outcomes. The extraction of forest resources for livelihood often leads to trade-offs between conservation efforts and livelihood outcome (Kusters, Achdiawan, Belcher and Ruiz Pérez, 2006; Nyaupane and Poudel, 2011). Similarly, Persha, Agrawal and Chhatre (2011) reported positive and negative relationships between biodiversity conservation and the outcomes of forest-based livelihoods. Hence, the use of forest resources for livelihoods may be considered a positive outcome when preservation of fauna and flora is supported and negative outcome when natural resources are being depleted without corresponding replacement or benefits.

2.9 Conceptual framework

The conceptual framework of this study draws on the sustainable livelihoods approach. The study recognised three types of variables while focusing on the independent and dependent variables. Firstly, the independent variable which includes socio-economic characteristics of rural households; their livelihood (consisting of rural households' ability, assets, and activities), the perceived effects of the waterfalls on livelihood and constraints to the use of waterfalls for livelihood were examined. The dependent variable is the rural households' livelihood outcome. Three indicators used to construct the livelihood outcomewere food security, reduced vulnerability, and sustainable use of natural resources. The study also recognises that there are intervening variables which can impede the achievement of livelihood outcome. Some of these variables are identified as social, political, economic, and cultural factors.

The conceptual framework shows that socio-economic characteristics of rural households such as age, education, marital status, and household size could affect the three components of livelihood status namely ability, assets, activities of rural households in the study area. These components share a mutual relationship as an increase in one component can cause a corresponding increase in another component. Furthermore, livelihood activities will affect the perceived effects of the waterfalls on the livelihoods of rural households. The extent of a rural household's interaction with the waterfall will influence the perception of respondents on the effect of the waterfall on livelihood as positive, negative or without effect. Although ability, assets, and activities are major determinants of livelihood, constraints act as restraining variables that can influence an individual's ability to access livelihood.

Furthermore, intervening variables mediate between the independent and dependent variables. Although the intervening variables which include social, cultural, political and economic factors are not the focus of this study, a premise for these variables in the study area was established through Focus Group Discussion (FGD), observation and Key Informant Interview (KII) with the community chiefs. This was used to draw inference on occurrences which may not have been captured in the research instrument. An example of this was the adjourning tourism destination to Arinta waterfalls and the traffic flow that was observed at the waterfall destinations. The observations were particularly instrumental to explain the difference in livelihood outcome across the waterfall destinations.

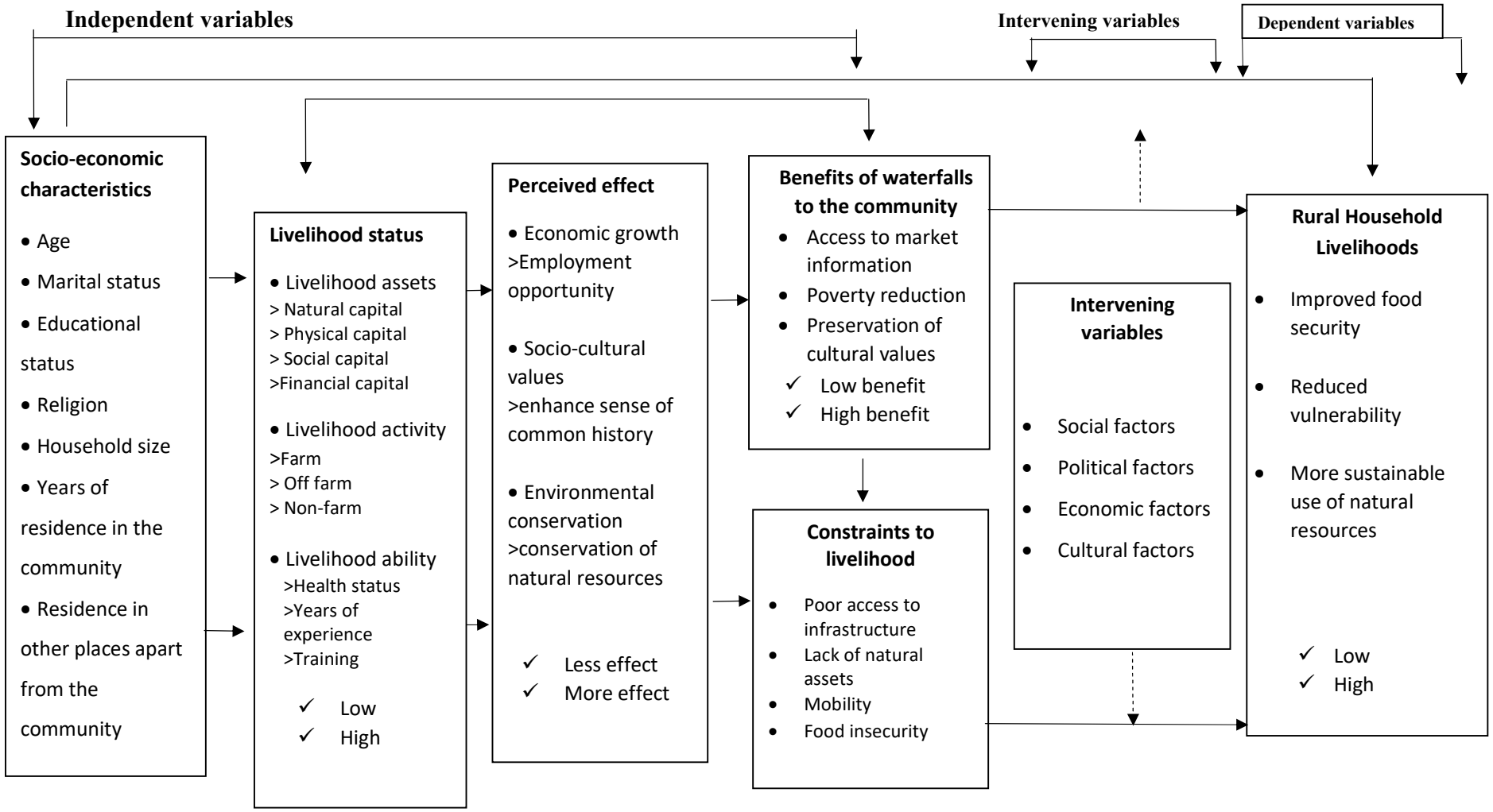

Figure 2.1. The conceptual framework on the influence of waterfalls as a tourist destination on the livelihood outcomes of rural households in Southwestern Nigeria

2.10 Theoretical framework

This study will adopt the sustainable livelihood framework, Bourdieu's theory of practice (field theory) and theory of transfer/transformation of capital to unveil the relationship between waterfall as a community capital and the livelihood outcome of residents in the selected nature-based tourism communities.

1. Sustainable Livelihood Framework
2. Bourdieu's theory of practice

2.10.1 Sustainable Livelihoods Framework (SLF)

Sustainable livelihood framework is a systems approach which illustrates all related concepts to livelihood to establish linkages between the assets, institutions, processes, and outcomes for an individual or household to earn a living. SLF has been attributed as a people-centred approach to livelihood (Tao and Wall, 2009). This approach is necessary to personalise people's experiences in a bid to understand poverty and standard of living from an actor's point of view. SLF is relevant for identifying the components of livelihood status and outcomes. It operates as a systems framework which incorporates the various components and factors that can influence or determine the livelihood of people in each context.

Although the SLF approach has come to be recognised as a useful framework for livelihood analysis, Sakdapolrak (2014) opined that livelihood researches lack a 'structure-agency' relation. While the choice of an individual's time and livelihood pursuit has been emphasised, structural constraints which limit the choices are underemphasised in livelihood studies. This can be attributed to the lack of explanation on the influence of institutions and policies on livelihood in the SLF. To address the fundamental weak points of SLF, researchers have turned to Bourdieu's theory of practice (Sakdapolrak, 2014) to enrich the dialogue between livelihoods and social processes in the society.

2.10.2 Bourdieu's theory of practice

Bourdieu's theory of practice (1972) adopts the principle of field theory to identify the social environment, actor and influencing factors of behaviour in a social environment. Like most social theories or perspective, the focus of the theory is to explore the factors that influence actions and outcomes in social settings. Bourdieu attempts to eliminate the rigid position between actors, institutions and processes by exploring the relationship between multifaceted and interrelated practices (Martin, 2003; Nowicka, 2015).

The theory of practice adopts three concepts to explain our interactions with our world and our corresponding behaviours as 'field', 'habitus' and 'Doxa'. Field theory describes how interaction with various components of the society shapes our actions and behaviours in the social world.

'Fields'

Bourdieu argues that there aredifferent social environments (fields) which define a person's experience. Hence, every individual behaves differently in relation to the fields. For example, a person's activities and behaviours at work may be significantly different from his attitude in social gatherings. Despite these different fields, the activities cumulate to the daily routine that influence our lifestyle and perspectives of our environment. Although each field is independent and can exist on its own, other fields in the social space are influenced by one another. In this study, fields are operationalised as the host community of the tourism resource.

'Habitus'

Habitus, on the other hand, refers to the characteristics, dispositions, and capital that determine our behaviours in social settings. It is influenced by social and cultural beliefs that influence the collective history of a community and how these histories are reproduced. For example, natural capital is a widely recognised measure of wealth in rural communities (Shackleton *et al.,* 2001) because rural households depend on nature-based resources for farming, livestock production and the extraction of forest products. However, assets have been further classified by Barrett et al., (2001) productive and non-productive assets. Productive assets are described as assets that generate earned-income such as land, labour, livestock, and skills. Alternatively, non-

productive assets are assets which do not contribute to direct earnings such as social groups or networks and household valuables. Although these assets are regarded as unproductive, Barrett *et al.* (2001) argues that they contribute to the unearned income of households. This reflects the diversity of livelihood activities of rural households.

'Doxa'

Agents are individuals who interact within the social field based on the rules of the environment. The actions of an individual are often captured as practice in the description of Bourdieu's theory. The rule known as 'Doxa' prescribes the code of conduct in the social field. In the community, there are rules for resource allocation, social organisations and social order which influences the power and behaviours exhibited by members of the group. Doxa poses limitations or restrictions to action. The level of conformity to 'Doxa' that an individual displays depends on his affluence, social connections and knowledge systems. Habituson the other hand describes the difference in the activities of the various social classes existing within the community. Different generations will attempt to achieve the same goal differently based on the cultural and social setting. For example, agriculture was seen as a primary means of livelihood in previous years but in recent times, youths' resort to migration and service sectors to earn a living.

'Capital'

In Bourdieu's theory of practice, capital is used to depict relationships and exchanges within the society. Four level of capitals were identified by Bourdieu as economic, cultural, social and symbolic capital. However, unlike the capital captured in the sustainable livelihoods framework which appears to be fixed, Bourdieu emphasized the dynamic nature of these capitals. He posits that exchanges and values are constantly occurring the society. Hence, the premise of Bourdieu's capital captures the transformation of resources in the society.

2.10.3 Transfer and transformation of livelihood capital

Stone and Nyaupane (2018) suggest that the transformation of capital is a dynamic process which involves the appropriation of labour time in relation to other assets and desired outcomes. Adopting the systems approach thinking, this study opines that asset can be transformed from one form to another to improve the household income (de Sherbinin, VanWey, McSweeney and Aggarwal et al., 2008). The premise holds that capital can be transferred from one person to another or transformed from one form to another to achieve the desired livelihood outcome (Long, 2011). The approach identifies the various ways in which people respond to the resources in their environment to achieve livelihoods. Furthermore, it highlights the ability of individuals to convert capitals and resources from one form to another. An individual with high asset or ability can transform his livelihood status by diversifying his livelihood activity.

Relation of Bourdieu's theory of practice to the study

Bourdieu's theory of practice was adopted because of the various premises that is captured in the theory as it accommodates the various components of the sustainable livelihood framework. Habitus was used to illustrate the socio-economic characteristic of the respondents as it captures variables internal to the individual such as gender, age, household size and educational attainment. Although these variables are internal as they are imbibed or learned, they reflect external social structures which dictates the acceptable behaviour in the society. Habitus also captures the objective of the perceived effects of waterfalls as it is used to describe actor's perception, thinking or actions of present and future activities. These thoughts may be preconditioned and internalised for a long time before they are expressed as actions. So, despite a shared cultural value or experience, individuals may react differently to situations.

Social field describes the framework where capitals and actions interact. Resources, networks and processes used to create capital or convert it from one form to another. In the context of this study, social field will be explored using livelihood status, benefits and constraints. One of the major components of livelihood status is 'capitals', which are the baseline for the assets captured in the sustainable livelihood framework. To further expand on capitals and the link to this study, it is presumed that the capitals can be transformed from one type to another as well as further processed

to activities and capabilities. Social fields act as the conditions to achieve predetermined goals. Thieme(2008) also emphasized that the position of an individual within the social field is relative rather than absolute. This implies that ownership and access to resources, the skills or strategies available to process resources and other external conditions could influence the ability of an actor to achieve his set objective.

Practice refers to outcome of the relationship between an individual's habitus, different forms of capital and the social field of action. This study conceptualised practice on the outcome of livelihood of individuals. It is presumed that all the variables of the study are interpreted and processed differently by respondents based on their access to capitals and status in the social field. Also, internal and external factors of individuals influence their livelihood strategies as well as their ability to meet their daily needs.

2.11 Empirical studies on effect of tourist destination on livelihoods

Ashley (2000) assessed tourism impact on rural livelihood in Namibia. The study measured livelihood using three major indicators namely: human capital, natural capital and social capital. The study centres on residents' choice, decision and opinion of tourism as a livelihood activity.

Results from the study reveal that tourism impacted positively on human capital as community members acquired skills through adult training. However, tourism impacted both negatively and positively on natural capital. Some of the negative impacts identified by the author include loss of access to land as a key resource for grazing and planting, land use conflict, damage from tourists by polluting water sources or driving off-track. On the other hand, the positive impacts include enhanced management of natural resources by community members, local conservation of wildlife and an increase in wildlife numbers.

In addition, the tourist destination site impacted positively on social capital of community members by enhancing social cohesion for all community members. It also enhanced community relevance through participation in tourism enterprises. Furthermore, tourism enhanced organisational strength and management capacity of the community. Other social benefits were increased social status through community recognition and provision of links to the global community. This allowed community members to relate with both public and private entrepreneurs thus increasing the capacity of rural dwellers to pro-actively engage in tourism.

The author also examined the effect of tourist destination on livelihood outcome. Livelihood outcome were measured through cash income, vulnerability, empowerment and food security. The author posited that the tourist destination sites impacted positively on cash income as community members experienced regular wages from their jobs, improved casual earnings opportunities from selling grasses, food, wood and crafts as well as the profits accruing from ownership of a tourism enterprise. Tourist destination sites were also found to decrease vulnerability as cash income generated through tourism helped community members to cope with drought. Women who sold grasses to tourism lodges were able to use their earnings to buy food in poor agricultural years.However, tourist destination sites also undermined food security through lost access to veld foodsas a result ofhuman footprint andwildlife's damage to

crops.Hence, the study established the positive and negative effects tourism activities on the empowerment of community members.

Biddlecom, Axinn and Barber (2005)posit that greater reliance on natural resources is associated with households having large family size. The volume of agricultural and forest resources required by households depend on the household size. Where capital assets that can be used to earn a living in a household is low, residents tend to rely on the natural environment for food security. For example, Gbadegesin and Olorunfemi (2011) opined that rural households in Southwestern Nigeria exploit forest resources without adequate afforestation plan. The implication could be the overexploitation of natural capital which will eventually lead to a low livelihood outcome. Households that have alternative livelihood assets may be able to fall back on other resources rather than depending solely on natural capital for their livelihood.

Soini (2005) further reported that an increase or improvement in livelihood assets will lead to an improved livelihood outcome. Similarly, increased skills or physical ability have been reported to improve the portfolio of livelihood activities available to rural residents (Kamwi et al., 2018). However, low livelihood status tends to increase the vulnerability of rural households and expose them to livelihood shocks and associated risks (Wei, Xu, Shi, Tian, Wang and Liu, 2011).

Motsholapheko,Kgathiand Vanderpost (2012) observed that natural capital is the most significant asset for rural residents as access to natural capital could drive access to other livelihood capitals. Access to land, water and forest resources could be used in the production of livelihood goods and services thereby enhancing the transformation of natural capital to physical or financial capital. Employment related networks could also be created through the production of goods and services in rural communities. The strategies adopted to transform environmental resources to other forms of capital could therefore lead to improved livelihood outcome (Kusters et al., 2006). However, the sustainable use of the resources of the environment is important to ensure the sustained production and consumption of environmental goods for the present and future generation.

Another study carried out by Ijeomah (2015) focused on tourism impact of five communities adjoining eco-destinations in Plateau state. The study reveals that tourism impacted both positively and negatively on livelihood strategies. On the

positive side, the author found that in Pandam community, tourism gave rise to employment opportunities, improved fishing activities and the preservation of culture. Conversely, tourism activities resulted in reduced farmlands, destruction of crops by animals, fuel wood scarcity and consumption of livestock by wild animals. The popularity of tourist destinations and the tourist influx also influence the benefits that accrue to rural residents from tourist destinations (Godwin, Kasim and Ikweyatun, 2013).

Ijeomah (2015) further noted that the tourism impacts on the livelihoods in Plateau State is occupation and location specific. These impacts vary with strategies adopted by management, individual level of participation and the attractions in an eco-destination. It was also observed that tourism activities impacted more positively on communities that were closer to the tourist sites. In addition, they found that destinations controlled by non-governmental organisations (Assop falls, Rayfield resort and Naraguta) impacted more positively on the livelihoods of host communities than those managed by the government.

Koki (2017) reported a positive perception of tourism development among residents in host communities around nature-based destinations. Tourism creates alternative livelihood activities and strategies for rural residents to achieve their livelihood. Where improved livelihoods are attributed to tourism development by residents, they tend to support tourism development and as a result create an environment to also improve their livelihood outcome (Martin, de los Sanchez and Herrero, 2018). The benefits of tourism development may include social prestige, civic pride and conservation of natural resources (Karim, Rokis and Awang, 2017). The important benefits of tourism may vary from one individual to another depending on the individual's habitus and social fields as proposed by Bourdieu.

Zhen and Qiuying (2017) examined the efficiency of tourism impact on people's livelihood. These authors opine that people's livelihood could be overlapping but relatively independent. The study showed that tourism improved the income, employment, environment and local infrastructure of the residents. The study concluded that the development of tourism is a useful tool for improving people's livelihood. However, the study laid emphasis on economic benefits with less emphasis on social capital and other livelihood indicators.

Islam and Alam (2018) noted that reduced financial and social capital predisposes rural households to poverty. As the livelihood asset of rural household reduces, their level of vulnerability to poverty increases. When individuals are unable to meet their basic livelihood needs, capital assets that should be used for production of goods and services may not be in their optimal condition. In extreme cases, important assets may be sold or mortgaged to meet needs that individuals consider important to them at the time. Other vulnerability factors include the availability of infrastructure and the ability of rural residents to participate in tourism related activities and decision making (Khatiwada, Deng, Paudel, Khatiwada, Zhang and Su, 2017).

Chen, Qiu, Usio and Nakamura (2018) examined the impact of tourism on the sustainability of an aging community in Japan. The study adopted indicator strategies including variables five categories of livelihood capital: physical, natural, human, financial, and social capital. These authors found that tourism impacted positively on each type of livelihood capital. The study also affirmed that the indicators measured the impact of tourism-related activities on rural community.

However, one of the limitations of the study by Chen *et al.* (2018) is that the study relied solely on in-depth interview. However, a quantitative data could have complemented the in-depth interview on the livelihood of the host community. Also, a sample size of 17 households may not be sufficient to allow generalisation of the findings of the study. This has led to the use of mixed research methods to allow for a more robust data collection process in research.

In conclusion, the reviewed literatures established the use of livelihood capitals. Likewise, the positive and negative effect of tourism on host communities were recognised by the authors of most of the literatures reviewed.

2.12 Review of methodological issues

Sustainable livelihood framework is widely adopted in the study of rural poverty. The framework allows a researcher to explore the inputs, processes, strategies, institutions, outputs and effects of livelihoods on rural households (Wang, 2018). Livelihood studies focus on individual, household and community assessment. Hence, questionnaires, survey, census and monitoring approach can be used to acquire qualitative insights (Scoones, 1998). Furthermore, in-depth interviews, life histories, biographies and oral histories are used to explore detailed issues regarding the variable of study (Scoones, 1998).

Olawuyi and Rahji (2012) in an analysis of the livelihoods of household heads in Ode-Omi kingdom adopted multistage and mixed methods in a community whose livelihoods depends largely on farming related activities. Data collection instruments used in livelihood studies include interview schedule, focus group discussions, participatory rural appraisal, informal survey and secondary sources of data.

Wilmsen and van Hulten (2017) further established the longitudinal approach in the study of livelihoods. Since livelihood assessment involves tracking changes, some studies involve prolonged interaction with the respondents. Hence, they rely on recall data to interpret changes in household's livelihood status. This approach involves the use of detailed, disaggregated data to capture the livelihood experiences of respondents.

To analyse the volume of data gathered across the various sectors of the livelihood framework, Donohue and Biggs (2015) calculated the weighted average of indicators in each category of livelihood variable and obtained standardized scores of each variable.

Given the rich methodological approach to livelihood studies, this study adopted a mixed research method which included interview schedule, focus group discussions and participant observation to gather data from respondents on the influence of waterfalls on their livelihoods.

2.13 Summary of literature

Tourism is a positive force of development in rural communities (Banerjee et al.,2018). Employment opportunities in the transportation sector, trade (farm produce, souvenir production and sales), food and beverage sector, farm and ranch excursion and activities, and other tourism specific services create social and economic development in rural communities. This provides the economic justification of tourism development through increased job opportunities and provision of social infrastructure. Tourism also enhances socio-cultural development through community pride as residents can showcase their material and non-material culture. Other studies have emphasized environmental conservation as an important pillar for sustainable livelihoods.

Despite the benefits attached to the development of tourism in rural areas, literature is yet to situate the livelihood outcomes of residents around waterfall destinations in southwestern Nigeria. Hence, this purpose of this study is to explore the livelihood outcomes that rural households can derive from waterfall destinations.

CHAPTER THREE
METHODOLOGY

3.0 Overview

This chapter describes the design of the study, the study area and the selection of waterfall tourist destinations for the study. It covers the selection of the study population and procedure for selecting the sample size. It further describes the structure of the questionnaire as the instrument for data collection. In addition, the independent and dependent variables were identified as well as the methods used for data analysis.

3.1 Study design

Research design describes the plan with which the researcher intends to investigate the research problem to achieve the research objective (Andrew, 2006). The study adopted descriptive survey design to unveil the lived experiences of selected rural households around waterfall communities. The descriptive research allows information to be collected across several components of a system as a unit of study using case studies (Ritchie, Burns and Palmer, 2005). There are three waterfalls in Southwestern Nigeria. Hence, the multiple case study approach was used to examine how residents earn a living in the various rural communities.

Beeton (2005) established that the process of descriptive design can involve one or more of the following methods: participant observation, quantitative and qualitative methods, key informant interviews and informal discussions. The approach of using mixed methods of data collection to study the same phenomenon is known as triangulation (Molina--Azorín and Font, 2016; Mandal, 2018). Mixed data collection can be used to validate or negate information supplied by rural households to improve the validity of the study. It is also useful to ameliorate the bias disadvantage inherent in case study research. The researcher was able to examine and analyse relationships between livelihood status, perceived effects, benefits and constraints of rural residents in achieving their livelihood outcome.

3.2 The study area

The Southwestern geopolitical zone is made up of six states namely: Oyo, Ekiti, Ogun, Ondo, Lagos and Osun states. Two states (Ekiti and Osun; Figure 4.1) identified as having waterfall destinations were used for the study. The regions are dominated by the Yoruba ethnic group with various dialects among members of the group. Southwestern Nigeria has a total population of 27,581,992 based on 2006 population census and an estimated population of 38,257,260 in 2017 release of demographics statistics (tribuneonlineng.com). The study area lies between longitude $2^0\ 31^1$ and $6^0\ 00^1$ East and Latitude $6^0\ 21^1$ and $8^0\ 37^1$N consisting of land area measuring 77,818 km^2. To the north, the zone is bounded by Kwara and Kogi States, in the east by Edo and Delta States. Also, the zone is bordered by Republic of Benin in the West and Gulf of Guinea in the South.

The Southwestern zone has two seasons annually; the rainy season between March and October and the dry season between November and February. The study area is tropical in nature with average temperature of 21-34^{0}C and annual rainfall of between 150 and 3000 mm. The vegetation consists of freshwater, swamp and mangrove forest. This provides important livelihood resources and tourism potentials for the region. The ridge complex found in Ekiti and Osun states also provides exciting landscape for leisure activities. Some of the landscape explored as tourism destinations in the Southwestern region include Idanre hills, Osun Osogbo sacred grove, Ikogosi warm spring, Arinta waterfalls, Olumirin waterfalls and Ayikunnugba waterfalls.

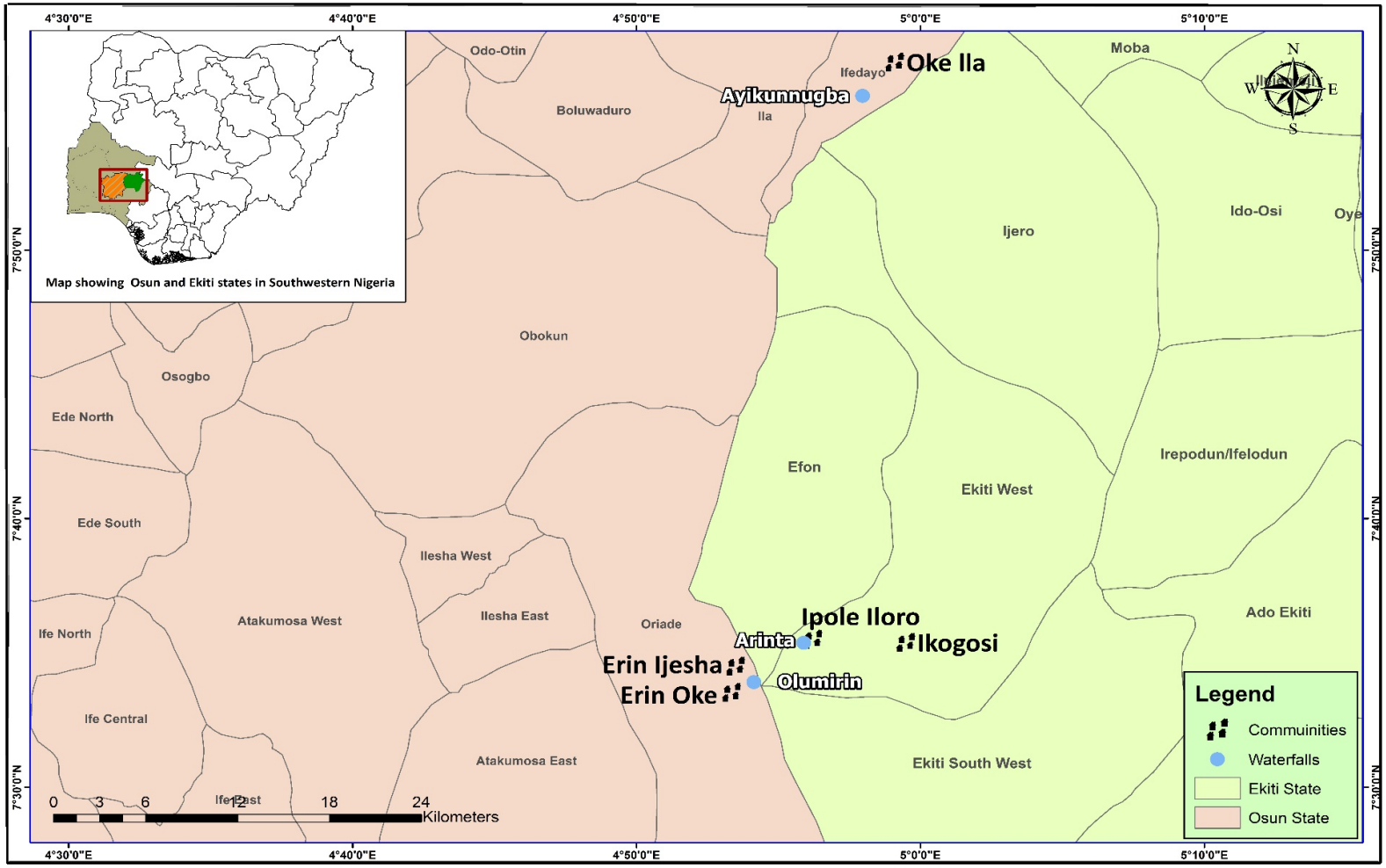

Figure 3.1: Map of Nigeria showing the waterfall destinations in Southwestern Nigeria

Source: Field survey, 2018

3.2.1 Arinta waterfalls (Ekiti state)

Arinta waterfalls is located in Ekiti West Local Government Area (LGA) of Ekiti state. Ekiti west population comprise of 179,892 based to the 2006 population (NPC, 2007). The LGA has an area of 366km^2 and a density of 669.1/km^2. The waterfall is located 6km North-west of Ikogosi warm spring. The waterfall is one of the popular tourist attractions after Ikogosi in Ekiti state (Adeyeye, Fagbohun, and Odeyemi, 2008). Arinta waterfalls is bounded by Erin-Ijesha to the East, Ikeji-Ile to the Southeast, EffonAlaaye to the North, and Ikogosi/Erijiyan to the East. It lies within latitudes $7^0$32'N and $7^0$36'N of the equator and longitudes $4^0$55'E and $4^0$57'E of the Greenwich meridian.

Plate 3.1: Arinta waterfalls in IpoleIloro Community of Ekiti State

3.2.2 Olumirin waterfalls (Osun state)

Olumirin waterfalls flows from Ijesa hills in Ori-Ade LGA, Osun state. Oriade LGA has an area of 465km^2 and a population density of 439.4/km^2. The LGA recorded population figure of 148,379 during 2006 population enumeration and a projected population of 204,300 in 2016. The waterfall is located 2km off Erin Ijesa town. It lies within latitudes7^{0}31'E and 4^{0}52'E and 4^{0}54'E of the Greenwich meridian. Oriade is a Local Government area located in the Northeastern part of Osun state, which is predominantly occupied by Ijesa people.

Plate 3.2: Olumirin waterfalls in Erin-Ijesha community, Osun State

3.2.3 Ayikunnugba waterfalls (Osun state)

Ayikunnugba waterfalls is situated in Oke–Ila Orangun community, Ifedayo LGA of Osun State. Ayikunnugba waterfalls is located along Oke-Ila ridge complex. Ifedayo LGA has a total population of 37,508 at the 2006 population census and a projected population of 51,700 in 2016. Oke-Ila covers 128 km² in landmass, with a population spread of 403.9/km².

Plate 3.3: Ayikunnugba waterfalls in Oke-Ila community, Osun State

3.3 Study population`

The study population consist of all households in communities within 0-10km radius of where Olumirin, Arinta, and Ayikunnugba waterfalls are located (Table 3.1).

Table 3.1: Proximity of communities around waterfall communities in Southwestern Nigeria

Waterfall destinations	State	Local Government	Communities	Distance from community to the waterfall
Olumirin waterfalls	Osun State	Oriade L.G.A.	Erin-Ijesha	1.2km
			Erin-Oke	4.5km
Ayikunugba waterfalls	Osun State	Ifedayo L.G.A.	Oke-Ila	5.2km
Arinta waterfalls	Ekiti State	Ekiti West L.G.A.	Ipole-Iloro	4.9km
			Ikogosi	10km

Source: Field survey, 2018

3.4 Sampling procedure and sample size

The sample is chosen as a representation of the population to draw conclusions about the larger population. Purposive and simple random sampling methods were used in the study.

Stage 1: Osun and Ekiti states were purposively selected as the two states that have waterfalls as tourism destinations in Southwestern Nigeria.

Stage 2: Three local governments with waterfall destinations were located and purposively selected. Olumirin and Ayikunnugba waterfalls are in Oriade and Ifedayo Local Government Areas respectively in Osun state. In Ekiti State, Ekiti West Local Government Area where Arinta waterfalls is situated was selected.

Stage 3: Erin-Ijesha, Erin-Oke, Oke-Ila, IpoleIloro and Ikogosi communities were purposively selected because they are the rural communities for tourism activities at Olumirin, Ayikunnugba, and Arintawaterfalls respectively.

Stage 4: Simple random sampling was used to select households around waterfall destinations. A representative, preferably the head of the household, was required to provide livelihood information about the household.

Yamane formula (1967) in Israel (1992) was used to determine the sample size as indicated below:

$$n = \frac{N}{1+N(e)^2}$$

Where; n- Sample size

N- Study population size (115,520)

e- Sampling error of 0.05 (confidence interval of 95%)

$$n = \frac{115,520}{1+ 115,520\ (0.05)^2}$$

n = 399

The total sample size used for the study was 399.

Table 3.2: Sampling procedure and sample size

Waterfall location purposively selected	Communities purposively selected	Household population*	Sample size	Rural household's return rate	%
Questionnaire administration					
Olumirin	Erin-Ijesha Erin-Oke	39,520	141	110	**78.0**
Arinta	Ipole-Iloro Ikogosi	38,000	129	101	**78.3**
Ayikunnugba	Oke-Ila	38,000	129	101	**78.3**
		115,520	**399**	**312**	**78.2**
Interview Schedule					
Focus Group Discussion (FGD)			10	10	**100**
Key Informant Interview (KII)			5	5	**100**

Source: Field survey, 2018

***National population of areas selected (NPC 2007)**

3.5 Instruments for data collection

Quantitative and qualitative methods were used for the study. The integration of both methods allowed for confirmation of data through triangulation to improve the quality of discussion and findings. Quantitative data was collected using questionnaire while qualitative data collection includes Key Informant Interviews (KII), Focus Group Discussions (FGD) and Participant Observation (PO) to elicit the opinions and experiences of rural households. This approach was considered necessary to capture responses which may not reflect in the closed-ended questionnaire.

3.5.1 Questionnaire

The quantitative method involved the use of questionnaire to elicit information from the respondents. Structured-questionnaire was utilised to gather information on socio-economic characteristics, livelihood status, perceived effects of the waterfalls on livelihood, benefits derived from the waterfall, constraints to the use of waterfalls for livelihood and livelihood outcome (Appendix I).

3.5.2 Key informant interview

Key Informant Interview (KII) was conducted to gather data from rural households on livelihood status and rural household livelihoods in the study area. The KII conducted covers traditional ruler/village heads and owners of land close to the waterfall. The interview guide was designed in an open-ended format (Appendix II).

3.5.3 Focus group discussions

Focus Group Discussions (FGD) was used to stimulate a deeper understanding of the livelihood status, perceived effects and benefits of waterfalls to the communities. For the FGD, an outline of questions was prepared by the researcher to guide the discussion (Appendix III). Groups were formed based on gender and social strata within the communities.

3.5.4 Participant observation

Participant observation was conducted using checklists to gather relevant information on the landscape, facilities and environmental impacts of waterfalls in the communities.

3.6 Validity of research instrument

The questionnaire and interview guide were subjected to face and content validity with researchers in the Department of Agricultural Extension and Rural development, Centre for Sustainable Development at the University of Ibadan and Department of Hospitality and Tourism, Federal University of Agriculture Abeokuta.

3.7 Reliability of research instrument

Reliability is used to ascertain the ability of the construct to produce the same or highly similar result if the study is repeated. Eromola waterfalls in IdofinIgbana community in Kwara State was used for the pilot study. Split-half method was used to test the reliability of the instrument as shown in Table 3.3.

Table 3.3: Reliability test of variables

Variables	Cronbach Alpha Coefficient
Natural capital	0.741
Physical capital	0.792
Financial capital	0.901
Social capital	0.754
Livelihood ability	0.721
Livelihood activities	0.711
Perceived effect	0.685
Benefits	0.710
Constraints	0.923
Food security	0.774
Reduced vulnerability	0.779
Sustainable use of natural resource base	0.790

Source: Field survey, 2018

3.8 Description and measurement of variables

The variables of the research were categorised into independent and dependent variables. These variables were measured at nominal, ordinal, ratio and interval scale as described below.

3.8.1 Independent variables

The independent variables of the study were socio-economic characteristics (age, gender, education, income sources), livelihood status (assets, abilities and activities), perceived effects of the waterfalls on livelihood, benefits derived from the waterfall and constraints to the use of waterfalls for livelihood.

3.8.1.1 Socio-economic characteristics

Personal information was used to describe the socio-economic characteristics ofthe respondents. Respondents were selected based onthe representative of a household. Any household member above 18 years was allowed to participate in the survey as a representative of his or her household. The information collected were;

1. **Sex:** Sex was determined using nominal scale. Sex rating scale of '1' to Male and '2' to female were assigned.

2. **Age:** Rural household's age was measured using ratio scale. The exact age of respondents was required in years. Rural household's age as at their last birthday was used to ensure consistency of figures presented by rural households.

3. **Marital Status:** This was measured based on nominal scale of '1' single, '2' married '3' separated/divorced and '4' widowed.

4. **Educational attainment:** This was measured at nominal level using the different levels of education obtainable in the country as follows '1' no formal education, '2' primary education, '3' secondary education, '4' tertiary education, and '5' vocational training.

5. **Household size:** This was measured at interval level based on the actual number of residents per household.

6. **Religion:** The religion practiced was assessed at nominal level by indicating the respondent's religion as follows '1' Christianity, '2' Islam, '3' traditional, '4' other, specify.

7. **Estimated monthly income:** The estimated monthly income of the rural households was assessed using interval scale.

8. **Length of stay in the community**: This was evaluated using interval level by requesting for the number of years that the respondents had lived in the community. Respondents were also to indicate any other place(s) they have resided apart from the community.

3.8.1.2 Livelihood status

Livelihood status was measured using three components of livelihood - assets, abilities and activities. A mean score was obtained from the sum of the standardised score of the three components. Households with scores equal to or above the mean was classified as having high livelihood status, while those below the mean were classified as having low livelihood status.

Livelihood assets

The rural households' assets were measured using the livelihood asset pentagon as identified in the Sustainable Livelihoods Framework (Chambers and Conway, 1991; DFID, 1999; Lassoand Dahles, 2018). Standardized scores were obtained from the sum of scores across the livelihood assets. The maximum, minimum and mean scores were determined. Rural households with scores ranging from the mean to maximum scores were interpreted as the ones with high livelihood asset, while those with scores below the mean were interpreted as those with low livelihood assets.

Natural capital was measured by listing various categories of the natural resource such as land, water, and forest. Rural households were asked to provide ownership information using a score of 0 - to 'No' and 1 - to 'Yes' response. Access to natural capital was assessed on a three-point ordinal scale ranging from '0'- not accessible, '1'- accessible and '2'- very accessible.

Physical capital was measured using the gadgets, tools and other belongings of the respondents. The resources available to people for livelihood activities were examined by identifying the availability of lightening, energy sources, housing, transportation and farm tools in the household. Availability was measured using a Yes/No response.

Financial capital refers to an individual's access to money in various forms such as employment income, savings, credit facilities, insurance, remittances, and gifts. Financial capital was measured by requesting rural households to identify their sources of income. Accessibility of the various sources of income available to the household was measured. Rural households were asked to rate their access to the listed sources of fund on a four-point scale rating of '0' for never '1' for rarely '2' for sometimes and '3' for always.

Social networks and connections were measured by asking rural households to indicate membership in social groups like farmer's association, cooperative, age-grade groups and so on. This was measured by assigning '0' to none member and '1' to member. Also, the role of the rural households in each of the groups was assigned '0, 1 and 2' for an inactive member, active member, and leadership role respectively. The perceived benefits of the group were assigned '0' no benefit, '1' low benefit, '2' for average benefit and '3' high benefit.

Livelihood activities and choices

The various forms of livelihood activities in rural communities were listed. Participation in each livelihood activity was indicated by respondents using yes/no option. The extent of contribution of the listed activities to livelihood was measured at ordinal scale ranging from '0'- Not at all (NA), '1'- Small Extent (SE), '2'- Medium Extent (ME) and '3' High Extent (HE).

Livelihood ability

The livelihood ability of a rural household was measured based on participation in livelihood activities, years of experience, training and perceived level of safety of the livelihood activity. Livelihood activity participation was based on interval scale by asking respondents to specify the average number of hours of participation. Interval scale was further used to determine years of experience while training and level of

safety were measured at nominal level. Training on livelihood activity was assigned '1' for indigenous training, '2' for informal training and '3' for formal training. Level of safety was assigned '0' for not safe, '1' for safe and '2' for very safe.

The standardized score for each sub-category of livelihood asset was then computed. Composite standardised score was used to categorise livelihood asset, activity and ability based on the mean.

3.8.1.3 Perceived effects of waterfalls

The perceived effects of waterfalls on the livelihoods of rural residents were assessed with a five-point Likert scale. The perceived effect of waterfalls to the community was measured using economic, social and environmental indicators. Positive and negative statements were used to test the consistency of response to statements. Positive statements were rated on 1-5 from strongly disagree, disagree, neither agree nor disagree, strongly agree and agree respectively. Reverse score coding was used for negative statements to ensure uniformity of data.

3.8.1.4 Benefit of waterfall to the community

The benefit was measured using a rating scale of '0'– none, '1' – slightly, '2' – moderately, '3' - very large extent and '4'- extremely.

3.8.1.5 Constraints to the use of waterfall

Rural households were asked to provide answer to questions raised on constraints to the use of waterfall as a livelihood resource using the following rating scale: Not a Constraint (NC) = 0, Mild Constraint (MC) = 1 and Severe Constraints (SC) = 2. The mean score used to rank the severity of constraints identified by rural households.

3.8.2 Dependent variable

The dependent variable for this study is livelihood outcome of rural residents in nature-based destinations. This was tested by adopting three indicators of livelihood outcome which are food security, reduced vulnerability and sustainable use of natural resource base as identified by Shen et al. (2008). The three indicators of livelihood outcome were selected based on the dominant activities in rural communities.

Food security was selected because literature points to agriculture as the major livelihood activity of rural dwellers while reduced vulnerability was selected because like agriculture, tourism is prone to shocks and seasonality that could negatively influence livelihood outcome. Finally, most activities in rural areas depend on natural resources through inter-generational transfer. This study explored rural households' perception of the ability of the existing natural resource to support future generations in the light of the current economic use of the resources.

3.8.2.1 Food security

Food and Nutrition Technical Assistance (FANTA) identified three main aspects of food security as availability, accessibility and utilisation/consumption in the Household Food (In)security Access Scale [HFIAS] (Coates, Swindale and Bilinsky, 2007; Nkembi, Herman, Mubeteneh and Nkengafac, 2021). Food availability describes a situation where there is enough food in terms of quantity and appropriate food sources. Access describes the economic situation in which a household can afford to buy enough food for a healthy life. Utilisation refers to the capacity of the body to absorb and use the food nutrients.

A scale consisting of 9 items modified from FANTA scale was used to measure food security. Rural households were asked to rate the frequency of food security items using an ordinal scale rating of '1' – Never, '2' – Rarely, '3' – sometimes and '4' – often. The outcome of food security status was categorised into three as mild, moderate and severe food insecure households.

3.8.2.2 Reduced vulnerability

Vulnerability items were used to measure households' experience of possible livelihood risks and threats in the last three months. The level of a household's exposure to vulnerability was measured using indicatorsthat covers socio-economic domain as well as support from social networks. A rating scale of '1'- decrease greatly, '2'- decrease slightly, '3'- stay the same, '4'- increase slightly and '5'- increase greatly was used to measure the items. Household vulnerability was measured using these set of items to categorise rural households' vulnerability as low level or high level.

3.8.2.3 More sustainable use of natural resource base

Natural capital as a livelihood resource and the conservation of ecosystem was measured on a three-point ordinal scale of '1'- low, '2'- moderate and '3'- high.

3.8.2.4 Livelihood outcome

Livelihood outcome was computed based on the standard scores of food security, reduced vulnerability and sustainable use of natural resource base. The mean score was obtained to categorise the level of rural household's livelihood outcome into low livelihood outcome and highlivelihood outcome.

3.9 Data analysis

The data collected were analysed using frequency counts, percentages, Chi-square, Pearson Product Moment Correlation (PPMC), Analysis of Variance (ANOVA) and logit regression.

3.9.1 Hypotheses testing

Hypothesis 1 is based on the relationship between socio-economic characteristics and livelihood outcome and was tested using Chi-Square and Person Product Moment Correlation (PPMC).

Hypothesis 2 tested the relationship between livelihood status and livelihoods of rural household outcomes around the waterfall destinations and was examined using PPMC.

Hypothesis 3 which examined the relationship between residents' perceived effects of waterfalls and livelihood outcome around the waterfall destinations was tested using PPMC.

Hypothesis 4 which assessed the relationship between benefits derived from the waterfall and livelihood outcome of rural households around the waterfall destinations was assessed using PPMC.

Hypothesis 5 on the relationship between constraints to the use of waterfalls and livelihood outcome of rural households around the waterfall destinations was tested using PPMC.

Hypothesis 6 which examined the differences in the livelihood outcome across the waterfallsin the study area was evaluated using Analysis of Variance.

Hypothesis 7 which assessed the factors influencing waterfalls as a tourist destination on the livelihood outcome of rural households was examined using logit regression.

3.9.2 Logit regression model

Logit regression model was used to determine variables influencing the use of waterfalls as a tourist destination on the livelihood outcome of rural households (Table 3.4). The model is then given as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + \beta_{13} X_{13} + \beta_{14} X_{814} + \varepsilon,$$

Where Y is the conditional probability of waterfalls influencing the livelihood outcome of rural households, X is a vector of hypothesised explanatory variables which includes sex, age, marital status, educational attainment, household size, income, years of residence in the community, livelihood assets, livelihood activities, livelihood abilities, perceived economic effects, perceived sociocultural effects, perceived environmental effects and benefits derived from waterfalls. β is the vector of unknown parameters to be estimated and ϵ is independently and normally distributed random error term.

Table 3.4: Description of logit model

Variable	Description	Measurement
Y	Livelihood outcome	Dummy: High = 1, Low = 0
β_0	Constant	
B_i	Regression coefficient	i = 1 … 14
X_1	Age of rural households	In years
X_2	Sex	Dummy: Male =1, Female = 0
X_3	Marital status	Dummy: Married = 1, Otherwise = 0
X_4	Educational attainment	Dummy: Formal = 1, Otherwise = 0
X_5	Household size	Number of persons in the household
X_6	Estimated monthly income	Actual amount in Naira
X_7	Years of residence in the community	Number in years
X_8	Livelihood assets	Dummy: High = 1, Low = 0
X_9	Livelihood activities	Dummy: High = 1, Low = 0
X_{10}	Livelihood abilities	Dummy: High = 1, Low = 0
X_{11}	Perceived economic effects	Dummy: More effect = 1, Less effect = 0
X_{12}	Perceived sociocultural effects	Dummy: More effect = 1, Less effect = 0
X_{13}	Perceived environmental effects	Dummy: More effect = 1, Less effect = 0
X_{14}	Benefits derived from waterfall	Benefit index

Source: Field survey, 2018

CHAPTER FOUR
RESULTS AND DISCUSSION

4.0 Overview

This chapter presents the analyses of the findings and discussion of the study. Questionnaire (312), focus group discussion, participant observation and key-informant interview were used to elicit information on the livelihoods of the rural households in the study area. The analyses of the findings and discussions covered the seven objectives of the study which include the socio-economic characteristics, livelihood status, perceived effects, benefits of waterfalls to the communities, constraints to the use of waterfalls for livelihood activities and the livelihood outcome of rural households around waterfall destinations.

4.1 Socio-economic characteristics of rural households

The socio-economic characteristics of the respondents are: sex, marital status, religion, educational attainment, age, household size, estimated monthly income and rural household's length of stay in the community. The cosmopolitan awareness of the rural households was examined by assessing the rural households that had resided in locations other than the community and the years of residence in those communities. Objective one was analysed using bar chart, pie chart, frequency distribution table and content analysis.

Sex

The result in Table 4.1a revealed that 54.2% of the rural household members were male while 45.8% were female. This suggests a fair spread of gender distribution among rural households in Southwestern Nigeria and this is deemed necessary to reflect the contributions of males and females to rural livelihoods. Household gender relations influence the wealth and poverty status of household (Whitehead and Kabeer,

2001). Family roles based on gender have continued to change in recent times with a changing

narrative from the traditional practice of men as the sole income earner in most households (Zuo and Tang 2000; Evans, 2016).

Marital status

The marital status of an individual determines the multiple income earning activities and social support of the household. Married individuals are presumed to have more roles and responsibilities regarding livelihoods of their households.

The result indicated that 78.5% of the rural households were married; 19.2% were single, and 1.3% were widowed while 1.0% were separated (Table 4.1a). This suggests that married rural households may have access to multiple livelihoods through spousal support. Fabusoro, Omotayo, Apantaku, and Okuneye (2010) findings reported that married people have spousal support and have lesser livelihood risk. Similarly, Ademola (2016) noted that marital status is a poverty reduction strategy since individuals can pool resources and assets together to achieve desired livelihood outcome.

Religion

The results in Table 4.1ashowed that 97.8% of the rural households were Christians, while 9.6% were Muslims and 2.6% were traditionalists. This implies that Christianity is the dominant religion practiced by members of the communities examined. It also suggests that religion does not place restrictions on the use of waterfalls. This is evident as one of the discussants during the FGD reported that:

> "*the fact that I go to church does not stop me from* a*sking my husband to fetch water with jerrycan whenever he is going to the waterfalls. It is not a myth that the waterfall has healing properties. I drink and bath with the water. It is different from all other sources of water in the community. The serene environment at the waterfall also calms anybody that visits the place*" (FGD, Ipole-Iloro community, 2018).

Educational attainment

The results on educational attainment of rural households showed that 45.5% completed secondary school education and 21.5% completed primary education while 20.5% of the respondents had one form of tertiary education or the other (Table 4.1a). This indicates a high level of literacy among rural households in Southwestern Nigeria. This finding concurred with Agbelemoge (2013) that members of rural households in Southwestern Nigeria are literates.

The level of education among rural households is expected to provide knowledge and skill required to engage in livelihood activities, maximise resources and opportunities within their environment for better living standard. This is further reiterated by one of the male discussants during the conduct of the FGD who reported that:

> *"I am a graduate and an entrepreneur in this community. I diversify my livelihood by engaging in 'cash transfer services' (Paga) in addition to sales of agricultural implements."*
> (FGD, Ipole-Iloro community, 2018)

Table 4.1a: Distribution of respondents based on socioeconomic characteristics

Characteristics of respondents	Percentage (n=312)
Sex	
Male	54.2
Female	45.8
Marital status	
Single	19.2
Married	78.5
Separated/Divorced	1.0
Widowed	1.3
Religion	
Christian	87.8
Muslim	9.6
Traditional	2.6
Educational attainment	
No formal education	10.9
Vocational studies	1.6
Completed primary education	21.5
Completed secondary education	45.5
Tertiary education	20.5

Source: Field survey, 2018

Age

Kassie, Kim, and Fellizar Jr. (2017) argues that age is an important factor that influences the livelihood of people. It is assumed that as an individual's age increases, the ability to diversify livelihood activities decreases. The results on the age distribution of rural households in the study area in Table 4.1b revealed that 30.4% of the rural households were between 21-30 years, 21.2% were between the age range of 31 to 40 years and 21.5% were between 41-50 years with a mean age of 40.50±16.52 years. This finding reveals that there are more economically active young people in the study area who can still engage in livelihood activities. This finding also agrees with Olowa and Adebayo (2012) who reported that most rural households in Southwestern Nigeria were less than 47 years and within their economic productive age.

Household size

Table 4.1. showed the results of the distribution of rural households by household size. More than half (52.6%) of the rural households had household size of 5-8 persons and 33.3% had 1-4 persons in the household with a mean household size of 6.05±3.26 persons. This implies a relatively large household size among rural households in the study area. The household size is also expected to provide labour for rural livelihood activities. This finding agrees with Fabusoroet al.(2010) that households with large family size have higher probability of increased human capital for livelihood activities.

Estimated monthly income

The distribution on monthly income showed that 56.1% of the rural households earn between ₦10,000 - ₦39,999 while 22.8% reported a monthly income of less than ₦10,000per month (Table 4.1b). Although the minimum wage of the country is ₦30,000 most of the rural households in the study area do not obtain their income through public wages and salaries. Rather, they are predominantly farmers and traders. The minimum monthly income reported was ₦5,000 while the maximum income was ₦250,000. The mean income of ₦26,477.56±29,356.62 was recorded. This shows that rural households in the study area are relatively poor. This finding is in congruence with Apata, Apata, Igbalajobi and Awoniyi (2010) that most rural households in Southwestern Nigeria are poor. The low income could be attributed to the low level of

tourist inflow to the waterfalls as observed in the study area. Justifying this situation, Olowa and Adebayo (2012) argued that poverty can also be an indicator or outcome of inefficient use of common resources.

Length of stay in the community

The result in Table 4.1brevealed that31.1% of the rural households have stayed in the community for less than 10 years while 27.2% have stayed for more than 30 years. Furthermore, 23.7% of the rural households reported their length of stay for 11 to 20 years and 17.9% reported length of residency between 21 and 30 years. The average length of stay of rural households in their communities was 24.0±19.20 years.

Further enquiries on whether respondents have once lived outside the community were solicited. Majority (76.3%) of the rural households had lived in other communities while 23.7% of the rural households had not resided elsewhere apart from their communities. The reasons for living in other communities as reported by respondents during the FGD were based on education, employment opportunities and temporary relocation to reside with family and friends. This cosmopolitan behaviour of respondents is expected to enhance their livelihoods by expanding their social networks and capabilities. This is in line with the findings of Endris et al. (2017) that social networks provide support and safety net for rural households to buffer livelihood vulnerabilities.

Table 4.1b: Distribution of respondents based on socio-economic characteristics

Variables	Categories	Frequency	Percentage	Mean	SD
Age	<21 years	18	5.8	40.50	16.515
	21-30 years	95	30.4		
	31-40 years	66	21.2		
	41-50 years	67	21.5		
	51-60 years	29	9.3		
	>60 years	37	11.9		
Household size	1-4 persons	104	33.3	6.05	3.262
	5-8 persons	164	52.6		
	9-12 persons	28	9.0		
Estimated monthly income	<₦10,000	71	22.8	₦24477.56	₦29356.62
	₦10,000 – ₦39,999	175	56.1		
	₦40,000 – ₦69,999	48	15.4		
	>₦70,000	18	5.8		
Length of stay in the community	1-10 years	97	31.1	23.96	19.203
	11-20 years	74	23.7		
	21-30 years	56	17.9		
	>30 years	85	27.2		

Source: Field survey, 2018

4.2 Livelihood status

The livelihood status of the rural households was assessed through livelihood assets, abilities and activities. These indicators represent factors that influence the livelihood strategies adopted by households.

4.2.1 Household livelihood assets

The livelihood assets of the respondents were measured as a mean of composite score of natural capital, physical capital, financial capital and social capital.

4.2.1.1 Natural capital

Land ownership and access to land, water and forest products were the natural capital measured in this study. Similar to other forms of natural capital, the ecosystem is the basic resource from which other livelihood resources are derived. These resources are considered as common pool resources because access to them cannot be restricted to private use because they are often the source of food, water and energy to rural residents. Land, water, nutrient recycling and tourism landscape are some of the natural capital assets that can enhance the livelihoods of rural residents (Plate 4.1). Land is required for agricultural purposes to ensure food security while the landscape serves as an alternative livelihood resource to diversify the income base of rural residents.

Land ownership

Land ownership refers to land accessible for crop cultivation and other uses among rural households in the study area. The distribution of rural households by land ownership in Table 4.2 shows that 87.5% owned land in the communities, while 12.5% did not own land. This implies that most of the rural households have access to arable land for agricultural activities. This finding is corroborated by Osabuohien, Osabuohien and Urhie (2017) that land ownership enhances food security. Since agriculture is the major economic activity in rural areas, availability and accessibility to land are important livelihood assets (Mohammadi, NaajafabadiandPoursaeid, 2021). Therefore, the role of land ownership in rural communities cannot be overemphasised

because direct accessibility to the use of land is significant for rural residents to achieve livelihoods.

Table 4.2: Distribution of respondents based on land ownership

Land Ownership	Frequency	Percentage (%)
Yes	273	87.5
No	39	12.5

Source: Field survey, 2018

Accessibility to natural capital

The distribution of rural households based on accessibility to natural capital in Table 4.3 indicated that water ($\bar{x}$ =1.90) is the most accessible natural capital in the study area. This may be due to the availability of streams, rivers, waterfalls and bore-hole water available in different locations within the community. This implies that water is readily available in these communities for the residents' domestic needs. Although borehole water is widely accessible in public areas in the communities, most of the rural households believe in the therapeutic features of the waterfall and claim it as their source of portable water. Similarly, land was ranked second and considered very accessible ($\bar{x}$ =1.40) by majority of the rural households.

Timber forest product ($\bar{x}$ =1.20) was ranked third in the accessibility of natural capital while non-timber forest product ($\bar{x}$ =0.90) was the least accessible natural capital among the rural households. The opinion on availability of timber forest product may be attributed to lumbering activities, while limited access to non-timber forest product may likely be attributed to decline in forest biodiversity in the study area. This is in line with the findings of Fasonaet al., (2019) that over-exploitation of forest resources in Southwestern Nigeria have posed serious threat on the stock of natural resource in the study area and consequently on rural livelihoods.

Table 4.3: Distribution of respondents based on the level of accessibility of natural capital

Natural capital	NA F (%)	A F (%)	VA F (%)	Mean	Std. Deviation	Rank
Land	57(18.3)	79(25.3)	176(56.4)	1.40	0.78	2nd
Water	6(1.9)	23(7.4)	283(90.7)	1.90	0.37	1st
Non-Timber Forest product	99(31.7)	58(18.6)	155(49.7)	1.20	0.89	3rd
Timber forest products	156(50.0)	39(12.5)	117(37.5)	0.90	0.93	4th

Source: Field survey, 2018

Plate 4.1: View of Olumirin waterfalls surrounded by vegetation

Source: Field survey, 2018

4.2.1.2 Physical capital

The physical capital examined for the rural households in the study area are: ownership of housing unit, sources of energy used for cooking and electricity, farm tools and equipment, vehicles, and large consumer durables.

Table 4.4 shows the results of ownership of housing units. 24.0% of the rural households owned their own houses while 38.5% resided in houses that are not paid for. Focus group discussion revealed that the no-payment housing unit were either family houses or second homes of urban dwellers. Only 35.9% lived in rented houses while 0.6% resided in houses on lease. Based on the observation from the study, the communities examined had mud houses with aluminium roof as well as modern houses made from bricks and modern roofing sheets. The types of housing units available in the communities are important in ascertaining the prospects of providing accommodation to support the development of tourism in and around the study areas.

For lighting, 62.6% had access to the general source of electricity infrastructure. However, rural households rely on alternative sources of energy for lighting as 59.3% used traditional lamps, 36.2% owned generators and 11.2% used solar energy source. With respect to cooking energy sources, the study also observed that rural households use more than one energy sources; 54.5% use firewood; 47.4% use gas; and 43.6% use kerosene; while 11.2% of the rural households use charcoal.

The result of physical capital as presented in Table 4.5 reveals that motorcycle is the most prominent means of transportation in the study area and is owned by 20.2% of the rural households. Only 18.9% owned cars, while 3.5% of the rural households owned vans. Tricycle is the least owned vehicle in the communities with 0.3% ownership in the study area. This suggests a low level of ownership of vehicles among respondents in the study area. The reason could be attributed to their low income as observed in Table 4.1.

None of the respondents reported ownership of bicycle which is presumed to be a major means of transportation in rural communities as it does not require fuelling. This is indicative of a decline in bicycle ownership among rural dwellers. Based on accessibility to furniture, Table 4.5 reveals that most (63.1%) of the rural households had basic furniture necessary to make them comfortable in their homes.

Table 4.4: Distribution of respondents by housing unit

Housing unit	Frequency	Percentage
Owned	75	24.0
Leased	2	0.6
Rented	115	36.9
No payment	120	38.5

Source: Field survey, 2018

Table 4.5: Distribution of respondents based on ownership/accessibility of physical capital

Sources of energy	No F(%)	Yes F(%)
Power supply for lighting		
Traditional lamp	127(40.7)	185(59.3)
NEPA/PHCN	117(37.5)	195(62.5)
Generator	199(63.8)	113(36.2)
Solar	283(90.7)	29(9.3)
Fuel for cooking		
Gas	164(52.6)	148(47.4)
Kerosene	176(56.4)	136(43.6)
Charcoal	277(88.8)	35(11.2)
Firewood	142(45.5)	170(54.5)
Production inputs		
Farm equipment	307(98.4)	5(1.6)
Farm tools cutlass	110(35.3)	202(64.7)
Farm processing equipment	213(68.3)	99(31.7)
Fishpond	297(95.2)	15(4.8)
Van	301(96.5)	11(3.5)
Car	253(81.1)	59(18.9)
Tricycle	311(99.7)	1(0.3)
Motorcycle	249(79.8)	63(20.2)
Bicycle	312(100)	0(0.0)
Household furniture	115(36.9)	197(63.1)

Source: Field survey, 2018

4.2.1.3 Financial capital

Financial capital indicates the monetary resources that are available for an individual to meet his livelihood need. The distribution of rural households by financial capital in Table 4.6 shows that cash at hand ($\bar{x}$=2.49) ranked highest. This may be attributed to the sale of farm produce and other forms of petty trading that are carried out in the study area. This is closely followed by Cash at bank ($\bar{x}$=1.61). Although there are no functional banks in the communities, most of the rural households reported during focus group discussions that they travel to neighbouring towns such as *Ilesha, EffonAlaaye*and *Ila Orangun* when they need to access their bank accounts.

Cash from family and friends ($\bar{x}$=0.77), savings from cooperatives ($\bar{x}$=0.52), and wages and salary ($\bar{x}$=0.38) were other forms of financial capital identified among rural households in the study area. Insurance ($\bar{x}$=0.06) and pension ($\bar{x}$=0.34) were the least ranked financial capital among rural households in Southwestern Nigeria. The low income of the rural population could be attributed to limited employment opportunities available in the host communities. Low access to funds from pension were mostly reported by residents who decided to relocate to the village after their retirement. For example, a key informant at Oke-Ila who was the only one that reported pension as a source of income noted that he returned to the community after he retired as a teacher in Osogbo.

Table 4.6: Distribution of respondents based on financial capital

Financial capital	Never F (%)	Rarely F (%)	Sometimes F (%)	Always F (%)	Mean	Std. Deviation	Rank
Cash at hand	18(5.8)	8(2.6)	89(28.5)	197(63.1)	2.49	0.81	1st
Cash at bank	105(33.7)	35(11.2)	50(16.0)	122(39.1)	1.61	1.30	2nd
Wages and salary	258(82.7)	13(4.2)	16(5.1)	25(8.0)	0.39	0.91	5th
Savings from cooperatives	244(78.3)	12(3.8)	17(5.4)	39(12.5)	0.52	1.06	4th
Remittances from physical capital	285(91.4)	0(0.0)	15(4.8)	12(3.8)	0.21	0.70	7th
Communal group	286(91.7)	7(2.2)	13(4.2)	6(1.9)	0.16	0.58	8th
Cash from family and friends	180(57.6)	37(11.9)	82(26.3)	13(4.2)	0.77	0.98	3rd
Loan	269(86.3)	7(2.2)	2(0.6)	34(10.9)	0.36	0.95	6th
Insurance	307(98.4)	1(0.3)	0(0.0)	4(1.3)	0.04	0.34	9th
Pension	311(99.7)	1(0.3)	0(0.0)	0(0.0)	0.00	0.06	10th

Source: Field survey, 2018

4.2.1.4 Social capital

Table 4.7 presents the distribution of rural households by their membership in social groups. Religious (53.5%) and age-grade groups (42.6%) had the highest number of group membership, while livelihood activity-related groups such as crop producers and tourism marketer groups had the least score of membership at 4.8% of the total population respectively. Participation in religious and age-grade activities could increase the social network base of rural households thereby facilitating access to information, safety net, community development and social support among members of the group. The low level of group membership among crop producers could be attributed to the indigenous training on crop farming and the absence of extension agents in the study areas as reported by the respondents during the focus group discussions.

Furthermore, Table 4.7 shows that members of the social groups represented in the community had leaders (committee and executive members) and ordinary members. However, members of tourism marketer's group perceived their status in the group to be that of leadership role as none of the rural households claimed to be ordinary or inactive members of the group. Focus group discussion further revealed that members of the groups become inactive when they cannot relate any tangible (financial) benefit to their membership.

Table 4.7: Distribution of respondents based on social group(s) membership status

Social capital	No	Yes	If yes, membership status		
	F (%)	F (%)	Inactive	Member	Executive
			F (%)	F (%)	F (%)
Age grade group	179(57.4)	133(42.6)	6(1.9)	69(22.1)	58(18.6)
Religious organisation	145(46.5)	167(53.5)	10(3.2)	101(32.4)	56(17.9)
Cooperative groups	250(80.1)	62(19.8)	19(6.1)	17(5.4)	26(8.3)
Crop producer group	297(95.2)	15(4.8)	4(1.3)	8(2.6)	3(1.0)
Livestock producer group	312(100.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)
Community development association	264(84.6)	48(15.4)	2(0.6)	30(9.6)	16(5.1)
Tourism marketer group	297(95.2)	15(4.8)	0(0.0)	0(0.0)	15(4.8)
Tourism employer/employee	312(100.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)

Source: Field survey, 2018

Benefits derived from social groups

In Table 4.8, age-grade (36.5%), religious groups (31.7%) and cooperative groups (13.1%) were identified as the most beneficial group among rural households in the study area. Some of the benefits identified by rural households include advice on planning, money lending/financial support, sensitisation on currents events in the community and information about other communities. Drawing from the premise of the theory of practice, it is possible that respondents are able to improve their overall livelihood status through their social network. If social groups are seen as a resource that can be used to identify potential livelihood opportunities and investments in the community, then capital could be transformed from social to any other form of capital to meet livelihood needs.

Table 4.8: Distribution of respondents based on benefits derived from social groups

Social groups	None	Low	Average	High
	F (%)	F (%)	F (%)	F (%)
Age grade group	187(60.0)	0(0.0)	11(3.5)	114(36.5)
Religious organisation	146(46.8)	5(1.6)	62(19.91)	99(31.7)
Cooperative groups	250(80.1)	0(0.0)	21(6.7)	41(13.1)
Crop producer group	299(95.8)	2(0.6)	8(2.6)	3(1.0)
Livestock producer group	312(100.0)	0(0.0)	0(0.0)	0(0.0)
Community development association	269(86.2)	2(0.6)	22(7.1)	17(5.4)
Tourism marketer group	297(95.2)	0(0.0)	3(1.0)	12(3.8)
Tourism employer/employee	312(100.0)	0(0.0)	0(0.0)	0(0.0)

Source: Field survey, 2018

4.2.1.5 Level of capital assets

The distribution in Table 4.9 reveals that natural capital (54.8%) and physical capital (52.6%) were high among rural households in the communities around waterfall destinations in Southwestern Nigeria. The plausible reason for high level of natural capital among rural households could be attributed to the availability of arable land and water resources for their livelihoods. Equally, the high level of physical capital could be attributed to availability of housing units through inheritance, as well as the ownership of farm implements. However, rural households had low level of social capital (69.9%) and financial capital (59.3%).

On the overall, the level of livelihood assets among rural households in the communities around the waterfalls in Southwestern Nigeria was low as 63.1% and it fell below the benchmark (28.56±18.03). This suggests that rural households in the communities have limited capital assets to achieve sustainable livelihood. In other words, limited assets will pose restrictions on their livelihood engagements. Tao and Wall (2009) noted that strong financial and social capital (livelihood assets) give room for more livelihood opportunities. The low level of social capital could be linked to low social interaction as found in Table 4.7 where rural households mostly identified themselves with religious group and age-grade membership. Likewise, the low level of financial capital assets could be associated with limited paid employment in the communities.

This finding agrees with the report of Su et al. (2019) that agricultural households often report high natural capital than microbusiness and tourism-related households. The argument is that diversified households are likely to further develop their social, financial and physical capital through social networks and improved earnings.

Table 4.9: Distribution of respondents based on level of livelihood assets

	Natural Capital	Physical Capital	Financial capital	Social Capital	Livelihood assets
Low F (%)	141 (45.2)	148(47.4)	185(59.3)	218(69.9)	197(63.1)
High F (%)	171 (54.8)	164(52.6)	127(40.7)	94(30.1)	115(36.9)
Minimum value	0.00	0.00	0.00	0.00	0.00
Maximum value	27.70	54.98	21.00	64.55	86.91
Mean±SD	22.28±4.63	20.54±8.83	6.56±3.71	11.84±11.16	28.56±18.03

Source: Field survey, 2018

4.2.2 Livelihood activities

The distribution in Table 4.10 shows that crop farming (50.3%) and trading (45.5%) were the major livelihood activities of rural households in the communities examined. However, paid (7.7%) and tourism employment (2.2%) were the least form of livelihood activities among respondents living around waterfall the destinations. This finding agrees with Talabi (2016) that paid employment is the least form of livelihood activity among rural households in Southwestern Nigeria. The result of crop farming as a livelihood activity aligns with several studies in rural communities that farming is the major occupation of rural dwellers (Ashley, 2000; Tao and Wall, 2009; Mbaiwa, 2011). Similarly, the high rate of trading can be traced to the need to sell farm produce to tourists. This is further corroborated by one of the discussants during the FGD who claimed that:

> *"We just display our farm produce in front of our houses and make easy sales. We don't have to wait for market day all the time. Visitors from Lagos buy a lot of plantains and fruits that we display. By selling our farm produce, we benefit from tourism in the community."* (Female FGD discussant, Ikogosi community, 2018)

The livelihood activities with the highest contribution to income were trading ($\bar{x}$=1.22) and crop farming ($\bar{x}$=1.20) as shown in Table 4.11. The livelihood activities with the least contribution to income were paid employment ($\bar{x}$ =0.30) and tourism employment ($\bar{x}$=0.23). Furthermore, the contribution of livestock/poultry to livelihood is low compared to the number of respondents who participate in the livelihood activities in the communities. Hence, livestock rearing is mostly practiced to enhance food security in the households rather than income earning.

Table 4.10: Distribution of respondents based on livelihood activities

Livelihood activities	F(%)*
Crop farming	157(50.3)
Livestock/Poultry	71(22.8)
Forest products	92(29.5)
Trading/Business	142(45.5)
Traditional craft	39(12.5)
Transportation	34(10.9)
Services	47(15.1)
Paid employment	24(7.7)
Tourism employment	7(2.2)

Source: Field survey, 2018

*Multiple responses for livelihood activities

Table 4.11: Distribution of respondents according to the contribution of livelihood activity to income

	NA F(%)	SE F (%)	ME F (%)	HE F (%)	Mean±SD
Crop farming (n=157)	155(49.7)	24(7.7)	49(15.7)	84(26.9)	1.20±1.30
Livestock/Poultry (n=71)	241(77.2)	20(6.4)	5(1.6)	46(14.7)	0.54±1.80
Forest products (n=92)	220(70.5)	11(3.5)	17(5.4)	64(20.5)	0.76±1.24
Trading/Business (n=142)	170(54.5)	5(1.6)	34(10.9)	103(33.0)	1.22±1.39
Traditional craft (n=39)	273(89.1)	3(1.0)	4(1.3)	32(10.3)	0.34±0.93
Transportation (n=34)	278(89.1)	2(0.6)	1(0.3)	31(9.9)	0.31±0.91
Services (n=47)	265(84.9)	6(1.9)	0(0.0)	41(13.1)	0.41±1.02
Paid employment (n=24)	288(92.3)	0(0.0)	0(0.0)	24(7.7)	0.30±0.81
Tourism employment (n=7)	305(97.8)	0(0.0)	0(0.0)	7(2.2)	0.23±0.81

Source: Field survey, 2018

Key: SE: Small extent, ME: Medium extent, HE: High Extent

Level of livelihood activities

Table 4.12 reveals the categorisation of livelihood activities to low level (52.6%) and high level (47.4%) among rural households. The low level of livelihood activities could be linked to the fact that rural households did not have enough paid employment hence they tend to rely on farming and sales of farm produce. Focus Group Discussion reveals that:

> *"Most of the men engage in intensive farming while women sell the farm produce. When tourists visit the community in groups, we have opportunity to sell more. We sell by hawking the goods around the waterfall and as well have the opportunity to station our goods at the open space provided at the entrance of the waterfall. The business activity in this community is seasonal."* (FGD, Erin-Ijesha Community, 2018)

Traders in the community also attested to this fact as one of the discussants during FGD opined that:

> *"The sale of our products is subject to the visit of tourists to the community. Sometimes we may not have tourists in a week. Since the community is also far from the waterfall, we may not know when the tourists arrive and leave so that we can sell goods to them. It is only when they come in groups and need to eat that they come into the community."* (FGD, Ipole-Iloro Community, 2018)

Table 4.12: Distribution of respondents based on the level of livelihood activities

	Frequency	Percentage	Minimum value	Maximum Value	Mean
Low	164	52.6	0.00	10.90	4.32±2.61
High	148	47.4			

Source: Field survey, 2018

4.2.3 Livelihood abilities

In Table 4.13, 45.5% of the rural households spend an average of 1-5 hours on farming activities per day while 20.5% spend 6-10 hours on farming activities per day. Half (52.9%) of the crop farmers learned from their parents while 58.0% regarded farming as a safe occupation. Results as also revealed a low participation in tourism activities as 2.1% of the rural households indicated that tourism is their occupation. Tourism as a livelihood activity had only been practiced by the rural households in the last ten years.

This finding is in line with Ashley (2000) who reported that agriculture is the core activity among rural households in tourist destination. He further argued that tourism is a new activity. Thus, engagement in tourism as a livelihood activity could be influenced by skills, social networks and financial capital of rural households.

The distribution of rural households according to livelihood ability was examined based on the number of hours imputed to various livelihood activities per day, years of experience on the job, type of training received on livelihood activity, and the level of safety of their livelihood activity. These indicators are similar to those used for the assessment of human capital. Hence, there is a link between human capital and the ability of rural households to make a living.

The findings revealed that livelihood activities that require high educational qualification often involves lesser health risk. Only 9.9% of the respondents reported jobs related to wages and salaries and most respondents in this category had only been on the job for less than 10 years.

Table 4.13: Distribution of respondents according to livelihood abilities

Livelihood ability items	Crop farming	Livestock rearing	Forest product	Trading and business	Crafts	Transportation	Services	Paid employment	Tourism employment
	n =157	n =71	n = 92	n = 142	n = 39	n = 34	n = 47	n = 24	n = 7
	F (%)	F (%)	F (%)	F (%)	F (%)	F (%)	F (%)	F (%)	F (%)
Livelihood activity (Hours/Day)									
1-5	110(70.1)	63(88.7)	22(23.9)	46(32.4)	11(28.2)	19(55.9)	11(23.4)	0(0.0)	0(0.0)
6-10	47(29.9)	8(11.3)	42(45.7)	90(60.4)	28(71.8)	12(35.3)	36(76.6)	24(100.0)	7 (100.0)
>11	0(0.0)	0(0.0)	29(31.5)	63(44.4)	0(0.0)	3(8.8)	0(0.0)	0(0.0)	0(0.0)
Years of experience on the job									
1-10 years	87(55.4)	11(15.5)	39(42.4)	86(60.6)	6(15.4)	18(52.9)	31(70.0)	17(70.8)	7 (100.0)
11-20 years	39(28.4)	29(40.9)	32(34.8)	28(19.7)	9(23.1)	12(35.3)	8(17.0)	3(12.5)	0(0.0)
21-30 years	7(4.5)	12(16.9)	12(13.0)	25(17.6)	15(38.5)	4(11.8)	3(6.4)	2(8.3)	0(0.0)
>30 years	24(15.3)	19(26.8)	9(9.8)	3(2.1)	9(23.1)	0(0.0)	5(10.6)	2(8.3)	0(0.0)
Training on livelihood activity									
Indigenous	116(73.9)	57(80.3)	50(54.4)	74(52.1)	13(33.3)	3(8.8)	3(6.4)	6(25.0)	3(42.9)
Informal	40(25.5)	13(18.3)	33(35.9)	40(28.2)	18(46.2)	31(91.2)	33(70.2)	7(29.2)	1(14.3)
Formal	1(0.6)	1(0.6)	9(9.9)	28(19.7)	8(20.5)	0(0.0)	11(23.4)	11(45.8)	3(42.9)
Level of safety of occupation									
Not Safe	17(5.5)	2(2.8)	3(3.3)	11(7.8)	5(12.8)	2(5.9)	4(8.5)	1(4.2)	0(0.0)
Safe	51(32.5)	17(23.9)	10(10.9)	36(25.4)	13(33.3)	9(26.5)	14(29.8)	3(12.5)	1(14.3)
Very Safe	42(13.5)	52(73.2)	69(75.0)	95(66.9)	21(53.9)	23(67.7)	29(61.7)	20(83.3)	6(85.7)

Source: Field survey, 2018

Level of livelihood ability among rural households

Table 4.14 shows that 61.5% of rural households had low level of livelihood ability while 38.5% had high level of livelihood ability. This could possibly lead to low level of livelihood activities among rural households. Studies (Ellis, 1999; Kamwi et al., 2018) have shown that increased skills or physical ability increases household's portfolio of livelihood activities. Hence, an improvement in household skill or ability would enhance tourism as a non-farm livelihood activity and consequently promote sustainable livelihood among rural households.

Table 4.14: Distribution of respondents based on the level of livelihood ability

	Frequency	Percentage	Minimum value	Maximum Value	Mean
Low	192	61.5	0.00	62.72	16.82±10.67
High	120	38.5			

Source: Field survey, 2018

4.2.4 Livelihood Status

Composite standardised scores of livelihood assets, abilities, and activities were used to generate an index for livelihood status. Table 4.15 reveals that more than half (59.6%) of the rural households were below the cut-off point (39.67±23.76). Thus, suggesting a low level of livelihood status among rural households in communities around waterfalls in Southwestern Nigeria. The low level of livelihood status has been established as previous findings in the study revealed limited livelihood assets, activities and abilities among rural households. This could further threaten the livelihood outcome of households due to their reliance on farming which is prone to climate variability and other natural hazards. In corollary to this, Wei et al. (2011) argued that households with low livelihood status tend to be vulnerable to shocks and associated risks.

Table 4.15: Distribution of respondents by level of livelihood status

	Assets	Activities	Abilities	Livelihood status
Low F (%)	197(63.1)	164(52.6)	192(61.5)	186(59.6)
High F (%)	115(36.9)	148(47.4)	120(38.5)	126(40.4)
Minimum value	0.00	0.00	0.00	0.00
Maximum value	86.91	10.90	62.72	126.94
Mean±SD	28.56±18.03	4.32±2.60	16.82±10.67	39.67±23.76

Source: Field survey, 2018

4.3 Perceived effects of waterfalls

The perceived effects of waterfalls on the livelihood of rural households were operationalised using economic, socio-cultural and environmental indicators. Table 4.16indicates that rural households opined that tourism does not have negative effects on agricultural activities ($\bar{x}$ =4.522). This connotes cultural sustainability as tourism co-exists with agriculture which is the major traditional economic activity in the community. This result is corroborated by one of the discussants during the FGD who submitted that:

> "*Tourism activities do not restrict us from using our farmland nor affect soil fertility."* (FGD, Oke-Ila community, 2018)

Another discussant added that:

> "*The landscape in this community favours agricultural production because we have access to water all year round. Apart from the waterfall, there are several rivers that enhance vegetable production."* (KII, Ipole-Iloro community, 2018)

With respect to socio-cultural effects, rural households opined that tourism does not give rise to social vices in their local communities ($\bar{x}$=4.07) and does not lead to conflict between guest and host communities ($\bar{x}$=4.07). This suggests that rural households do not have negative disposition to the development of tourism. Hence, they are likely to participate and support the growth of tourism development. This assertion is further validated by the findings of Martin et al, (2018) who reported that host communities are likely to support tourism if they perceive low negative impacts of tourism development.

However, rural households disagreed that there has been fair distribution of tourism benefits among residents of the community ($\bar{x}$=3.00). It can be inferred from this finding that rural households have not felt the impact of tourism revenue in their community. This view is further supported by one of the discussants during FGD who claimed that:

> *"The waterfall would have been a source of revenue to further develop the community, but it is controlled and managed by the government. So,*

we do not feel the impact of the revenue generated in our community." (FGD discussant, Ipole-Iloro, 2018)

Furthermore, rural households agreed that tourism contributes to the conservation of natural resources ($\bar{x}$=4.180). This suggests that the rural households appreciate the presence of the waterfalls and participate in conserving the natural resource. This is further supported by an informant who believes that:

"*The waterfall is a divine gift and a magnificent display of mystical power. We believe that the gods have entrusted us with such great treasure that has made this community popular all over the world. It is our pride and collective responsibility to protect the resource base."* (KII, Erin-Oke, 2018)

Reiterating the importance of the waterfall to the community, another KII informant stated aptly that:

"We are proud of our asset base in this community. The beautiful and serene landscape is so unique that the federal government has listed the waterfall as one of the tourist centres in Nigeria. This has contributed to community pride and sense of belonging to protect the waterfall as our heritage. Also, hunting and tree felling activities are restricted at the waterfall premises. Similarly, there are consequences for violating environmental laws in the community." (KII, Ipole-Iloro, 2018)

Table 4.16: Distribution of respondents based on perceived effects of waterfalls

	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	SD
Economic							
Tourism activities would improve infrastructure, such as roads in our community	8(2.6)	17(5.4)	14(4.5)	75(24.0)	198(63.5)	4.404	0.984
The presence of the waterfalls would increase the income of residents in the community	35(11.2)	10(3.2)	8(2.6)	58(18.6)	201(64.4)	4.218	1.329
Tourism activities poses much negative influence on our agricultural activities	186(59.6)	106(34.0)	17(5.4)	3(1.0)	0(0.0)	4.522	0.646
The waterfall destination does not contribute to the economy of our society in anyway.	163(52.2)	110(35.3)	10(3.2)	23(7.4)	6(1.9)	4.285	0.972
Socio-cultural							
Tourism would give rise to social vices in the local community	156(50.0)	92(29.6)	26(8.3)	7(2.2)	31(9.9)	4.074	1.252
Increase in the prices of goods and services	111(35.6)	122(39.1)	25(8.0)	50(16.0)	4(1.3)	3.917	1.090
Frequent visit to the waterfall by tourist would result in extinction of cultural values	142(45.5)	121(38.8)	8(2.6)	13(4.2)	28(9.0)	4.077	1.206
The waterfall would give room for conflict between guest and the host community	143(45.8)	114(36.5)	8(2.6)	28(9.0)	19(6.1)	4.071	1.179
There is fair distribution of tourism benefits among the residents of the community	88(28.3)	67(21.5)	17(5.4)	50(16.0)	90(28.8)	2.958	1.632
The presence of the waterfall would increase tourist's interest in our local food	88(28.2)	5(1.6)	10(3.2)	118(37.8)	91(29.2)	3.381	1.597
The tourist site would enhance sense of common history among residents	33(10.6)	12(3.8)	24(7.7)	126(40.4)	117(37.5)	3.904	1.246
The tourist site would improve trust among community members	58(18.7)	15(4.8)	16(5.1)	114(36.5)	109(34.9)	3.644	1.465
Environmental							
Frequent visit to the waterfall would give rise to environmental pollution	131(42.0)	70(22.4)	11(3.5)	48(15.4)	52(16.7)	3.577	1.549
Activities related to the waterfall would aid in conserving our natural resources	12(3.9)	36(11.5)	13(4.2)	74(23.7)	177(56.7)	4.180	1.179
Diversity of nature will be sustained in the community as a result of the tourist attraction	34(10.9)	30(9.6)	8(2.5)	117(37.5)	123(39.4)	3.849	1.330
The tourist site would help to preserve our ecosystem	52(16.7)	12(3.8)	13(4.2)	109(34.9)	126(40.4)	3.785	1.435
Human activities have contributed to loss of fauna and flora in our community	51(16.3)	130(41.7)	13(4.2)	25(8.0)	93(29.8)	3.067	1.532
Tourism activities can contribute to overexploitation of natural resources for livelihood	84(26.9)	97(31.1)	9(2.9)	21(6.7)	101(32.4)	3.135	1.655

Source: Field survey, 2018

Level of perceived effects of waterfalls

Table 4.17 reveals that 59.6% of the respondents perceived that the economic effect of waterfalls to livelihoods was low while 53.3% and 51.3% perceived the socio-cultural and environmental effects to be high. It can be inferred from the finding that the waterfall has not positively impacted the economic growth of the community. This might be responsible for the low livelihood status of the respondents.

Overall, the perceived effects of waterfalls on the livelihood of rural households was marginally low (50.6%). This could be attributed to the unfair distribution of tourism benefits, as well as low social and financial capital to participate in and stimulate tourism business.

Table 4.17: Distribution of respondents based on level of perceived effects of waterfalls

	Less effectF(%)	More effectF(%)	Minimum value	Maximum value	Mean
Economic growth	186(59.6)	126(40.4)	8.00	20.00	17.4±2.6
Socio-cultural values	144(46.2)	168(53.8)	22.00	40.00	30.0±5.6
Environmental conservation	152(48.7)	160(51.3)	10.00	30.00	21.6±4.6
Overall	158(50.6)	154(49.4)	40.00	90.00	69.1±10.3

Source: Field survey, 2018

4.4 Benefits of waterfalls to the community

The main benefits reported by the rural households as shown in Table 4.18 were maintaining biodiversity of species ($\bar{x}$=2.98), preservation of cultural values ($\bar{x}$=2.94), and regular food supply ($\bar{x}$=2.87). This finding suggests that rural households derive more of environmental and socio-cultural benefits from the waterfalls. This perception is in tandem with Karim et al., (2017) who indicated that social prestige, civic pride and conservation of natural resources are major benefits of tourism to the host communities. This also has implication on SGD goal 15 such that the rich biodiversity and natural heritage of the waterfalls can enhance tourist visits to the destinations and consequently generate revenues or alternative livelihood to local communities if the natural resource base is sustained. However, income opportunities in tourism ($\bar{x}$=2.08) and livelihood diversification ($\bar{x}$=2.18) ranked lowest. This could be attributed to inadequate awareness of the potentials of tourist sites, lack of incentives for the advancement of rural tourism and inadequate tourist infrastructure

Table 4.18: Distribution of respondents based on derived benefits of waterfalls

Derived benefits	N	S	M	V	E	Mean	Std.
	F (%)	F (%)	F (%)	F (%)	F (%)		Deviation
Access to information	28(9.0)	21(6.7)	93(29.8)	80(25.6)	90(28.9)	2.59	1.22
Improve social service	29(9.3)	17(5.4)	129(41.3)	77(24.7)	60(19.3)	2.39	1.14
Income opportunities in tourism	64(20.5)	43(13.8)	99(31.7)	15(4.8)	91(29.2)	2.08	1.47
Sustainable income	42(13.5)	27(8.7)	136(43.6)	27(8.7)	80(25.5)	2.24	1.30
Access to road network	44(14.1)	41(13.1)	67(21.5)	44(14.1)	116(37.2)	2.47	1.45
Improved health facilities	56(17.9)	22(7.1)	62(19.9)	71(22.8)	101(32.3)	2.45	1.46
Improved educational facilities	62(19.9)	25(8.0)	61(19.5)	67(21.5)	97(31.1)	2.36	1.49
Enhance social interaction	35(11.2)	36(11.5)	85(27.2)	70(22.4)	86(27.6)	2.44	1.31
Maintain biodiversity of species	24(7.6)	10(3.2)	58(18.6)	76(24.4)	144(46.2)	2.98	1.30
Strengthen community organisation	30(9.6)	32(10.3)	103(33.0)	44(14.1)	103(33.0)	2.51	1.41
Poverty reduction	45(14.3)	52(16.7)	86(27.6)	37(11.9)	92(29.5)	2.25	1.41
Livelihood diversification	54(17.3)	49(15.7)	94(30.1)	18(5.8)	97(31.1)	2.18	1.47
Environmental education	23(7.4)	50(16.0)	44(14.1)	23(7.4)	172(55.1)	2.87	1.21
Regular food supply	35(11.2)	19(6.1)	86(27.6)	68(21.8)	104(33.3)	2.60	1.31
Preservation of cultural values	21(6.7)	10(3.2)	86(27.6)	44(14.1)	151(48.4)	2.94	1.22

Source: Field survey, 2018

Key: N- None, S- Slightly, M- Moderate, V- Very, E- Extremely

Level of benefits of waterfalls

The distribution on the level of benefits of waterfalls in Table 4.19 shows that 57.4% had low benefit while 42.6% had high benefit. The result reveals that most of the rural households had scores below the mean value. This implies that most of the rural households derived low benefits from the waterfalls. This could be as a result of their low financial and social capital (Table 4.9) which might limit livelihood diversification and employment opportunities. This finding is in line with Ijeomah and Okoli (2016) who reported low benefits among host communities around tourist destinations.

Table 4.19: Distribution of respondents by level of benefits of waterfalls

	Freq.	%	Minimum value	Maximum value	Mean
Low benefit	179	57.4	4.0	60.0	37.34±14.51
High benefit	133	42.6			

Source: Field survey, 2018

4.5 Constraints to livelihood activities

In order to examine the possible constraints to achieve improved livelihood status from farm and non-farm activities, the following possible constraints were raised to evaluate the level of constraint to agriculture and tourism as livelihood activities. The result in Table 4.20 shows that rural households identified lack of financial capital to invest in tourism business ($\bar{x}$=1.67), insufficient employment opportunity in the tourism industry ($\bar{x} = 1.66$), seasonality of tourism activities ($\bar{x} = 1.61$), and poor transportation services ($\bar{x}$ =1.61) as the most pressing constraints to livelihood in the communities. This was further reiterated by discussants during Focus Group Discussion conducted among traders at the waterfalls that:

> *"We have to pay high rate to transport our goods to the waterfall daily. We can only make profit by selling at higher price than what is obtainable in the community centre if we want to make profit. It is not easy to carry our goods on our heads as we walk long distance from our house to the waterfall. This often discourage us from trading at the waterfalls." (FGD at Olumirin waterfalls, 2018)*

This finding is in congruence with Khatiwada et al., (2017) that poor access to road network and market are major limitations to participation in livelihood activities among rural dwellers in developing countries. However, lack of safety at the waterfall ($\bar{x}$=0.10) natural hazards affecting agricultural yield ($\bar{x}$=0.08) and poor attitude of tourism offers to residents ($\bar{x}$=0.07) were the least constraints reported by the rural households.

Table 4.20: Distribution of respondents based on the constraints to livelihood

Constraints	NC F (%)	MC F (%)	SC F (%)	Mean	Std. Deviation	Rank
Natural hazards affecting agricultural yield	84(26.9)	26(8.4)	202(64.7)	0.08	0.28	15th
Reduced harvest as a result of crop destruction or soil infertility	81(26.0)	50(16.0)	181(58.0)	1.32	0.86	9th
Loss of livestock, poultry and fishpond	205(65.7)	52(16.7)	55(17.6)	0.17	0.37	10th
Long distance of waterfall from the village	78(25.0)	46(14.7)	188(60.3)	1.35	0.85	8th
Poor attitude of tourism officers to community residents	268(85.8)	22(7.1)	22(7.1)	0.07	0.26	16th
Poor transportation services	41(13.2)	64(20.5)	207(66.3)	1.53	0.72	4th
Lack of safety at the waterfall	261(83.7)	30(9.6)	21(6.7)	0.10	0.30	14th
Lack of financial capital to invest in tourism business	32(10.3)	38(12.2)	242(77.5)	1.67	0.65	1st
Lack of tourism infrastructure to boost tourism trade	53(17.0)	69(22.1)	190(60.9)	1.44	0.77	7th
Short tourist length of stay	44(14.1)	59(18.9)	209(67.0)	1.53	0.73	4th
Language barrier of community with tourists	9(2.9)	53(17.0)	250(80.1)	0.17	0.65	10th
Limited access to information on tourism trade	55(17.6)	49(15.7)	208(66.7)	1.50	0.78	6th
Restriction of resident's access to the waterfall premises	21(6.7)	35(11.2)	256(82.1)	0.11	0.32	12th
Seasonality of tourism activities	45(14.4)	32(10.3)	235(75.3)	1.61	0.73	3rd
Insufficient employment opportunity in the tourism industry	23(7.3)	61(19.6)	228(73.1)	1.66	0.61	2nd
Poor participation of residents in tourism decision-making	69(22.1)	43(13.8)	200(64.1)	0.14	0.35	11th

Source: Field survey, 2018

4.6 Livelihood outcome

Livelihood outcome was computed using a standardised score generated from the food security, livelihood vulnerability and sustainable use of natural resources.

4.6.1 Food security

This result in Table 4.21 reveals that only few of the rural households eat smaller meals in a day ($\bar{x}$=0.43), go a whole day without eating ($\bar{x}$=0.42), go to sleep hungry ($\bar{x}$=0.21) and eat fewer meals in a day ($\bar{x}$=0.29). The result in Table 4.22 further reveals a high level of food security (75%) among rural households in waterfall destinations of Southwestern Nigeria. This implies a high level of food security among rural households in Southwestern Nigeria. The high level of food security could be linked with the high level of natural capital such as land, water and forest resources which enhances agricultural activities or food production. This result agreed with the findings of Otunaiya and Ibidunni (2014) who reported thatrural households who engage in farming as a primary livelihood activity are food secure.

Table 4.21: Distribution of respondents according to food security

	Never F(%)	Rarely F(%)	Sometimes F(%)	Mean
Worry about food	229(73.4)	49(15.7)	34(10.9)	0.69
Unable to eat preferred foods	234(75.0)	18(5.8)	60(19.2)	0.56
Just eat a few kinds of food	239(76.6)	15(4.8)	58(18.6)	0.52
Eat foods they do not want to eat	242(77.6)	17(5.4)	53(17.0)	0.50
Eat smaller meal	249(79.8)	8(2.6)	55(17.6)	0.43
Eat fewer meals in a day	271(86.9)	10(3.2)	31(9.9)	0.29
No food of any kind in the household	282(90.4)	4(1.3)	26(8.3)	0.21
Go to sleep hungry	282(90.4)	4(1.3)	26(8.3)	0.21
Go a whole day and night without eating	260(83.3)	26(8.3)	26(8.3)	0.42

Source: Field survey, 2018

Table 4.22: Distribution of respondents by level of food security around waterfall destinations

Level of food security	Freq.	%	Minimum value	Maximum value	Mean
Food insecure	78	25.0	0	23.0	3.82±6.74
Food secure	234	75.0			

Source: Field survey, 2018

4.6.2 Reduced vulnerability

The distribution in Table 4.23 reveals that rural households were more vulnerable to accessing support from social network in the community ($\bar{x}$=1.77), access to health services ($\bar{x}$=2.09), low income from non-agricultural activities ($\bar{x}$=2.13) and ability to earn from tourism ($\bar{x}$=2.36). Limited livelihood diversification, tourism infrastructure and remoteness may be the basis for rural household's vulnerability to low income and access to health services. This result agreed with Adepoju, Sulaiman, Omonona and Okunmadewa (2011) that rural households with less income-generating activities are vulnerable to shocks.

Livelihood vulnerability was further profiled as less and more vulnerable. Data in Table 4.24 further reveals that half (52.6%) of the rural households in communities around waterfall destinations in Southwestern Nigeria were more vulnerable. The high level of vulnerability could be attributed to low livelihood status as Islam and Alam (2018) noted that reduced financial and social capital predisposes rural households to poverty.

Table 4.23: Distribution of respondents based on degree of vulnerability

Degree of vulnerability	**DG** **F (%)**	**DS** **F (%)**	**SS** **F (%)**	**IS** **F (%)**	**IG** **F (%)**	Mean	Std. Dev.
Income from non-agricultural sources	146(46.8)	104(33.3)	0(0.0)	22(7.1)	40(12.8)	2.13	1.21
Access to healthcare facilities	109(34.9)	133(42.6)	17(5.4)	39(12.6)	14(4.5)	2.09	1.34
Access to training	48(15.4)	54(17.3)	63(20.2)	84(26.9)	63(20.2)	3.19	1.35
Crop yields	16(5.1)	7(2.2)	64(20.5)	88(28.3)	137(43.9)	4.04	1.10
Access to continuous water supply	13(4.1)	9(2.9)	9(2.9)	54(17.3)	227(72.8)	4.52	0.99
Ability to earn from tourism activities	79(25.4)	118(37.8)	35(11.2)	35(11.2)	45(14.4)	2.36	1.40
Access to food resources	9(2.8)	12(3.8)	3(1.0)	105(33.7)	183(58.7)	4.41	0.92
Current housing unit	9(2.9)	11(3.5)	25(8.0)	119(38.1)	148(47.5)	4.24	0.95
Income from agricultural sources	13(4.2)	32(10.3)	19(6.1)	114(36.5)	134(42.9)	4.04	1.13
Support from social networks in the community	118(37.8)	150(48.1)	24(7.7)	13(4.2)	7(2.2)	1.77	0.99
Family connectedness	13(4.1)	9(2.9)	5(1.6)	107(34.3)	178(57.1)	4.37	0.97
Access to information in other communities	13(4.2)	12(3.8)	17(5.4)	145(46.5)	125(40.1)	4.14	0.98
Grand mean = 4.05							

Source: Field survey, 2018

Key: DG- Decreased Greatly, DS- Decreased Slightly, SS- Stay the Same, IS- Increased Slightly, IG- Increased Greatly

Table 4.24: Distribution of respondents by level of livelihood vulnerability

	Freq.	%	Minimum value	Maximum value	Mean
Less vulnerable	148	47.4	12	60	48.60±8.76
More vulnerable	164	52.6			

Source: Field survey, 2018

4.6.3 Sustainable use of natural resources

The use of natural resources as presented in Table 4.25 indicates an unsustainable use of natural resources with respect to extraction of non-timber forest products ($\bar{x} = 1.76$), poor reforestation practice ($\bar{x} = 1.98$), decline in soil fertility ($\bar{x} = 2.07$), and increased deforestation ($\bar{x} = 2.01$). Further information obtained from FGD revealed that not all 'timber contractors' replant trees according to the law by which they operate. One of the respondents informed that:

> *"... it is difficult to get seedling or nursery of some tree species that are being harvested. So, the timber contractors just plant any other tree in place of the ones they have harvested*." (FGD, Oke-Ila community, 2018)

Another rural household noted that the effect of lumbers is already being felt by residents in the community stating that:

> "*In times past, the trees act as wind breaker for houses in the community. So you will hardly hear of wind causing damage to houses and rooftops. Nowadays, we can only hope for safety when there are high winds.*" (FGD, Ipole-Iloro community, 2018)

Table 4.26 shows that most 53.5% of the rural households were below the mean score. Thus, indicating a low level of sustainable use of natural resources among rural households in communities around waterfalls in Southwestern Nigeria. This finding is not farfetched as there is low engagement in sustainable reforestation practices in the communities. This finding is in line with Gbadegesin and Olorunfemi (2011) that rural households in Southwestern Nigeria exploit forest resources without adequate afforestation plan.

Table 4.25: Distribution of respondents based on sustainable use of natural resources

Use of natural resources	Low F (%)	Moderate F (%)	High F (%)	Mean	Std. Dev.
Reforestation/Planting of trees	136(43.6)	45(14.4)	131(42.0)	1.98	0.93
Soil fertility	150(48.1)	35(11.2)	127(40.7)	2.07	0.94
Air pollution	139(44.5)	32(10.3)	141(45.2)	2.18	0.93
Water quality	29(9.3)	120(38.5)	163(52.2)	2.43	0.66
Deforestation	168(53.8)	32(10.3)	112(35.9)	2.01	0.95
Access and use of land	50(16.0)	120(38.5)	142(45.5)	2.29	0.73
Extraction of non-timber forest products	96(30.8)	46(14.7)	170(54.5)	1.76	0.89
Extinction of wildlife and biodiversity	144(46.1)	38(12.2)	130(41.7)	2.04	0.94

Source: Field survey, 2018

Table 4.26: Distribution of respondents based on the level of sustainable use of natural resources

	Freq.	%	Minimum value	Maximum value	Mean
Low	167	53.5	12	22	16.80±2.00
High	145	46.5			

Source: Field survey, 2018

4.6.4 Level of livelihood outcome

The study reveals in Table 4.27 that the level of livelihood outcome is low among 57.7% of the rural households around waterfalls in Southwestern Nigeria. The low level of livelihood outcome may not be unconnected with the low levels of livelihood status, and benefits of waterfalls to rural livelihood. It may also be due to the low asset base and livelihood options available to rural households which may influence their vulnerability tendencies.

This finding has implications on sustainable development such that low level of livelihood status may contribute to the depletion of forest resources and biodiversity as rural households continue to depend on forest resources for food security. In addition, social capital can enable rural households to maximise the benefits of waterfalls as a tourism resource for improved livelihood.

Table 4.27: Distribution of respondents based on the level of livelihood outcome

	Freq.	%	Minimum value	Maximum value	Mean
Low	180	57.7	0.00	82.73	40.51±17.61
High	132	42.3			

Source: Field survey, 2018

4.7 Test of Hypotheses

This section presents the result of the hypotheses that were generated and tested in the study.

4.7.1 Hypothesis I: relationship between socio-economic variables and livelihood outcome of rural households around waterfalls in Southwestern Nigeria

The result in Table 4.28 shows that only marital status (χ^2=12.853, p=0.005) was significantly related to livelihoods, while respondents' sex (χ^2=0.565, p=0.646) and educational attainment (χ^2=6.408, p=0.269) were not significantly related to livelihood outcome. This suggests that rural households' sex and educational qualification do not have influence on their livelihood outcome. This might because of limited use of formal education in agricultural activities commonly engaged in by rural households despite the respondent's educational attainment. The findings in Table 4.13 revealed that indigenous and informal training were required for most of the livelihood activities of rural residents. This result negates the finding of Olawuyi and Rahji (2012) who reported a significant relationship between level of education and livelihood outcome. The significant relationship between rural households' marital status and livelihood outcome is an indication that individuals who are married may have better livelihood outcome than the unmarried due to livelihood diversification as noted by Yamba, Appiah, Pokuaa-Siaw and Asante (2017) that married individuals tends to cope with livelihood shocks than the unmarried.

Furthermore, the correlation analysis on the relationship between rural households selected socio-economic characteristics and livelihood outcome as shown in Table 4.29 shows a negatively significant relationship between rural households' age and their livelihood outcome (r=-0.183, p=0.001). This suggests that an increase in rural households' age would result in reduced livelihood outcome. That is, as household heads grow older, their livelihood outcome tends to decrease. This might be as a result of ageing which will reduce the man-days and hours invested in livelihood activities by the rural households. Similarly, a negative and significant relationship exists between household size and livelihood outcome of rural households (r=-0.140, p=0.014). This implies that an increase in household size may likely give rise to decreased livelihood outcome. This might probably be due to the increase in

household size while livelihood activities are not increased or changed. This result negates the findings of Olawuyi and Rahji (2012) who indicated a positive relationship between household size and livelihood outcome of rural households.

The estimated income of respondents and livelihood outcome (r=-0.057, p=0.317) was not significant. However, a significant relationship exists between years of residency and livelihood outcome of rural households around waterfall destinations (r= -0.163, p=0.004). This suggests that rural households who have spent more years in their communities tend to have low livelihood outcome than those with shorter years of stay. The plausible reason for this could be that individuals who have spent fewer years in the community may have gathered social and financial capital from residing in other communities before relocating to their present communities.

Table 4.28: Chi-square test of selected socio-economic characteristics and livelihood outcome

Variables	χ^2	Df	p-value	Decision
Sex	0.565	1	0.646	Not significant
Marital status	12.853	3	0.005	Significant
Educational attainment	6.408	5	0.269	Not significant

Source: Field survey, 2018

Table 4.29:Relationship between socio-economic characteristics of rural households and livelihood outcome in the study area

Variables	r-value	p-value	Decision
Age	-0.183	0.001	Significant
Household size	-0.140	0.014	Significant
Estimated monthly income	0.057	0.317	Not significant
Years of residency	-0.163	0.004	Significant

Source: Field survey, 2018

4.7.2 Hypothesis II: Relationship between livelihood status and livelihood outcome of rural households around waterfall destinations

Table 4.30 shows the result between livelihood status of rural households and their livelihood outcome ($r=0.126$, $p=0.026$). This suggests that as livelihood status of rural households' increases, their livelihood outcome increases as well. Consequently, an increase in rural households' assets, abilities and livelihood activities would result in improved food security, reduced vulnerability and sustainable use of natural resources. This agrees with the findings of Soini (2005) who reported a significant relationship between livelihood status and livelihood outcome.

Table 4.30: Correlation analysis of livelihood status and livelihood outcome of respondents around waterfall destinations

Variables	r-value	p-value	Decision
Livelihood status vs. livelihood outcome	0.126	0.026	Significant

Source: Field survey, 2018

4.7.3 Hypothesis III: Relationship between perceived effects of waterfall and livelihood outcome of rural households

Table 4.31 shows a significant association between perceived economic effects of waterfalls (r=0.275, p=0.000) and perceived socio-cultural effects of waterfalls (r=0.276, p=0.000) among rural households around waterfall destinations in Southwestern Nigeria. This implies that as perceived economic and socio-cultural effect increases, so does livelihood outcome of rural households around these destinations. However, perceived environmental effects of waterfalls revealed a negative and weak association with livelihood outcome (r=-0.027, p=0.639). This connotes an inverse relationship between perceived environmental effects and livelihood outcome such that as perceived environmental effect increases, livelihood outcome decreases and vice versa.

The overall perceived effects of waterfalls show a significant relationship between perceived effects of waterfalls and livelihood outcome of rural households (r=0.208, p=0.000). This suggests that a positive disposition towards economic, socio-cultural and environmental effects of waterfalls may likely improve the livelihood outcome of rural households around waterfalls in Southwestern Nigeria. This affirms the findings of Koki (2017) who noted that a significant positive influence exists between nature-based tourism and the livelihood of rural households.

Table 4.31: Pearson's correlation matrix of perceived effects of waterfalls and livelihood outcome of rural households

Variables		Perceived economic effects of waterfalls	Perceived socio-cultural effects of waterfalls	Perceived environmental effects of waterfalls	perceived effects of waterfalls	Livelihood outcome
Perceived economic effects of waterfalls	Pearson Correlation	1	.216**	.016	.376**	.275**
	Sig. (2-tailed)		.000	.784	.000	.000
	N	312	312	312	312	312
Perceived socio-cultural effects of waterfalls	Pearson Correlation	.216**	1	.743**	.939**	.276**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	312	312	312	312	312
Perceived environmental effects of waterfalls	Pearson Correlation	.016	.743**	1	.863**	-.027
	Sig. (2-tailed)	.784	.000		.000	.639
	N	312	312	312	312	312
perceived effects of waterfalls	Pearson Correlation	.376**	.939**	.863**	1	.208**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	312	312	312	312	312
Livelihood outcome	Pearson Correlation	.275**	.276**	-.027	.208**	1
	Sig. (2-tailed)	.000	.000	.639	.000	
	N	312	312	312	312	312

** Correlation is significant at the 0.01 level (2-tailed)
Source: Field survey, 2018

4.7.4 Hypothesis IV: Relationship between benefits derived from waterfalls and rural households' livelihood outcome

Table 4.32 shows a significant relationship between benefits derived from waterfalls and rural households' livelihood outcome ($r=0.462$, $p=0.000$). This suggests that an increase in benefits derived from waterfalls would result in an increase in livelihood outcome. In other words, increase in economic activities around the waterfalls may likely translate to more livelihood options, increase income and consequently improved livelihood outcome. This result further validates the position of Koki (2017) where the benefits derived from nature-based tourism destinations is found to contribute positively to the livelihoods of local communities.

Table 4.32: Correlation analysis between benefits derived from waterfalls and respondent's livelihood outcome

Variables	r-value	p-value	Decision
Benefits derived from waterfalls vs. livelihood outcome	0.462	0.000	Significant

Source: Field survey, 2018

4.7.5 Hypothesis V: relationship between constraints to the use of waterfalls and livelihood outcome among rural households

Table 4.33 shows that there is no significant relationship between the constraints to the use of waterfalls and livelihood outcome of rural households (r=-0.016, p=0.778). This infers that the constraints to the use of waterfalls do not have influence on the livelihood outcome of rural households. This could be informed by the low engagement in tourism as a livelihood activity in the communities.

Table 4.33: Correlation analysis between the constraints to livelihood and livelihood outcome around waterfalldestinations

Variables	r	p-value	Decision
Constraints vs. livelihood outcome	0.016	0.778	Not Significant

Source: Field survey, 2018

4.7.6 Hypothesis VI: Test of significant difference in the livelihood outcome of rural households across the waterfall destinations in Southwestern Nigeria

The study tested the hypothesis of a significant difference in the level of livelihood outcome of rural households across the selected waterfalls in Southwestern Nigeria. The result is presented in Table 4.34. It shows that significant difference exists in the livelihood outcome of rural households across the three waterfalls (F=13.73, p=0.000). This means that livelihood outcome of rural households varies from one waterfall to another.

The Duncan multiple comparison result as depicted in Table 4.35 further shows separation of means across the waterfalls. It reveals that the level of livelihood outcome was highest among rural households in Arinta waterfalls ($F_{(13.73)}$=46.78) than rural households around Olumirin waterfalls ($F_{(13.73)}$=40.45) and Ayikunnugba waterfalls ($F_{(13.73)}$=34.30). The high livelihood outcome among rural households around Arinta waterfalls could be attributed to the presence of Ikogosi warm spring which is a well-developed tourist attraction site in the location. In addition, Ikogosi community being a transit route to Arinta waterfalls may increase tourist inflow to Arinta waterfalls. This could also further explain the high level of livelihood outcome among rural households around Arinta waterfalls.

Closely followed by Arinta waterfalls in the level of livelihood outcome is Olumirin (also known as Erin-Ijesha waterfalls) which may be due to the popularity of the destination as a natural destination in Southwestern Nigeria (Adora, 2010; Godwin et al., 2013). On the other hand, rural households around Ayikunnugba waterfalls had the least livelihood outcome. The possible reason for this could be attributed to the low level of awareness of the waterfall as a tourist destination in Southwestern Nigeria. Furthermore, unlike Olumirin and Arinta waterfalls which are located along the highway and connected to other tourist destinations, Ayikunnugba waterfalls is located in a remote area with poor linkage which does not facilitate tourism activities.

Table 4.34: Analysis of variance of livelihood outcome across waterfall destinations in Southwestern Nigeria

	Sum of squares	df	Mean square	F	Sig.
Between groups	7868.05	2	3934.03	13.73	0.000
Within groups	88559.003	309	286.599		
Total	96427.05	311			

Source: Field survey, 2018

Table 4.35: Post hoc difference in livelihood outcome across waterfall destinations in Southwestern Nigeria

Duncan[a,b]				
Tourist sites	**N**	**Subset for alpha = 0.05**		
		1	**2**	**3**
Ayikunnugba waterfalls	101	34.30		
Olumirin waterfalls	110		40.45	
Arinta waterfalls	101			46.78
Sig.		1.000	1.000	1.000

Source: Field survey, 2018

4.7.7 Hypothesis VII: Binary logit regression analysis of livelihood outcome of rural households around waterfalls in Southwestern Nigeria

The dependent variable is a dummy outcome of two levels of livelihood outcome coded as follows: 1=High livelihood, 0= low livelihood. Table 4.36 shows the results from logit model for 312 households close to the waterfalls. The likelihood ratio chi-square of χ^2=155.57, p=0.000 indicates a statistically significant model. Table 4.36 also shows that out of the fourteen covariates considered in the logit regression model, only household size (β=-0.131), Livelihood asset (β=0.710), perceived economic effects of waterfalls (β=1.700), perceived sociocultural effects of the waterfalls (β=1.175), perceived environmental effects of the waterfalls (β=-1.194) and benefits of waterfalls (β=0.089) were significant predictors of livelihood outcome of rural households located around waterfalls in Southwestern Nigeria. However, sex, age, marital status, education, income, years spent in community, livelihood activity and livelihood ability had no significant effect on the livelihood outcome of rural households.

The results show the proportional odds ratio for household size of rural households and its implications on their livelihood outcome given that all other variables in the model are held constant. The results reveal that for each additional household size of the rural households, the likelihood of having a high level of livelihood outcome is reduced by 0.13 times holding all other variables in the model constant. The result shows that as the household size increases, the livelihood outcome of the rural households' decreases thus implying that rural households with small household size are more likely to have a high livelihood outcome. The reason could be traced to the fact that larger family sizes tend to be more insecure about feeding and vulnerable to greater exploitation of natural resources for survival. This assertion is in line with Biddlecom et al. (2005)that greater reliance on natural resources is associated with households having large family size. Also, for each additional livelihood asset of the rural households, the likelihood of having a high level of livelihood outcome is increased by 0.71 times. This result shows that as livelihood asset increases, the livelihood outcome of the rural household increases implying that individuals with more livelihood assets are likely to have a high livelihood outcome. This suggests that households with high level of capital assets are more likely to have better livelihood outcome than their counterparts with low livelihood asset. This agrees with the finding

of Soini (2005) who reported a positive association between livelihood assets and livelihood outcome of rural households.

Furthermore, perceived economic effects of waterfalls contribute significantly to the livelihood outcome of rural households. This indicates that as economic activities of people within the waterfall areas increases, the likelihood of a high livelihood outcome among rural household increases by 1.70 times. That is, an increase in economic growth will give rise to more income, food security and less reliance on exploitation of natural resources. Similarly, the likelihood of a household having a high livelihood outcome increases when perceived socio-cultural effect increases by 1.18 times. However, there is an inverse relationship between livelihood outcome and perceived environmental effects. The result reveals that livelihood outcome is reduced by 1.19 times for increase in unsustainable use of environmental resources. The logit regression analysis also shows that perceived environmental effect of waterfalls contributed negatively to livelihood outcome of rural households. This suggests that an increase in the use of natural resources within the waterfalls reduces the livelihood outcome of rural households. This is in consonance with the findings of Kusters et al. (2006) that higher environmental effects translate to lower livelihood outcome. Benefits derived from waterfalls also contributed significantly to the livelihood outcome of rural households. This implies that an increase in benefits derived from waterfalls would result in an increase in livelihood outcome by 2.04 times.

Logistic regression result gave a pseudo R^2 of about 37 percent which means that at least one of the variables if different from zero at 37% of the variations in the livelihood outcome of rural households around waterfall destinations in Southwestern Nigeria can be explained by the independent variable of the model. The χ^2 value of 155.57 which is significant at 0.05 confirms the goodness of fit of the logistic regression model which shows that the model has explanatory power as there is no evidence of gross deficiencies with the use of the model.

Table 4.36:Predictors of livelihood outcome among rural households around waterfalls in Southwestern Nigeria

Model	(β)	Standard error	p-value	Decision
Constant	2.123	1.117	0.000	
Sex	-0.481	0.342	0.152	NS
Age	-0.233	0.013	0.068	NS
Marital status	0.146	0.404	0.717	NS
Education	0.300	0.177	0.091	NS
Household size	-0.131	0.058	0.024	S
Income	0.323	0.711	0.235	NS
Years in community	0.042	0.017	0.335	NS
Livelihood asset	0.710	0.373	0.007	S
Livelihood activity	0.208	0.355	0.557	NS
Livelihood ability	0.089	0.357	0.803	NS
Perceived economic effect of waterfalls	1.700	0.354	0.000	S
Perceived sociocultural effect of waterfalls	1.175	0.495	0.018	S
Perceived environmental effect of waterfalls	-1.194	0.487	0.014	S
Benefits of waterfalls	0.089	0.014	0.000	S

R chi^2 (12)= 155.57

Prob> chi^2 = 0.000

Pseudo R^2= 0.3660

Key: NS- Not significant, S- Significant

Source: Field survey, 2018

4.8 Summary of findings

The test of hypothesis on socio-economic characteristics revealed that marital status (χ^2=12.853, p=0.005), Age (r=-0.183, p=0.001), household size (r=-0.140, p=0.014) and years of residency (r=-0.163, p=0.004) all had significant relationship with livelihood outcome. Furthermore, livelihood status (r=0.126, p=0.026), perceived effects (r=0.208, p=0.000), benefits derived from the waterfalls (r=0.462, p=0.000) all had significant relationships with livelihood outcome. However, the constraints to the use of the waterfall for livelihood (r=-0.016, p=0.778) does not have significant relationship on livelihood outcome.

The test of significant difference in the livelihood outcome showed that a significant difference exists in the livelihood outcome of rural households across the waterfall communities. The Duncan multiple comparison revealed that Arinta waterfalls recorded the highest livelihood outcome compared with the Olumirin and Ayikunnugba waterfalls. The high level of livelihood outcome around Arinta waterfalls could be attributed to the presence of Ikogosi warm spring which a well-developed attraction site in Ekiti West Local Government Area.

The logit regression model revealed that livelihood ratio Chi-Square was statistically significant. In all, six covariates which included household size, livelihood assets, perceived economic effects of waterfalls, perceived socio-cultural effects, perceived environmental effectsand benefits of waterfalls were all significant predictors of livelihood outcome of rural households around communities in Southwestern Nigeria where the waterfalls are located.

4.9 Discussion of findings

Early research in tourism focused on the benefits that local residents can get from tourism development. This finding became a major strategy for parading tourism as a tool for rural development. Many studies concluded on the economic, socio-cultural and environmental benefits of tourism and its potential for poverty eradication among rural residents. In a view to explore the multi-disciplinary and complex nature of tourism, researchers began to propose various holistic approaches to understand the effect of tourism. One of those concepts is sustainable livelihoods. The sustainable livelihoods framework was adopted as a comprehensive concept that could illustrate the context, resources, processes strategies and outcome of meeting the needs of man.

In addressing the context of the study, the rural landscape which contains significant natural resources that could be used for the basic provisioning need of man as well as relaxation needs was represented by waterfalls. The type and diversity of livelihood activity of respondents could be influenced by age and other personal characteristics of the respondents. The structure of the household depicted by the age of the household head and the number of people in the household and the length of residence in years were significantly related livelihood outcome in the study area. Migration for instance influences the characteristics of the workforce population of a community by suggesting the range of livelihood strategies that can be adopted by members of the community. Furthermore, respondents in the study area showed a high level of literacy rate having acquired one form of formal education or another. However, the respondents reported participating mostly in skill-based livelihood activities with very few respondents engaged in jobs that required educational qualification.

The livelihood assets of the respondents were measured using natural capital, social capital, physical capital and financial capital as indicators. The findings showed a low level of livelihood asset among the respondents. Natural and physical capital had the highest independent mean score while financial and social capital were low. This result negates the findings of Motsholapheko et al. (2012) that rural resident's access to physical, financial, human and social capital are low when there is sufficient access to natural capital. The plausible explanation for the variance physical capital could be the length of stay of respondents within the communities around waterfall destinations. Majorityof the respondents had resided in their respective communities for more than

ten (10) years. Furthermore, most of them have lived in other communities which could have given them the opportunity to develop their social capital. These respondents could also have acquired the skill to transform one form of capital stock to meet their needs.

According to conventional knowledge, assets are the bedrock of livelihoods. However, one asset is required to transform resources from one form to another.Contrary to the trend that land is the most accessible natural capital in rural areas as reported by Mohammadi et al. (2021), the respondents reported that water was the most accessible natural asset. The justification for this could be attributed to the proximity of the communities to waterfalls.The reported accessibility to water could also be as a result of the public good nature of water as compared to land which has commercial value in the communities. Ownership of public goods may be shared, managed by the community/public or controlled by the government for the greater benefit of all residents or citizens of the country.

On the other hand, ownershipof land among natives is majorly by inheritance and it is a measure of wealth and social status. Migrants can only own land if it is purchased or given to him/her as gift. If an immigrant requires land for farming; he will either lease the land or purchase it to claim ownership of the land. In Ipole-Iloro community, there is a high influx of immigrant farm workers who have to source for land for their livelihood. Conversely, water is available through streams, rivers or through other public means within the community. Example of functional public water supply (manual borehole) were found in Erin-Ijesha and Oke-Ila communities.

The major cash flow reported by respondents were cash at hand and cash in bank. Due to the limited paid employment opportunities and tourism related employment, cash at hand may imply that the cash flow was majorly from the sale of agricultural goods and other services within the community. The ability of rural residents to invest or participate in alternative livelihood portfolio is dependent on the availability of cash flow. Education as an indicator of human capital could influence the diversification strategy of rural households. The findings of the study revealed that majority of the respondents were literate. Hence, the application of knowledge and skills of the respondents could lead them to proffer solution to a business need within the community.This was reflected in the activities of one business owner who sold

agricultural related goods but also included financial services (cash withdrawal) because of how often he travels to town.

Findings concerning the social capital of the respondents revealed that religious groups had the highest membership. However, this did not translate as the most supportive or beneficial group as age grade group was reported to be the most beneficial with regards to financial assistance and social networks.Capital assets are resources and institutions that are combined in various ways by people to meet their needs. Hence, access to one of the capital assets could be transformed to acquire other types of asset by the respondents. This corroborates the theory of practice adopted in this study that the activities people conduct in their social environment could be used to acquire capital assets. This environment also contain the resources and institutions that shape behaviour of people to the resources around them.

The findings of the study showed an overall positive perception of waterfalls as a tourism destination. Environmental effect was the highest positive effect of the waterfall as a tourist destination. This finding could be as a result of the nature-based attraction of the tourism destination under study. The serenity and biodiversity of flora and fauna are some of the reasons why people favour residing in rural areas over urban areas. The potential of tourism to preserve the environment then serves as a reason for residents to support tourism development.

The overall low benefit of waterfall as a tourist destination could be attributed to the low level of participation in tourism-related activities employment. This can be corroborated with the assertion of Su et al. (2019) that participation in tourism activity is a prerequisite for benefit sharing. In addition, the perception of tourism benefit is often assessed in terms of financial benefits that accrue to residents of the host community.

It is too early to conclude that tourism is a sustainable livelihood strategy for local communities given the employment opportunities, income and benefits reported from the respondents around waterfall tourism communities in southwestern Nigeria. The study revealedthat the respondents are yet to fully engage the tourism sector for their livelihoods. Hence, their perception of tourism effects geared towards the common knowledge of tourism impacts. Similarly, there was no direct report on the negative effects of tourism which suggests that there is either a limited level of interaction with

the tourism industry or the pace of tourism development is slow. This could be instructive for sustainable tourism development as plans to develop tourism sustainably can be charted and implemented.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Overview

This chapter presents the summary, conclusion and recommendations of the study

5.1 Summary

Rural communities possess abundant natural resources that can be harnessed for the livelihoods of rural households. Such natural resources are used to meet the provision needs of food, fuel and shelter as well as the cultural services of recreation, aesthetics and tourism. However, most rural communities with such tourist attractions are still reported to be living under poverty level.

The aim of the study was to examine the influence of waterfalls as tourist destinations on the livelihood outcome in Southwestern Nigeria. The specific objectives cover the socio-economic characteristics of rural households, their livelihood status and the perceived effects of waterfalls on the livelihood of rural households. Also, the benefits derived from the waterfall by the rural households, the constraints to the use of the waterfall and the livelihood outcome of rural households in the study area were also examined. Seven hypotheses were developed and tested in line with the stated objectives.

Relevant literature was reviewed, and two theories were adopted. The sustainable livelihood framework and Bourdieu's theory of practice were used to examine the relationship between capital assets and livelihood outcome. The conceptual framework was also developed to cover the independent, intervening and dependent variables.

The study adopted survey research method. Data were collected through the use of interview schedule using key informant interview, participant observation, focus group discussion and questionnaire in five communities in Southwestern Nigeria based on the proximity of these communities to the waterfalls. The five communities selected

for the study were Erin-Ijesha, Erin-Oke, Ipole-Iloro, Ikogosi and Oke-Ila. A total sample size

of 399 was projected for the study with 312 completed surveys. Simple random sampling was used to select the rural households for the study.

Data were collected with the aid of quantitative and qualitative tools. Quantitative data were collected with the use of questionnaires while qualitative data were collected by conducting focus group discussions, key informant interviews and participant observation. Focus group discussions comprising eight to ten respondents were conducted. In all, a total of ten FGDs were conducted across the communities around waterfall destinations. Five KIIs comprising village heads, youth leaders and tourism coordinator were also carried out.

Data were presented using descriptive statistics such as frequency counts, percentages and mean. Furthermore, hypotheses for the study were tested using Chi-square, Pearson product moment correlation, analysis of variance (ANOVA) and logit regression. The significant level for the hypothesis was decided at 0.05.

The findings on the socio-economic characteristics of the rural households revealed that there is a fair spread of sex distribution among rural households in Southwestern Nigeria. Also, the study finds that majority of the members of rural households were married and had no restriction or reservations concerning the use of the waterfalls in the communities arising from religious affiliation or beliefs. Another finding in this study is the high level of literacy among rural households and majority of the respondents who are in their economically active years engage in various livelihood activities. The findings also indicated relatively larger household sizes among the rural households with low-income level. Majority of the respondents had lived in places other than the community. Education, employment and temporary relocation with family members and friends were adduced for this development.

With respect to the livelihood assets of rural households, the study revealed a high level of natural and physical capital among rural households while financial and social capital were found to be low. Overall, majority of the rural households had low level of livelihood assets. This may be linked to the low level of livelihood activities and abilities reported among the rural households. Consequently, the livelihood status of rural household was found to be low. Furthermore, the findings on the perceived effects of waterfalls on livelihood is marginally low among rural households. Disaggregated data on perceived effects of waterfalls revealed that the rural

households perceived less economic effect on their livelihoods, while socio-cultural and environmental domains were perceived to have more effects on their livelihood. The findings further showed a low level of benefits derived from the waterfalls and this could be attributed to the low level of financial and social capital among rural households. The highest reported benefits of the waterfalls were environmental benefits related to maintaining biodiversity of species, preserving cultural values and providing regular supply of food. Lastly, the major constraints to the use of the waterfalls for livelihood activities were lack of financial capital to invest in tourism business, insufficient employment opportunities in the tourism industry, seasonality of tourism activities and tourist's short length of stay.

The livelihood outcome revealed a high level of food security among the rural households and this may be linked to the high level of natural capital available in the waterfall locations.

5.2 Conclusion

The study established that rural households in the tourist destinations were low-income earners who engaged in farming and trading activities. The study found that assets, activities and abilities of rural households were low. This in turn translated to low livelihood status.

The effects of waterfalls as perceived by rural households was marginally low. However, the tourist destinations had more effects on socio-cultural values and environmental conservation with less impact on economic growth. Benefits accrued from waterfalls was low among rural households due to certain constraints ranging from lack of financial capital to invest in tourism business, insufficient employment opportunities in the tourism industry, seasonality of tourism activities and poor transportation services.

The study also showed a low level of livelihood outcome among rural households around waterfalls in Southwestern Nigeria. However, the livelihood outcome of rural households across the three waterfalls differed from one another with rural households around Arinta waterfalls faring better than their counterparts in Olumirin and Ayikunnugba waterfalls. This could be attributed to the cluster of well-developed tourist attraction site in Ikogosi community. Hence, it can be implied that adjourning tourism communities as well as investment in tourism destination could influence better livelihood outcome for rural households.

In conclusion, livelihood asset, perceived economic effects of waterfalls, perceived socio-cultural effects of waterfalls and benefits of waterfalls increased livelihood outcome of rural households while household size and perceived environmental effects of the waterfalls reduced the livelihood outcome of rural households around communities where waterfall destinations are located in Southwestern Nigeria.

5.3 Recommendations

Firstly, there is a need to improve the livelihood asset of rural households around waterfall destinations in southwestern Nigeria. This could be achieved by enhancing the financial and social capital among rural households by government, corporate organisations and donor agencies. Access to financial capital should be simplified for rural households by establishing micro-finance banks, cooperative societies and other money-lending facilities with little or no interest to facilitate local investment in tourism development. This will make it easier for households to diversify their livelihoods by engaging in both farm and off-farm activities.

Secondly, environmental awareness and education programmes should be conducted for rural residents around waterfall destinations. This will facilitate sustainable forest and land management practices as well as conservation of forest resources without jeopardising the needs of future generations.

Thirdly, rural households should be encouraged to participate in tourism related livelihood activities through entrepreneurial programmes and trainings organised by local government tourism offices and other interest groups. This will create interest in tourism investments among rural households and assist them to develop a positive disposition towards the perceived economic effects of the use of waterfalls for tourism.

Lastly, in order to attain the full benefit of the waterfalls to the livelihoods of rural households, community-based development should be promoted by the government through Public Private Partnership (PPP). This will enhance the development of tourism by providing accommodation and other amenities necessary for tourism to thrive in rural communities. In turn, this will enhance employment creation and improve income earning activities among rural households around communities in waterfall destinations.

5.4 Contributions to knowledge

The study has contributed to tourism livelihood studies by establishing that household size is a significant determinant of livelihood outcome among rural households in communities located around waterfall destinations in Southwestern Nigeria. The findings have also established livelihood asset as a significant predictor of livelihood outcome among rural households established in communities located around waterfall destinations in Southwestern Nigeria.

Furthermore, the findings recognised that the economic, socio-cultural and environmental domains of life as well as the benefits derived from waterfalls are significant predictors of livelihood outcome of rural households in communities located around waterfall destinations in Southwestern Nigeria.

5.5 Research limitations and suggestions for further research

This study focused on the livelihoods of rural household based on the premise that agriculture is the primary livelihood activity of rural households in the study area. However, the study did not consider the level of tourism development and influx of visitors to the destination as factors that influence rural household's perception of tourism benefits. Other scholars could study theeffect of visitor flow on the livelihood outcome of rural residents as well as the contributions of indigenous crafts and cuisines to rural livelihoods households around nature-based tourism destinations.

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Appendix 1

TOURISM AND DEVELOPMENT PROGRAMME, CENTRE FOR SUSTAINABLE DEVELOPMENT, UNIVERSITY OF IBADAN, IBADAN

INTERVIEW SCHEDULE ON THE INFLUENCE OF WATERFALLS AS TOURIST DESTINATION ON THE LIVELIHOODS OF RURAL HOUSEHOLDS IN SOUTHWESTERN NIGERIA

Dear Sir/Madam,

I am conducting a Doctor of Philosophy (Ph.D.) research on the above-named topic. I hereby humbly request for your response to the following questions relating to the influence of waterfall as a tourism destination on your livelihood in the community.
The information provided is solely for research purpose and will be treated with utmost confidentiality.
Thank you for your support.
Oyinkansola C. ODUNTAN

Name of the community ……

SECTION A: Socio-economic characteristics

1. Sex: Male ( ) Female ( )
2. Age: _____ years
3. Marital Status: Single ( ) Married ( ) Separated/Divorced ( ) Widowed ( )
4. Religion: Christianity ( ) Islam ( ) Traditionalist ( )
5. Educational attainment: No formal education ( ) Primary education ( ) Secondary education ( ) Tertiary education ( ) Vocational training/skills ( ) Adult education ( )
6. Household size: _____ (a) Number of male ____ (b) Number of female ____
7. What is your estimated monthly income? _____
8. How long have you lived in this community? _____ years
9. Have you stayed in any other place apart from this community? Yes ( ) No ( ) Please indicate the length of stay in other places apart from this community _____

Section B: Household livelihood assets

i Natural capital

Tick the appropriate column in the table to indicate the level of access to natural assets available to achieve rural livelihood.

Note: *Not accessible (NA) = 0, Very Accessible (VA)i.e. it is always accessible whenever it is needed = 2, Accessible (A)i.e. accessible with permission = 1*

S/N	Do you have access to any of the following natural resources?	Availability		How accessible are the following resources?		
		No	Yes	NA	A	VA
1.	Land					
2.	Water					
3.	Timber forest product					
4.	Non-Timber forest product					

ii. Physical capital

(i) Tick the appropriate description of your house(s) among the following:
Is your house (a) Owned (b) leased (c) rented (d) Not paid for

(ii) What are your sources of energy? (Tick all applicable options)
1a. Traditional e.g. lamps, candle ( ) b. PHCN/NEPA ( ) b. Generator ( )
c. Solar ( )
2a. Gas ( ) b. Kerosene stove ( ) c. Charcoal ( ) d. Firewood ( )

(iii) Please tick the appropriate physical capital as it applies to you

	Physical capital	Availability		Mode of acquisition		
		No	Yes	Owned	Rented	Borrowed
1.	Farm equipment (tractor)					
2.	Farm tools (cutlass, sprayers)					
3.	Farm processing equipment					
4.	Van					
5.	Car					
6.	Tricycle					
7.	Motorbike					
8.	Bicycle					
9.	Large consumer durables (*fridge, TV, sofa and furniture*)					
10.	Fish pond					

iii. Financial Capital

Kindly indicate funds available to you by ticking (√) the appropriate column

S/N	In the last four weeks, have you had access to any of the following sources of fund?	How often do you access such fund?			
		Never	**Rarely**	**Sometimes**	**Always**
1.	Cash at hand				
2.	Cash in bank				
3.	Wages and salary				
4.	Savings from cooperatives				
5.	Remittances from assets (rent, dividend)				
6.	Communal groups				
7.	Cash from family and friends				
8.	Loan				
9.	Insurance				
10.	Pension				
11.	Other, Specify				

iv. Social capital

c. *Kindly provide information about your membership of the group as active member or inactive member. Active members (a) attend meetings regularly or participate in group activities while inactive members (b) are registered members who do not participate in the group's activities. Benefits derived from the group High benefit means that you get support every time you approach the group. Average benefit means you receive the needed support once in every two times you approach, Low means you are not sure if you will receive support from the group when you need support*
Key: I – Inactive, M – Member, E – Executive

S/N	**Please indicate your membership in any of the following groups**	Membership Status/ Number of Years		Membership status in the last one year			Assistance derived from group		
		No	**Yes**	**I**	**M**	**E**	**Low**	**Average**	**High**
1.	Age grade groups								
2.	Religious organisations								
3.	Co-operative societies								
4.	Crop producers' groups								
5.	Livestock producers' groups								
6.	Community development associations								
7.	Tourism marketers' groups								
8.	Tourism employer/employee groups								

Section C: Livelihood activities

High Extent (HE) (≥70%), Medium Extent (ME) 35-69%, Small Extent (SE) 1-34%, and Not at all (NA) 0% contribution

S/N	Which of the following activities do you engage in for survival?	No	Yes	If yes, what is the extent of contribution to income?			
				HE	ME	SE	NA
1.	Crop Farming						
2.	Livestock/Poultry						
3.	Gathering forest products						
4.	Trading and Business						
5.	Traditional Craftwork e.g. drumming, weaving, plaiting, tie and dye						
6.	Transportation						
7.	Services						
8.	Paid employment						
9.	Tourism employment						
10.	Others (Please specify)						

Section D: Livelihood ability

Kindly provide information concerning the following

Training – Indigenous (training within the community/by family), Informal (vocational school), Formal (secondary/Tertiary education)

Not safe -0 (accident recorded once in a month), Safe – 1(One accident in the last six months), Very safe – 2 (No accident in the last one year)

S/N		Hrs/day	No of years	Training	Safety
1.	Crop farming				
2.	Livestock/Poultry				
3.	Forest Products				
4.	Trading and business				
5.	Crafts				
6.	Transportation				
7.	Services				
8.	Paid employment				
9.	Tourism employment				

Section E: Perceived Effects of Waterfall on Livelihood

Tick (√) the most appropriate response in the table below reflecting your perception of the effect of waterfalls on the livelihood of your household

S/N	Statements	SD	D	N	A	SA
	Economic effects					
1.	The presence of the waterfall destinations would improve infrastructure, such as roads, hospitals, schools, parks and restaurants in our community					
2.	The presence of the waterfall destinations would increase the income of residents in the community					
3.	The waterfall destination poses much negative influence on our agricultural activities®					
4.	The waterfall destination does not contribute to the economy of our society in anyway®					
	Socio-cultural effects					
5.	Tourism would give rise to social vices, such as crime, drug use, and Prostitution would be in the local community®					
6.	Increase in the prices of goods and services®					
7.	Frequent visit to the waterfall by tourist would result in extinction of cultural values in our community®					
8.	The waterfall would give room for conflict between guest and the host community®					
9.	There is fair distribution of tourism benefits among the residents of the community					
10.	The presence of the waterfall would increase tourist's interest in our local food					
11.	The tourist site would enhance sense of common history among dwellers in the community					
12.	The tourist site would improve trust among community members					
	Environmental effects					
13.	Frequent visit to the waterfall would give rise to environmental pollution®					
14.	Activities related to the waterfall enable the conservation of natural resources					
15.	Tourist activity sustains diversity of nature in the community					
16.	The tourist site would help to preserve our ecosystem					
17.	Human activities have contributed to loss of fauna and flora in our community					
18.	Tourism activities can contribute to overexploitation of natural resources for livelihood					

Strongly disagree (SA) = 1, Disagree (A) = 2, Neither agree nor disagree (N) = 3, Agree (A) = 4, Strongly agree (SA) = 5

Section F: Benefits of waterfalls as tourist destination to the community

S/N	Benefits	Extremely	Very	Moderate	Slightly	Not at all
1.	Access to information					
2.	Improve social service					
3.	income opportunities in tourism					
4.	Sustainable income					
5.	Access to road network					
6.	Improved health facilities					
7.	Improved educational facilities					
8.	Enhance social interaction					
9.	Maintain biodiversity of species					
10.	Strengthen community organisation					
11.	Poverty reduction					
12.	Livelihood diversification					
13.	Environmental education					
14.	Regular food supply					
15.	Preservation of cultural values					

Section G: Constraints to livelihood

Indicate your perception on the following statements about the constraints to livelihood

S/N	Which of the following items are a constraint to livelihood?	SC	MC	NC
1.	Natural hazards (drought, flood and erosion) affecting agricultural yield			
2.	Reduced harvest as a result of crop destruction or soil infertility			
3.	Loss of livestock, Poultry and Fish			
4.	Long Distance of the waterfall destination from the village			
5.	Poor Attitude of tourism officers to community residents			
6.	Poor transportation services in the community			
7.	Lack of safety at the waterfall destination			
8.	Lack of financial capital to invest in tourism business			
9.	Lack of tourism infrastructure to boost tourism trade			
10.	Short Tourist's length of stay			
11.	Language barrier to communicate with tourists			
12.	Limited access to information on tourism trade			
13.	Restricting resident's access to the waterfall premises due to tourism activities			
14.	Seasonality of tourism activities			
15.	Insufficient Employment opportunities in the tourism industry			
16.	Poor participation of residents in tourism decision making			

Severe Constraint (SC) = 2, Mild Constraint (MC) = 1, Not a Constraint (NC) = 0

Section H: Livelihood outcome

a. Food security

Rarely (once or twice in the last four weeks), Sometimes (three to ten times in the last four weeks), Often (more than ten times in the last four weeks)

S/N	Occurrence Questions	Never	Rarely	Sometimes	Often
1.	Did you worry that your household would not have enough food?				
2.	Were you or any household member not able to eat the kinds of foods you preferred because of lack of resources?				
3.	Did you or any household member have to eat limited variety of foods due to lack of resources?				
4.	Did you or any or any household member have to eat some foods that you really didn't want to eat because of lack of resources to obtain other types of food?				
5.	Did you or any other household member have to eat smaller meal than you felt you needed because there was not enough food?				
6.	Did you or any household member have to eat fewer meals in a day because of lack of resources?				
7.	Was there ever no food to eat in your household because of lack of resources?				
8.	Did you or any household member go to sleep at night hungry because there was not enough food?				
9.	Did you or any household member go a whole day and night without eating anything because there was not enough food?				

b. Reduced vulnerability

Decrease greatly (DG), Decrease slightly (DS), Stay the same (SS), Increase slightly (IS), Increase greatly (IG)

S/N	How satisfied are you with the following conditions in your community?	DG	DS	SS	IS	IG
1.	Income from non-agricultural sources					
2.	Access to healthcare facilities					
3.	Access to training					
4.	Crop yield					
5.	Access to continuous water supply					
6.	Ability to earn from tourism activities					
7.	Access to food resources					
8.	Current housing unit					
9.	Income from agricultural sources					
10.	Support from social networks in the community					
11.	Family connectedness					
12.	Access to information in other communities					

c. Sustainable use of natural resources

S/N	Environmental situations in the last one year?	What is your opinion of the following environmental conditions?		
		Low	Moderate	High
1.	Reforestation/Planting of trees			
2.	Perceived Soil Fertility/improved crop yield			
3.	Perceived Air quality			
4.	Water quality			
5.	Deforestation			
6.	Access and use of land			
7.	Extraction of forest resources			
8.	Participation in forest/land management activities			

Thank you for your cooperation.

Appendix 2

TOURISM AND DEVELOPMENT PROGRAMME, CENTRE FOR SUSTAINABLE DEVELOPMENT, UNIVERSITY OF IBADAN, IBADAN

KEY INFORMANT INTERVIEW GUIDE ON THE INFLUENCE OF WATERFALLS AS TOURIST DESTINATION ON THE LIVELIHOODS OF RURAL HOUSEHOLDS IN SOUTHWESTERN NIGERIA

Schedule for community leaders, landowners and tourism entrepreneurs.

Dear Sir/Madam,

I am conducting a Doctor of Philosophy (Ph.D.) research on the above-named topic. I hereby humbly request for your response to the following questions relating to the influence of waterfall as a tourism destination on your livelihood in the community.

This study is a doctoral research. It is not related with any government activity or funding. As part of the contribution of academic institutions to the community, we hope that the findings of this study will provide information for interested organizations to improve the living standard of the community. Please note that we will take notes and recordings while you share your experiences with us so that we can remember everything you tell us. Thank you for your co-operation.

Thank you for your support.

Oduntan O. C.

1. Date of interview: _____ 2. Community interviewed: _____

3. Name of interviewer: _____ 4. Name of note-taker _____

5. Role of rural household in the community: _____

A. Personal Characteristics of key informant

1. Name of the Leader_____ 2. Position in the group: _____

3. Age _____ (in years) 4. Sex: _____ Male _____ Female

5. Religion: Christianity_____ Islam _____Traditional _____ Others _____ (Specify)

6. Number of years of residence in the community _____

7. How long have you been in leadership position? _____ (in years)

8. Educational qualification: _____

9. What are your income generating activities? a. Civil Servant _____ b. Trading _____ c. artisan _____ d. Others(specify) _____

B. Characteristics of the community's natural and physical assets

1. What are the important assets that can help an individual gain a living in this community?

a. How is ownership to these resources controlled? (For example, how is land ownership managed in the community?)

b. Are there any restriction to access? a. Yes ____ b. No _____ (may be in term of gender, ethnic background, status etc.) If yes, state reasons _____

2. What is the history and importance of the waterfall to your community?

3. How would you rate the level of development in this community in terms of

a. infrastructural facilities a. low _____ b. average _____ c. high _____

b. household wealth a. low _____ b. average _____ c. high _____

c. natural resources a. low _____ b. average _____ c. high _____

d. tourism development a. low _____ b. average _____ c. high _____

Please give reasons for the above rating

_____

_____

_____

C. Characteristics of the community's human, social and financial asset

4. How is social status rated in this community? What separates the better off from the average and the poor?

5. What types of training are available in the community to develop the human assets of residents? a. formal education _____ b. informal education _____

a. what are the types of facilities and the conditions of facilities available to meet the education needs of residents

a. Formal Institutions _____

_____

b. Informal Institutions (vocational training) _____

_____

6. What are some of the social groups that exist in the community? how do these groups support livelihood of members of the community?

7. Does the community presently enjoy assistance from any organisation or agency? (Are there agriculture or tourism related benefits in the community?)

8. What is the relationship between the community and government agencies in charge of tourism development?

b. What is the relationship between the leaders of the community, neighbouring community, and residents?

D. Livelihood activities and ability of community residents

9. What are the livelihood activities of members of the community?

10. Are there new trends in the type of activities they practice in recent times? Yes/ No

(If yes, Probe further to identify the trends)

a. Do they combine more than one income generating activity to earn a living?

b. Are there gender specific livelihood activities in the community?

If yes, categorise the activities according to (Male roles, female roles or both male and female)

E. Perceived effect of waterfalls on livelihood

11. What are the effects of the waterfall in your community? (Probe further for the effects)

If there are negative effects, what are the strategies being adopted to mitigate the negative effects?

12. what is the effect of the waterfall on;

S/N		**Very Good**	**Positive effect**	**No effect**	**Negative effect**	**Very bad**
1.	Community					
2.	Livelihood					

13. have you recorded any conflict in this area? Yes No

If yes, what was the cause of the conflict?

_____

_____

F. Benefits of the waterfall to livelihood and constraints to livelihood

11. Do you think the waterfall have any benefit to community residents? Please specify whether the benefit is positive or negative

S/N	Food production	Infrastructure	Forest conservation

G. Constraint to livelihood in the community

12. What are the constraints to livelihood experienced by community members?

13. Can you identify the cause(s) of poverty in the community?

14. What are the effects of poverty on community residents?

15. Are there community traditions guiding the use of the waterfall or associated forest region?

a. What are those laws?

b. Are there violations on any of the laws?

H. Livelihood outcome

16. What is the extent of contribution of waterfall to the following aspects of livelihood in your community?

S/N	Outcomes	Very good	Positive effect	No effect	Negative effect	Very bad
1.	Food security					
2.	Reduced vulnerability					
3.	Sustainable use of natural resources					

Appendix 3

TOURISM AND DEVELOPMENT PROGRAMME, CENTRE FOR SUSTAINABLE DEVELOPMENT, UNIVERSITY OF IBADAN, IBADAN

FOCUS GROUP DISCUSSION GUIDE ON THE INFLUENCE OF WATERFALLS AS TOURIST DESTINATION ON THE LIVELIHOODS OF RURAL HOUSEHOLDS IN SOUTHWESTERN NIGERIA

Dear Sir/Madam,

I am conducting a Doctor of Philosophy (Ph.D.) research on the above-named topic. I hereby humbly request for your response to the following questions relating to the influence of waterfall as a tourism destination on your livelihood in the community.

This study is a doctoral research. It is not related with any government activity or funding. As part of the contribution of academic institutions to the community, we hope that the findings of this study will provide information for interested organizations to improve the living standard of the community. Please note that we will take notes and recordings while you share your experiences with us so that we can remember everything you tell us. Thank you for your co-operation.

Thank you for your support.

Oduntan O. C.

A. Information of Focus Group Members

Social composition of the group reported in percentages

1. How many members are in the group? _____

    a. Number of male participants _____

    b. Number of female participants _____

2. Religion

a. Muslims _____ b. Christians _____ c. Traditional _____ d. Others _____

3. Age group of rural households _____

4. Educational qualification of members of the group

a. No formal education _____ b. Completed primary school _____

c. Completed secondary school _____ d. University degree _____

e. Post graduate degree _____ f. Vocational training _____

5. Ethnic group:

a. Yoruba _____ b. Igbo _____ c. Hausa _____ d. Others _____

6. Length of stay in the community

a. Less than five years _____ b. Five to ten years _____

c. Ten to fifteen years _____ d. Fifteen to twenty years _____

e. More than twenty years _____

B. Information on community's natural and physical capital

7. What is the importance of the waterfall in this community?

a. Farmland _____ b. Water _____ c. forest resources _____

d. leisure and recreation _____ e. community pride _____

f. Other, please specify _____

8. How many people have land in this community? _____

a. For those who have land how did you acquire the land? a. Inheritance _____

b. purchase _____ c. lease _____ d. borrowed _____ e. other, specify

9. Identify the physical assets you have in your household? (asset ranking)

a. Farm equipment and machinery _____ b. Household items _____

c. Vehicles _____ d. livestock _____ d. Other, specify _____

a. Which item is the most important to you? _____

C. Information on rural households' human, social and financial capital

10. What are your income generating activities?

a. Farming _____ b. Civil servant _____ c. Trading _____

d. Artisan _____ e. Tourism related _____ f. Others, specify

11. What are the sources of fund you have access to for livelihood?

a. savings from bank _____ b. savings from cooperatives _____

c. loan from cooperatives _____ d. salary from employment _____

e. gift from friends and family _____ f. other, specify _____

12. Which membership groups do you belong to?

(a) Social group organisations _____

(b) employment/business organisation _____

a. Are there social groups that you will like to be a member, but you are not allowed?

Yes _____ No _____

b. If yes, what are the names of the groups and the benefits you think you can get from the group?

_____

_____

___

13. Perception of group members about their social status

(a) Better off _____ (b) Average _____ (c) poor _____

Please state reasons for the answer you have given above _____

14. what are the common reported illnesses among members of your household?

a. How do you treat such illnesses? (This is an opportunity to probe into how they treat diseases either as self-care, health centres, hospitals or traditional medicine)

b. What are the factors that determine if you visit health centres or not? (this should probe into the types of facilities and the conditions of the facilities)

D. Information on livelihood activities and abilities of community residents

15. How many of you depend on more than one source of income? _____

a. How many activities make up your household income? (a) 1 (b) 2 (c) 3 (d) 4

b. What are the various livelihood activities people in this participate in?

c. Are there gender specific livelihood activities in the community?

If yes, categorise the activities according the a. Male ____ b. female ___
c. Both____

d. How many members of you household contribute to the household income?

_____

C. Benefits of waterfalls to livelihood and constraints to livelihood

16. What are the benefits of the waterfall to livelihood in your household?

a. Social interaction _____ b. economic benefits _____ c. social amenities _____

d. education and enlightenment ____ e. relaxation/leisure ____ f. employment _____

g. environmental conservation _____ h. other, specify _____

17. Are there restrictions to the use of waterfalls in the community?

(a) Ownership restriction _____ (b) Access restriction _____

(c) Ability to afford gate fee/access fee _____ (d) livelihood enterprises _____

18. Are there restrictions to the ownership and use of land or other natural assets in this community? Yes _____ No _____

a. If yes, what are the restrictions and how do members of the community cope with such restrictions?

_____

_____

19. What are the difficulties experienced by members of the community in achieving livelihood?

a. access to information _____ b. health status _____ c. transportation _____

d. safety _____ e. tourism managers _____ f. community leaders _____

g. level of tourism development _____ h. other, specify _____

20. How do you cope when you don't have enough money to cater for your household's need?

a. sale of assets _____ b. depend on natural resources _____

c. cutting expenses (list the various ways by which you reduce your spending)

d. relieve yourself of the cost of education _____ e. reduce meal type and size ____

21. Do you think the waterfall have any benefit to community residents? Please specify whether the benefit is positive or negative

S/N	Food production	Infrastructure	Forest conservation

D. Constraint to livelihood in the community

22. What are the constraints to livelihood experienced by community members?

23. Can you identify the cause(s) of poverty in the community?

24. What are the effects of poverty on community residents?

25. Are there community traditions guiding the use of the waterfall or associated forest region?

a. What are those laws?

b. Are there violations on any of the laws?

H. Livelihood outcome

26. What is the extent of contribution of waterfall to the following aspects of livelihood in your community?

S/N	Outcomes	Very good	Positive effect	No effect	Negative effect	Very bad
1.	Food security					
2.	Reduced vulnerability					
3.	Sustainable use of natural resources					

27. If you can choose, will you continue to reside in this community?

(a) Yes (b) No

28. Please comment on the reason to your answer in question 12:

_____

_____

Appendix 4

PICTURES FROM LOCATIONS AROUND WATERFALL DESTINATIONS IN THE STUDY AREA

Signpost indicating the direction of Ayikunnugba waterfalls in Oke-Ila, Osun State

Road sign to Arinta Waterfalls located in Ipole-Iloro Community, Ekiti State.

Historic plaque at Olumirin waterfalls in Erin-Ijesha Community, Osun State.

Key informant interview session with Oba AlayeluwaAdedokunOmoniyiAbolarin, the Orangun of Oke-Ila Kingdom, Osun State

Focus Group Discussion with respondents at Ipole-Iloro Community, Osun State

Key informant interview session with the Olupole of Ipole-Ekiti, H.R.H. Oba Babatola Ezekiel, in Osun State

Key informant interview session with Palace Chiefs in Oke-Ila, Osun State.

Focus group discussion held at Ikogosi Community, Ekiti State.