AGRITOURISM POTENTIALS OF INTEGRATED FARMS IN IBADAN, NIGERIA

BY

Olakunle Shakur, OLAWUYI
MATRIC. NO.: 172891
B. Tech., (LAUTECH), M. Sc., (U.I)

A Thesis in the Department of Sustainability Studies
Submitted in the Faculty of Multidisciplinary Studies
In partial fulfilment of the requirements for the Degree of

DOCTOR OF PHILOSOPHY

of the

UNIVERSITY OF IBADAN

AUGUST, 2023

CERTIFICATION

I certify that this work was carried out by Olakunle Shakur, Olawuyi in Tourism Development Unit, the Department of Sustainability Studies, Faculty of Multidisciplinary, University of Ibadan, Ibadan.

_____
Supervisor

R. A. Alabi,
B.Sc., M.Sc., Ph.D. (Ibadan)
Professor, Department of Archaeology and Anthropology,
University of Ibadan
and
Centre for Sustainable Development (CESDEV)
University of Ibadan

_____
Supervisor
A.B.C. Robert
B. Eng. (Minna), M. Inf. Sc. (Ibadan), DEA (Nancy-France), PhD (Nancy-France)
Senior Lecturer, Department of Computer Science, Faculty of Science
University of Ibadan, Nigeria.

DEDICATION

This project is dedicated to the Holy Spirit, Jesus Christ and God Almighty.

ACKNOWLEDGEMENTS

ABSTRACT

Agritourism, a trip to farms or ex-farm houses for the purpose of leisure, education or entertainment contributes to economic growth of nations. An integrated farm brings together different farm components, in such a way that waste from one farm component is a resource for another farm component. Literature have focused on different perceptions of agritourism with limited attention to its potentials for integrated farms. This study was, therefore, designed to examine the agritourism potentials of integrated farms with a view to ascertaining the predictors of information systems usage.

The study adopted the Dann Graham's Push and Pull Theory and the descriptive research design. Farms in Iddo, Egbeda, Akinyele and Lagelu Local Government Areas (LGAs) were purposively selected due to the concentration of integrated farms in the LGAs. Two hundred and five integrated farms in these LGAs were enumerated but 188 farms were used. A structured questionnaire, with Cronbach's alpha index of 0.876 was administered in the farm to either farm owners or managers. In-depth interviews were conducted with 15 software developers on how information systems could be used to enhance the agritourism potentials of the farms. The data were analysed using descriptive statistics and linear regression at $p \leq 0.05$, while qualitative data were content-analysed.

Tourism potentials of the farms were crop cultivation, animal husbandry and farm environments. The potentials of crop cultivation activities capable of attracting tourists to the farms were transplanting activities (2.09 ± 0.77), pruning of trees and vines (1.97 ± 0.83), sowing of seeds and transplanting of seedlings (1.97 ± 0.85), farm products packaging and branding (1.80 ± 0.72), operation of farm machinery and implements (1.79 ± 0.72), pest and disease control (1.79 ± 0.77) and storage and preservation of crop products (1.72 ± 0.75). The potentials of animal husbandry were livestock feed composition and milling (1.72 ± 0.63), livestock houses and pen (1.70 ± 0.58), vaccination and medication services (1.69 ± 0.54), sight of animals (1.67 ± 0.63), feeding of livestock (1.62 ± 0.58), veterinary care of animals (1.54 ± 0.59) and breeding of animals (1.47 ± 0.62). The potentials of the farm environments were petting zoos (3.69 ± 0.50), waterbodies (3.51 ± 0.71), farm shops (3.56 ± 0.56), natural landscapes (3.50 ± 0.58), unique farm machineries (3.49 ± 0.65), green agrarian environment (3.45 ± 0.66) and cultural/historical objects of attraction (3.31 ± 0.65). The agritourism potentials of integrated farms in Ibadan, in order of importance were farm environment (35.13 ± 6.04), crop production activities (19.03 ± 7.64) and animal husbandry (16.44 ± 6.07). Crop cultivation, animal husbandry and farm environment jointly predicted information usage ($F_{(2;185)} = 29.68$). Crop cultivation ($\beta = 0.09$), animal husbandry ($\beta = 050$) and farm environment ($\beta = 0.20$) contributed to information system usage ($F_{(2;185)} = 29.68$). There was an advocacy for the usage of information systems to help showcase the agritourism potentials, tracking the number of visitors, making tour reservations/bookings, and records keeping.

Farm environments, crop cultivation activities and animal husbandry determined agritourism potentials of integrated farms in Ibadan, Nigeria. A credible information database would enhance agritourism potentials.

Keywords: Integrated farms in Ibadan, Crop cultivation, Animal husbandry, Farm environments, Information systems

Word count: 456

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IS	Information systems
IFS	Integrated Farming System
ICT	Information and Communications Technology
MIS	Management Information Systems
GIS	Geography Information Systems
IDI	In-Depth Interview

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Tourism involves the movement of people from one spatial location to another, oftentimes not for generating revenue but essentially for leisure. Scott (2005) opines that it is the greatest leisure activity that provides a brief break from the middle, which still retains its peripheral value. An emotion usually triggers tourism and that emotion centers around going off work or domestic indulgence which is coupled with the drive for enjoyment/relaxation. Therefore, tourism can be described as the actualization of the emotional drive for enjoyment/relaxation for a precise period. Human beings are rational and emotional animals, so, it is the emotions that are inherent in human beings that drive or propel their actions. Tourism has not yet taken place when enjoyment/relaxation is only being conceptualized by an individual; however, tourism takes place when the concept is escalated into action. Without action (movement) tourism can never be said to have been done. Meanwhile, if tourism has been operationalized, movement of people and dispensation of money must be evident (by the tourist and the hotel/tourism destination), similarly, satisfaction or dissatisfaction by visitors on the premise of the offering of the tourism destination must be evident. In this context the exchange of cash can occur at the planning phase of tourism where the prospective tourist(s) make payment vis-a-vis hotel reservation, flight reservation and booking of the prospective tourism destination. The exchange of cash ultimately occurs when the tourist gets to the tourism destination.

Tourism has affiliation and relation to various disciplines. The disciplines that tourism has affiliations to include Agriculture, Economics, Geography, Archaeology, Medicine, Education, Law and Theology. When carefully examined, there is an element of tourism in all of these disciplines. Griffin (2013) asserted that the fact that the tourism industry is interdisciplinary identically reflects in precise managerial practice that is evident in the tourism attractions. Tourism is a sustainable venture most especially cultural,

geological and agricultural forms of tourism. Accessibility is of utmost importance when it comes to tourism attractions, so, the routes to the tourism attraction must be pliable with legs and vehicles, and the tourism attraction must be developed. All these processes are essentially processes associated with the practice of sustainability. Tourism remains a component that is connected with the trajectory of sustainable development, thus, development of tourism is expected to lead to the confirmation of the attribute, height, level and the developmental means that are appropriate for a period, which the environment also exhibits capacities for making available irreducible sundry circumstances and situations, because there is accessibility of tourism through related events where resources are exploited (Awan *et al.,* 2016). The development of tourism destinations must have basis in sustainability; otherwise, in a jiffy the tourism destination would not stand the test of time. Any tourism destination that cannot stand the test of time is definitely bad for investors, because, investors will not be certain of recouping monies invested talkess of making profits.

Agritourism essentially involves travel to agricultural farms for the sole purpose of leisure, relaxation and education. Agritourism is also referred to as agrotourism and farm tourism by some scholars. Sznajder *et al.,* (2009) opined that agritourism depicts a growing portion of the tourism economy of a lot of destinations. Love for nature (that is, the escape from the urban areas to rural regions where their ecosystem is balanced) might be the reason why some people embark on agritourism. Agritourism is a developing concept in the world, availing residents of urban areas the privilege of escaping the solid city lifestyle for rediscovering various ancestral connections they have in the country side via agriculture (Griver, 2009). It is the temporary relocation of individuals from bustling and hustling of urban areas to a farm environment which enjoys natural serenity and calmness.

Ion and Cornelia (2010) pointed out that any farm that focuses on agritourism should be accessible to prospective tourists searching for pleasure and educational information; it is an agricultural engagement which could lead to the generation of extra revenue via marketing of farm's products to the prospective tourists. Malkanthi and Routry (2011) note that, for the purposes of recreation, education or direct/indirect participation in the activities of the activity of that agribusiness entity, similarly, agricultural tourism could have a description of a vacation that depicts escaping to a destination where agriculture-businesses thrive. Agritourism is actually a niche tourism. Niche tourism are rarefied

types of tourism. Its biological and biodiversity implication validates its niche tourism's status. Other forms of niche tourism as noted by Rogerson and Rogerson (2014) are inclusive of tourism for adventures, catching of fishes, culinary and winery, tourism done or around golf course, lastly, tourism attractions that are natural. A trip to some farms in rural areas can be furnished with sightseeing of rodents, serpents and other forms of animals which definitely implies that the tourist(s) is/are already enjoying the biodiversity blessings of the agricultural niche.

Agricultural practice and settings can never be taken away from the definition of agritourism, because, agritourism in itself implies trips to farms. It does not matter how much an agritourism destination may be modernized, it must reveal agricultural practices which can either be plant cultivation or animal rearing. Malkanthi and Routry (2011) opined that in agritourism, natives or local farmers offer trips to farmlands that belong to them in a bid to give room to tourists, so that tourists can observe agricultural processes such as harvest of crops, sowing of seeds, likewise, the processes involved in turning around indigenously monitored crop, for instance, corn, millet or sundry products which tourists might stumble upon or see in their neighborhood. The fact that the local farmers make available their farm products and operations to visitors in agritourism, implies that there is supply and demand trajectories associated with agritourism. Christelle and Peet (2021) noted that after the combination of agricultural practice and tourism, agritourism can be examined from supply and demand perceptions. Supply trajectory is from the end of the farmers or tour operator, while, the demand trajectory is from the visitors. From the supply end, agritourism can be the primary enterprise of the farmer or it can be a complementary enterprise. Meanwhile, the tourist is expected to learn new things after their demand for agritourism has been achieved. Thus, it is apparent that education is infused into agritourism. This is the reason why no matter how well fixated for leisure an agritourism is, the tourist would still learn directly or indirectly from that trip. It is either the tourist learns directly from the farm consequent upon the explanation of the farmer or tour guide or the tourist learns through observation of the serene and natural ambience of the farm.

It is notable that there are various agricultural risks that can be prevalent either at the cultivation phase, maintenance phase or harvest phase. It should however, be noted that the risks attached to agritourism is quite minimal when compared to the risk attached to agricultural practice, therefore, the statement that agritourism is a means for the farmer

to minimize or eliminate risks while generating income is a fact. Mahaliyanaarachchi (2016) noted that, agritourism is an activity enshrined in marketing which makes available extra privileges to farmers, for the reduction of risk associated with agriculture through diversifying in competitive and urban environments. It avails farmers the avenue to better showcase or advertise their products to tourist(s) which in turn would help to tell more people subsequently.

It gives room for one-by-one advertisement of agricultural goods and products. Meanwhile, it could be expensive in establishing a farm where agritourism can be practiced. This is because financial resource must be put in place to establish a farm and put in place structures and facilities that would make tourism possible on such farms. As Page and Connell (2012) opined that the development of agricultural tourism successfully needs significant financial investment, promotion, and reliance on outside counsel and financing. So, putting in place an agricultural farm and tourism structures on the same area of land is an expensive venture. This is because the cost of setting up additional structures to accommodate agritourism and the cost of maintaining the crops or animals in such structures in a staged form depicts extra financial implication for the farmer. However, the conversion of ex-farm houses to lodging facilities for agritourist may not imply costly financial implication for the farmer.

Recently, there was a pressing request for adopting agriculture system with better sustainability, and logical estimation procedures are required in determining contrary management methods for achieving successes (Cruz *et al.*, 2016). So, it can be said that one of the products of the logic evaluation process is Integrated Farming System (IFS). Integrated farms emanated as a result of farmers' wish to minimize production cost, efficiently manage waste and essentially maximize profit. Societal concerns for environment associated troubles created via conventional agriculture, combined with enhanced request for achieving societal regard for environments' issues brought forth by traditional agriculture, sustainable agricultural industry, likewise safety, enhanced quality of food produced, has resulted unto development of another form of agricultural practices engaged recently (Parra- Lopez *et al*., 2007).

So, agricultural systems can be used to ameliorate some environmental challenges, depending on the specific farming system employed, how it is well managed, the capacity of the farmer and government and non-governmental organisation. Richard and

Budi (2016) noted that the view of agricultural experts (citizens) and political leaders will have a significant effect on the actualization of an ecologically friendly agricultural system. This implies some farmers will have the mindset that it is going to be environmentally friendly while, affording them opportunity to make good income at the same time. An environmentally friendly farming system is obviously the best farming system because it ensures sustainability and provides good living conditions for the biodiversity on and around the farm.

Farming System is essentially the development on the primitive agricultural practice so as to have better and smarter production processes, with increased outputs and economic gains. Sharma *et al.,* (2017) while citing the case of India communities opined that farming system engagement is a worthy engagement that addresses issues of sustainability in terms of enhancement of economy, which implies that the basis of coming up with farming system is to get a better and more efficient way of indulging in agricultural practices, so as to foster increased revenue generation for the farmer and the nation at large. Farming system implies leveraging on technological innovation and inferences in making farming engagements easier, faster and efficient. Therefore, farming systems have helped some farmers to break even, even on a relatively small portion of land. There is however, a system of farming where only crops are cultivated, there is another system where only animals are raised and there is a specific system where both crops and animals are raised at on the same farm.

The systems of farming where animals are reared and crops are cultivated in an integrated way is termed Integrated Farming System. Manjunatha *et al.,* (2014) noted that integrated farming system (IFS) essentially constitutes a compounded network of interactions between soils, water, plant, animal, and the surroundings which makes the structure better productive and lucrative than the arable agricultural method. It is important to note that integrated farm is not only an integration of crops and animals; it can also be an integration of one type of farm animal and the other, as long as the waste from any of the farm animal can be used up by the other animal and vice versa. It speaks of farming practices which combine raising livestock with growing crops or raising animals and fishes (Soni *et al.,* 2014). In integrated farming system crop production and livestock rearing or even different types of farm animals are done on the same area of land, such that the waste of crop produce/or farm animal would be recycled and used up by the livestock and vice versa, thereby, minimizing waste and maximizing outputs.

It is the only farm venture that gives room for a co-existence of agricultural practices where by-products serve as inputs and minimal or no inputs are purchased from outside. It helps the farmers increase his/her savings and at the same time giving room for such farmer to invest excess cash on some other pressing needs on the farm instead of spending it on inputs. Integrated farms lead to quantitative and qualitative food production on a relatively small or average size of land. The final products of Integrated Farms may be used to only meet the needs of the immediate family of the farmer or it may even be sold out to make money, if the farm is on a large or medium scale.

Al Mamun, *et al.*, (2011:128) summarized Integrated Farming Systems (IFS) into 3 major points and they are as follows:

1) Introduction of variation in farming systems so as to achieve optimum production in the patterns of the crops per unit area via giving good attention to maximum operationalization of resources.
2) Wastages from the farms were subjected to recycling for the goal of productivity in an interrelated and interconnected matrix.
3) A very good mixture of the components of the farm, for instance dairy, poultry, fishery, sericulture and so on, suitable for established agricultural climates together with social and economy status of the farmers brings financial buoyancy to the agricultural venture.

Soni *et al.,* (2014) opined that the creation of integrated farming system has led to enablement for developing a template of subsidiary growth template for enhancing chances of little scale farms related to bigger operations. There are very few farmers that operate integrated farming system on a big farm land. The flexibility of this farming system makes it possible to be practiced on both large and marginal portion of lands, depending on what the farmer wants. With the aim of halting resource deterioration and maintaining agricultural revenue, integrated farming systems can likewise be considered a viable substitute for conventional agricultural techniques, particularly on marginal lands (Dadabhau and Kisan, 2013). However, it is indeed a great developmental model that has helped translate some farmers from their primitive farming system to better developed agricultural techniques. Integrated farming systems often times are viewed as sustainable alternatives to commercialized agricultural engagements especially on lands that are marginal with the goal to reverse degrading resources and stabilize farm

revenues (Al Mamun *et al.,* 2011). It can be regarded as a highly conservative alternative way of engaging in agricultural practices, so as to ensure the development and sustainability of the practice.

As it is known that every venture/system has its own goal, therefore, integrated farming system has its own goals too which according to Kalita *et al.,* (2016) are:

i. Maximizing the development of every section for the provision uninterrupted and continuous enhanced revenue

ii. Rejuvenate or ameliorate of production system so as to attain agricultural-ecological equilibria.

iii. Controlling growth and development of insect and pest, disease and weed via nature-based system for managing crops and their maintenance on a minimal degree in terms of how intense they are.

iv. Reduction in usage of chemically made fertilizers and different innocuous agricultural-chemical and pesticide that could lead to unpolluted, hygienic products from hygienic environments.

v. Increasing efficient usage of nature-based resources via nutrient that were recycled earlier.

vi. Mitigating the wrong effects agricultural activities (crops and/or livestock) on the environments.

Information Communication Technology (ICT) can be broadly categorized into Information Systems and Information Technology. Recently, ICT became a critical tool for most organizations, likewise, businesses of which education is part (Bingimlas, 2009). Munyua and Adera (2009) and, Pande and Deshmukh (2015 cited in Saidu *et al.,* 2017) noted that there are ICT devices that aids the facilitation of farming activities and they include gadgets such as laptops, mobile gadgets application software and so on. This research however adopts information system component of ICT. Boell and Cecez-Kecmanovic (2015) examined four views in defining information system and this has basis on major sections reiterated through specific defining characteristics: (a) technology based section, which is inclusive of the process, storing and transforming of data; (b) social categories, reiterating that information systems are intrinsic in social methods; (c) social technical categories, with arguments that information system is inclusive of both societal and technology constituents that are interwoven; and (d)

process categories – the conceptualization of information system with regards to the performance and support procedures and methods.

Paul (2010) defined information systems as information technology in use; the 'In Use' phrase is interpreted based on the dimensions of time, together with human dimension basically because information technology is apparently engaged when users are using it, and the usage is a function of time. It can be defined as a technological system that is synchronized to collate, arrange, process, store and communicate information for either present use or future needs. Furthermore, information systems can be categorized into a few components, such as software, messages via SMS, voice notes and so on. Technical Centre for Agricultural and Rural Cooperation (CTA) (2015) pointed out the premise that information system basically aid collating, managing and distributing data or information, hence, there are certain tools which help achieve the foregoing and the tools include; ready to use software, bulk messaging via SMS or voice recordings, user polls and survey. Encyclopaedia Britannica (2020) reveals that information system has five components, as follow; computer hardware, computer software, telecommunication, repositories as well as information stores, finally, people together with procedure. It is pertinent to note that for this study, software application component of information systems was focused on.

Agritourism involves welcoming visitors to farms for educational, leisure or business purposes. The concept of agritourism from the farmers perspective is essentially the synergy between the agricultural enterprises cum operations and tourism, in a bid to expand the farmers revenue generating base. Grillini *et al.,* (2022) asserted that visitors that make payments to sleep or/and eat on a farmland might aid the stabilization of a traditionally run farm via the creation of a connection between various business engagements, precisely, agriculture and tourism. From the perspective of tourist, the concept of agritourism involves visitors travelling to farm lands, for leisure, business, conferences and events. Agritourism can simply be conceptualized as different agriculture-based tourist engagements domiciled in rural areas, precisely, based on pleasurable/educational experiences (Gil *et al.,* 2013). Xiaowen *et al.,* (2022) opined that agritourism is a mix of agricultural practice with tourism premised on farm assets. It may involve business transactions by the famers and his/her customers that will necessitate the customer to spend considerable amount of time on the farm. It may also

involve active participation of visitors in farming activities in a bid to lend a helping hand to the farmer.

1.2 Problem Statement

The connection between agriculture and tourism has been established practically and literarily long ago in Europe and the United States of America. To a very good extent agritourism has been well explored theoretically and practically by researchers and practitioners (professionals) in these developed nations. However, some scholars still believe that research on agritourism is not close to being adequate. Thus, Choo (2012) noted that studies related to agritourism exists in the baby phase in terms of growth, likewise, the idea of agritourism has room for more philosophical and conceptual development. Bianca *et al.,'s* (2014) study in the Philippines demonstrates that, in a pleasing trend, State Colleges and Universities (SCUs) all over the nation are leading this novel profession. While, on the contrary, almost all the citadels of higher learning in Nigeria have not included agritourism in their curricula, which thus implies that in Nigeria, there has been insignificant or little study on agritourism. This might be because it is not yet a widely accepted field of study in the country. It is however, interesting that many trips that people make to farm settlements are agritourism and they are oblivious of it. Many farmers are also operationalizing agritourism enterprises on their farms and they are also not aware that they are operationalizing agritourism.

This inability to understand the true nature of agritourism coupled with the fact that there are not much studies on it has made it difficult to define and explain agritourism in Nigeria; moreover, in most instances where a functional farm is listed as a condition of agritourism, nil definition is provided, and the notion of what defines a functional farm is being virtually neglected in agritourism scholarship outputs (Sharon *et al.,* 2010). It has thus been pretty difficult to describe and conceptualize agritourism that is peculiar to Nigeria, hitherto. However, it is notable that both working farms and defunct farm steads or areas with farm houses converted to lodging facilities are pertinent for agritourism. Agritourism is usually practiced on either large or relatively large expanse of farm lands. Both large, relatively large and medium sized farmlands are specifically restricted to agricultural zones in the rural areas. Hence, oftentimes agritourism practices are sited in agricultural zones, where there is a plethora of agricultural activities.

A few amongst the many literatures underpinning agritourism is as follows; Jin *et al.,* (2022) examined the conditions that affects revenue of agritourism farmers. Grillini *et al.,* (2022) examined qualitative evaluation of agritourism in selected countries of Europe, America and Africa. Wang *et al.,* (2022) (2022) examined the pitfalls of agritourism industry in the USA. Khairabadi *et al.,* (2020) assessed and evaluated tourism engagements with empathic regard to agritourism. Obeidat (2022) assessed the potentials of agritourism in a Jordanian village with emphasis on farmer-precise and geographic-inclined conditions.

After examining the above, it is germane to consider indicators or factors that could be engaged to enhance agritourism potentials in countries where agritourism has not been developed as a major enterprise. There is no contest that information systems and information technology have enabled and enhanced various businesses and human endeavors, agriculture inclusive. Sopuru (2015) noted that information system serves a crucial function in agriculture because it helps to provide and deliver information to stakeholders in agriculture. Various studies have revealed that information systems have been used for agricultural processes and agribusinesses in various climes. Milovanović (2014) examined the importance and potentials of information technology for improving agriculture. Sami and Sayyed (2014) studied the effect of IT on the agricultural industry. Sousa *et al.,* (2016) examined IT as paraphernalia of agriculture extension services as well as exchanges between farmers and farmers. Vodouhe and Zoundji (2013) noted that Songhaï farms in Benin Republic through financing from USAID, a communal connectivity teleservice organization was created beginning in 1999 to provide farm owners particularly with connection to cutting-edge computer technology. Some farmers engaged the regular mobile gadgets like mobile phones to source for agricultural information and contact other farmers in other area.

It is, therefore, notable that information technology and information systems components are generally used by human beings, hence, some of these components have been used for agritourism practices and processes in some parts of the world, for instance telecentre is used to enhance agritourism of Songhai farms in Benin Republic (Vodouhe and Zoundji, 2013). Likewise, information system has been generally explored and employed for different reasons in the tourism, for instance, marketing information systems was used in enhancing tourism industry (Hanif *et al.,* 2013). In the same vein, some forms of information systems have generally been engaged and adopted for

different farming operations, for example, farm management information systems was used to enhance German multifunctional farm (Husemann and Novković, 2014) and so on. Therefore, clearly, a literature gap exists vis-à-vis studies focusing on the agritourism potentials of selected integrated farms in Ibadan with a view to ascertaining the predictors of information systems usage.

1.3 Aim and Objectives of the Study

This research examined agritourism potentials of integrated farms and predictors of information system usage in Ibadan, Nigeria. The precise objectives were to:

1) Examine the agritourism potentials of crop cultivation activities of the integrated farms

2) Examine the agritourism potentials of animal husbandry of the integrated farms

3) Examine the agritourism potentials of environments of the integrated farms

4) Investigate the prospect of creating software application to enhance agritourism potentials of the integrated farms

1.4 Research questions

The research questions for this study are as follows;

1) What are the agritourism potentials of crop cultivation activities of the integrated farms?

2) What are the agritourism potentials of animal husbandry of the integrated farms?

3) What are the agritourism potentials of the environments of the integrated farms?

4) What is the prospect of creating software application to enhance agritourism potentials of the integrated farms?

1.5 Hypothesis

H_0 There is no significant relationship between respondent's demographic characteristics and tourism potentials of crop cultivation activities

H$_1$ There is no significant relationship between respondent's demographic characteristics and tourism potentials of animal husbandry activities

H$_2$ There is no significant relationship between respondent's demographic characteristics and tourism potentials of the farm's environment

H$_3$ There is no significant relationship between information systems usage and agritourism potentials of integrated farms in Ibadan

1.6 Justification for the Study

The study investigated the agritourism potentials of selected integrated farms in Ibadan, Nigeria and predictors of information system usage. This is premised on the fact that there are variants of literatures on agritourism vis-à-vis its pitfalls and prospective advantages. However, studies operationalizing the agritourism potentials of integrated farms in Ibadan has not been carried out. Similarly, different Governmental and Non-Governmental repositories were checked to ascertain that the focus of this study stems from a precise literature gap and that the study is entirely novel. This research is thus justified premised on the fact that it examined crop production activities, animal husbandry and the farm's environment as the agritourism potentials of the selected integrated farms, likewise, it examines the predictors of information systems.

1.7 Scope of the Study

This research was carried out in Ibadan, Oyo State, Nigeria. The study area that captures the farmers is particularly restricted to the agricultural zones in Ibadan, Oyo State, which are Akinyele Local Government, Egbeda Local Government, Iddo Local Government, Oluyole Local Government and Lagelu Local Government areas. This is because there is a prominent concentration of integrated farms in these areas. The agritourism potentials operationalized in this study are the crop production activities on the farms, animal husbandry and the farm's environment. It is notable that the software developers were drawn from the urban areas of Ibadan. The Local Governments Areas with significant urban areas where the software developers were drawn from are Oluyole Local Government, Akinyele Local Government and Ibadan North Local Government.

1.8 Plan of the Study

Chapter one considered the introduction to the study, problem statement, aim and objectives, justification for the study, scope and plan of the study. In chapter two, a review of conceptual, theoretical, empirical and methodological issues is undertaken. Theoretical framework, statement of hypothesis, research design, data requirement and sources, description and measurement of relevant variables, method of data analysis, study area description and model of the study were considered in chapter three. Chapter four basically has data analysis, interpretation and discussion. Chapter five looked into the summary and conclusion of the study, recommendations and limitations of the study and suggestions for future research. The chapters are followed by a list of reference consulted.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Review of Conceptual Issues

2.1.1 The Concept of Tourism

Tourism definitions may change depending on certain contexts, such as time and location (Greer *et al.,* 2008). Olawuyi *et al.,* (2017) noted that for tourism to have occurred, there needed to be a dislocation of people (mobility), an interchange of money, and either a good or bad experience depending on the amenities the tourist destination had to offer. These points are highlighted, adapted and explained in the table below;

Table 2.1: Necessary Steps That Must Be Taken While on Tourism

S/N	Points	Explanation
1.	Displacement of individual(s) (movement)	Apparently, tourism cannot be done at an inertia position of a prospective tourist, save it is arm chair tourism. There must be movement from an inertia position to another position before it can be said that tourism has taken place. This displacement must be purposely for leisure. Such prospective tourist should be totally dislodged out of his/her environment because it is required of such individual to pass at least a night outside, while on the leisure trip.
2.	Exchange of cash:	It usually involves direct or indirect cash exchange from one person to the other. The cash exchange can take place from the prospective tourist's destination (by booking hotels or paying the destination charge online or via bank transfers) or it can take place on the spot, at the precise tourism destination. Even the cash expended on logistics in getting to the tourism destination is also part of the cash exchange. In addition are the purchases of sourvenirs, cultural items, products of cottage industry, indigenous meals, among others.
3.	Experience:	It can be garnered from the prospective tourist's online review of the tourism destination. Likewise, it could be an aftermath of the tourist visit to the tourism destination. It is essentially emotional. It can either be good or bad, on the premise of the offering of the destination to the tourist(s) online or onsite.
4.	Motive of not making money	The tourist must expunge the intention of generating revenue while on tourism but rather his/her motive should basically be for leisure, relaxation and sightseeing. Instead of making money, the tourist is expected to spend money, as explained in item 2 above.

Adapted from Olawuyi, Jimoh and Olorunniyi (2017)

Olawuyi *et al.,* (2017) further noted that tourism is the movement of individuals without an eye toward creating profits through a place to another for pleasure or entertainment. Although, cash might exchange hands between the tourists and the tourism manager, yet the tourist must not have the mindset of making money or raking in cash from the tourism adventure. The tourist is supposed to be the spender while the tourism manager, cottage industries and ancillary businesses are supposed to be at the receiving end. Any itinerary that is embarked upon with the sole aim of making money is not tourism.

Meanwhile, various locations or destinations of tourism depict the geographical attribution of tourism, which might be geological, cultural, agricultural and rural in nature. Tourism has good connected with geography, premised on its variations that is inclusive of man-environment relationship with terrain, preservation with maintenance associated to destinations surroundings, perspectives of the environment, feeling of location, and geographical characteristic behaviors and movement of people (Williams and Lew, 2015).

The human-environment interaction of tourism usually leads to preservation of a naturally endowed surrounding/habitat, development of such surrounding, likewise, sometimes the alteration of the ecological balance of such environment. Spatial study and characteristic attribution of an environment determines the appropriateness of tourism in that environment and the inflow of tourists to such destination. Oguzor (2011) noted that any country's ability to expand and develop, either in a city or countryside environment, depends on the infrastructure's ability to deliver the basic functions and amenities required for a higher level of living. In line with this backdrop, a tourism destination is consequent on timely and good spatial analysis and rational decision. Since tourism destination is geographical then tourism spatial analysis is done with basis in data obtained from geographic information studies.

Tourism has gotten a good stand within various interdisciplinary intellectual discourse. Meanwhile, there are certain themes that generally navigate tourism discourse to a good point, and according to Hoogendoorn and Rogerson (2015) these issues which have received great investigative concerns are:

i.   Touristic engagements done responsibly,
ii. touristic influence targeted at making the life of the have-nots better,
iii. touristic engagements driving indigenous growth of the economy

iv.   and importance of the growth of small, medium and micro enterprise (SME's) captured under tourism.

Each and all of these theme(s) has/have significant influence on tourism establishment and sustainability. Responsible tourism validates sustainable tourism while the role of SME's determines the quick closure or longevity of any tourism venture. As a matter of fact, none of these themes can be overemphasized in the discussion of establishment of a tourism venture either in the rural or urban area. Rogerson (2015a) noted that while the four concepts of accountable tourist industry, pro-poor tourist industry effects, tourist industry being drivers for the growth of indigenous economies, likewise, the importance of small, middle, and micro enterprise (SME) advancement have been frequently ignored in cities, they are now the focus of the vast bulk of interrogations due to the amount of significant tourism development occurring there.

Tourism industry can be classified under the Small and Medium Scale Enterprises. This is because largely developed tourist industries in various parts of the Globe either operates on small scale or medium scale basis. Likewise, most of the developed and developing tourism destinations have staff population within the range of 5 to 150. Nyankomo (2014) defines SME's in corroboration with the United Nations Development Programme (UNDP) as firms with maximum of 200 employees, while the African Development Bank (AfDB) uses a benchmark of 50 employees in their description and definition of what SME is.

It can be generally stated that tourism is amongst the small and medium scale enterprises that essentially drive the economies of various climes of the world to stability, fruition and good functionality. It is only an unserious and a visionless government that would not create an enabling environment for SME's to thrive well. Some countries of the world refuse to be developed basically because the government of such countries do not either have good policies or are not implementing those policies that would enhance the development of SME's and cottage industries in their nations. It is naturally expected that the tourism industry of such countries would either still be in its potential or developing phase. A typical example of such nations is Nigeria, for instance, according to Bassey (2013), it is deplorable that the degree of dedication towards harnessing the value in   the   tourist   industry   like   a financial vehicle   remains   exceptionally

little in every level of Nigerian government, despite the clear importance that tourist industry brings to the general growth of the nation's economy.

2.1.2 Sustainable Tourism

Sustainability is a topical issue in various disciplines, in which tourism is not an exception. Olawuyi and Posun (2021) noted that in essence, sustainability is a method or action that guarantees the ongoing existence of a thing (physical or intangible) or place. Sustainable development, therefore, importantly deals with maintaining an item or thing for immediate and future usage. The concept of sustainability is also related to immateriality in a situation where cultural values, attributes, belief system and ethics of certain set of people are well preserved so as to ensure that they are successfully passed down to incoming generations. So, tourism assets, resources and products must also be preserved, maintained and conserved in order to ensure continual existence of these assets, resources and products. In consideration of the reality that the touristic industry has become an essentially biggest revenue generators for various Nations of the World, it is important to ensure the perpetuity of such industry. Wamboye, Nyaronga and Sergi (2020) opined about the lucid fact that one of Tanzania's three development industries as well as the nation's second-largest source of international cash earnings following agricultural production is tourism. Despite the fact that tourism industry is a massive foreign exchange earner for Tanzania, tourism industry earns far more for some other Countries. For instance, Wamboye, Nyaronga and Sergi (2020) further noted that nevertheless, Tanzanian touristic industry is expanding and it is non-competitive when compared with North African countries, South Africa, Botswana and Kenya.

Bhutia (2015) points out that the World Tourism Organization's 1988 vision for sustainable tourism included managing of assets' that would allow for the satisfaction of financial, societal, and beauty necessities, whilst preserving culture-based values, crucial ecologically inclined procedures, bio - diversity, and models that sustain life. The intent of sustainable tourism is basically for ensuring the touristic venture is subjected to appropriate administration, for it to be explored by present generation and then passed over to incoming generation. As a result, sustainable tourism could be characterized as both a type of tourism which considers current, and upcoming effects (including economy, social, and environment's effects), likewise, adapts towards the diverse demands of travelers, business, and indigenous settings in addition to the environmental

contexts (Minciu, *et al.,* 2010). Sustainable tourism is a form of tourism is also conscious of maintaining ecological and environmental balance in environments that the tourism destination domiciles. International or intergovernmental agencies have supported sustainable tourism as the optimum balance between financial feasibility, protection of the environment, and sociocultural wealth, Examples include the United Nations Environment Program (UNEP) and the World Tourism Organization (UNWTO) (Hall, 2011). Sustainable tourism ensures the interconnectedness between the three arms of sustainability, in a bid to ensure tourism destination exists on a continuum. It gives ability to tourism destinations to weather various storms and survive various challenges. Hence, before the development of any tourism attraction, sufficient environmental assessment must have been made in order to prevent and avert any present or feasible threats. Niedziolka (2012) noted that any kinds of tourism administration and growth which protect environments, economies, as well as societies, while concurrently ascertaining preservation of culture as well as environmental assets are referred to as sustainable tourism.

Nevertheless, there exist certain pitfalls which could be associated with sustainable tourism in the countryside, most especially in trying to inculcate the sense of preserving the tourism assets and products into the locales (stakeholders) of the rural regions. People in nearby or impoverished neighborhoods might not have been able to clearly or comprehend the effects of sustainable tourism since a majority of them are unaware of the concept of sustainable development (Olawuyi *et al.,* 2017:9). It is therefore, necessary that the various stakeholders must be sufficiently sensitized as regards the essence of sustaining the tourism assets that are in their area; otherwise, these tourism assets might be vandalized by these stakeholders.

Bhutia (2015) pointed out the various components with major stakes in sustainable tourism's sector and they include; the locales, authorities, and tourist industry, visitors, peer group, volunteers, tourism experts, likewise, media. Each and every one of these stakeholders have their vested interests and contributions that must be protected and valued. Likewise, Zamfir and Corbos (2015) opined that filling the lacunae amidst phases attributed to plans and execution, which involves the creation of methodology, tourist regulations, and advanced technologies, is among the key obstacles in attaining sustainable tourism. So, it can be stated that several plans for different tourism

destinations never came to fruition because of the gap between the planning and the implementation of such proposed tourism destinations.

It is worthy of note that the political will and power from the power that be, which enables sustainability must be put in place, otherwise, sustainability of tourism industry cannot exist in a particular environment. The confidence of administration as well as perceptions connected to do with governmental effectiveness can be key predictors of how much influence communities have on tourist growth (Nunkoo *et al.,* 2012). The political situation determines the extent of peace and tranquility in a region, it also determines the level of participation of the locals and how well a tourism destination can survive in an environment. Gkoumas (2019) opined that most the execution of sustainable tourism is mostly in the capacity of federal governments as well as regional administrative bodies, according to a number of hotel owners cum managers, alot of restaurant owners cum managers, travel agencies, as well as some vehicle hire business owners as well as boat business professionals. A hostile environment usually does not give room for tourism to thrive, because, such environment will scare off visitor(s). Likewise, the factor that could mess up sustainability of tourism facility doesn't stop at the political power of the power that be, but also rests on the tourism officers working in the tourism destination.

The tourism literature cites numerous instances in which locals' confidence has been damaged due to the abuse of authority as well as fraud from government servants and tourism professionals for their own, their employers', or other organizations' profit (Bramwell and Lane, 2011; Nunkoo *et al.,* 2012). Hence, it is important to create awareness for employees about the modality and importance of sustainability. Amir *et al.,* (2015) noted that if tourism is to keep having a good commitment to sustainable growth of rural areas, it is crucial to possess a deeper knowledge of the whole reliance in order to make. It is therefore, pertinent to strike a balance between the influence of the elected Government of the day and the governance structure in the tourism organizational structure, in a bid to ensure smooth running of the tourism organization. Anjos and Kennell (2019) noted that essential requirement to have a sustained growth of tourism attractions is good leadership. Without ethically blending the Government's policy with the organizational's tenets, then sustainable practices are absolutely moot. This is because sustainable practices of an organization that flouts Government's policies will certainly lead to the annihilation of such organization.

Similarly, it is important to check the policies of National Government and Local Government in a bid to see if they align or disconnect on establishment and running of tourism destinations. Reinsche *et al.,* (2019) noted that Contrary to policies which contribute to socially just growth which consider the demands of locales, differences among federal govt systems and municipal govt viewpoints frequently lead to the provision of a gap for the domination of localized, personal benefit. This is to be sure that the policy will be aligned with, so as to be sure that the organization will run sustainably without hassle. In the same vein, if tourism facility is going to be sustainable, it is important for all its stakeholders to have appropriate knowledge and understanding of the goals of sustainability. It has the chances to ensure that they do not engage in behaviors or activities capable of impairing established sustainability balance.

2.1.3 Sustainability in Agritourism

It is established that agritourism is essentially leisure trip to farms or a site with traces of agricultural activities from the past, for a specific period of time. Vaugeois *et al.,* (2017) noted that agritourism events might be inclusive of the following:

a) Exhibition of heritages of agriculture on agricultural land;
b) a visit to agricultural land, a lesson or exhibition across every or some of the agricultural operations carried out there, as well as any task related to any of the activities;
c) a compromise of the farmlands as a result of riding cart, sleigh and tractor on farmlands;
d) Events like exhibitions, cattle drives, and petting zoos which advertise or promote livestock on the farm, regardless of if the event also features livestock from different farmlands or otherwise;
e) Trial activities for dos carried out on farmlands;
f) harvesting celebrations as well as other season-based activities carried out on farms to advertise or promote agricultural produce made on farmlands;
g) Maze of corns done via maize plantation on the farmlands.

It is pertinent that sustainability should be added to the above activities. The escapade to sustainable development approach stem from indigenous players, particularly farm owners, whom are looking for "novel approaches" with doing things and evaluating the sustainability of various market economies (McGehee and Kyungmi, 2004). The onus

of introducing sustainability into agritourism basically rests on the farmer or agritourism owner in this context. It is the agritourism owner that will share the responsibility of sustainability with the staff and the community members where the agritourism business domiciles. Sustainability is a germane concept to be attributed to agritourism, because, it is important to maintain the agricultural essence of the tourism destination, otherwise, the purpose of referring to such site as an agritourism destination will be defeated in no time. Nguyen *et al.,* (2018) opined that premised on erstwhile researches, there is a conclusion that agritourism could establish a lot of advantages for agriculture, agritourists, as well as indigenous communal settings.

There had been various frameworks or typologies to ensure management or continuity of businesses especially tourism businesses, but the framework of sustainability is topical in contemporary times. Amidst various reachable templates of analysis, sustainability precisely appeals, premised on it being whole in terms of capturing the range of leisure and tourism's beneficial as well as negative influences on environments, societies, and the economies (Xu *et al.,* 2016). The tripod perspectives attributable to sustainable development are, economic, environmental and social; these dimensions must be factored in for the sustainability of agritourism. Mukhlis (2018) opined that sustainable development has basis on a tripod trajectory of social, economy, and environment in order to ensure social safety nets, protection of the environment, as well as growth of the economy.

Agritourism could have the consideration of being linked to the economy, society as well as the environments, which are major sustainability constituents (Muresan *et al.,* 2016). Similarly, Fanelli and Romagnoli (2020) noted that the farm amenities with an instructive farm could play a significant importance in rural sustainable development, including specific consequences on the surrounding, farm heritage, culinary and the development of the economy. It is pertinent to note that sustainability in agritourism can be in two categories; it could be sustainability of the agritourism venture and it could be sustainability of certain quarters like cultural, social, environmental and economic, consequent upon the agritourism venture in a particular destination. Sustainability of the agritourism venture is all about ensuring that the venture does not fail or close down abruptly. This is categorically possible as long as the tourists are ready to pay for the agritourism product, so that the revenue accrued from such purchase will be channeled to effective management of the agritourism venture.

With regards to financial implications, societal worth of agritourism could be deciphered via willingness of prospective customers in making payments for products (provision of service) (Shaken *et al.,* 2020). It ensures that the venture grows to become a heritage, as it will be passed down to the incoming generation. Chatterjee and Prasad (2019) noted that in agritourism, the founders of the venture usually intimate young ones with different phases of farming, that includes grain, fruit, vegetable, fishes, most importantly putting into consideration the fact that they lack exposure to the background activities plunged to creative thinking that could lead to producing bread that is being consumed everyday or milk being drank everyday. Once, the younger generations are in the know of the techniques of agritourism and the prospects of the businesses, then, the tendency is high that such generation might cherish and embrace such business.

Digitization makes it easy to pass the modus operandi of the agritourism business to the incoming generation and it further serves as a repository where agritourism information can be kept on a sustainable basis. Behera *et al.,* (2015) noted that e-agriculture adds good worth to farm owner's life as well as consumers premised on sustainable development via e-governance, weblinks for managing knowledge, virtual kiosks as well as regular servicing locations in the categories of local communities. This makes sustainability of the agritourism venture quite easy, because the knowledge adopted in the first place to preserve the business and ensure profitability can be easily accessible by new generation. In the same vein, digitization can be employed to view sustainable practices used for agritourism business operationalized on different regions of the globe and these operations whose adoption is essentially premised in local agritourism business.

In the same vein, Barbieri (2013) noted that it is hypothesized that agritourism will have a variety of financial, social-cultural, as well as environmental advantages which will principally help rural households and moreover favor nearby towns. Sathe and Randhave (2019) opined that Also, this type of tourism helps farm owners maintain their financial viability by providing them with financial assistance during periods with adversity within their fields. Although agritourism operations don't usually result in straightforward financial benefit from entry or event charges, as shown by research done in Missouri (US), producers believe it is crucial for the ongoing procedure of their farmlands as it leads to cross-marketing potential, as leisure engagements boost general

agricultural income and profits via selling of sundry agricultural produce (Barbieri and Tew, 2010).

The bottom-line is that it ensures consistent revenue generation. The generated revenue if well managed, is in turn an indicator that ensures sustainability of the agritourism business. Gkoumas (2019) noted that on the premise of surveys from indigenous tourism industry there is a perception which implies the fundamental goal of sustainable development was to ascertain durable financial gains, while also ascertaining the maximum exploration for assets in the environment. The maximum use of the environment can also in the other way round ensure continual or long-term revenue generation. This is because on the path of the agritourism investor revenue generation comes to the fore; as corroborated by Amir *et al.,* (2015) that opined that tourism is most of the time seen firstly and foremost as a source of income, even if it may also contradict the societal sustainability objectives for preserving environments and culture. Hence, revenue generated from agritourism venture can be plunged into sustaining the environmental and social arm of sustainability, likewise, the social arm and the environmental arm of sustainability can ensure long-term (sustainable) revenue generation, as long as it is well managed. It is notable that sustainable development vis-a-vis a diversified economy should consider the focal points as follows:

1) providing for fundamental individual necessities such as housing, job, nourishment, as well as wellness;
2) promoting fairness across and among generations;
3) enhancing technological as well as socially organized settings for expanding capability of environment in line with sustenance of individual's desires (Anyaehie and Areji, 2015)

It is important to note that once the above are considered, then it is certain that sustainability is inculcated into agritourism. Importance associated with sustainability is intrinsically in meeting human needs and create a sane environment for human beings to thrive well. Agritourism can definitely be used in achieving this feat, regardless if sustainability is only considered for the agritourism venture or it is considered from the angle of agritourism being a predictor of sustainable environment or society. This simply implies that agritourism in itself is a sustainable practice because it a system of achieving a single result, from two ends. Sathe and Randhave (2019) opined that agritourism

remains a sustainable tourism type that could attract development and not degrade tourism destination. Adamov *et al.,* (2020) opined the development of agritourism business could therefore be considered in the interest of promoting a countryside society that has everything it entails from a financial, societal, and cultural perspective.

The fact that agritourism could be the commercial hub that directly or indirectly puts food on the table of the locals in the environment where it domiciles, implies, that it has the capacity to economically empower such locals on a sustainable basis. Mandy *et al.,* (2019) opined that agritourism enhances domestic brands, adds benefit via straightforward advertising, as well as provokes financial activity for increasing gains connected to communities in which the industry is formed; which lowers the threshold associated with urbanization evident in individual's working as well as earning better through agrotourism; likewise, there is education of individual(s) and communities of agricultural practices while contributing to domestic economies. Once, the indigenes of a rural area have the certainty that they can be well employed in their rural domain, then, the chances that the rural-urban drift will significantly reduce is high.

Activities that result into agritourism enhances employment of a good number of household members, hence, leading to the sustained survival of rural families (Nikolić et al., 2016). Considering it from the angle of being a vehicle for diversifying local economies, the contribution of agro-tourism has resulted into reduced poverty and enhancement of the indigenous population's means of support (Tiraieyari and Hamzah, 2012). These afore-stated economic benefits have the capacity to sustain the commercial cum economic strength of the area where the agritourism destination is cited. Barbieri (2013) further noted that prior literature emphasize the viability of agritourism associated with agricultural engagements for achieving a range of business objectives as well as to improve financial success of the agricultural communities.

Khanal and Shrestha (2019) noted that tourism takes place in a specific area, with environment's condition capable of either benefiting or hurting tourist-related operations. Agritourism can destroy or build the environment where it domiciles, depending on how informed the agritourism owner or investor is. On a positive note, agritourism has the capacity to sustain the environment through the proper usage of the environment. Further, Valdivia *et al.,* (2014) have noted that agritourism is a climatic variation adaptability approach which might support countryside's lifestyles whilst

generating farm revenues. It is however, notable that if the environment where agritourism venture is situated is not well managed, it could sustainably impair and destroy such environment. Tiraieyari and Hamzah (2012) noted that nonetheless, the activities of agritourism can result to noise, pollution of community's environment, gradual destruction of naturally formed assets, cultural heritage's demolition as well as impact stable lands via transports, infrastructures, equipment.

Meanwhile, once, it is clearly understood that agritourism essentially revolves around the farm's environment, then all efforts will be channeled towards ensuring the sustainability of such environment. Because it comprises tourism activity with the goal of being acquainted to agricultural operations and also vacationing through an agriculture field, agritourism is inextricably linked to farm surroundings (Cigale *et al.,* 2013). Likewise, Nikolić, Arsenijević and Božić (2016) opined that agritourism as a component of rural tourism, exhibits a significant correlation with issues bordering on the environment. Matić, Djordjevic and Vujic (2019) noted that, additionally, not only innovations and modern ICT need to be applied, but also the idea of sustainable development in light of contemporary environmental situation serving as basis of development in the countryside tourist industry. Therefore, all efforts must be put in place that agritourism activities and reception of tourists do no lead to the deterioration of the environment.

Similarly, any deteriorating phase of the environment where agritourism business is sited should be salvaged. It is noteworthy that environmental qualities are capable of attracting visitors to tourism destinations. Farmlands in attractive places mostly concentrate their attractiveness to visitors on scenery, environmental integrity, quiet, as well as feeling in addition to these same agricultural divisions that develop their special appeals on the affiliation to livestock accessible on farmlands or encounters involving agricultural activities (Lu *et al.,* 2017). A well-kept, tidy, serene environment that is embellished with significant proportion of aesthetics design is definitely a beauty to behold. Mahaliyanaarachchi (2015) noted that agritourism can assist in improving the viability of the farm by jacking up the economic feasibilities via the same straightforward selling of crop and animal produces as well as various operational engagements and via the addition of good worth to terrains of different regions. The values added to the landscapes upon which agritourism attraction is cited, is a judicious

and sustainable use of such landscape. Meanwhile, it cannot be overemphasized that such environment must be kept clean as much as possible.

With regard to social trajectory associated with sustainability, agritourism owns the capacity of resulting into the facelift of the region vis-à-vis aesthetics. New and finely designed structures and buildings can be easily sited in the areas where the agritourism destination is located. For instance, an environment that has agritourism running properly should also have a sizeable number of accommodation facilities for the existing and prospective tourists. This implies that agritourism destinations can lead to the emergence of a good number of hospitality industries. It is no gain saying that it is standard practice that the hospitality industry should be embellished with aesthetics, depending on the category or rating that such aesthetic fits into. Shaken, Milka and Plokhikh (2020) opined that in terms of agritourism, potential Kazakh visitors' aspirations are mostly focused upon the level of service provided by lodgings, a subjective satisfactory degree of lodging, as well as the hygienic standards of the infrastructure supplying those lodgings.

In the light of the foregoing, it is expected of any accommodation facility that will have the stated facilities to also have a good architectural design that is capable of attracting people to itself. In the same vein, agritourism can lead to infrastructural development; infrastructures like transportation modes, electricity, portable water supply and so on. Moreover, the social arm of sustainable development has the capacity to foster better and intimate relationship between the rural and urban area. Jovanović and Ilić (2016) opined that precisely, in order for visitors to operate comfortably at the chosen site, technical supplies for water system, trash removal, communications, and electrical connection are required are being jacked up. It is notable that rural areas of Nigeria are replete with lack of these infrastructures, however, it is no gainsaying that developed agritourism can systematically facilitate the development of these facilities.

Gelashvili *et al.,* (2014) opined that the social inclination of sustainability enhances the building of rural-urban relationships in a bid to raise awareness of "sustainable" consumption. The fact that agritourism is a centre of attraction in the hinterland means that people from various walks of life in urbanized and peri-urban communities would visit the agritourism destination in the rural area for sundry reasons. During the process of visits of the urban dwellers to the rural areas, there will be exchange of a lot of material

items and values. To achieve the economic, societal and environments inclination of sustainable development, in terms of agritourism, education is key. The probability that tourists that are well informed or educated about agritourism will engage activities that will ensure the three domains of agritourism are stuck to, is high. Similarly, when indigenes and staff of the agritourism destination are well informed about agritourism, there is high chance that they will engage with activities that will conform to the domains of agritourism.

Against the background of the above paragraphs, sustainability in agritourism also entails steady and consistent supply of agritourism products to the tourist, irrespective of the seasonality of such agritourism product. Chen *et al.,* (2019) opined that as a result of high seasonality of tourism offerings, several beautiful regions have always had the difficulty of an influx of visitors relative to service capacity within the high season, and a significant quantity of amenities are vacant in the off-season. It is no gainsaying that there is seasonality in agricultural production, however, for its tourism inclination, the agricultural products should be made available as much as possible all year round. This will annihilate the huge presence of tourists on the farm at the season such products are available and the significant low presence of tourists on the farm at the season such products are not available. The huge presence of tourist on a farm seasonally leads to the overstretch and over usage of the farm facilities and it does not equate to sustainable revenue generation. However, it is notable that some agritourism operators or owners may not have the wherewithal to preserve and ensure steady availability of agritourism products, all year round, hence, they are obligated to intimate the prospective tourist with the specific agritourism products that will be available based on their seasonality.

In a bid to ensure the sustainability of agritourism, all barriers must be checked and appropriately dealt with. One of the barriers that could significantly impair the sustainability of or in agritourism, is lack of information or misinformation vis-à-vis agritourism. There must be concerted efforts in ensuring all shareholders get well intimated with the components of agritourism in their location, why such was set up, its importance and so on. Mandy *et al.,* (2019) noted that the barriers in agritourism include, language problem, insufficient financial support, communication problem, lack of trained tourist guide, and lack of business planning skills. Any or all of the foregoing can distort existing sustainability in any agritourism venture, and it can even as a matter of fact run the business aground, if not attended to as soon as possible. The agritourism

investor or owner is expected to create a feedback mechanism from the tourists, in a bid to ascertain that the staff of the organization are still very much discharging the competence and professionalism that is expected of them to tourist(s).

2.1.4 Authenticity of Agritourism

It may be contended that in order to allow a visitor to know true farming practices, participants should go "rear-stage" because frontal views are perceived as the phase, in which performers or music artists operate for the viewing public, as well as rear areas are perceived as the handling food region which the wider populace doesn't typically have the opportunity to witness (Sharon, *et al.,* 2010). Potentials affiliated with visitor's experience of original farming engagements can sometimes be rarified because authenticity of agritourism often times involves physical participation of the tourists in farming activities. There are situations that necessitates visitors not to directly participate in agricultural activities and they are only faced with staged agricultural practice or produce, yet they still leave the farm with a lingering experience of an insight into how the agricultural practice is exhibited on a proper farmland.

Similarly, this depicts the means for farming engagements set up on stage through farm owners, essentially for tourists' activities are conceived by visitors as making available an authentic view to agricultural activities (Pavić *et al.,* 2018). The experience of authentic agricultural activity is relatively dependent on the willingness and drive of the tourist in participating in the agricultural process or just having a sight of the agricultural production processes. In the real sense of it, it is expected of all tourists on agritourism to experience authenticity, because, to a very large extent agricultural activities are authentic and authenticity reflects in most agritourism's defining characteristics. Arroyo *et al.,* (2013) opined that agritourism's defining concepts evident in literature can have three classifications as follows:

1) descriptions connected with forms of system (agriculture, any farming system);

2) authentic nature of farming amenities or experiences, as well as,

3) forms of operations engaged (accommodation, instructive).

The word 'agriculture farmland', itself depicts authenticity and it is expected of all agritourism definition to have such word, otherwise, such definition is neither concise nor comprehensive enough. The primary or initial existing business of an agritourism

venture upon which tourism is built is agriculture. Hence, it is expected that agricultural business must have been well established or successful to a good extent before it could be diversified into tourism. Pavić *et al.,* (2018) noted that genuine agritourism occurs on wholly operational, functional farm in which farming operations predominate over tourist-related activities and where intimate, direct interaction with hosting family as well as its associates occurs in a natural farming setting. The major source of revenue in an agritourism destination is basically, the agricultural practice, which is definitely authentic; hence, it is expected that such practice is authentic and lives up to expectation, otherwise, it will not attract customers from various quarters that it is supposed to attract customers from.

As noted above there are majorly two dimensions to authenticity that could be related to agritourism. According to Sasu and Epuran (2016) they are front stage authenticity and back stage authenticity. Frontally staged authentic nature means the visitors direct engagement related to particular tourism attraction. They are aspects of the tourism attraction that the tourists can sight and maybe touch. However, back stage authenticity has to do with the authenticity of the composing component of the tourism attraction. This can only be deciphered by the custodian of the tourism attraction or when the attraction is subjected to careful examination by the tourist or visitor. Authenticity of agritourism, essentially helps the tourist to substantiate that such person has gotten value for his or her money spent, especially, in line with being satisfied via quality agricultural experience. When it comes to using originality in rural tourism, the goal would be to idealize and create a spotless impression of the community so that visitors enjoy a peaceful encounter (Sasu and Epuran, 2016).

Most times, there is going to be minimum of a small amount of staging when visitors get the chance to interact with real farming operations by the destination manager. Agritourism has various advantages and some of them are listed below:

i.   Agritourism offers privileges to visitors, so that they will be directly involved in farm procedures or otherwise, but, bottom line is that the tourist must learn new things while on the farmland. Kline *et al.,* (2016) opined that the maturity of agritourism through the provision of better diverse offers as well as advantages, has better acceptability with tourists, studies that pertains with agritourism is expected to advance beyond fanciful descriptions.

ii.   Likewise, agritourism affords tourists that are willing to buy farm produce and outputs the grace to be able to have a firsthand appraisal/look at the produce to be purchased. Therefore, the tourists would be able to make instantaneous decision if to either proceed with buying such produce or rather not to buy such produce.

iii.   Another major advantage of agritourism is that it is a form of advertizing farm produce and proceeds without advertisement on social media. Meanwhile, agritourism, could aid the mitigation of certain disadvantages of marketing meat produced, especially via inviting prospective clients to the farmland where agritourism is practiced, reduction of farm owners' desires of selling on the outer side of the farm, as well as having farmers revenue supplemented via making available agritourism produce and selling meat on the agritourism farm (Kline, Barbieri, and LaPan, 2016:644).

iv.   It avails tourists the opportunity to be able to decipher quality farm produce by learning the attributes that a farm produce must have before it could be referred to as qualitative. When such tourist returns to his/her base and needs to get farm produce (food items), he/she would be able to know the qualities to watch out for when determining a quality farm produce (food item).

v.   Agritourism essentially is a section of diverse revenue system on a farmland (Barbieri and Mahoney 2009). It particularly helps farmers to generate income from agricultural activities and tourism activities on the same farm land, thereby, helping the farmer to diversify their income sources. This is good because, peradventure there is glut of farm produce in the market and the farmer finds it difficult to make good sales, such farmer would be able to depend on income from agritourism for the time being. Sobieralski (2013) noted that financial influence by tourists could be categorized to straightforward as well as indirect impacts. Straightforward impacts constitute present spendings for foods, accommodation, leisure engagements and so on. Indirect impacts constitute enhanced financial engagements through straightforward payment. Indirect impacts constitute enhancement of financial engagements through straightforward payment.

Before tourism asset can be declared or pronounced authentic, it must have passed through certain process and that process is called authentication. Authentication is

essentially the process/procedure that validates a tourism asset as authentic. Xie (2011), as cited in Cohen and Cohen (2012) creates an advocacy for moving from authentic characteristics to a reiteration on the procedures of authenticity. Therefore, there could be a template for determining authentication; however, it is usually done from the experience that has been garnered by the tourist. A tourist has the right to judge from his/her opinion if a tourism attraction is still in its authentic form or if it had already been fabricated. Cohen and Cohen (2012) alluded that a tourist would desire to operationalize two varieties (coldness and hotness) associated with authenticity vis-à-vis accommodating for a variety of individual knowledge of authentic characteristics.

In the same vein, to substantiate the authenticity of agritourism according to Kim *et al.,* (2013) the following elements must be in existence:

a) A location with prosperity, with richness in terms of naturally as well as anthropological assets;

b) Persons with interests connected to the practice of agritourism;

c) Service offering to visitors: lodging as well as food;

d) Existing tangible resources (that is, transportation modes, road network, visitor components, different pleasure privileges) as well as suitable legal system in engaging agritourism activities.

However, it is also very important to ensure that all the facilities put in place in any agritourism destination are absolutely authentic because it has a ripple effect on making such agritourism destination an authentic one. Nikolić *et al.,* (2016) opined that in this regard, agritourism could be made up of a tourists' lodging facility different from a farm, for instance an accommodation or sundry assets with authenticity that has typical system of specific domain, in situations which farm owners do not participate in direct farming processes. Some developed agritourism destinations are also blessed with certain form of tourism (either cultural or natural). Such other forms of tourism might in some cases be the core tourism attraction or ancillary attraction. Whatever the case is, it is pertinent to affirm the other tourism forms and the agritourism components are authentic as much as possible. Nikolić *et al.,* (2016) further note that these characteristics can be a representation of nature-based aesthetics as well as socially inclined events, however, pertinent to note the emphasis on the authentic nature of these assets.

2.1.5 Concept of Rural Tourism and its relations to Agritourism

Both relatively big and big mechanized agricultural farms are normally cited in the rural areas. This is because it requires a large expanse of land to set up a mechanized farm. In the same vein, farms into animal husbandry are normally cited in the rural area because of the offensive stench that emanates from the droppings of the animals, bio-security reasons and security of the animals. A rural area in this regard is an area that has less population when compared to what is obtainable in the city. Likewise, it is a spatial spread that is found beyond the urban area. Hence, the reason there is a large expanse of unused land to be used for agritourism and sundry activities. Nistoreanu and Marinela (2011) cited in Olawuyi and Alabi (2018) opined that this is why hinterlands retains pristine tradition and spiritually based value, precisely, ethnography, social economy lifestyle and surroundings, that enables enhancement of rural tourism, with awesome prospects, having a straightforward connection with sundry tourism forms. It is worthy of note that in such area there are various heritage resources.

These heritage resources can be in the natural or cultural form. Both the heritage forms when well harnessed could be centre of attraction to people from far and near. Such heritage resources that could serve as attraction centres in the hinterlands could be referred to as forms of rural tourism. For instance, waterfalls, hills, wildlife, sand dunes, monuments, farms and so on, situated in the rural areas are all forms of rural tourism. Matić *et al.,* (2019) opined that the various forms of tourism connected to the rural area include, cultural tourism, culinary activities in agritourism, ecotourism, wine tourism, religious tourism, tourism of special interest like sporting engagements, pristine natural surroundings, indigenous handcraft, wellbeing and so on. Sasu and epuran (2016) noted that rural tourism is an umbrella concept covering other tourism forms for instance, agritourism, ethnicity-based tourism, ecotourism, culinary tourism as well as creative tourism. Mandy *et al.,* (2019) also noted that the different tourism types for rural tourism include ecotourism, cultural tourism as well as agricultural tourism.

Meanwhile, rural tourism might be pretty difficult to define, but inferences from the aforementioned components are helpful in defining rural tourism. Ray and Das (2016) described rural tourism as tourism type which exudes rurality, cultural inclination, heritage and arts with a rural location, hence, contributing valuably to the indigenous area of the host in terms of their commerce and social construct and availing

communications between the tourists and the host indigenes for a better satisfying tourism experience. Similarly, Nagaraju and Chandrashekara (2014) opined that rural tourism is a representative of sundry tourism forms with the exhibition of rurality, arts, cultural characteristics and heritage in hinterlands, thus, creating a benefit for indigenous communities in terms of their economy and societal values, likewise, the enablement of relationship between visitors and the locales for better tourism experience. Podgorica (2019) opined that rural tourism offers the following:

a) Accommodation in rural and country-side areas;
b) Content: activities and attractions;
c) Staying in camps, rural households or family boarding houses and agricultural husbandries on the basis of bed and breakfast;
d) Accommodation in a small country-side hotel, a tent, a tree house (glamping), a country house;
e) Contents that require the presence of farm animals;
f) Organization of outings by a small boat, cycling;
g) Culinary workshops and handicraft workshops;
h) Horse-back riding, fishing and other sports activities; swimming;
i) Organizing tours (visits to other villages along with consumption of coffee, tea, wine tasting, hiking trails);
j) Vicinity of archaeological sites and cultural centres;
k) Cultural theme and gastronomic trails.

The above is a compendium of what a typical rural tourism has to offer, which is inclusive of agritourism as revealed by a, b, c, d and e. The alignment of the above with agritourism is substantiated in the table below which shows what a typical agritourism has to offer tourists:

Table 2.2: Elements offered to tourist(s)

S/N	Components made available to visitors
1.	lodging facilities to pass the night
2.	Farmlands for educational purpose (for instance, diary cattle, sheep, dog, staged cattle drive, livestock feeds and pets)
3.	Rejoice over farming events, such as, rice planting
4.	Real time participation in farming activities ('pick-your-own' amenities, engagement of farm duties or assignments)
5.	Having a taste of meals prepared by oneself
6.	Selling of self-made food
7.	Having a taste of products from various indigenous farmlands
8.	Selling of products from various indigenous farmlands
9.	Riding of horses
10.	Provision of foods

Source: Ammirato and Felicetti (2014)

The main difference between agricultural tourism as well as sundry forms of countryside's tourism is the fact that agritourism is cited in farmlands or an area that has evidence of agricultural activities from the past. This makes it pertinent to note that agritourism is different from rural tourism; as the former is only a form of the later. Chen *et al.,* (2019) noted that for the differentiation of agricultural tourism from broad perception of countryside tourism makes it germane vis-à-vis agritourism being inclusive of dummy and original procedures, usually connected with precise terrains, as well as preserving communities. However, other forms of agritourism can be sited in farmlands or areas beyond farmland in the rural space.

For instance, there are farmlands that have hills with footprints and unique structures, capable of attracting visitors from far and near. It is pertinent that both agritourism and other tourism types in the hinterlands have the capacity to expose visitors to agrarian lifestyle, culture, atmosphere in the spirit of leisure trips. Agritourism and other types of diverse tourism inside rural areas are examples of unambiguous definitions pertaining to tourist stays in rural tourism, which seem to be significantly distinct depending on the level of uniqueness connected to the offering and the feasibility of partaking in agricultural operations (Streifeneder, 2016).

It is worthy of note that aside the fact that agricultural activities are the core attractions that draw tourists to rural areas for agritourism activities, crave for rural areas that is naturally accompanied with seemingly undisturbed and green environment, is also a serious predictor to visit agritourism destinations. But among the populace of the city, personal attachment as well as an urge for environment and agricultural experiences continues to remain as strong motivators and even appeared to have grown, which helped to fuel the reemergence for seeking agritourism engagements, growing request for agritourism in different parts, as well as evaluation for such particular form of tourism (Chen *et al.,* 2019). Some agritourists do not have the intent or are ready to participate in agricultural activities, but they only want to be in an environment that has rustic attributes in a bid to totally disengage themselves from the various work indulgence in the city.

2.1.6 The Concept of Agri-tourist

An agritourist is an individual that travels to an agricultural destination for leisure. The individual has natural cravings for agrarian environment and visits such environment. Vaugeoism *et al.,* (2017) noted that agri-tourists have categorization and description premised on three defining characters as follows: firstly, their source: the place the tourists left to another place; secondly, their demography: sex, revenue, age; thirdly, their desires: reason they would like experiencing agritourism, as well as the kinds of engagements that they enjoy. An agritourist is an individual whose love for rural life, especially, agriculture is an intrinsic value. Certain values enthuse a typical agritourist, and according to Podgorica (2019), things that interest agritourists are as follow:

1) Stunning scenery with pristine surroundings,
2) Possibilities to buy and enjoy foods with drinks made or cultivated domestically,
3) Secured environments with safety,
4) Possibilities of going outside to take part in recreational engagements,
5) Privileges of learning and experiencing novel ideas,
6) Safety from the metropolitan setting,
7) Relaxed as well as reduced stress,
8) Disconnection from online platforms,
9) Privileges of spending time with associates and relatives,
10) Celebrating uniquely, in terms of wellbeing and hygiene,
11) Probability of meeting different as well lovely individual(s),
12) Sharing knowledge on media platforms.

An agritourist seeks refuge in withdrawing to an agrarian destination, in a bid to temporarily disengage from the hustle and bustle of the urban environments. Trevor *et al.,* (2021) noted that an agritourist is someone that searches for experience-based life transforming holidays which is inclusive of culturally, naturally induced education. It is notable that some individuals who also goes to the farm for business purpose could also be referred to as agritourists, as long as they pass minimum of a night on the farm.

They are individuals willing to go and learn something new from the farm. In most cases agritourists are indigenes of areas that agritourism industry is situated, or, better still, they are nationals of the country in which agribusiness is sited. The cases of the preponderance of international agritourists in a particular agritourism destination is rare,

because, most of the workers, trainees, interns, clients and visitors to farms are the nationals of the country in which the agritourism attraction domiciles. Ismail and Chansawang (2018) opined that in 2015, indigenous agritourists made up 95.2% of the total agritourist population in Thailand, while foreign visitors made up 4.8%.

2.1.7 Information Systems

Information system is a system that is responsible for collecting, processing and storage of information of any kind. It does not matter the type and volume of information, information system has the capacity to manage them appropriately. Different definitions and concepts of information systems stems from the precise inclination of information system. For instance, Hardcastle, (2008) opined that in a bid to transform data into information tools which could be utilized in supporting forecast, plans, controlling, coordinating, judgement, as well as areas of operation inside a business entity, a business information system is made up of a number of interconnected parts which work together carrying on inputs, processes, outputs, storing, likewise, controlling activities. According to Heidarkhani *et al.,* (2013) a kind of business information system called a management information system takes internal data from an operational process mechanism and summarizes it into usable outputs which managers may utilize to carry out their obligations. They are systems that arrange, process and pro-rate information that are saved into them already. The method utilized to collect, analyze, store, and disseminate pertinent information in supporting management procedures of any business entity is the main focus of management information systems (MIS) (Ajayi *et al.,* 2007).

Information systems are particularly important to tourism and hospitality industry because information systems exhibit a major importance for execution and maintenance of various businesses as well as trades around the world. Al-Mamary, *et al.,* (2014:333) point that there is a reliance on contemporary information systems by individual(s) for communicating with other individual(s) via the usage of various handy gadgets (hardwares), media for instructing data (softwares), media for communicating (network), as well as saved information (information resources). So, since people rely on information system for their various activities, it is thus expected that people should also rely on using information system for accommodation as well as tourism sectors. Nowduri and Al-Dossary (2012) buttressed this point by indicating that all firms during

the period under study should be dependent upon information systems in keeping tabs on every organizational engagement, starting from plans associated with the organization, unto rendering of goods and services through production as well as pertinent phases.

Therefore, there is an expectation of relying on IS for making a choice of tourism destination, reservations, making travel itinerary, collating information for setting up a tourism destination and so on. Al-Mamary, *et al.,* (2014) noted that an information system can technically be described to be a group of interconnected units which can retrieve/obtain, processes, stores, and disseminate data for supporting steps involved in taking decisions, coordinating, likewise, controlling a business entity.

There are various types of information systems, and according to Al-Mamary *et al.,* (2014) they are:

   i.   Transaction Processing Systems,
  ii.   Process Control Systems, Management Information Systems,
 iii.   Enterprise Collaboration Systems,
 iv.   Decision Support Systems,
  v.   Executive Information Systems,
 vi.   Knowledge Management Systems,
 vii.   Strategic Information Systems,
viii.   Functional Business Systems (Information Systems from Functional Perspective),
 ix.   Sales and Marketing Information Systems,
  x.   Finance and Accounting Manufacturing and Production Information Systems,
 xi.   Information Systems, Human Resource Information Systems.

Each of these information systems has its peculiarity in usage and usability. Most of the functions of these information systems can be deciphered from their names, for instance; transaction processing systems are used to process various transactions in an organization, whereas process control information system is used to control various processes in an organizational setting. Likewise, management information system is indeed helpful and useful for all management activities in an organization. For instance, Hasan (2018) opined that the outlines of management information system (MIS) include the following:

a) Making information available for all the levels in the organization.

b) Provision of information for decision making.

c) Assistance in analyzing and solving problems.

d) It plays a germane function in the organization by the roles and procedures exhibited at all stages of the organization.

e) Assistance in setting planning policies for the organization.

There are specifically certain elements that aid the development and effectual usage of information systems within an organization precisely as obtainable in accommodation and tourism sectors. There are essentially twelve (12) specific items that represents the developmental elements of Information System, as coined via past empirically inclined researches, which reflects highly places reiteration of objects found in the 'organization technology environment' concept, that was created by Wang and Qualls (2007) and cited in DiPetro and Wang (2010).

When a system is sustainable there is tendency that development or maturity applies to such system over a period of time. Thus, the developmental or maturity elements for information system of a hotel are found in figure 2.1. From the figure it is believed that for information system to be sustained and eventually mature, such information system must be reliable and available to all and sundry any time that it is needed, it must also exhibit integrity and give room for good networking. These are essential attributes that sustains an Information system. It is also pertinent that it has large database for information storage and that can facilitate access to information at ease. The software and hardware renewal cycle must be flexible and easy.
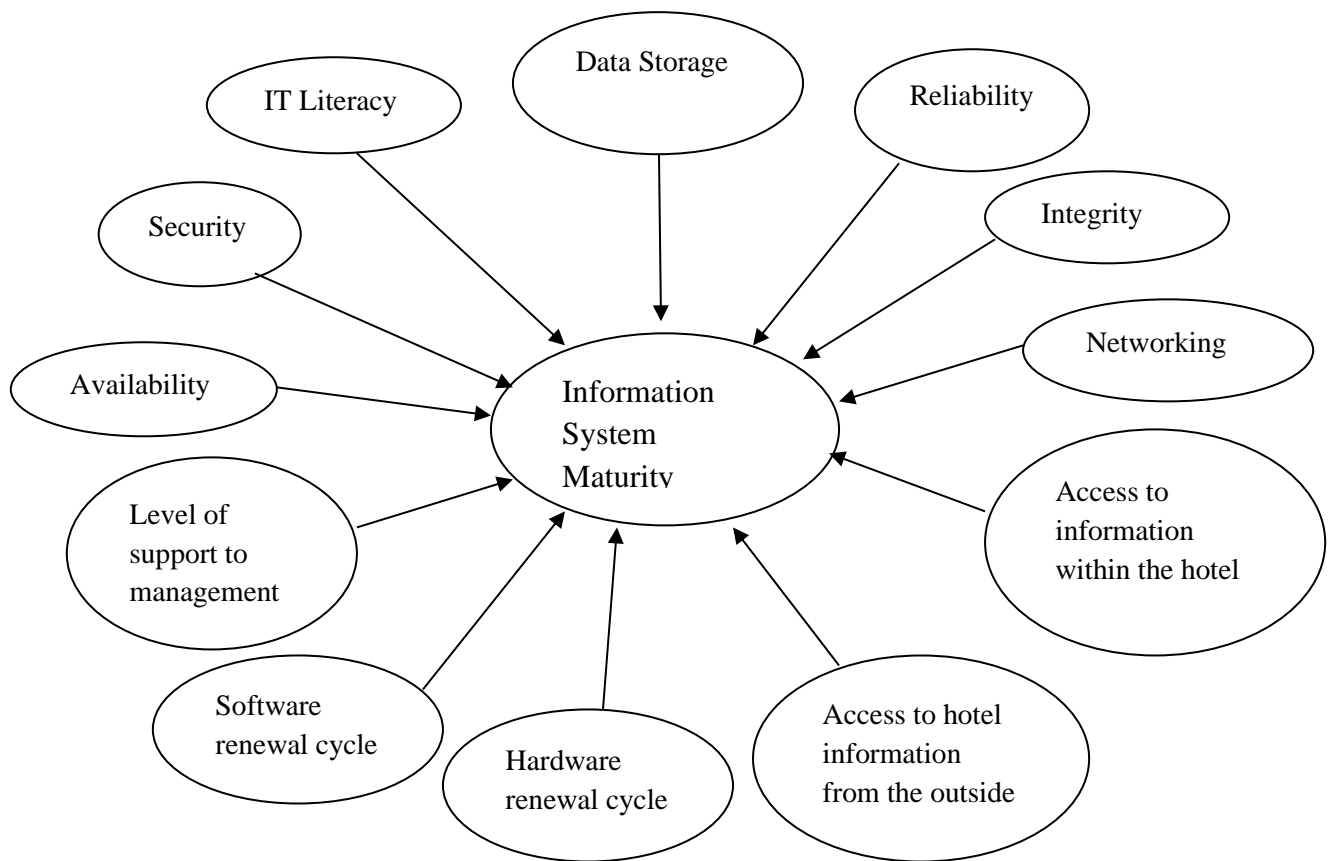
Figure 2.1: Items used to measure IS maturity. Source: (PraniČević, Alfirević and Štemberger, 2011)

As a matter of fact, information systems make communication between people less cumbersome, efficient and timely, as the sender of an information do no longer need to wait for several days before the sent information can get across to the supposed receiver at the other end of the world. Oke and Olawuyi (2016) pointed that, notably, during contemporary period, there is an easy communication of information from someone sending to the person receiving the information at another end in just a very short period through engagements of technologies. It is no doubt, that tourists and prospective tourists have been making use of Information System directly or indirectly for their travel plans.

Hosteltur, (2011) opined that contemporary researches revealed that individual(s) visited averagely twenty-three web portals prior to selecting tourist locations. This depicts that many individuals in the western world make good use of information system to choose their tourism destination because information system is well exploited for various uses in the developed nations. However, this may not be true and could be the other way round for a lot of people in the developing nations. Tourism industry's information systems in tourism is different from IS of sundry industries through its operations that is engaged in various parts of the world, likewise, it also exhibits diversity and high-level competitiveness, thus, it engages externally and internally driven data associated with every event, engagements as well as internally and externally driven economy, politics, culture, history and future trends (Al farajat *et al.,* 2011).

It is notable that information systems in tourism discipline, represents a repository of tourism information, likewise, it makes information available to people in need of it. In some cases, the various information that are not core tourism information but are helpful to tourists are also kept information system. This information ranges from the description of the tourism destination (either an overview or detailed) of the particular tourism destination or the information of the existing tourists to the information of the staff/workforce of the tourism destination. Akukwe and Odom (2014) noted that Geographical Information System (GIS) database will avail prospective visitors' knowledge and fortified data about the visitor's preferred tourism location, inclusive of the different cultural and natural attractions therein. In the same vein, geographic information about the proposed tourism destination can be easily retrieved by the prospective tourists.

The retrieved geographic information can be checked against the contemporary realities of security, environmental hazard, availability of electricity and so on, which will in turn help the prospective tourist in decision making. As a result of adaptable and capable nature of GIS via the internet, geographical information for operators of tours as well as means to various pertinent data can be easily remotely verified by the tourist (Akukwe and Odom, 2014). In the same vein certain information systems have been developed to make it easy for prospective tourists to make early reservations and payments, after being satisfied from the information of the tourism destination gotten via the GIS and other media. Malcienė and Skauronė (2019) noted that electronic payment system is scheduled to transfer funds through business engagements, monetary institutions, likewise, people using internet for products through Internet via electronic money (EasyPay), mobile payment systems (iPay) or international payment system (Web Money-transfer).

2.1.8 Concept of Agritourism

According to Tew and Barbieri (2012) academics have found it difficult to create a grading scheme that takes into account both the traits as well as the general concept of agritourism. So, different scholars have come up with different perceptions on agritourism but the indices that establish the nexus between these various perceptions are agribusiness, farm activities (direct or indirect) and leisure as shown in the figure below.
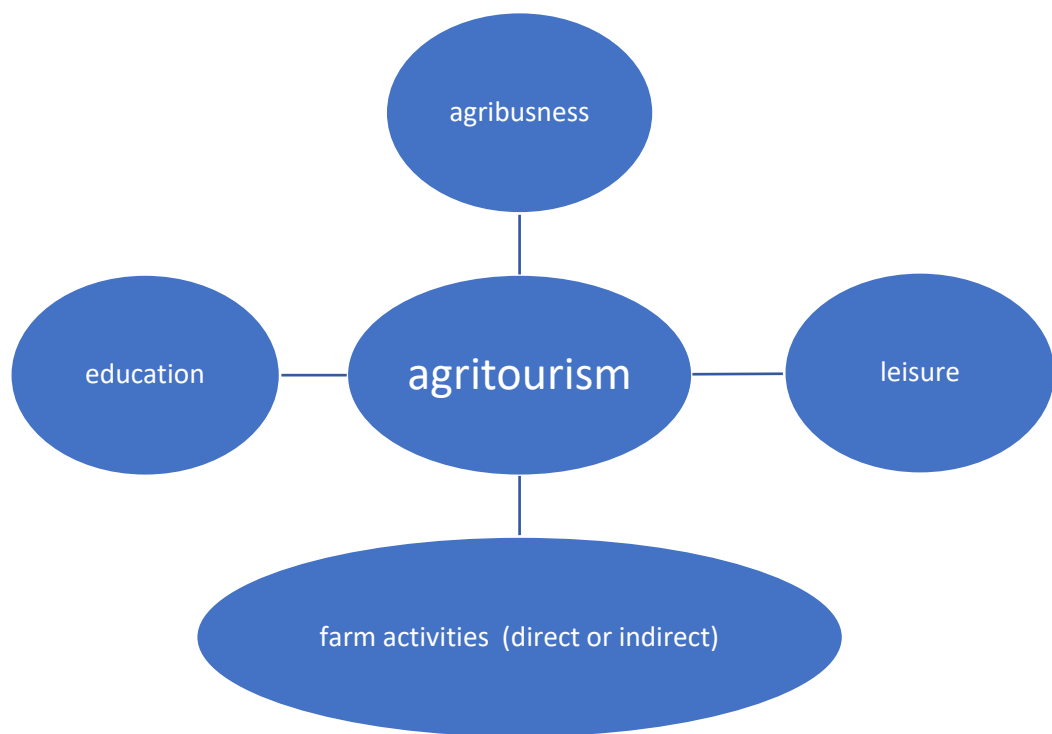
Figure 2.2: Various indices of Agritourism

Source: Tew and Barbieri (2012)

As Claudia *et al.* (2013) explain, the inconsistencies in the various defining concepts of agritourism about three concerns that can be discovered with in literature. which are highlighted below:

(1) the form of setting (for instance agricultural land, farm environment found anywhere);

(2) authentic nature of agricultural land's facilities/experiences; likewise,

(3) forms of activity engaged (for instance, lodging, education).

The settings of agritourism have various indices that range from size of the farm, the social and financial settings for agricultural land, farms' mechanization, the farmers' experiences, how well the farm has been synergized with tourism and the likes. According to Sofia *et al.,* (2016) there are two issues that are of importance with regards to the social economic settings of agritourism and they are:

(a) the size of operations of the businesses;

(b) and associated nodes of the businesses on various categories, likewise the size of additional worth of activities earned on an indigenous basis.

Phillip *et al.,* (2010) observed as an academic standpoint, that resolving discrepancies including attempting to create a common description of agritourism could assist to produce a better homogeneous study area, allowing for greater focused inputs in the long term. These various attempts at defining and explaining agritourism reveals that agritourism is a unique concept that various scholars want to profoundly understand and associate their research with. There are however, certain components that essentially serve as the buildup of Agritourism. These components include

   i.   the Farm,
  ii.   on farm accommodation or nearby lodging facilities, relaxation huts/sheds, location for learning about the overview of the farm and for questions and answers
 iii.   and parking spaces.

Agritourism has immense advantage to country-sides as well as stakeholders involved in leisure trips to farm settlements and locations. Fagioli *et al.,* (2014) noted that

agritourism serves as a catalyst promoting vital growth of tourism throughout country sides and encourages growth of rural areas, enabling the farmer's family to augment agricultural revenue through money from tourism-related operations. It has not only served as a driver for developing touristic activities in the country side, it has particularly served the purpose of driving enhancement and restructuring of the country sides. Rogerson and Rogerson (2014) noted that on the outer side of South Africa's major cities, tourism takes an equal important significance in subsidiary cities' attempts to diversify their economies and in the post-productivist rural areas that has accompanied restructuring of rural areas. Agritourism helps in generally developing agricultural activities such that it is done in a way that would be appealing and informative to the visitors.

To the farmer, the business aspect of agritourism is sacrosanct, so, the farmer packages his/her agricultural operation/venture in such a way that leaves long impressions on tourist minds. In this sense, agritourism has the potential to serve as a stimulus for boosting the value of such relevant industry to the nation's finances, that may be expanded by giving people the chance to live at or explore farmlands to take part in the gathering or harvests of farm produces (Ahmed and Jahan, 2013). Meanwhile, to the tourists the leisure and knowledge gained from agritourism is sacrosanct, which is why some of the tourists visit the farms with their recording or writing materials while some visit the farm with a mind of relaxation. So, when tourists that are naturally inclined to nature and rural environment embark on tourism to farm(s), they are being availed the opportunity to experience agricultural activities, both on-farm and off-farm operations, as the case may be. The typology in figure 1.2 describes tourists' activities on a functional farmland with respect to direct contact and indirect contact with farming activities.
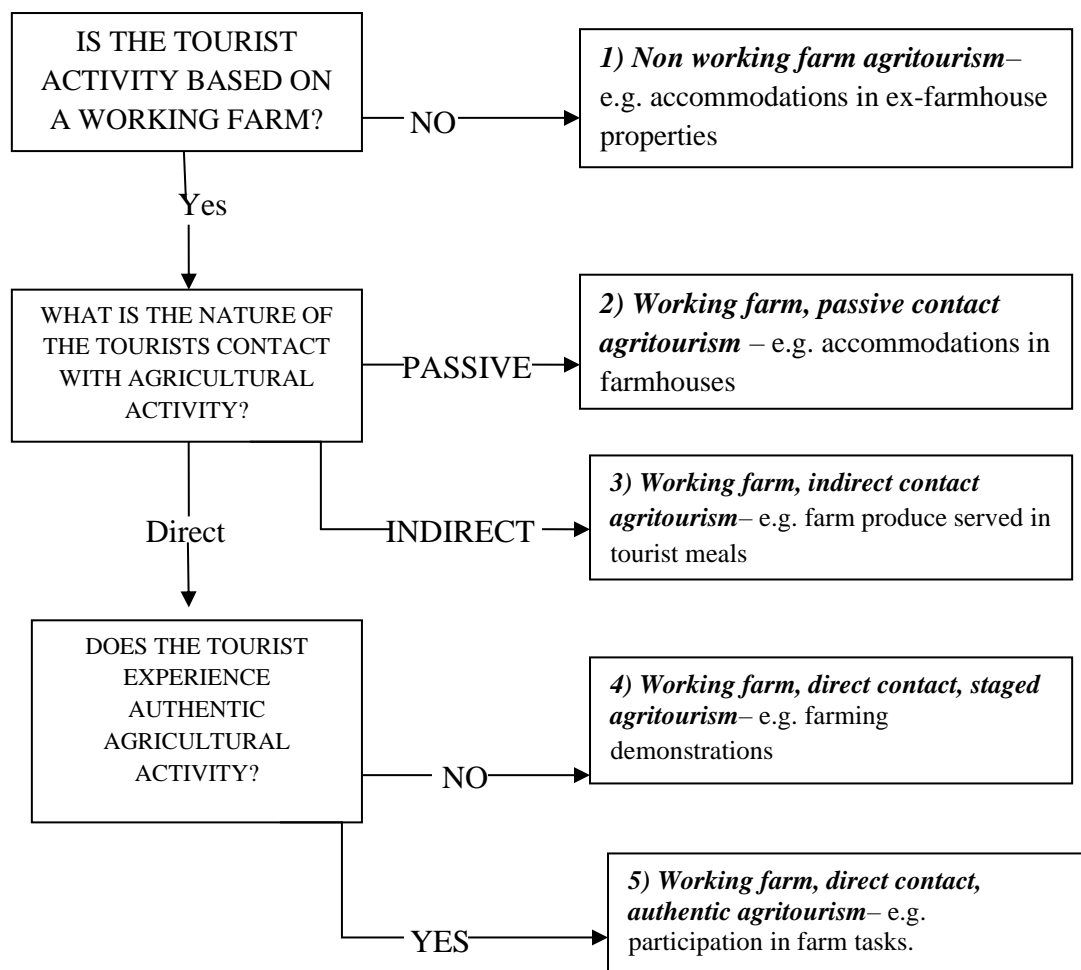
Figure 2.3: Agritourism Typology

(Source: Sharon, Colin and Kirsty, 2010)

Sharon *et al.,* (2010) further opined that the typology above serve three pertinent importance:

a) the clarification and classification of the defining concepts of agritourism presently existing in literature;

b) serve a fundamental background for empirical studies in the future;

c) the provision of a prior template for more refinement of the concept of agritourism in connection to broader rural debates.

During the 1960's and the 1970's there was a significant alteration to agritourism that led to engagements like, aiding farmers while farmers harvest, engage in stable work, horse ride and how animals were groomed (Khairabadi *et al.,* 2020). Agritourism, then became visitors' active engagement with farm activities, either to help farmers or to learn new agricultural procedures. Trevor *et al.,* (2021) pointed out that different forms of the experiences associated with agritourism and produces that are made available to visitors in contemporary time is inclusive of field to plate meals, cookery classes taking place on the farm, harvest of products from inherited gardens, getting educated or informed about seeds that are planted domestically, going to visit a farm where animal husbandry is being practiced, and so on.

Farm engagements that like observation and participation in agricultural activities, staying one or two nights on the farmland and getting educated about agricultural practices and its produce has led to a big agritourism community (Khairabadi *et al.,* 2020). The experiences and active tourist enthusiast involvement in farming engagements, thus, necessitates farmers to expand his/her farm operations and spaces. Trevor *et al.,* (2021) opined that agricultural tourism requires all seriousness and it is an organizational developing trajectory that requires a lot of time, meanwhile, it does not take care of all the pitfalls associated with agricultural and tourism engagements in the hinterlands.

There is a general agreement that the concept of agritourism emanated from Italy. Grillini *et al.,* (2022) stated that the concept of farm visit is not novel in the United States of America, however, agritourism was adopted from Italian lexis 'agriturismo' during late '80s. It has become a worldwide adopted word, and it is also being engaged and practiced in various World's regions. It has made it possible to protect farming heritage and pass the knowledge and practices associated such heritage to other people that are

willing to know them. Król *et al.,* (2019) pointed out that in addition, agritourism aids the maintenance of lifestyles associated with rural areas and tradition, thus, availing visitors with non-physical advantages which are free. Factual assertions that the trajectory of agritourism gradually spreads through different regions of the World implies that it must have its challenges. Kolodinsky *et al.,* (2020) noted that in recent time the COVID pandemic created increased challenges for operators of agritourism because visitors make demand for indigenous meals. The variations have exerted a lot of pressure on the operators of agritourism that has experienced the requests from those that consumer the local meals and those that consume agritourism experiences.

2.1.9 Agritourism and Information Systems

Essentially, software applications are created for business activities or enterprises to make business interactions easier and to better put businesses at a vantage of position of visibility. People in various World's regions can easily connect with a business enterprise in another part of the world. Software applications can be used to promote and advertise agritourism businesses. It is however, notable that after the creation of a software application, the internet must be engaged for full operations of the software application. Although Dreamweaver is a widely used application for building and keeping up websites, you might prefer a website developer to design and set up your original site if there is no time to learn about its functions (George and Rilla, 2011). Furthermore, the internet is used during the creation of software applications.

The adaptability of the Website as well as its capacity to access various consumer markets let tourist firms create unique advertising messages for each business and boost financial gains (Buhalis and Law, 2008). This can be accomplished through promoting the use of the Internet for instance, promoting the websites of thermal tourism attractions, which shows that the Internet has proven to be a successful medium for promoting, marketing, and delivering commodities as well as providing information services (Avcikurt and Ibrahim, 2011). In contemporary linked world, internet is a substantive knowledge and data channel and medium for millions of individuals, as record time directions and newer forms of communication have been made possible by the web and the Internet (Untari and Satria, 2019).

Jasiński (2012) highlighted the privileges attributable to promoting agritourism via the web, from the prism of the investors or managers of agritourism as follows:

- Privilege of gaining different clients.
- Privilege of expanding tourism's knowledge-base.
- Privilege of comparing what they offer with what competitors offer.
- Privilege of gaining competitive advantages via the enrichment of the farms' offerings with novel items for instance, movies to promote farmlands.
- Privilege of improving businesses via usage of virtual lodging platforms.

The above highlights the privileges of using web portal for agritourism, especially by the farm owners. Meanwhile, the advantages of promoting agritourism through the internet is not limited to the farmers alone, but tourists, community residents and other groups of people can also benefit immensely from it. Jasiński (2012) further highlighted the privileges attributable to promoting agritourism via the web, from the prism of the tourists, and they are as follows;

- Privilege of acquiring fundamental understanding of tourism.
- Privilege of saving time via the usage of virtual lodging facilities.
- Privilege of learning the views of visitors on the farmland.
- Privilege of obtaining pertinent as well as updated data of specific farmlands
- Privilege of using creative IT solution.

In the light of the above, the promotion and advantages of agritourism thought web applications can only be achievable with the aid of the internet. This is premised on the fact that all software application needs the internet to work optimally. Karol (2017) pointed out that the benefits associated to the internet has been identified through agritourism farmlands, with farmers increasing usage of the internet in promoting their available services.

Beldona and Cai (2006) opined observed that increasing overall value of websites and using the Web better effectively could aid in the growth of tourism in remote regions. The fact that internet has helped many businesses positively implies that it may also be used for agritourism, especially marketing of agritourism to different regions and quarters. In a different article, the author described the goals and methods of marketing, provided information sources on the selection of Podlaskie Vivodeship agritourism farmlands that tourists choose, and assessed the level of architecture of these farms' websites (Krzyżanowska and Wojtkowski 2012). Ammirato (2010) pointed out that

similarly, population of individuals into tour operating, that also use web-portals to market and sell their products is expanding continuously.

In climes where agritourism has been significantly developed, the internet has been engaged for it. Although, the usage of the internet by prospective and existing customers may not be impressive enough. Karol (2017) noted that the web-portals of agri - tourism farms in the Visegrad Group counties are distinguished via low global confidence index values and fairly low functionality; the impression as well as assessment of the webportals are influenced by the webportal's speed, hence, it may directly affect the customer's decision to watch and return to it. Ammirato (2010) noted that the findings show that Calabrian agritourist farmlands' usage of website pages as a marketing or sales device lacked a sound thoughtful plan to electronic commerce.

2.2 Review of Theoretical Issues

Different scholars have employed varied theories in their studies and research on the relationship between information systems and agritourism in various regions of the globe. These theories range from Diffusion of Innovation (DOI) theory, Unified Theory of Acceptance and Use of Technology (UTAUT), constructivist theory of learning, Technological Acceptance Model, Heckscher-Ohlin theory, Ricardian theory, Agglomeratio theory to social cognitive theory. The theories that are information system inclined revealed the flexibility and readiness of people to adopt information systems for sundry tasks. Some of them also revealed the innovativeness behind the creation of information systems. Similarly, agritourism inclined theories explained the sustainability of agritourism venture and how agritourism businesses could lead to sustainable environment and economy.

Lim (2002) adopted activity theory and concentric theoretical model in a proposal on the application of ICT in schools. Ammirato (2007) carried out a study on "Agritourism as well as importance of e-Commerce in evolution of Agribusiness: Evidence from a Regional Survey"; the study employed Systems theory that was developed by Hegel in the 19th century. Schmitt (2010) examined agritourism via extra revenue source to strategies of income as well as enhancement of the hinterland. The study used the approach of creativity of action as combined with Jan Douwe van der Ploeg's theory of "the new peasantries". Obono (2013) examined a template of conditions that affect adopting information communication technology in physical education. The study

applied the theory of planned behavior and technology acceptance model. Tsephe and Obono (2013) examined a theoretical framework for rural tourism motivation factors. The study explored the Sunlust and Wanderlust Theory, the push and pull theory, the personal and interpersonal theory, the physical, status and prestige, cultural and impersonal motivation Theory and the inner-directed and outer-directed theory.

Umunnakwe and Sello's (2014) "efficient usage of Information and Communication Technology for understudying English language: The case of University of Botswana undergraduate students" applied the constructivist theory of learning as theory of the research. Alkhawaldeh, Olimat and Al-Rousan (2015) examined a mixed theory for integrating ICT in early year education using the sociocultural theory and ecological systems theory. Bwana et al., (2015) also examined Agritourism and its Potential Socio-Economic Impacts in Kisumu County, the study also employed Systems theory that was developed by Hegel in the 19th century. Ukabuilu and Igbojekwe (2015) examined engagement of tourism financial growth theories for attaining aims of developing tourism destinations in Cross River State, Nigeria. The research used development theories vis-à-vis theory of modernization and theory of dependency, theory of world system and theory of globalization.

Mpiti and De la Harpe (2016) examined factors affecting agritourism growth in rural communities of Lesotho. The theoretical framework included the Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM) (Althunibat, Zain and Sahari 2011) and the Information Innovation Adoption model created by Alvarez and Nuthall in 2006. Ntshakala and Söllner, Hoffmann and Leimeister (2016) carried out a study titled 'Why different trust relationships matter for information systems users'. The study adopted a network of trust in information systems theory. The theory has two parties and they are the user and the network itself. Dwivedi *et al.'s* (2017) "re-examining the unified theory of acceptance and use of technology (UTAUT): towards a revised theoretical model" adopted the Alternative Theories on IS/IT Acceptance and Use, and Unified Theory of Acceptance and Use of Technology in the interpretation of their data.

Genovese (2017) carried out a study titled 'could livestock farms as well as tourism be combined in hilly areas? A new business model for sustainability'. The research examined PLSFS that can be referred to grazing, pastoral, agro-pastoral or agro-silvo-pastoral systems that make use of lower yielding forage areas. Likewise, sustainable

business model was used as a theoretical framework. Freeman and Mubichi (2017) carried out a study on ICT use by smallholder farmers in rural Mozambique: a case study of two villages in central Mozambique and used the Diffusion of Innovation (DOI) theory as the theoretical framework.

Jenkins *et al.,* (2018) explored social cognitive theory for creating novel insights with respect to organizational data education, managing data, as well as connection amongst data characteristics and innovative procedures. Wagaw and Mulugeta (2018) examined fusion of information communication technology with tourism to enhance advertisement of Ethiopian tourism destinations. The study used diffusion of innovation (DOI) theory that was created by Rogers in 1995 and Task Technology Fit Theory (TTF) that was developed by Goodhue and Thompson in 1995. Pimonratanakan (2019) examined acceptance of Information Technology that affects comfortability associated with Agritourism Services in Chumphon Province, Thailand. The study used technology acceptance model. Perceived Ease of Use (PEOU) and Perceived Usefulness are the major variables that actually impact users' reception of technologies or innovations (PU). Van Sandt *et al.,* (2019) carried out a research titled "place-conditioned predictors as well as performances attributable to farm-level entrepreneurship: A spatial interaction model of Agritourism in the United States". The authors adopted three theories for their study which are Heckscher-Ohlin theory, Ricardian theory and Agglomeration theory.

It is notable from the theoretical review that authors that worked on ICT especially information systems component used theoretical frameworks that explains or justifies the usage of information systems in line with the aims of their researches. However, authors that worked on agritourism used theoretical frameworks in line with the motivation and drive of prospective tourist(s) to visit agritourism locations.

2.3 Review of Empirical Issues

Various researchers have carried out different studies on information systems. Likewise, many scholars have worked on agritourism. The aims of their studies, various frameworks they used and the result of their findings are quite germane to this study, thus they are reviewed below.

Praničević *et al.,* (2011) analyzed the sophistication of the information system and the efficiency of hospitality businesses in Croatia. The research adopted inferential statistics

in showing relationships between the respective variables and indicators. The study therefore concluded that the maturity of the information system was linked to specific uneconomic sequences in terms of performances of hotels, including the performances measurement model (which is financial sequence performances as well as visitors' connections via the internet). In their study, Kaloxylos *et al.,* (2012) looked at 'farm management systems and the Future Internet era'. To establish the creation of architectural designs, an analysis of a big sequence of criteria that has end users' definition as well as the performance of solution supplies.

The financial advantages of agro-tourism were examined by Schilling *et al.,* (2012), citing the New Jersey case. The study is quantitative, as data were retrieved with the aid of questionnaire. Research instrument was sent to randomly sampled farmlands by the New Jersey Field Office of the National Agricultural Statistics Service between April and July 2007. The retrieved data was descriptively and inferentially analysed. The research showed conclusively that the financial importance of agro-tourism does not accrue on an equal basis to all groups of farm scale, indicating that within farm business models, these practices meet varying aims or motives. Similarly, it also indicates that a large number of farmers in New Jersey give leisure trips to farm free of charge to tourists. Wei (2012) evaluated information structures focused on operational effects to assess tourism service efficiency. The research was empirical in nature. Overall, the study results found system efficiency, knowledge quality, and service quality had important direct or indirect operational impacts on tourism businesses.

Assessing the viability of agritourism in the US: a contrast between agritourism and other agricultural entrepreneurial projects was investigated by Barbieri (2013). It is a quantitative-based research as data were retrieved with questionnaires, as well as, the retrieved data analyzed descriptively and inferentially. Data from 873 US farms with a diversified market portfolio showed that farmers approach sustainability to a greater degree than their peers, providing their farms, households and even society with numerous natural, sociocultural and economic benefits. There is a suggestion from the findings that agritourism in comparison with different agricultural businesses, has better successes in terms of enhancing agricultural revenues, employment creation, likewise, culture-based heritage.

Hanif *et al.,* (2013) investigated the efficacy of the revolutionary knowledge system for marketing, which was basically an observational study of Pakistan's tourism industry. The research conclusively revealed that the idea of information system efficiency was assigned appropriate significance for being productive, efficient, flexible, controllable, internally driven communication and data handling to attain successes and enhancement of advertising and consumer-based decision-making format for Pakistan's tourism sector.

Joo *et al.,* (2013) carried out a study titled 'farmer's participation in agritourism: does it affect the Bottom line?'. The research is quantitative in nature. Data for the study was retrieved from USDA Agricultural Resource Management Survey for 2006, 2007 and 2008. The obtained information was subjected to descriptive and inferential analysis. The study shows that agritourism helps to increase the economic well-being of small-scale operators which also enhances their sustainability. This implies that agritourism improves the worth of indigenous assets and preserves indigenous resources while, at the same time leading to the generation of awareness for indigenous products and demand for onsite casual and permanent labour. Walia and Kaur (2013) have published a succinct analysis of a report entitled Integrated Farming System and Sustainable Agricultural Environment Ecofriendly Approach. It was a quantitative-research that showed that Integrated Farming System is also an eco-friendly approach in which waste of one enterprise automatically becomes the input of another enterprise(s), thus making efficient use of resources that help in improving the soil health, weed and pest control, increasing water use efficiency and maintaining water quality.

A research titled "Designing and developing a GIS database for tourism in Nigeria: the case of Anambra State" was carried out by Akukwe and Odum (2014). It is a qualitative study because primary data were retrieved from the co-ordinates for the sampled tourism site as well as a few tourism assets in Anambra State were retrieved via ground truthing with GPS 4.2.2; while, secondary data retrieved from journals and literatures. It was concluded that the GIS is very well recommended as a tourism application on the basis that it is simple and fast to use it to identify tourist destinations and facilities with information, so that a detailed map of what they have in each province, local government area and town can be used for Nigeria. Husemann and Novković (2014) examined the information system for farm management using a multifunctional German farm as a case study. The research was quantitative in nature and it developed a farm management

information system from the generally accepted farm management information system. Their analysis clarified that the basic information systems for farm management have an appropriate general framework and establish basic functionalities for concrete information systems for farm management. However, a lot of changes have to be made in the case of an application on actual farms in order to show all output processes completely.

In South Africa, Rogerson and Rogerson (2014) have explored agro-tourism and local economic growth. Their research showed conclusively that the suggestion of foreign research on entrepreneurs and especially farmers turning to agritourism to ensure revenue diversification underlines the need to develop business skills, entrepreneurship capacities and enterprise networking. Therefore, training programmes as well as publicizing of indigenous financial enhancement done by stakeholders is required for catalyzing and supporting policy to address deficient skills for developing products and driving small tourism organizations. A research entitled effects of information technology in the agriculture sector was carried out by Sami and Sayyed (2014). The study employed qualitative methods to elicit appropriate data. The study shows that intermittent developments in the information technology discipline make it possible for rural India to establish and disseminate the necessary electronic services.

Soni *et al.,* (2014) performed a comparative analysis that reviewed the integrated farming method in detail. Integrated farming system makes available rare privileges to maintain and extend biological diversity, where there is a reiteration of the system, there is optimization of usage of resources instead of maximizing each of the system's units. Their analysis found that farmers have already been experimenting with the development of locally adapted technologies and inventions. An advanced farming method that increases soil fertility and soil physical structure from suitable crop rotation and the use of cover crops and organic compost is part of the innovation. In integrated farming systems, the use of crop residues and livestock waste generates less dependency on external inputs such as fertilizers, agrochemicals, feed, electricity, and so on and so on. The empirically reviewed research within the framework of the Integrated Farming Method practically shows that this type of farming system is fundamentally valuable because it really limits farm waste at the very least while allowing farmers to minimize risks and restrict farm investment. So, in a sense, it can be assumed that it decreases the investment of farmers and increases the income production of farmers.

Valdiva and Barbieri (2014) conducted an agro-tourism analysis using Andean Altiplano as a case study to act as a sustainable climate change adaptation approach. The study revealed that agritourism poses as a short-term adaptation strategy that will allow Ancoraime families for investing in long-term stabilization of their livelihoods by capitalizing on their naturally, agriculturally, culturally and socially inclined assets. It further revealed that agritourism is a representative of market system of incentivizing and rewarding farm owners for protecting their landscapes as well as environments via the adoption, maintenance or emboldening inherited farm activities which conserve crop diversification and development of organically induced materials, that can also lead to sequestrating carbon as well the capture of water.

In their report on "agritourism: Potential socio-economic impact in Kisumu County, Kenya," Bwana *et al.,* (2015), a mixed approach analysis. They obtained qualitatively as well as quantitatively based data. Data qualitatively collected contains survey of household via administering questionnaire, however, data qualitatively collected was done via interview method as well as FGDs. Respondents are essentially farm owners as well as key informants. The study indicates that possible social economic influence of Kisumu County agro-tourism are broad. The opportunity uncovered is inclusive of prospect for creating jobs, revenue production and food security prospects for local farmers, strengthened entrepreneurship abilities as well diversities and rarity of indigenous food crops in the community. Using a case study of small and medium-sized enterprises (SMEs) in Harare, Mhizha *et al.,* (2015) explored the adoption of social media channels in tourism and hospitality marketing. The research was quantitative in nature because the analysis of the result was descriptive. The outcome conclusively demonstrated that the use of social media channels to advertise their goods and services on a general basis (although much needs to be done to ensure that they benefit maximally from this move) is well accepted in the field of case study.

Udoh (2015) published a report entitled 'An Exploratory Study' Measuring the Potential of Agri-tourism Growth in Rural Nigeria. The study is qualitative in nature. It is evident from the research that there are numerous agricultural outputs which demand more customers in the region. Thus, if agri-tourism is created, different farmers would become better focused on the diversification of agricultural activities for including produce and service such as flower, fishes, pure honey, agricultural craft, fruit, vegetable as well as selling livestocks. A research entitled 'Influence of success expectancy (PE) on the

intention of commercial farmers to use mobile-based communication technologies (MBCTs) for the dissemination of agricultural market knowledge in Uganda' was carried out by Engotoit *et al.,* (2016). A cross-sectional field survey research design was engaged for the research, therefore quantitatively inclined research methods (self-administered questionnaires) were engaged while collecting data. The study showed conclusively a substantial positive relationship between the independent variables of PE and the dependent variable behavioral intentions of using an indicator that PE has the potential to influence the behavioral intention of commercial farmers to follow and use MBCTs for access and dissemination of agricultural knowledge.

The effects of agritourism on local growth in small islands were analyzed by Karampela *et al.,* (2016). The study revealed that a good lab for examining effects of agritourism are islands. The philosophical framework presented in their work is that agritourism can be elevated from a small-scale and farmer-oriented operation to a larger-scale activity comprising largely different practitioners (inclusive of farm owners as well as tourism experts) combining multiple assets and fusion of the knowledge of agricultural tourism with various forms of tourism. Their study further revealed that the Islands have gained tremendously via increased literature of agro-tourism as well as diversified concepts. A research titled 'Why various confidence relationships matter for consumers of information systems' was carried out by Söllner *et al.,* (2016). The study adopted a free simulation experiment (moderated by the first author). In conclusion, the study contributes to IS trust analysis by offering methodological support for previous research decision-making to concentrate on understanding the effect and development of consumer confidence in information systems, because, majorly it drives usage of information systems.

A research titled 'ICT use of smallholder farmers in rural Mozambique: A case study of two villages in central Mozambique' was carried out by Freeman and Mubichi (2017). This is a qualitative study based on a deductive content analysis and case study approach. The present usage of ICTs shows different means through which smallholder farmers might be beneficial from them, particularly mobile phones. The outcome indicates the willingness of farmers to use ICTs for obtaining agriculture information. While, radio is a substantive source of agricultural knowledge, the proliferation and growing comfort of mobile phones technologically is a significant factor to recognize. This study identified a practical framework for FMS that examines advanced features of the future

Internet. Apart from promoting traditional farming modes, its basic features include the smooth assistance and incorporation of multiple partners and resources, the interconnection with networked facilities and implementation of autonomous and cognitive indices into the general management processes. 'ICT application in agriculture: prospects and problems in developed countries' was investigated by Saidu *et al.,* (2017). It is a qualitative research because literatures were reviewed and inferences were drawn from them. This study concluded that the potential benefits of ICT include agricultural research, enhancement of business operation, sharing of relevant knowledge, profit gain; global networking of agricultural activities; performing research; and strategizing economic development for self-reliance.

Barbieri *et al.,* (2019) examined the perceived advantages of agritourism-providing agricultural property. The research has a comparison of socio-culturally, environmentally, as well as economically inclined resources that both forms of land generate and describe socio-economic activity, lifestyle behavior, and predictors correlated with those expectations associated with previous visits. The study showed that the respondents considered that, with little statistical disparities between both, farmers and forest results into many socio-culturally, environmentally, and economically inclined resources to the people. It further showed that social, economy and lifestyle predictors are related in various ways to the expectations of service offered by farmlands as well as forest areas by people.

In protected scenic areas in the mountain regions of China and Europe, Chen *et al.,* (2019) explored the complementary impact of agritourism as well as tourism site labels. Literatures were basically reviewed and inferences were made from them. The study thus revealed that while China's management structure differs from that of Europe, it is necessary to create community efforts to cultivate unique local assets for the growth of agro-tourism in order to construct strategies for TDI and agro-tourism choices. Irrespective of its reliance on the source, implementing sequences connects with relevant entities, and it is feasible to transfer general lessons from regional activities to preserved scenic areas.

Creselle *et al.,* (2019) have researched the advantages of agritourism in the province of Batangas. Descriptive research design and stratified random sampling was used for this study. The participants of the study were the owners and employees of the most visited

farms in the province of Batangas with the total population of 113. Data were retrieved from the participants with the aid of questionnaire. Collected data was subjected to descriptive and inferential analysis. This research conclusively revealed that farm owners of the farms in Batangas province agreed on agritourism being advantageous economically, considering the fact that provides extra revenue, environmentally, it would not lead to the destruction of nature, likewise, socially, it creates connection amongst tourists and farm owners through the education of tourists. Khanal and Shrestha (2019) 'examined Agro-tourism: prospects, importance, destinations and challenges in Nepal'. It is a qualitative research as pieces of literature collected from different published journal articles, Government institutes and other relevant reports were studied and the major findings were summarized. The study reveals that basic revenue sources for a nation caught in between big China and India is tourism. Meanwhile, the significant form of tourism is not moving successfully and there is a need for an alternative. A major prospective alternative could is the enhancement of agritourism.

Khasawneh (2019) published a report entitled Barriers to the Usage of Tourist Information Systems: The Experience of Tourism Sector Staff. The research is quantitative in nature. The study shows conclusively that the implementation of barriers to tourist information systems from the point of view of tourism sector staff is strong. This may be because the Tourist Information Systems implementation requires the provision of management's environment and trained personnel capable of integrating such a system in the tourism sector. Khatri (2019) published a thesis entitled 'Information Technology in the Tourism and Hospitality Industry: A Analysis of Publications over Ten Years.' The study reviews the former studies connected to the information technology (IT) in tourism and hospitality industry with the goal of examining the recent changes and applications of IT in the industry. The study showed that IT is most widely explored in the tourism and hospitality industry to satisfy knowledge requirements, to study behaviour and efficiency, to control the operational process and the process of innovation.

Mahaliyanaarachchi *et al.,* (2019) explored agro-tourism as an alternative for sustainable climate change adaptation. This research was done in low country dry zone (LCDZ) and the upcountry wet zone (UPWZ) of Sri Lanka. Survey was engaged using unstructured as well as structured interview for data collection. Sample was one hundred farm owners from low country dry zone and the upcountry wet zone respectively. The study found

that the dearth of knowledge in relations to agricultural tourism in the farming area is the primary cause of farm owners not responding to this significant choice of diversifying. A large proportion of farm owners, however, were interested for the consideration of agro-tourism as a climate change mitigation option.

Malcienė and Skauronė (2019) have explored the usage of information systems in the travel and leisure industries. The study is essentially qualitative, because inferences were made from the reviewed literatures and 191 residents of Panevėžys city were interviewed, consistsing 58 men and 133 women. Premised on review of science literature, the research thus reaches the conclusion that the prerequisite of the tourism and leisure industry involves usage of highly varied information systems, that ranges from genuinely explored formats for operating with electronic tables, texts and databases to the use of advanced programs that provide individuals with automatic jobs. Furthermore, the analysis showed that, after examining the usage of computer systems by customers and the purchasing of tourism and leisure goods, it was noticed that the new information technology helps the customer to easily build an individual tourism product.

Nuchakorn *et al.,* (2019) analyzed the routes and operation habits of agro-tourism for education and knowledge systems in Surat Thani, Thailand. The study found that there is an essential relationship between the information system and the type of agricultural tourism activities in the province of Surat Thani; by defining the coordinates of agricultural tourism in Surat Thani, the researcher further developed the information system through Google API. Pimonratanakan (2019) investigated "acceptance of information technology that affects the convenience of Chumphon Province, Thailand Agritourism Services." The study is quantitative in nature, as four hundred and fifty (450) questionnaires were administered and retrieved. The research showed that the convenience of agritourism facilities in the province of Chumphon, Thailand, is influenced by information technology.

Adamov *et al.,* (2020) examined the sustainability of agro-tourism initiatives and challenges in rural regions of the Romanian Mountains. The study is quantitative because data were retrieved through questionnaire. The research instruments were administered by two members of the research team and they were directly administered to the owners of the agritourism venture (farmers that practice tourism as well as

agriculture). Substantive percent of the people engaging agritourism procedures have the conviction that agritourism will depict an opportunity for their personal guesthouses/farms to grow and develop economically, and see this activity as an opportunity to capitalize on their products/crafts/services. In the same vein the study revealed that on the basis of contemporary incidence of going back to nature, to nature-based assets or to hinterland's surroundings, those that own agritourism facilities in three spatial areas pointed out components of agricultural tourism assets that can aid the achievement of being visible in global markets and they are; returning to natural products as well as significant leisure, hygienic meals, as well as, involvement in activities of hinterland.

Tugade's (2020) study titled re-creating farms into Agritourism: Cases of selected micro-entrepreneurs in the Philippines is qualitative in nature as secondary data were retrieved from literatures and primary data were retrieved via quasi structured interview as well as informal engagements with respondents. The study conclusively revealed that agricultural tourism could result into a dependable propeller of economy for the growth of the hinterlands as well as help diversify agriculture as an opportunity for various farm owners, particularly the peasant farmers. The future benefits of agro-tourism for local farming are varied. Next, it will provide local farmers with resources for diversification to increase sales and enhance the viability of their activities. Secondly, it will result to impeccable ways of educating people of the role of farming as well as its economic implications, likewise, its influence on the quality of life of the county. Thirdly, it may provide economic stimuli and limit opposition within the rural-urban frontier, thus helping to conserve agricultural land.

2.4 Review of Methodological Issues

Different researchers have employed varied methodologies for their studies. The examination of the methodologies used by these researchers is germane in making appropriate inference that will guide in choosing the correct methodology for this present study. The methodologies used by the various researchers range from qualitative methods, quantitative methods and mixed-method research. Qualitative research method makes use of Indepth interview as well as Focus Group Discussion in eliciting primary data; the primary data elicited are as such analyzed using content analysis. Quantitative research methodology essentially uses questionnaires to elicit primary; the primary data

elicited are analyzed descriptively and inferentially. Mixed method research methodology engages both the qualitative and quantitative research methods.

Meera *et al.,* (2004) did a comparative analysis of information and communication technology in agricultural development in India. Data was collected for the study with questionnaire. The coded questionnaire was analyzed through frequency distribution and correlation analysis. Al-farajat *et. al.,* (2011) examined the Information Systems and their role in the performance of the Jordanian Tourism 233 Qcompanies. The sample consists of 132 users of 19 Jordanian tourism companies. Questionnaire was used as the data collection tool. Several statistical measures were done using arithmetic-test, test Cronbach's alpha and standard deviation.

Al Mamun *et al.,* (2011) examined Integrated Farming System and their Prospects in Bangladesh. It was a qualitative research that made use of qualitative research tool, especially key informant interview and review of various literatures. Kanto (2011) examined an integrated animal-plant agriculture system in Thailand in response to climate change. It was a quantitative research where mean score was used in determining average rice yield and improvement by using pig waste as fertilizer for 2008 and 2009 respectively; likewise, mean score was also used to derive average rice production by using pig waste as fertilizers for 2008 and 2009. PraniČević *et al.,* (2011) examined information system maturity and the hospitality enterprise performance. The case study is Croatian hospitality industry. Questionnaire was used to elicit necessary data; research instrument engaged for collecting primary data had three phases connected broad information of hotels, predictors for measuring IS growth, organizational procedures, as well as the growth of staff members.

Arif *et al.,* (2012) identified the information system needs in an organisation and the relationship between information system and decision-making process of an organisation. Structured research instrument was administered to various categories of staff members of reputable business entitie. This study identified that MIS play efficient importance in an organisation so as to take appropriate steps as and when due via analysing various related conditions via the aid of sundry information systems in global competitive environment.

Schilling *et al.,* (2012) examined "the economic benefits of agritourism: The case of New Jersey". The study is quantitative, as data were retrieved with the aid of

questionnaire. Questionnaires were sent by mail to randomly selected farm owners between April and July 2007. The retrieved data was analyzed using descriptive and inferential statistical analytical tools. Upon return of the research instrument, a sum of 1,043 were obtained, which depicts a rate of 69.5%. For the evaluation of the spread of agritourism activities through various categories in the sampled farmlands, SAS was used for descriptively done statistics. For the evaluation of the relationship between categoric data, chi square tests of independence was used. Expansion factors was used to draw inferences of New Jersey's farmlands population.

Wei (2012) carried out an analysis of Information Systems applied to evaluating tourism service quality based on organizational impact. The study used a method that in line with constructive measures of the quality of information as well as the firms influence and modus operandi of collecting data for empirically inclined tests of specific tourism businesses. The research is inclusive of the barometer for quality tourism services, mining of data to validate instruments as well test hypotheses, and validating and test of instruments. The psychometric properties of the constructs were tested using confirmatory factor analysis (CFA) using SmartPLS 2.0 M3. SmartPLS is similar to PLS-Graph and is a component-based path modeling program based on partial least squares (PLS).

Hanif *et al.,* (2013) used a sampled population from the service industry of Pakistan. Sampled population is inclusive of manager in charge of branding, assisting manager and managers in the advertising section, that serves in mid-level management of specific business entities in hospitality sector. The respondents were chosen from hotels, restaurants, fast food chains, and resorts. Business entities with IT/ MIS sections that also engage computer inclined information systems in business transactions and dealings were selected. A set of well-structured questionnaires were engaged in eliciting the necessary data from the respondents. The sample size that was used was two hundred and fifty. Chhachhar *et al.,* (2014) examined the ICT's influence on the enhancement of agricultural practices. It was a qualitative research as various literatures were reviewed and used in reaching conclusions.

Manjunatha *et al.,* (2014) examined Integrated Farming System using a Holistic Approach in India. The research is qualitative in nature. Several literatures were holistically reviewed before the authors could establish their positions. Simple

calculation of the workers gross income and Net returns were done. Milovanović (2014) examined the importance cum potentials associated with information technologies for enhancement of agriculture. It is a qualitative research that is based on economic theory and available literature. Valdiva and Barbieri (2014) examined the strategies associated with sustainability in terms of changes in climatic condition of Andean Altiplano. The study obtained primary data from the field. The data were elicited via face-to-face interviews, with the aid of close-ended questionnaires. Simply because of language barriers, the researchers employed the services of four survey enumerators (two male and two female) that translated the questionnaires to the respondents as appropriate. Enumerators read questions and response options to farmers families on the basis of structured questionnaires made accessible in indigenous language (Aymara) and Spanish.

Kusumastuti, *et al.,* (2015) examined integrated farming model of small ruminants in Deli serdang, North Sumatra. The research was quantitative in nature, with purposive sampling used and the sample size consisted of 50 goat farmers and 50 sheep farmers. Multiple regression model with Ordinary Least Square was used to identify factors influencing goat and sheep productivity. Udoh (2015) carried out a research titled 'measuring the potential of Agri-tourism development in Rural Nigeria – An exploratory study'. The study is qualitative in nature. Data for the research was retrieved using documentations reviews, oral surveys, semi–structured interviews, participant observation and focus group techniques to collect data from 500 participants randomly selected from 15 communities, which were randomly selected from 45 communities in the study area. Participants that were 30 in number were chosen from ten communal areas, totaling three hundred and forty participants based on random selection out of 5 communal areas that remained totaling two hundred and a final total of 500 which partook in the research. The sample procedure adopted was based on stratified in nature. Percentage calculation on the respective variables was used to present information regarding the data on socio-economic variables, cultural values, community symbols and crafts produced in the area.

Engotoit *et al.,* (2016) carried out a study titled 'Impact of performance expectancy on commercial farmers' intention to use mobile-based communication technologies for agricultural market information dissemination in Uganda'. The research designed operationalized was cross-sectional, hence, the method for eliciting data was

quantitatively inclined (self-administered questionnaires). The retrieved data was analyzed using descriptive (frequency, percentage and mean) and inferential (regression) tools. Karampela *et al.,* (2016) evaluated the impact of agritourism on local development in small islands. It is a qualitative research where various literatures were reviewed in order to create a typology of different forms of agritourism, including aspects of supply and demand, the scale of operation of the enterprises and networks of enterprises related to agritourism. Mahaliyanaarachchi (2016) in the research titled agri tourism as a risk management strategy in rural agriculture sector: with special reference to developing countries, reviewed extensive literature on this topic. The developing countries of Asia, Africa and Latin America were used as case study areas. Rupak *et al.,* (2016) examined fusion of resources in smallholder farmlands for sustainable livelihood in developing Nations. It was a qualitative research because various literatures were reviewed and cited before the authors concluded the research.

Söllner *et al.,* (2016) carried out a study titled 'Why different trust relationships matter for information systems users'. The study adopted a free simulation experiment (moderated by the first author). Afterwards respondents finished assigned duties, respondents essentially were requested to fill-in questionnaires. There was a record of all feedbacks on a bipolar 9-point Likert feedback template, that had both extremes with 'extremely disagree' and 'extremely agree' labels and the midpoint as 'partly'. SPSS 20 and Smart PLS 2.0 M3 were used for the analysis. Curras-Perez, *et al.,* (2017) study on "the determinants of customer retention in virtual environments: the role of perceived risk in a tourism services context". Essentially, the research was empirically based and data were retrieved via one-on-one interviews with structured questionnaires. The obtained data were analyzed using structural equation models and multigroup analyses with EQS 6.1 software. The sample size was four hundred and forty-five (455) Spanish Internet purchasers of tourist accommodation.

Dhanushkodi, et al., (2017) examined the contribution of Integrated Farming System for livelihood Security of Tribals in Pachamalai Hill of Tiruchirappalli District in India. It was a qualitative research that used interview schedule and field survey. Information was collected through field survey and a sample of 100 farmers meeting at farm-level. The research was inclusive of many open-ended questions for eliciting farm owners perspectives in terms of system as well as general issues relating to welfare changes. The collated data were analyzed textually.

Freeman and Mubichi (2017) carried out a study titled ICT use by smallholder farmers in rural Mozambique: A case study of two villages in central Mozambique. The research is qualitatively inclined, engaging deductive content analysis process and case study approach. A total of eight focus group discussions (FGDs) were conducted in the villages of Rotanda and Munhinga, both found in the Manica province of central Mozambique in March 2015. The analysis of the retrieved data was done through deductive content analysis. The research was qualitative in nature. Pivoto *et al.,* (2018) carried out a study on examined scientific development of smart farming technologies and their application in Brazil. Four (4) experts were interviewed on an in-depth basis: two agricultural engineers, a coordinator of research and technical testing of products, and an electrical engineer. The data retrieved from these experts were textually analyzed.

Barbieri *et al.,* (2019) examined perceived benefits of agricultural lands offering agritourism. The study is a quantitative one. Data were retrieved through a survey that was mailed to a random sample of 5000 households in Missouri (US), obtaining 969 responses. The retrieved data were analyzed descriptively and inferentially. Creselle *et al.,* (2019) examined benefits of Agritourism in Batangas Province in Philippines. Data were retrieved from 113 participants who are the owners of the farms and employees of the most visited farms in the province of Batangas. The retrieved data were analyzed descriptively using frequency and percentage distribution. Likewise, the data was also analyzed inferentially using T-test. Khasawneh (2019) examined challenges attributable to usage of information system by tourists: Worker's perception from tourism industry. The study population was culled from the health sector from the year 2015 through to 2016. Ninety (90) Employees (males/females) were culled from three directorates: Ajloun, twenty (20) employees, Jarash, thirty (30) employees, and Irbid, forty (40) employees. The data retrieved from these employees with the aid of questionnaire were both descriptively and inferentially analyzed.

Khatri (2019) carried out a research titled Information Technology in tourism and hospitality Industry: a review of ten years' publications. Precisely, seven (7) big tourism and hospitality journals published in the last 10 years are reviewed which included 64 research articles that have relevance with IT in tourism and hospitality industry. The researcher explored SAGEPUB, ScienceDirect and Wiley databases to find the 7 major travel and hospitality journals which included the list of journal of hospitality and tourism management, international journal of tourism research, annals of tourism

research, tourism management, journal of travel research, journal of hospitality and tourism research and cornell hospitality quarterly. The content analysis of the publications has three categorizations, as follows: fundamental purpose, internal business process or process redesign and value creation and competitive advantage. Malcienė and Skauronė (2019) examined application of Information Systems in tourism and leisure sector. The study is essentially qualitative in nature. Various literatures were retrieved and inferences were made from them. In the same vein 191 residents of Panevėžys city were interviewed, of whom 58 men and 133 women.

Nuchakorn *et al.,'s* (2019) study was on education and information systems routes and activity patterns of agro-tourism in Surat Thani in Thailand. The study employed a mixed method form of research, as questionnaire was used to elicit data from 7 agro-tourism sites, likewise, an in-depth qualitative study of agricultural tourism activities was conducted via interviews with all tourist leaders. The retrieved data was analyzed with content analysis and descriptive analysis. Pimonratanakan (2019) examined acceptance of Information Technology affecting the convenience of agritourism services in Chumphon Province, Thailand. Sampled population was made up of Thai as well as international visitors that explore trip offerings in Chumphon Province. Sampled population is a total of 450 people. Questionnaires about acceptance of information technology were administered to the sample population as well as accessing virtual network system affecting agricultural tourism's easy usage. Statistical tools engaged for analysis of data is basically descriptive as well as inferential.

Tugade (2020) examined 're-creating farms into Agritourism: Cases of selected micro-entrepreneurs in the Philippines'. The study is qualitative in nature as secondary data were retrieved from literatures and primary data were retrieved via quasi structured interview as well as informal discussion with respondents. A total of fifteen key participants that are made up farm owner as well as managers with ages from 30 to 60 years were chosen as respondents for the fieldwork carried out during the summer in 2018 from chosen agritourism sites in Cavite, Laguna, and Rizal provinces.

2.5 Summary of the Literature and Identified Gaps that the Thesis addressed

Various literatures on agritourism, rural tourism and Information Systems have been reviewed. It is clear from the review that most of the literatures on agritourism were written by scholars from Europe, South Africa, America and very few were from

scholars in Nigeria. It is evident that agritourism has been well explored by practitioners and scholars in the western World. However, literatures on the general growth of agritourism, agritourism as a component of rural tourism, culinary underpinning of agritourism and others were reviewed.

In the same vein literatures on information system usage for agricultural practices and agritourism were reviewed from scholars across the world and it is notable that most of the researches focused on internets or websites and agritourism, for instance, Plantania (2014) examined Agritourism farms and the Web, an exploratory evaluation of their websites and Colucci *et al.,* (2014) examined 'using social media to market agritourism'. Thus, it is clearly evident that there is a literature gap vis-à-vis studies examining the agritourism potentials of selected integrated farms, vis-à-vis, potentials from the trajectory of crop production activities, animal husbandry and the environment of the integrated farm. In terms of the enhancement of the aforementioned potentials via the usage of software applications, there is a dearth of literature. Hence, there is a need to fill the research gap which this study seeks to do.

2.6 Theoretical Framework

2.6.1 The Push and Pull Theory

Morrison (2013) stated that Dann's (1977) push and pull theory is so far the most acceptable in respect of the specific explanations of tourist motivation. While bringing out the clear-cut difference between 'push' and 'pull', Morrison (2013) opined that 'push' factors are inherent in individuals, in the sense that people make attempt in taking care of their internal drives, for instance, their needs to escape from a certain environment for another, while, the 'pull' factors are essentially the products of marketing the tourism destination to invite people to visit such destination. The push factor solely rests on the prospective tourist(s) while the pull factor primarily rests with the tourism destination. Uysal, and Hagan, (1993) as cited in Kanagaraj and Bindu (2013:113) noted that push predictors are connected to the origin and relates to aspirations that are intrinsic for the individual visitor for instance, escaping, resting and relaxing, and for adventuring, health and prestige whilst predictors for 'pull' connects to the attractiveness of the destination, for instance beaches, recreation facilities, historical and cultural.

Push factor is primarily the impulse or driver of an individual to make time out to engage in other activities that has basis in leisure, unwinding and relaxation. It is notable that both of these factors are psychological, but pull factor is a means to satisfying psychological urge cum need while push factor is the precise psychological urge. Pull factors are the tourism attractions which may be categorized into core and ancillary tourism attraction. For this study, pull factors are farms or agrarian areas that are capable of drawing people to itself for tourism. It is essentially established agritourism destinations that attract tourists. Meanwhile, push factors are the factors responsible for a prospective tourist to escape his/her immediate environment for agritourism sake. In some rare cases, ancillary tourism attractions such as internet facilities, hotels cum lodging facilities are substantive enough to draw visitors from their various abodes. Yoon and Uysal, (2005) as cited in Damijanić and Šergo (2013) highlighted eight (8) specific push motives and nine (9) specific pull motives and they are shown in table 3.1.

Table 2.3: Push and Pull motives

S/N	Push motives	Pull motives
1.	Excitement	Contemporary atmosphere and activity
2.	Knowledge/education	Wide space and activities
3.	Leisure	Small size and reliable heather
4.	Achievements	Nature based sceneries
5.	Family togetherness	Various cultures
6.	Escape	Cleanness and shopping
7.	Safety/fun	Night life and local cuisine
8.	Away from home and seeing	Interesting town and village
9.		Water activities.

Source: Yoon and Uysal, (2005) as cited in Damijanić and Šergo (2013)

2.6.2 Social Cognitive Theory

Social cognitive theory was created by Bnadura in the Mid 1970's. This theory has psychological inclinations that reveal the means through which people within social systems effect different human procedures, that includes the procurement and engagement of data and knowledge. The essence of social cognitive theory is learning of new things, ideas and concepts. It basically aids people to quickly conform with or adopt new norms and ideas in the society. It is all about the acquisition of new knowledge at specific point in time. Jenkins, Hall, and Raeside (2018) opined that in social cognitive theory the profound understanding of novel skill and knowledge are of more important interest over the output or goal of the educational procedures.

This theory is specifically important for Information Systems because, from time to time, new ones with their precise peculiarities are created and hence, they must be learnt and understood before they could be explored. It is notable that information system is a product of innovation on the premise of Battisteli *et al.,* (2013) conceptualization of creative work behaviour, as follow;

(i) recognizing the desire for creativity,

ii) innovation of a concept,

iii) leading the course of the new concept or earn support for the new concept and

iv) implementing the concept.

The produce or outcome of the above must be studied and learnt by people before they could be understood and used. Pálsdóttir (2013) noted that social cognitive theory, for instance, it is of significant value in terms of investigating motivation to disseminate knowledge, search for information and get educated. The information that are systematically packed and arranged in information systems would be sought out and learnt by people, hence, social cognitive theory comes into play. The treatment of social cognitive theory in the Information Science literature is connected to two broad areas and enumerated as follows: (i) behavior for searching information and its usage (inclusive of information literacy) and (ii) dissemination of knowledge (Jenkins, Hall, and Raeside, 2018). There are four specific learning processes that define social cognitive theory. According to Harinie *et al.,* (2017) the learning processes are as follow:

1. Attentional Processes: This is the phase where person(s) are attentive to the essentially characterized behavior in the environment.

2. Retention Processes: This is the phase where person(s) imitate(s) the exhibited models' behavior. This means that person(s) memorize(s) and characterize(s) exhibited information by models, in a bid for the person(s) to adopt the models' behavior.

3. Motor Reproduction Processes: This is the phase where person(s) exhibit(s) motoric capabilities in a bid to reproduce the behavior appropriately.

4. Motivational Processes: In this phase, the success of the learning process is determined.

CHAPTER THREE

METHODOLOGY

3.1 Research Design

There are various forms of research designs, but this research explored descriptive and exploratory research designs. The descriptive research design is applicable to research questions that are being asked in the "what" format. Singh (2007) opined that in few situations, exploratory studies exist as the formative study so as to examine ideas prior to operationalizing them. Exploratory research design is germane for this study because this research focuses on testing if information systems can be suitable for the enhancement of agritourism potentials of integrated farms and once the result of the test is positive, then, it can be put into practice.

Descriptive researches focus on the concern to describe the defining characters of a person, or of a set of people, meanwhile, diagnostic researches focus on determining frequency of occurrence of some situations or its relationship with specific situations or things (Kothari, 2004). A part of the target respondents are integrated farmers hence, they are properly described especially in line with the agritourism potentials of their farms. Descriptive research design also helps to properly register the frequencies of customer patronage to the farms. Singh (2007) opined that descriptive design makes available the frequency of occurrence of somethings and aids to determine descriptive statistics of a population, which means, average occurrences in terms of frequency.

Usually, as a matter of consequence, explanatory research design leads to the generation of descriptive research design. Therefore, because the research questions associated with this research are asked in the "what" format, then it is adopted for this study. This research design provides a relatively concrete description as logical answers to the research questions.

However, research design for experimental design might be different. Cox (2015) noted that the taxonomy of research designs, or study types is as follows:

1. Experimental

1a. True experimental

1b. False experimental

2. Observational study

2a. Natural experiments

2b. Correlational study

2c. Case study

2d. Embedded case study

3. Synthetic study

3a. Review of Literature

3b. Case study meta-analysis

3c. Systematic review

The appropriate design capable of helping researchers achieve set aim and objectives must be chosen accordingly. For natural experiment under observational study, scholars have no attempt of changing or manipulating indicators for testing its impacts; rather, they focus on observing or measuring things as evident in the pristine world (Remler and Ryzin, 2011:355).

3.2 Study Area Description

The study area that captured the integrated farmers are the Local Government Areas with vast rural areas that has farm settlements or a high concentration of farmers. This is because farmers into integrated farming systems were chosen from these Local Government Areas. They are as follow;

1) Akinyele Local Government area,
2) Ido Local Government area,
3) Lagelu Local Government area,
4) Egbeda Local Government area.

All of these Local Government areas as shown in figure 3.1 are part of the thirty three (33) Local Government Areas of Oyo State, Nigeria. It is pertinent to note that these Local Government Areas are referred to as agricultural zones largely because there are Oyo State Government established farm settlements in three of these Local Government Areas. There is a farm settlement in Akinyele Local Government called Ijaiye Crops and Farm settlements, another farm settlement is located in Ido Local Government Area and it is referred to as Akufo Farm settlement, lastly, there is another farm settlement in Lagelu Local Government area. It is noteworthy that Egbeda Local Government Area does not have any State Government established farm settlement but it houses the State Secretariat of Poultry Association of Nigeria (PAN) and a lot of livestock farms sited very close to Asejire water works.

There are no substantive farms that fit into the integrated farming system category in Oluyole Local Government Area rather it has a preponderance of hatcheries for poultry birds. Oluyole Local Government Area is essentially an industrial zone, and thus, it has various information systems experts either working or living in it. Meanwhile, in addition to the foregoing, information system experts were also purposively chosen from Ibadan North Local Government Area. This is because there is a concentration of information system expert in Ibadan North Local Government consequent upon the fact that it is largely an urbanized area. Ibadan North Local Government Area has a concentration of educational institutions that range from Polytechnic to Universities.

It is believed that Ido Local Government Area is the biggest Local Government Area (in terms of land area) in the city of Ibadan, because, the census population (National Population Commission, 2006) revealed that Ido has a population of 104,261 and it also has a land area of 986 km^2. Adebisi *et al.,* (2015) opined that the strategic location of the local government area within the deciduous forest in the central part of Oyo State certainly makes it one of the most viable areas for agricultural practice in the state. Yusuf *et al.,* (2011) noted that Ido Local Government was established in the second Republic on May 29, 1989 with its headquarters at Ido. It shares boundaries with Oluyole Local Government, Ibarapa East Local Government, Akinyele Local Government, Ibadan North West Local Government, Ibadan South West Local Government and Ibadan North Local Government areas of Oyo State as well as Odeda Local Government in Ogun State. This Local Government Area houses the Polytechnic, Ibadan, the School of Hygiene, Eleyele, the School of Nursing, Eleyele and Fan milk, also in Eleyele. The

climate of Ido Local Government Area is essentially tropical and its vegetation is rainforest. The fact that the climate of this area is tropical makes the soil fertile for agricultural production.

Akinyele Local Government Area is situated between latitude 7º 29' and 7º 40' N while its longitude ranges from 3º 45' to 4º 04' E. It is largely agrarian and a residential area. It houses the prestigious National Institute of Social and Economic Research (NISER) and the International Institute of Tropical Agriculture (IITA). Its climatic condition is tropical in nature. The soil of the area was formed from rocks of pre-Cambrian basement complex essentially granites, gneisses, quartz-schist, biotite gneisses and schist, and they are formed under moist semi-deciduous forest cover and can be categorized under the major soil group called ferruginous tropical soil (Ajadi *et al.,* 2012).

Egbeda town is the current political headquarter of Egbeda Local Government Area (LGA) of Oyo State. The town is located on latitude 7^0 21'-8^0N and longitude 4^0 02' – 4^0 28'E with a total land area of approximately 191km^2. Akinbile and Ikechukwu (2017) submit that Egbeda Local Government Area currently has four urban and seven rural wards. It is located in the rain-forest agro-ecological zone of sub-Sahara Africa.The town lies on a gently rolling plain which falls below 180 metres (600ft) above sea level in most parts of the LGA, while the lower parts which are very close to the flood plain of River Osun, both on its right and left bank, are on a height as low as 150 metres (500 ft) above sea level (Oyedotun, 2012).

The headquarters of Oluyole Local Government is at Idi Ayunre. It shares its boundaries with Ibadan South West, Ibadan South East, Ona Ara Local Governments and Ido Local Government, all in Ibadan West. It also shares boundaries with Ogun State through Obafemi Owode, Odeda and Ijebu North Local Government Areas. The climatic regime of this Local Government area is humid Tropical. It is characterized by an average temperature of about 32ºC but humidity can be as high as 95%. Oluyole Local Government houses companies like; British America Tobacco (BAT), ROM Oil, Agrited Company, Black-Hors plastic company, Jubaili Agro-Limited, KAMAR Industries, Oriented foods and many others. The Local Government area has a total land area is 629km^2 with population of 202,725 based on the 2006 census (Amusat and Oyedokun, 2018).

Lagelu Local Government area has a total land area of about 355.50 hectares and falls between latitude 7º20' and 7º50' East of the Greenwich Meridian. This local Government area is divided into Lalupon, Olorunda, Igbo-Elerin and Iyana Offa. Rainfall in the area is usually heavy during the rainy season, as it records an average of 1370mm while the minimum of 25mm is recorded in December. The vegetation of this area is secondary forest. It has an area of 338km square and a population of 147,957; it shares boundary with Iwo Local Government in the North and Egbeda Local Government in the West (Emmanuel, 2013). The Local Government Areas are captured in the figure below.
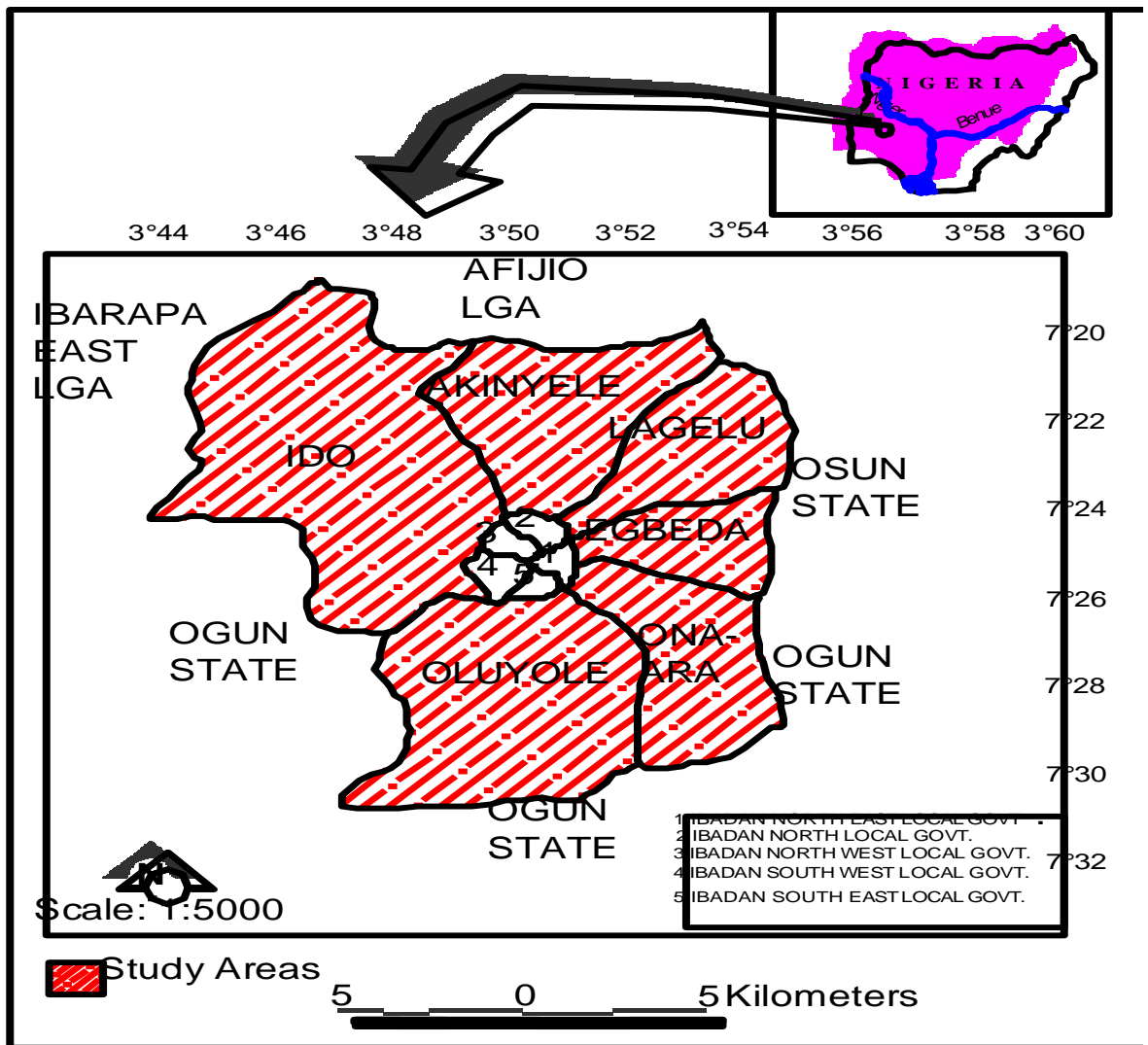
Figure 3.1: The five (5) Local Government Areas in the Agricultural Zone of Ibadan

3.3 Data Requirement and Sources

3.3.1 Population and Sample size for Quantitative Method

Generally, sampling procedures can be random or non-random and it can also be stratified or non-stratified in nature. Cox (2015) opined that in practice, however, a random sample is frequently not used on the premise that are as follows:

1) On the premise associated with dearth of sample framework or explicitly conceptualized enumeration of available observation,
2) Lack of ability for collecting data from observations that were chosen on a random basis,
3) There is a conduct of a case study analysis for limited observation level, as well as
4) As a matter of fact, there is no representative sample.

It is notable that the population of the study for this research is in two (2) categories. The categories are the farm owners/managers and the Information Systems (IS) experts, especially software developers domiciled in the study area. It is worthy of note that this study adopted purposive sampling which is also a type of non-random sampling for the quantitative aspect of this research. The quantitative aspect of this study focused on the integrated farmers or farm managers. Under this quantitative method all the farms that operate integrated farming system within these Local Government areas were visited and questionnaires were administered to them. Hence, no sampling frame was adopted for the quantitative aspect of this study.

The integrated farmers in Ido farm settlements were painstakingly spotted, the integrated farmers in Lagelu farm settlements were also spotted; through the help of Poultry Association Nigeria (P.A.N.) integrated farmers in Egbeda Local Government area were spotted; through referrals, integrated farmers in Akinyele Local Government area were also spotted, meanwhile, there are no integrated farmers in Oluyole Local Government Area. A total of two hundred and five (205) farmers that are essentially into integrated farming system were selected and questionnaires were administered to them. All the integrated farms in the study area were completely enumerated. Meanwhile, from these farmers, ten questionnaires were returned not filled while seven where badly filled, hence, one hundred and eighty-eight (188) valid data were retrieved.

3.3.2 Population and Sample Size for Qualitative Method

There are non-random sampling types in research. In this type of sampling, there is a particular modus operandi for selecting all of the target audience premised on researcher's volition. The reason for using non-probability sampling is that the representation of the sample might be low and the statistics that may be estimated from the sampled data might be dubious and thus unreliable (Bamgboye and Okoruwa, 2014). The types of non-random sampling include quota sampling, accidental sampling, purposive sampling and so on. The type of non-random sampling that is used for the qualitative aspect of this study is purposive non-random sampling. This is because, the respondents that can provide the necessary and adequate answers to the research questions were purposively selected from the study area. Purposive sampling involved the purposive selection of sample units on the basis of the judgment of the researcher (Bamgboye and Okoruwa, 2014). Cox (2015) noted that the common criteria for judgments in choosing purposive sample include;

a)   the specialization of specific individual participants, where the method of sampling is called expert sampling,

b)   the representation of the population's observations, or otherwise

c)   the situation of specific cases or observations not aligning with the population, if the specific cases or observation are meant to be defined.

The above method was preferred and used so as to be able to easily refer to phenomena, just as they are found in the real life. With regards to time and resources, the method is economical.

It is notable that software developers reside and work exclusively in the urban areas of the study area, hence, they were selected from Oluyole Local Government Area, Akinyele Local Government Area and Ibadan North Local Government Area, respectively. Five (5) software developers were purposively selected from each of the aforementioned Local Government Area. Therefore, a total of fifteen (15) software developers were purposively selected as respondents for the in-depth interviews.

3.3.3 Description and Preparation of Instrument

The research instruments engaged in this study were questionnaires and interview guide. In the various literatures that were reviewed, several research instruments were used by the various scholars. These various research instruments of different scholars guided in making informed decisions in preparation of the research instruments for this present study. Therefore, the interview guide for the respondents captured under the in-depth interview was carefully drafted and the questionnaires for all the stakeholders were also meticulously drafted. The research supervisors also carefully examined the research instruments so as to ensure that they were well prepared to justify the aim and objectives of the study.

The questionnaires elicited quantitative data from the respondents. The first section of the questionnaire captures demographic characteristics of the respondents. Section B of the questionnaire captures general knowledge of the respondents about agritourism. Section C captures information about the awareness of ICT and information system. Section D captures information about the usage of information system. Lastly, section E captures information about the agritourism potentials of integrated farms, as separated into agritourism potentials of crop production, agritourism potentials of animal husbandry and agritourism potentials of the farm's environment. The questionnaires administered to the farmers were well filled out, those that were not filled, destroyed or lost were not valid, hence, only the well filled out ones, which are valid were used for the analysis.

The interview guide essentially retrieved qualitative information that is premised on description of processes and entities from the respondents. The first question of the interview guide is about investigating the knowledge of the software expert about agricultural practices, especially, the one that adopts integrated farming model. The other question sought to know if information system has been at any time adopted and used for agriculture, more precisely, to investigate if it has been used for information systems. If yes, what are the names and functions of the adopted information systems for agriculture. On the premise of the foregoing, the information about the chances of adopting information system for agritourism emanates. The data retrieved from the

respondents for qualitative methods were recorded in recording tapes and subsequently transcribed appropriately.

3.3.4 Administration of Research Instrument

The research instruments were directly administered to the chosen respondents from the case study area. The target recipients of the questionnaires are the farm managers/owners. Some questionnaires were administered to some farmers at their settlers meeting (Ido and Lalupon Local Government area), while some questionnaires were administered to some farmers in their farm houses and farm lands. The researcher waited for most of the respondents to fill out and return their questionnaires, while, in few cases, the researcher had to go back at a much later time to retrieve the administered questionnaires from the farmers, because, the farmers were really busy when the questionnaires were administered to them.

However, for the interview guide for the software developers, the questions in the interview guides were dictated to the respondents in an interactive form. It was ensured that the respondents satisfactorily concluded the narrative to each question before another question was asked. It is notable that individuals that have actively been into software creation and development for over 10 years were exclusively chosen for the indepth interview. They were chosen because of their vast experience in computer programming and software development.

3.3.5 Reliability and Validity of the Research Instrument

Cronbach's alpha was engaged in determining reliability of the research instruments that were used in collating quantitative data from the field. The term Alpha was created by Lee Cronbach in 1951, which was to basically lead to the provision of a scale or test for internal consistency; and it is presented numerically between 0 and 1 (Tavakol and Dennick, 2011). Internal consistency basically reveals the appropriateness of specific indicators engaged as components of the research instrument. This must be first known before the instrument can be claimed to be valid. Since, reliability is expressed in numerical terms as a coefficient, John (2015) opined that a coefficient index that is high implies high reliability that has less error, while, a correlation coefficient that is low implies low reliability with a lot of errors. Cronbach (1970, as cited in John 2015) noted that reliability refers to how accurate or precise a measurement that is based on a sample

of test task at a specific time is a representation of performance that is based on various sample of the same tasks at various time period or the same time period. The Cronbach's alpha indices used to determine the internal consistency of the research instrument is revealed in the tables 3.2 below.

Table 3.2: Reliability Test for Agritourism Potentials of Integrated Farms

Cronbach's alpha	Number of items
0.876	30

Source: Author's field Survey (2020)

The number of items in Table 3.3 is thirty (30). The table tests for the reliability of the research instrument to be used in eliciting data with respect to the agritourism potentials of the integrated farm system. The Cronbach's alpha index for the table is 0.876, which implies a relatively high internal consistency of the Variable (agritourism potential).

The validity of a research instrument essentially refers to the accuracy of the research instrument with respect to data gathering. The settings of an environment, educational qualification of the people in such environment and the socio-economic status of such environment are major key components that determine which specific research instrument that should be used in collating data from such environment. Christodoulou *et al.* (2015) noted that validity of a research instrument is most often measured by relying on the knowledge of the subject matter's experts. Thus, the research Supervisor and other Lecturers in the Department helped in deciphering the validity of the content of the research instrument that was used, so as to ensure that the instruments measured the indices that are expected and capable of eliciting the right set of data.

Christodoulou *et al.* (2015:570) further noted that the experts judge how appropriate, meaningful, useful and effective each of the question could be used in determining the accuracy that the measurement technique fit into different sections of the research question. John (2015:72) also opined that if a research instrument measure what it is meant to measure, then the validity of the instrument can be ascertained as it is an appropriate or fit research instrument. So, to decipher if a research has a fair assessment, such research must have undergone the reliability and validity test. Hence, reliability and validity essentially are determinants of a fair assessment of a research. Reliability has very close relationship with validity. As a matter of fact, reliability determines validity, because, an instrument can never be accepted valid unless it has already proven reliable.

3.4 Description of Relevant Variables

It is notable that agritourism potentials are essentially connected to integrated farms because, it is precisely the agritourism potentials integrated farms that are being examined. The agritourism potentials of the integrated farms are separated into three categories which are agritourism potentials in crop production process, in animal husbandry and the farm's environment. The indicators examined for agritourism potentials of crop production process are stated as follow:

1) Land preparing activities

2) sowing activities

3) Transplanting

4) Weeding

5) Pruning of trees and vine

6) Pest and disease control

7) Operation of farm machinery and implements

8) Harvesting activities

9) Storage and preservation activities

10) Product packaging and branding

The indicators examined for animal husbandry on a typical integrated farm are;

1) Breeding of animals

2) Feeding activities of animals

3) Sight of animals

4) Farm animal products such as meats, cheese, milk and so on

5) Vaccination and medication services

6) Feed composition and milling

7) Livestock pens and houses

8) Veterinary care of animals

9) Animal slaughtering

10) Animal dressing

Lastly the indicators examined for the environment of a typical integrated farm are;

1) Cultural or historical objects of attraction

2) Farm shops

3) Unique/rarified farm machineries

4) Natural landscape of the farm like hills, sand dunes and so on.

5) Land capability

6) Hotels or guest houses

7) The green agrarian environment

8) Artificial forestation

9) Petting zoos (ponies, baby goats, piglets and so on)

10) Streams, ponds or any water body.

The awareness of information systems and its usage especially in terms of marketing businesses to the people in different parts of the World were examined.

3.5 Method of Data Analysis

The data obtained via questionnaires were subjected to coding and analyzed through the usage of the software named Statistical Package for Social Sciences (SPSS). The data were analyzed descriptively.

The following statistical tools were used in analyzing the objectives of the study;

The analysis for the first objective was done with frequency, percentage, mean and standard deviation;

The analysis for the second objective was done with frequency, percentage, mean and standard deviation;

The analysis for the third objective was done with frequency, percentage, mean and standard deviation;

For the fourth objective content analysis was used premised on the themes that were engaged in eliciting information from respondents that participated in the in-depth interview.

The four variables used for the analysis are agritourism potential of animal husbandry, agritourism potential of crops, agritourism potentials of the farm's environment and information system (software applications). Each of the variables had indicators properly arranged in Likert Tables. Meanwhile, the data obtained qualitatively through In-depth Interviews were analyzed using content analysis. The content analysis highlighted and explained the cogent points vis-à-vis the agritourism potentials of the selected integrated farms and viability of adopting information systems in the form of software applications for enhancing these potentials.

3.6 Ethical Considerations

The ethical considerations for this study are as follows;

1) The research instrument was subjected to reliability test using Cronbach alpha test. The result from the Cronbach alpha test showed that the research instrument has internal

consistency. Afterwards, the instrument was subjected to face validity by the supervisors and other Faculty members before they instrument was duplicated and taken to the field.

2) Each of the respondents was intimated with the fact that they have a right to choose to fill-out the instrument or otherwise.

3) Each of the respondents was assured of anonymity and that their responses were only going to be used for academic purpose.

4) In real time, this thesis was submitted for plagiarism and it met with the acceptable plagiarism threshold of the University

5) Thesis was formatted in line with the University of Ibadan Manual of Styles (UIMS) for writing theses and dissertations.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.0 Overview

This section examines the demographic characteristics of the respondents and results from the analysis of the objectives and aim of the study. It is notable that one hundred and eighty-eight (188) questionnaires were used for the statistical data analysis of this study. This is consequent on the fact that out of two hundred and five (205) farmers into integrated farming system, whom questionnaires were administered to, ten questionnaires were returned not filled while seven where badly filled. Similarly, for the qualitatively phase of this research, fifteen (15) respondents from Akinyele, Oluyole and Ibadan North Local Governments Areas participated in the in-depth interview.

4.1 Respondents Demography

Table 4.1: Respondents Demographic Characteristics

Gender of the respondents		
Valid	Frequency	Percentage
Male	125	66.5
Female	63	33.5
Age of respondents		
25-35	37	19.7
36-46	47	25.0
47-57	51	27.1
58 and above	53	28.2
Academic qualification of the respondents		
O'level	19	10.1
HND/BSC	86	45.7
Masters	53	28.2
Others	30	16.0
Marital Status of the respondents		
Single	19	10.1
Married	166	88.3
Others	3	1.6
Total	188	100

Source: Author's field Survey (2020)

It is evident from the above that one twenty-five (66.5%) of the respondents are male and sixty-three (33.5%) of the respondents fall under the female category. This depicts that there are more male farmers than female farmers. This is largely because in the southwestern part of the country, it is cultural that the men are the farm owners/farmers, while, their wives are engaged with agribusiness or other activities. Likewise, the table shows that thirty-seven (19.7%) of the respondents are between the age of 25-35 years, forty-seven (25%) of them are between 36-46 years old, fifty-one (27.1%) are between 47-57 years while fifty-three (28.2%) are 58 years and above. It is evident that the age bracket of the respondents from age 36 and above is almost equal or the same. This implies that most of the farmers are over 36 years old. In the same vein, it is notable that nineteen (10.1%) of the respondents have O'level, eighty-six (45.7%) have HND/BSc, fifty-three (28.2%) have Masters certificate and thirty (16%) have other academic qualification. This shows that respondents with very high numbers are HND/BSc and Masters degree holders. Lastly, it is evident that nineteen (10.1%) of the respondents are single, one hundred and sixteen (88.3%) are married and three (1.6%) have other marital status. It is evident that most of the farmers are married.

Table 4.2: Location of the Farms of the Respondents

Valid	Frequency	Percentage
Ido local Govt	87	46.3
Akinyele Local Govt	46	24.5
Lagelu Local Govt	27	14.4
Egbeda Local Govt	28	14.8
Total	188	100

Source: Author's field Survey (2020)

From table 4.2 it is obvious that eighty-seven (46.3%) of the respondents are integrated farmers in Ido Local Government Area, forty-six (24.5%) farmers in Akinyele Local Government Area, twenty-seven (14.4%) are in Lagelu Local Government Area and twenty eight (14.8%) are in Egbeda Local Government Area. It is evident that more of the respondents are from Ido Local Government. This is because it is believed that the Ido farm settlement in Ido Local Government is a farm settlement for integrated farmers.

4.2 Patronage of Agritourism

Table 4.3: Patronage of Agritourism

Valid	Frequency	Percentage
1. The form of integrated farm the farmers' practice		
Livestock and crops	126	67.0
Livestock and livestock	62	33.0
2. Opportunity for Visitors to visit Respondents' Farm		
I allow visitors on my farm	141	75.0
I don't allow visitors on my farm	34	18.1
I am not sure I allow visitors on my farm	13	6.9
3. Frequency of Visitors visit to respondents' Farm		
Daily	-	-
Monthly	30	15.9
Bi-annually	48	25.6
Annually	97	51.6
Never	13	6.9
4. Motive of the farmers allowing respondents to visit their farm(s)		
Generate additional revenue	41	21.8
Improve relationship with the community	28	14.9
Diversify activities on the farm	23	12.2
Educate public about agricultural operations	50	26.6
Keep other family members involved in the agricultural operations	4	2.1
All of the above	26	13.8
Missing system	16	8.5
5. Activities visitors that visit the farms engage in		
School trips	57	30.3
Agribusiness	104	55.3
Hunting/fishing	5	2.8
Other special events	7	3.7
Missing systems	15	8.0
6. Source of funding for the development of Agricultural Enterprise		
Personal funding	157	83.5
Bank loans	11	6.0
All of the above	20	10.6
Total	188	100

Source: Author's field Survey (2020)

It is obvious from the table above that one twenty-six (67%) of the respondents have livestock and crops in an integrated manner in their farms while sixty-two (33%) of the respondents have livestock and livestock in an integrated manner in their farms. This clearly shows that a larger percentage of the integrated farmers are essentially into animal husbandry and crop production. The analysis shows that one forty-one (75%) of the respondents allow visitors to visit their farms, thirty-four (18.1%) noted otherwise while, sixteen (6.9%) of the respondents noted that they are not sure. This implies that most of the farmers allow visitors to visit their farms at one point or the other. The analysis reveals that thirty (15.9%) of the respondents noted that visitors visit their farms monthly, forty-eight (25.5%) noted that they visit them bi-annually, ninety-seven (51.6%) noted that they visit annually and thirteen (6.9%) noted that visitors never visit their farms. It is evident that a larger percentage of the respondents give room for visitors to visit their farms bi-annually and annually.

From the analysis it is evident that forty one (21.8%) of the respondents allow visitors visit their farms so as to generate extra fund, twenty eight (14.9%) allow visitors to visit their farms so as to improve relationship with the community, twenty three (12.2%) allow visitors to visit their farms so as to diversify activities on the farm, fifty (26.6%) allows visitors to educate the public about agricultural operations, four (2.1%) allow visitors so as to keep other family members involved in agricultural operations, whilst twenty six (13.8%) chose all of the above with sixteen (8.5%) are in the missing system category.

It is evident that most of the integrated farmers allow visitors to visit their farms so as to generate extra revenue and educate public about agricultural operations. It is evident from the analysis that fifty-seven (30.3%) of the respondents offers school trips, one hundred and four (55.3%) offers agribusiness, five (2.8%) offers hunting/fishing, seven (3.7%) offers other special events while fifteen (8%) are in the missing system category. This implies that the form of the agritourism that most of the integrated farmers operate falls under the agribusiness category. Similarly, it largely establishes the fact that agritourism in the case study area is in the potential phase, otherwise, there would have been more farmers engaging in more forms of agritourism, likewise, the percentage of those that claim that they are into agribusiness as a component of agritourism will not be really disproportionate to the percentage of farmers into other forms of agritourism.

The analysis shows that one fifty-seven (83.5%) of the respondents funded their agricultural enterprise through their personal funds, eleven (6%) noted that they funded their business through bank loans and twenty (10.6%) used all of the earlier mentioned means to fund their agricultural enterprise. It is therefore clear, that most of the respondents fund their businesses, which is agritourism inclusive, on their own.

4.3 Tourism Potentials of Crop Cultivation

Table 4.4: Tourism Potentials of Crop Cultivation

Question items	SA	A	D	SD	Missing system	Mean	SD	Rank
Land preparing activities	35 (18.6%)	89 (47.3%)	13 (6.9%)	7 (3.7%)	44 (23.4%)	1.94	0.74	4th
Sowing of seeds and transplanting of seedlings	40 (21.2%)	79 (42.0%)	13 (6.9%)	12 (6.4%)	44 (23.4%)	1.97	0.85	3rd
Transplanting	28(14.9%)	91 (48.4%)	13 (6.9%)	11 (5.9%)	45 (23.9%)	2.09	0.77	2nd
Weeding	26 (13.8%)	82 (43.6%)	29 (15.4%)	6 (3.2%)	45 (23.9%)	2.11	0.74	1st
Pruning of trees and vines	41 (21.8%)	77 (41.0%)	14 (7.4%)	11 (5.9%)	45 (23.9%)	1.97	0.83	3rd
Pest and disease control	54 (28.7%)	71 (37.8%)	12 (6.4%)	6 (3.2%)	45 (23.9%)	1.79	0.77	7th
Operation of farm machinery and implements	49 (26.1%)	81 (43.1%)	7 (3.7%)	6 (3.2%)	45 (23.9%)	1.79	0.72	7th
Harvesting activities	44 (23.4%)	87 (44.7%)	7 (3.7%)	8 (4.3%)	45 (23.9%)	1.85	0.75	5th
Storage and preservation of crop products	59 (31.4%)	71 (37.8%)	7(3.7%)	6 (3.2%)	45 (23.9%)	1.72	0.75	8th
Farm product packaging and branding	47 (25.0%)	83 (44.1%)	7 (3.7%)	6 (3.2%)	45 (23.9%)	1.80	0.72	6th
Summary						19.03	7.64	

Source: Author's field survey (2020)

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It is evident from above table that 18.6% strongly agreed and 47.3% agreed that land preparing activities is a tourism potential, while 23.4% missing systems exists in the result on the premise that integrated farmers that engage in only livestock and livestock decided to leave this section blank. 21.2% strongly agreed and 42.0 % agreed that sowing activities are tourism potentials, while there is 23.4% missing systems. 14.9% strongly agreed and 48.4% agreed that weeding is a tourism potential, while 23.9% missing systems exists in the result. 21.8% strongly agreed and 41.0% agreed that pruning of trees and vines are tourism potentials while, 23.9% missing systems exists in the result. 28.7% strongly agreed and 37.8% agreed that pest and disease control is a tourism potential, while 23.9% missing systems exist in this result. 26.1% strongly agreed and 43.1% agreed that operation of farm machinery and implements is a tourism potential, while, 23.9% missing systems exist in the result.

23.4% strongly agreed and 44.7% agreed that harvesting activity is a tourism potential, while 23.9% missing systems exist in the result. 31.4% strongly agreed and 37.8% agreed that storage and preservation activity is a tourism potential, while 23.9% missing systems exist in the result. Lastly, 25.0% strongly agreed and 44.1% agreed that product packaging and branding is a tourism potential, while 23.9% missing systems exists in this result. It is notable that all of the respondents strongly agreed, agreed, disagreed and strongly disagreed on each of the indicators in the table above, however, most of the respondents either strongly agreed or agreed. The missing systems, are essentially, for the indicators that the respondents chose no available option for, this might be either as a result of the fact that they are either undecided or not sure of their responses.

In the same vein, above table's mean score is 19.03. The predictors of tourism potentials for crop farms were subjected to critical rating via their mean scores. Likewise, the significance of the mean scores for the indicators above simply implies that the lower the mean score the lower the perception of the respondents about the variable that captures all the indicators and vice-versa. This is also because each of the indicators is meant to help properly justify the set variable. In that light, it is of utmost importance to measure each of these indicators in a bid to decipher their significant implications for the research. Therefore, although, no statistical significant difference was found amongst these predictors, but mean value and standard error were used in rating them, as evident in the following; weeding (2.11±0.74), transplanting (2.09±0.77), sowing activities (1.97±0.85), Pruning of trees and vines (1.97±0.83), Land preparing activities (1.94±0.74), Harvesting activities (1.85±0.75), Pest and disease control (1.79±0.77),

Operation of farm machinery (1.79±0.72), and storage and preservation activities (1.72±0.75). This simply implies that tourism potentials of crop cultivation an ascending order according to the farmers can be rated as follow; storage and preservation activities, operation of farm machinery, pest and disease control, harvesting activities, land preparing activities, pruning of trees and vines, sowing activities, transplanting and weeding.

4.4 H₀ No Significant Relationship between Respondents' Demography and the Tourism Potentials of Crop Cultivation activities

Table 4.5: Relationship between Respondents' Demography and the Tourism Potentials of Crop Cultivation activities

Indicators	X^2	Df	P
Gender	93.704	16	0.000
Age	255.896	48	0.000
Academic qualifications	251.877	48	0.000
Marital status	150.422	32	0.000

Significance level at p≤0.05
Source: Author's field survey (2020)

The table above reveals a significant relationship between respondents' demography and the tourism potentials of crop production activities. Gender has a chi-square value of 93.704 and P-value of 0.000 that is lesser than the significant index of 0.05, age has a chi-square value of 255.896 with P-value of 0.000 that is lesser than the significant index of 0.05, academic qualifications of 255.877 with P-value of 0.000 that is lesser than the significant index of 0.05 and marital status of 150.422 with P-value of 0.000 that is lesser than the significant index of 0.05. Hence, it is advised to reject null hypothesis.

4.5 Tourism Potentials of Animal Husbandry

Table 4.6: Tourism Potentials of Animal Husbandry

Question items	SA	A	D	SD	Mean	SD	Rank
Breeding of animals	111 (59.0%)	65 (34.6%)	12 (6.4%)	-	1.47	0.62	9th
Feeding of animals	82 (43.6%)	95 (50.5%)	11 (5.9%)	-	1.62	0.58	7th
Sight of animals	78 (41.5%)	96 (51.1%)	14 (7.4%)	-	1.67	0.63	5th
Farm animal products such as cheese	82 (43.6%)	95 (50.5%)	11 (5.9%)	-	1.62	0.59	7th
Vaccination and medication services	66 (35.1%)	115 (61.2%)	7 (3.7%)	-	1.69	0.54	4th
Livestock feed composition and milling	70 (37.2%)	100 (53.2%)	18 (9.6%)	-	1.72	0.63	2nd
Livestock pen and houses	68 (26.2%)	108 (67.4%)	12 (6.4%)	-	1.70	0.58	3rd
Veterinary care of animals	96 (51.1%)	84 (44.7%)	8 (4.2%)	-	1.54	0.59	8th
Slaughtering of livestock	68 (36.2%)	95 (50.5%)	25 (13.3%)	-	1.78	0.68	1st
Animal dressing	84 (44.7%)	91 (48.4%)	13 (6.9%)	-	1.63	0.63	6th
Summary					16.44	6.07	

Source: Author's field survey (2020)

It is obvious from the above that 59.0% of respondents strongly agreed and 34.6% agreed that breeding of livestock is a tourism potential. 43.6% strongly agreed and 50.5% agreed that feeding of livestock is a tourism potential. 41.5% strongly agreed and 51.1% agreed that sight of animals is a tourism potential. 43.6% strongly agreed and 50.5% agreed that farm animal product such as cheese is a tourism potential. 35.1% strongly agreed and 61.2% agreed that livestock vaccination and medication are tourism potentials.

37.2% strongly agreed and 53.2% agreed that feed composition and milling is a tourism potential. 36.2% strongly agreed and 67.4% agreed that livestock pens and houses are tourism potentials. 51.1% strongly agreed and 44.7% agreed that veterinary care of animal is a tourism potential. 36.2% strongly agreed and 50.5% agreed that livestock slaughtering is a tourism potential. Lastly, 44.7% strongly agreed and 48.4% agreed that animal dressing is a tourism potential. It is clear that all of the respondents strongly agreed, agreed and disagreed on each of the indicators in the table above, however, most of the respondents either strongly agreed or agreed. The missing systems, are essentially, for the indicators that the respondents chose no available option for, this might be either as a result of the fact that they are either undecided or not sure of their responses.

Meanwhile, the result reveal that the mean value of above is 16.44. Notably, predictors of tourism potentials of livestock farms were subjected to critical rating by their mean values. Likewise, the significance of the mean scores for the indicators above simply implies that the lower the mean score the lower the perception of the respondents about the variable that captures all the indicators and vice-versa. This is so because each of the indicators is meant to help properly justify the set variable. In that light, it is of utmost importance to measure each of these indicators in a bid to decipher their significant implications for the research.

Therefore, no statistical difference is evident amongst the predictors, their mean values as well as standard errors were used in rating them; animal slaughtering (1.78±0.68), Feed composition and milling (1.72±0.63), Livestock pen and houses (1.70±0.58), Vaccination and medication services (1.69±0.54), Sight of animals (1.67±0.63), Animal dressing (1.63±0.63), Feeding of animals (1.62±0.58), Farm animal products such as cheese (1.62±0.59), Veterinary care of animals (1.54±0.59) and Breeding of animals (1.47±0.62). This simply implies that tourism potentials of animal husbandry in an ascending order according to the farmers can be rated as follow; breeding of animals, veterinary care of animals, farm animal products such as cheese, feeding of animal,

animal dressing, sight of animals, vaccination and medication, livestock pen and houses, feed composition and milling and animal slaughtering.

4.6 H_1 No Significant Relationship between Respondents' Demography and the Tourism Potentials of Animal Husbandry activities

Table 4.7: Relationship between Respondents' Demography and the Tourism Potentials of Animal Husbandry activities

Indicators	X^2	Df	P
Gender	73.605	15	0.000
Age	197.058	45	0.000
Academic qualifications	195.523	45	0.000
Marital status	259.973	30	0.000

Significance level at p≤0.05.
Source: Author's field survey (2020)

It is evident from above that a significant relationship amongst respondents' demography and the tourism potentials of animal husbandry activities exist. Gender has a chi-square value of 73.605 and P-value of 0.000 that is lesser than significant index of 0.05, age has a chi-square value of 197.058 with P-value of 0.000 that is lesser than significant index of 0.05, academic qualifications of 195.523 with P-value of 0.000 that is lesser than significant index of 0.05 and marital status of 259.973 with P-value of 0.000 that is lesser than significant index of 0.05. Hence, it is advised to reject null hypothesis.

4.7 Tourism potentials of the Farm's Environment

Table 4.8: Tourism potentials of the Farm's Environment

Question items	SA	A	D	SD	Mean	SD	Rank
Cultural/historical objects of attraction	-	15 (8.0%)	98 (52.1%)	75 (39.9%)	3.31	0.65	9th
Farm shops	-	8 (4.3%)	69 (36.7%)	111 (59.0%)	3.56	0.56	3rd
Unique farm machineries	-	16 (8.5%)	63 (33.5%)	109 (58.0%)	3.49	0.65	6th
Natural landscapes	9 (4.8%)	-	76 (40.4%)	103 (54.8%)	3.50	0.58	5th
Land capability	-	3 (1.6%)	71 (37.8%)	114 (60.6%)	3.58	0.54	2nd
Hotels or guest houses	-	-	80 (42.5%)	108 (57.4%)	3.56	0.51	3rd
Green agrarian environment	-	18 (9.6%)	68 (36.2%)	102 (54.3%)	3.45	0.66	8th
Artificial forestation	-	10 (5.3%)	77 (41.0%)	101 (53.7%)	3.48	0.59	7th
Petting zoos	-	-	55 (29.2%)	133 (70.7%)	3.69	0.59	1st
Stream, ponds or lake	3 (1.6%)	16 (8.5%)	70 (37.2%)	99 (52.7%)	3.51	0.71	4th
Summary					35.13	6.04	

Source: Author's field survey (2020)

It is obvious from above that 52.1% disagreed and 39.9% strongly disagreed that they have cultural or historical objects of attractions in their environments, while 8.0% agreed. 36.7% disagreed and 59.0% strongly disagreed while 4.3% agreed that they have farm shops as tourism potentials in their farms.   33.5 disagreed and 58.0% strongly disagreed while 8.5% agreed that they have unique farm machineries that could serve as tourism potential. 40.4% disagreed and 54.8% strongly disagreed while 4.8% strongly agreed that they have natural landscapes that could serve as tourism potential on their farms. 37.8% disagreed and 60.6% strongly disagreed that their land capacity can serve as tourism potential. 42.5% disagreed and 57.4% strongly disagreed that they have hotels and guest houses as tourism potentials on their farms.

36.2% agreed and 54.3% strongly disagreed while 9.6% agreed that their green agrarian environment is a tourism potential. 41.0% disagreed and 53.7% strongly disagreed while 5.3% agreed that artificial forestation is tourism potential. 29.2% disagreed and 70.7% strongly disagreed that petting zoos are tourism potentials on their farms. Lastly, 37.2% disagreed and 52.7% strongly disagreed while, 1.6% strongly agreed and 8.5% agreed that they have stream, ponds or lakes as tourism potentials on their farms. It is lucid that all of the respondents disagreed and strongly disagreed on each of the indicators in the table above, however, just a few of the respondents either strongly agreed or agreed. The missing systems, are essentially, for the indicators that the respondents chose no available option for, this might be either as a result of the fact that they are either undecided or not sure of their responses.

Similarly, the mean value of above is 35.13. Based on the evidence from the table above, predictors of tourism potentials in the farm's environment are rated critically using their mean scores. Similarly, the significance of the mean scores for the indicators above simply implies that the lower the mean score the lower the perception of the respondents about the variable that captures all the indicators and vice-versa. This is so because each of the indicators is meant to help properly justify the set variable. In that light, it is of utmost importance to measure each of these indicators in a bid to decipher their significant implications for the research.

Therefore, no statistical significant difference is evident amongst the predictors, their mean scores as well as standard errors were used in rating them, in line with the following; petting zoos (3.69±0.59), Land capability (3.58±0.54), Hotels or guest houses (3.56±0.51), Farm shops (3.56±0.56), Stream, ponds or lake (3.51±0.70), Natural

landscapes (3.50±0.58), Unique farm machineries (3.49±0.65), Artificial forestration (3.48±0.59), Green agrarian environment (3.45±0.66) and Cultural/historical objects of attraction (3.31±0.65). This simply implies that tourism potentials of the farm's environment in an ascending order according to the farmers can be rated as follow; cultural/historical objects of attraction, green agrarian environment, artificial forestration, unique farm machineries, natural landscapes, stream, ponds or lake, farm shops, hotels or guest houses, land capability and petting zoos.

4.8 H₂ No Significant Relationship between Respondents' Demography and the Tourism Potentials of Farm Environments

Table 4.9: Relationship between Respondents' Demography and the Tourism Potentials of Farm Environments

Indicators	X^2	Df	P
Gender	86.139	19	0.000
Age	291.856	57	0.000
Academic qualifications	258.895	57	0.000
Marital status	67.600	38	0.002

Significance level at p≤0.05.
Source: Author's field survey (2020)

From above chi-square analysis, it is notable that there is significant relationship amongst the demography of the respondents as well as tourism potentials of the farm environment. Gender of the respondents have chi-square value of 86.139 and P-value of 0.000 that is lesser than the significant index of 0.05, age has chi-square value of 291.856 and P-value of 0.000 that is lesser than the significant index of 0.05, academic qualification has a chi-square value of 258.895 and P-value of 0.000 that is lesser than the significant index of 0.05, lastly, marital status has a chi-square value of 67.600 and P-value of 0.002 that is lesser than significant value of 0.05. Hence, it is advised to reject null hypothesis.

In connection with the analysis there is a huge number of the medium scaled and mechanized scale farms situated in the study area. The residents of the Local Government Areas are majorly of Yoruba ethnicity. There are also minority tribes like the Hausa, Igbo and Igbira. There are various privately owned farms and government farm settlements in these Local Government areas. Farmers in these areas engage in either livestock production, cash crop production or food crops production, while, some farmers integrate components of livestock and other farmers integrate livestock with crops.

4.9 Investigate the prospect of creating software application to enhance agritourism potentials of the selected integrated farms

4.9.1 Appraise the possibility of adopting information systems in integrated farm processes

4.9.1.1 The Concept of Information System

Information are abstract entities therefore they exist in all places at all times. They exist in all places in different proportions and different shapes. One of the respondents posits that *Right here in my office, there are information flying around. They could be technical or random information. They both have the capacity to meet different needs (**IDI, George 2020, Age: 45, Experience: 15 years**)*.

It is only when a particular set of information is pertinent for a particular purpose that such information will be retrieved from its unkempt phase and properly arranged before it could be explored. Some of the respondents opined that they would only ascribe the word 'information' to the abstract entities flying around, only when they have been retrieved and properly arranged.

> Information are retrieved, arranged, processed and saved abstract entities. Upon undergoing retrieval processes, abstract entities are information, because, it is at the information stage that they could judiciously explored.
> **(IDI, Ayansola 2020, Age: 47, Experience: 18 years)**.

> information are news or messages in raw forms. They are essentially unprocessed and unharvested forms of messages. They are everywhere and only very useful when they are harvested
> **(IDI, Hakeem 2020, Age: 39, Experience: 6 years)**.

Information could be well arranged or unevenly distributed. The former exists in an arranged form because a system must have been put in place to harvest them and systematically arrange them. Hence, information system is a set of integrated units that works in consonance for achieving the aim of collating, managing and saving information. Information system is also a mix of interconnected units working together to generate timely information. Information systems are developments that are basically technologically driven for information collection and management. Information is haphazardly distributed throughout the world; the technological invention that brings

together these haphazardly distributed information, arrange them appropriately and make them easily accessible to those that need them is termed 'information systems'.

> There are some information haphazardly flying around the world, hence, a system must be put into place to make such information well-tailored for the use and exploration of those in need of them. All human endeavors have various unkempt and unused information attached to them; thus, a system which makes them well-kept and readily available for use must be created
> **(IDI, Omololu 2020, Age: 43, Experience: 10 years).**

In the same vein another respondent posited that '*information system is a technological invention and development that gives logical meaning and interpretation to knowledge that can be transmitted or shared* **(IDI, Dr. Enoch 2020, Age:35, Experience: 10 years).**

There are ideas and knowledge scattered all around. These ideas are communicable. It is expected that once transmitted abstract entities are in form of knowledge, it should be easy to relate with and understood. Thus, information systems are used to neatly and logically morph haphazard ideas to a form that could be easily understood once communicated to people. Technological invention and development have made it easy to retrieve and processes abstract entities, so as to make them readily available for both present and future use. Hence, information system is the system that is technologically synchronized to collect, manage and save information. These technological invention and development are also capable of efficiently distributing the processed information to the quarters where they are meant to be further processed or explored meaningfully.

> Information systems are technological developments that are used to collate and disseminate abstract entities. They help to systematically arrange and distribute information. They oftentimes serve as information repositories for other people to access for various purposes
> **(IDI, Ayansola 2020, Age: 47, Experience: 18 years)**.

4.9.1.2 Possibility of adopting information system for integrated farming processes

There are different forms of technological inventions that could be referred to as information systems. As long as a technological invention is capable of managing abstract entities appropriately, in such a way that when such abstract entities are passed to other people, they are easy to understand, then such invention could be referred to as information systems. Such system can either exist in the hardware form or software form. It is therefore, notable that computer software is one of the forms of information systems. This is premised upon the fact that it has the capacity to retrieve, manage and distribute information. There is a general perception amongst the software developers that nothing is impossible when it comes to software creation. Once, an idea is conceptualized, it is possible to back it up or actualize it with information systems. If an idea about integrated farm is conceptualized, vis-à-vis, engaging it with information systems, then information systems could be created for it.

> In the World of software, nothing is impossible. The first step is to come up with a concept. Then decide how to operationalize the concept with a software application and ensure that the software application achieve set goals in real time.
> **(IDI, George 2020, Age: 45, Experience: 15 years)**

Right now, nothing is impossible with technology, hence, software could be developed to drive anything
(IDI, Tolu 2020, Age: 35, Experience: 5 years).

It is notable that farming does not begin when the ground is tilled, rather, it begins from the conceptualization phase to the planning phase, implementation and monitoring phases. From the conceptualization phase, the precise farming practice to indulge in will be conceptualized, how it is going to be done and financed will also be conceptualized and so on.

Based on the knowledge of the respondents about ICT, they all noted that, it is very much possible to adopt information systems in integrated farm processes.

> It is common knowledge that various forms of Information Communication Technology (ICT), such has television, computers, radios, routers and so on, have been useful for agriculture in one way or the other, hence, information systems being a component of ICT is viable for integrated farming practices.

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(IDI, Tolu 2020, Age: 35, Experience: 5 years).

The positions of the respondents about the feasibility of engaging information systems for integrated farms cannot be contested on the premise of the fact that all of the respondents have over five (5) years experiences in the creation and operationalization of information systems for different tasks. There are significant information and data that can be referred to as big data, that are associated with agricultural practices, thus, there must be a mechanism in place to manage the data appropriately. It is therefore no gainsaying that ideas and knowledge in integrated farms cannot be very well managed without the use of information systems.

If information systems have not being either indirectly or directly adopted for integrated farms then various ideas and knowledge about the farm will still remain haphazard, largely unkempt and lost in some cases. The fact that there are various knowledge and ideas of information system that people could refer to and reckon with, implies that an information system had already been set in place to harvest, utilize and operationalize such ideas. Hence, all the respondents noted that they are aware of software application precisely set for specific farm operations in both Nigeria and the abroad. Therefore, the respondents all noted that it is an understatement to ask if it is possible to adopt software applications for integrated farms, because, it is absolutely possible. This is premised upon the fact that specific operations of integrated farms are as a result of conceptualized and operationalized ideas, which are needed for the creation of a software application.

A software application can be used to better drive the conceptualized and operationalized ideas of a specific operational phase of an integrated farm. As a matter of fact, it is wise to adopt information systems for agricultural activities, on the basis that it makes agricultural activities much easier and faster to achieve. With software applications, sectional operations of an integrated farm can be better operationalized in a less stressful and less cumbersome manner. Aside, operationalization of farm operations, pertinent information about integrated farms would be processed and managed by information system. The world is presently heavily dependent on information technology and information system and virtually all disciplines and human endeavors are essentially dependent on information systems. Therefore, it is absolutely realistic to adopt information system for different sections of integrated farms.

4.9.1.3 General importance of information system for agricultural processes

Information system can be adopted for anything that is a system on its own, that is, comprising of more than one component; apparently, agriculture is a great system on its own. It is no gain saying that a typical integrated farm is a buildup of various interrelated systems or components. Considering, the fact that there are various activities going on in a typical integrated farm, hence, information systems can be used for these activities. One of the respondents noted that:

> An integrated farm in Kwara State is presently making use of ICT component especially software. I am part of the Software professional that created a call centre for the Farm, in such a way that farmers cum potential clients can call, in a bid to make inquiry vis-à-vis when agricultural products will be out for sale, likewise, booking appointments for agribusiness **(IDI, Ayansola 2020, Age: 47, Experience: 18 years)**.

In the light of the above, information systems in such category are basically used for administrative purposes. It serves as link between clients and farmers and thus making relevant and pertinent information available at due time. Furthermore, there is management information system that is used to generate information for the management for decision making; there is also transactional information system that could be used for various transactions and so on. The processing information systems can be used to control and maintain several processes on the farm. It could be used to drive machines with various functions, for instance, it could drive machines that provide agricultural sheds, machines that feed animals, drinking through, machines that waters plants and others.

Likewise, there are certain software applications that could be used to aid and solidify conceptualization phase and also structure the concepts cum plans appropriately. For planting of crops, certain software applications can be used to test the climatic conditions of an area, in a bid to ascertain if it is appropriate to plant the crops or not at that particular point in time. Specific software applications can also be used to monitor the yields of the crops, calculate profit and loss on the farm and Return on Investment (ROI). One of the respondents noted that:

> That there is a 'precision software' that focuses on a precise stage of farming and there are variants of these precision software application. The software can independently

stand as a type for a specific purpose while, they could be packed together in a package. In the package there will be various stages for each respective purpose. The names of certain software applications that had been developed for agriculture include 'farmworks' 'SMS' 'AGDNA' 'ZENTEL' 'AGROSALES' 'AGRIFY' 'AGRIAPP' 'farmlog' and so on and so forth
(IDI, Olubiyi 2020, Age: 38, Experience: 9 years).

Another respondent opined that;

A couple of software applications can be useful for integrated farms for instance, some are already developed for agricultural purposes and they include; 'easykeeper' which is a web based application that helps farmers to manage livestock appropriately; 'crop tracker' is a cloud based application with mobile and desktop platform which aid farmers maintain correct record; 'easyfarm' is another farm software application which operationalizes accounting as well as crops and field management; 'agrifv' is a total agriculture software which aids farm owners to drive data, make decisions, improves productiveness and profit generation
(IDI, Reuben 2020, Age: 49, Experience: 13 years).

Likewise,

Some software applications had already been developed for various agricultural ventures, such as, easy farm, crop tracker and so on
(IDI, Hakeem 2020, Age: 39, Experience: 6 years).

In the same vein information systems can certainly be used for integrated farms via the adoption of 'internet-of-things' model.

Internet of things is an integrated system that is strategically placed in the farm for specific purposes, for instance, the gadget can be responsible for measuring humidity, temperature and so on, and the same time the owner of the farm can monitor the farm remotely. Internet of things is also a system that integrates certain components in a bit to achieve a particular aim. Close circuit camera can also be used to monitor all these processes
(IDI, Dr. Enoch 2020, Age:35, Experience: 10 years).

It is notable that the importance of these information systems for agriculture is huge, hence, some of them have review functions vis-à-vis making available review information on current market prices, the produce that has high sales at a particular season and so on; some have sensors, that could be used to sense the weather; some have

monitoring capability; while some have predictive functions, vis-à-vis making available real time predictive information of other farms. Aside using software applications to drive specific processes in the farms it could also be used to market outputs of integrated farms, monitor farm employees and serve as a gateway where transactions between the farmers and the customers are done. Some of the software applications can be used to keep records while some can be used to manage the payroll of the organization. It is very much useful for farm activities like feeding, vaccination, and so on. Similarly, it can absolutely be used to drive agribusiness trajectories of integrated farms. Most of the respondents pointed out the substantive capacity of information systems in making it easy for farmers to have easy access to latest updates about integrated farming systems from other parts of the world. It has the capacity of making farming activities and procedures less rigorous.

Generally, all of the information systems have repositories that houses various information, for the use of the owner cum creator of the information system and clients that need to retrieve different types of information at different times. Notably, most of the respondents noted that several software applications are already designed for agriculture in the Western World and there are some designed for agriculture in Nigeria too. Although, one of the respondents exhibited lack of information about the types and names of existing information systems for agriculture, nonetheless a certainty about the possibility of developing information systems was displayed. Some of the software applications designed for agriculture in Nigeria have been previously mentioned by some of the respondents. Each of these software applications has its own peculiarity from one region to the other. For instance, there are various formidable databases in western world. These databases that are computer based are majorly driven and operated through software applications. It is notable that a different software application can be connected with software applications that are databases. Oftentimes the essence of connecting another software with a database is to mine data from such database. Therefore, software experts and other professionals can easily mine data from a database through another software. Meanwhile, the respondents generally stated that there are just a few databases in Nigeria. Therefore, they only mine data from these few existing databases.

It is no gain saying that software programs could be set in place to drive certain processes and procedures on the farm. The intricacies of the precise agricultural processes must be

well factored in, so as to ensure that the software application that will be developed will achieve precision, vis-à-vis the precise purpose that it is developed for. Therefore, it is important that concerted efforts must exist between an expert in software development and the farmer into integrated farming to achieve the feat of creating a software application for integrated farm. In this regard, no tree can make a forest. An expert in software design that do not collaborate with other professionals before making a precise software for a discipline outside his own is bound to run into a lot of hassles, like difficulties with the technical terms of the field, shallow knowledge of the field, difficulty in reaching the precise target audience, difficulty in appropriating the precise needs of the target audience and so on.

It is possible that some farmers are already exploring information systems for their agricultural endeavors and they are not aware of it. This could be as a result of the fact that most farmers use mobile phones and gadgets and the gadgets might have been used to access different web-based information about agricultural practices at one point or the other. Similarly, the mobile phones and gadgets may have been used to connect with customers at different locations.

> As a matter of fact, many farmers explore information systems from time to time. Some of them may be exploring information systems for sundry reasons different from their agricultural ventures while, some of them may already have been exploring information systems for their agricultural activities at certain points in time
> **(IDI, Hakeem 2020, Age: 39, Experience: 6 years)**.

It is certain that farmers that have at one time or the other done businesses through the phone, either via Short Message Service (SMS), e-mails, chatting platforms or different software applications had already engaged information systems for their agricultural practices. Anyway, some of the farmers may not be technologically savvy enough to explore the aforementioned, but they may have employed the service of someone who could very well explore the aforementioned to help the farmers achieve their aims. The world is presently a global village and a lot of transactions go through the virtual space, likewise, a lot of farmers are also exploring the virtual space for sundry transactions either directly or indirectly. The virtual space that is internet driven has made different transactions seamless. Some of the farmers that are technologically savvy are intentionally engaging information systems for agricultural purposes. Most owners of

big farms that are either into exporting of food items or importing of inputs essentially make use of information systems to seamlessly link up with their clients and customers in other regions of the world. It is also noteworthy that farmers that also do local transactions explore different information system programs to reduce the friction of distance between them and their clients.

> A lot of big or relatively big farms have integrated information systems one way or the other into their farming practices and procedures. Some farms explore information systems to obtain information from various World's regions with respect to best as well as new farming practices. This has immensely helped farmers to keep in tune with developmental practices and innovations in crop cultivation and animal husbandry (**IDI, Yomi 2020, Age: 41 Experience: 9 years**).

In the light of the above, it is evident that information systems has been very germane in bringing services and transactions closer to farmers. The crux of the matter is that with the exploration of information system programs, both local and international transactions have become easier because, the cost of transactions and the likelihood of vehicular traffic congestions and unprecedented accident had been taken care of by information system applications. Services can be rendered to an integrated farmer without the farmer being dislodged from his/her location. Therefore, there is a significant reduction in distances between farmers and their customers in different parts of the World. Services that have to do with merchandise, trainings, inquiries and different forms of instructions fall into this category.

All of the respondents alluded that software applications can either be in the mobile or the desktop forms. The mobile versions of software applications are the software applications that could be downloaded and explored on mobile gadgets. They could be explored while individuals are in transits and in any other locations, as long as there is accessible internet connectivity. While, the desktop version of software applications are software applications that could only be explored in the desktop or laptop computers. However, for some software applications, both of these forms are explored, so as to make it easier for people that are comfy with the usage of desktop computers to access the software applications and at the same time make it possible for people who are only comfy with the usage of information systems on their phones to also have access to such software applications. In the light of this research, software applications adoptable for

integrated farming practices can either be in the desktop or mobile forms or both forms. One of the respondents noted that the software application that he participated in creating for a farm is Kwara State is essentially a desktop complaint software application.

4.10.2 Prospects of creating software application to explore agritourism potentials of integrated farms

4.10.2.1 Possibility of adopting software application for agritourism

As it was previously established that software applications can be adopted for agricultural practices of integrated farms, all the respondents also alluded that it is possible to adopt information system for agritourism potentials of integrated farms. For instance, one of the respondents submission goes thus;

> The fact that software applications have been developed for agriculture and they have also been developed for various forms of tourism and inclinations of agricultural practices, simply imply that they could also be developed for agritourism. Since agritourism is a synergy of agriculture and tourism, then, the information systems used for either or both agriculture or/and tourism can be engaged for agritourism **(IDI, Omololu 2020, Age: 43, Experience: 10 years)**.

Another respondent opined that;

> There are lot of software applications in mobile phones. For instance, there is a plethora of software applications on Google Play Store, and as a matter of fact, from time to time, different software applications for various purpose(s) are uploaded to Google Play Store. This implies that this is the world where software applications have made a lot of tasks very easy for people and it has brought a lot of remote destinations closer to people. This is a pointer to the fact that software applications can also be developed for agritourism
> **(IDI, Tolu 2020, Age: 35, Experience: 5 years).**

Information system experts generally strongly believe that it is absolutely possible and realistic to use information systems for anything and everything. It is even common knowledge that in this age, information systems can be adopted for all endeavors of human being, agritourism inclusive. The basis of agritourism, is agriculture, hence, without agriculture there is nothing like agritourism. Therefore, any concept that has to do with profiling, keeping and managing agricultural information can also be easily

adopted for agritourism. It could be used for the agricultural component of 'agritourism' and it could also be used for tourism. The fact that agriculture cannot be withdrawn from agritourism, then whatever is adaptable for agriculture, information systems wise would also be adaptable to agritourism. A respondent noted the following;

> There is a software that is essentially used for management of information in agriculture, likewise, a software for the management of information in agritourism can also be developed; similarly, there is a software used for transactional purposes in agriculture, likewise, software to manage transactions in agritourism will also be immensely useful and so on and so forth
> **(IDI, Reuben 2020, Age: 49, Experience: 13 years)**.

The software can be used to enhance the potentials of agritourism by placing the agritourism destination on the global map and even possibly attracting investors from different regions and quarters. It is notable that the world is presently a global village on the premise that you can sit in the corner of your apartment and conduct a seamless agritourism transaction. Hence, it is notable that information systems (software) will make a lot of information about agritourism available to individual(s) in different parts of the world with just a few click on their devices. It has the capacity to trigger or enthuse prospective agritourist to visit an agritourism destination on the premise of the information about such agritourism destination that had been uploaded on the internet. Information system has the capacity to expose the beauty of farms to prospective agritourist(s).

A system analyst usually does not just wake up to create a software, but rather creates software on the basis of the request that he or she must have gotten from an expert in the particular field. The software must have 'user requirement', otherwise, the software may not precisely fit into the field that it is designed for. The 'user requirement' can only be well stated by the agritourism expert. Agritourism being a new form of tourism will require a very good breakdown of its concept by an agritourism expert to a software developer. This will adequately inform such developer to come up with a software application that will fit into the aspiration of the agritourism and will also be able to satisfy the agritourist. It is therefore, germane that an agritourism expert or owner has to connect and extensively deliberate with software developer in a bid to come up with appropriate software for agritourism purpose.

Usually, a software developer develops software in conformation with the request of the client. With regards to agritourism, software could be developed to suit transactional purposes, management purposes and so on. For instance, an 'Oracle database' inculcated in a software application could be used to manage transactions, data collection, management and so on. Apparently, now that the Nigerian Government is presently encouraging Nigerians to go back to the farm, there is huge prospect of more influx of people to the farm, and there is higher chances that agritourism is viable and would be a hot cake. Therefore, information system will go a long way in managing the data of agritourism and making them readily available
(IDI, Ayansola 2020, Age: 47, Experience: 18 years).

Similarly, another respondent opined that

It is certain that software developers require the inputs and submissions of experts from different disciplines before software for such discipline is produced. Therefore, an agritourism expert will be able to clearly submit the technical words used in agritourism, state the expected functions of such software application and clearly state the scope of such software application. It is very much better that such application is developed rather than going to adopt existing ones because, if it is built, it will be precisely molded into one that fits into the exact desire of the agritourism expert
(IDI, Yomi 2020, Age: 41 Experience: 9 years).

Hence, it is of utmost importance to firstly recognize the precise potentials of agritourism for an integrated farm that a software application must be adopted for. This is because the modus operandi of operationalizing a software application for a component of an integrated farm may be different from the modus operandi of operationalizing a software application for another component of an integrated farm. Meanwhile, if a farm operation is applicable to all components of an integrated farm, then a software application that will accommodate and be flexible for all the farm operations would be created. If it is the same transaction entries that are used for all the various components of an integrated farm, then a software application can be created for all transaction entries of the farm. However, a little twist that will sectionalize the different farm components should be infused into the software application in a bid to ensure clarity and ensure seamless internal audit.

For instance, in the poultry section of an integrated farm, the precise purpose for adopting a software application must be deciphered. If the purpose is to have a list of visitors with their purposes of visiting the farms (probably, for sight-seeing, purchase of farm products, sale of farm inputs and so on), it must be clearly spelt out, so that a precise software application would be specifically designed for such purpose. Meanwhile, if each software application with its specificity will be explored for the same farming system, then, all the software applications for such farming system could be systematically infused together in a package

(IDI, Hakeem 2020, Age: 39, Experience: 6 years).

In the case of crop production as a component of integrated farm, information system could be used for it in diverse forms. It could be used for land preparation phase, for the planting phase, for the harvesting phase, for storage and selling of the harvested crops. Software application could be developed to properly manage each of these phases that are inherently agritourism potentials. In the same vein a software package that would systematically integrate all of the software applications could also be produced, just like it is obtainable in the 'internet-of-things' package earlier mentioned by one of the respondents. However, it is notable that integrated farms do not stop at a mix of crop production and animal husbandry, as there are integrated farms that are essentially a mix of animal husbandry components (for instance a mix of poultry and fish farm). For an integrated farm that essentially comprises of a mix of animal husbandry components, precisely software application can be created to manage and drive all the components and peculiarities of such farm.

4.10.2.2 Means of coming up with a Software Application for Agritourism Potentials

There are majorly two means of coming up with a software application for any particular purpose. It is either the software is freshly created or an existing one is modified to suit the new purpose. It is quite expensive to come up with the former than the later. This is because everything that will be needed in creating a new software application will be newly acquired hence, it will require more time, more concentration and more financial input.

The creation of a fresh software application might not be easy, in the sense that it is indeed expensive to come up with a functional and good software application. Creating

good software goes from three hundred thousand naira and above **(IDI, Ayansola 2020, Age: 47, Experience: 18 years).**

Another respondent further explained why it is better to create a fresh software application below;

It is not good to adopt an existing software application on the premise that the existing developed software applications have their precise functionalities in meeting the needs of the developer(s) or target user(s); hence, it is better to develop a precisely new software for agritourism, with its peculiar functionalities that are capable of meeting the needs of the agritourists and agritourism investors. Affirmatively, software applications can be used to enhance agritourism potentials of integrated farms in the agricultural zones of Ibadan.

It is notable that a robust plan must be put in place in a bid to come up with the software application. Thorough analysis must be done vis-à-vis asking certain questions like, what are the features expected of the app?, is the app going to cloud based or mobile? Is it going to have GPS facilities?, and so on. After appropriate responses are provided for these questions, then the precise method of developing the app must be thought of; afterwards a good flowchart should be developed. Then, the language to use for the mobile app must be decided; there are several languages for instance C sharp, Java and so on **(IDI, Olubiyi 2020, Age: 38, Experience: 9 years).**

Furthermore, another respondent noted the following

It is notable that there are presently no information systems developed for agritourism purpose in Nigeria, but it can certainly be built. Hence, it advisable to build the software from the scratch, so that the peculiar features to suit the aim of the project is incorporated into it **(IDI, Dr. Enoch 2020, Age:35, Experience: 10 years).**

Agritourism is a relatively new field that is not well explored yet in Nigeria, so, data on it might be rare and scarce. It is then better to newly create its software, so that it could be developed to suit the purpose of those that developed it on the basis of their preferences and requests of the agritourism professional(s) or practitioner(s). On the premise that creating a new software application might be quite expensive, then it can be referred to an elitist thing. Anyway, an agritourism venture is usually not a small-scale farmer's business, because it may be indeed capital intensive to come up with an agritourism venture. Hence, it is expected that a typical agritourism owner may be able

to easily afford paying for the creation of a fresh software application. In the same vein big farmers are normally mechanized farmers, hence, big farmers that own agritourism businesses would find it not difficult to adopt information systems.

Meanwhile, the concept of the information systems for agritourism must be well thought out and spelled out, so that no stone will be left unturned. It is only very important to note that the specific agritourism function that the software is expected to carry out must be well considered and integrated into such software application. Likewise, template or models of similar tourism software applications in and outside of Nigeria should be carefully studied, in order to appropriately guide in coming up with a very good software for agritourism. It is certain that there are several software applications developed for tourism purposes, at least some software applications are developed for hotel reservation and booking (for instance booking.com). Such software application can be carefully examined, so as to help in coming up with the booking and reservation platforms of the planned agritourism destination. One of the respondents opined the following

> Whatever software that must be developed for agritourism must be purpose driven. For instance, the hospitality industry which is a major aspect of tourism has several software applications, on which prospective visitors book their accommodations ahead of their trips, instances are booking.com, agoda.com and so on. A gateway for prospective agritourist(s) to book ahead, via a merchant can be established. Such gateway will be responsible for managing transactions that ensues between either the existing or prospective agritourists and the agritourism destination
> **(IDI, Omololu 2020, Age: 43, Experience: 10 years)**.

Whatever software that is developed must be tested over and over again before it could be certified usable. There should be laid out testing phases for it, so as to ensure that its function is near precision. Although, while, it is being used it could still be worked upon for necessary adjustment, until it achieves the precision expected by its owner or developer. If it is certain that the function of the software application is near precision, then it is certain that the ultimate user's confidence will be ascertained.

4.10.2.3 Major challenge of off-the-shelf software

In a bid to adopt existing software, it is pertinent that the software to be adopted must be previously configured for agritourism purpose, or at least agricultural purposes. It will be much easier for the software developer to leverage on the existing features of the existing software application to come up with the desired one. This would be much easier for starters that do not have substantive amount of money to pay to get a newly created software application. Such individuals can then subsequently order for a newly created software application, after making enough money to foot the bill. One of the respondents noted that;

> It is very good if an individual plans to gets an 'off-the-shelf' (existing) software and then adopt for whatever purpose he or she wants, at least for the start. However, it is notable that such software application may not precisely fit into the particular field. Meanwhile, it is better to develop a newly created software application precisely for agritourism, although, it will take time and cost more than buying existing ones. He noted that he doesn't have any brand in mind because agritourism is a novel field
> **(IDI, George 2020, Age: 45, Experience: 15 years)**

The major challenge is the fact that off-the-shelf software application may not precisely fit into the form and shape that is desired by the agritourism farmer. There may be specifics that may not be precisely useful to the farmer in the off-the-shelf software application. Likewise, there may be specific sections of the software that may make the software application less user friendly and cumbersome. On this premise, there may be various reasons to rework and recast the software at the different periods. A respondent expressed that;

> The major challenge with off-the-shelf software is the tendency that it may be pretty difficult to operationalize it to precisely fit into the role that has been conceptualized by the agritourism expert
> **(IDI, Hakeem 2020, Age: 39, Experience: 6 years)**

It is notable that off-the-shelf software applications were created for different purposes ab-initio. While, creating such software applications, the software expert must have had

a plan to design the software to precisely meet a specific need. Since, the specific need to be met was not agritourism, then, operationalizing these types of software applications to wholly meet new demands may be almost or totally impossible. This is because some sections of an off-the-shelf software may be absolutely useless for the agritourism expert. It is usually impossible to either obliterate or rework sections of existing software applications that could not meet present needs of the individual that adopt them. Similarly, there may be need to adopt two software applications if a particular software application cannot fully meet the demand of the agritourism expert. For instance, a software application may be suitable for organizational transactions and another may be suitable for call logs. Thus, if there are no off-the-shelf software applications that could capture the two features, then, there would be the adoption of two software applications to meet these needs. Meanwhile, new software applications could be created to capture both of transaction and call log features.

Another challenge is the stress in getting a precise off-the-shelf software application that could be adopted in record time. It may take an unprecedented protracted time before a suitable off-the-shelf software application can be found. In some cases, the software application may not be found eventually. Another respondent opined that

> sometimes the efforts in getting an off-the-shelf software application that is suitable to meet new demands might be in futility. This is because several software applications may be tried out and no one will satisfactorily meet new demands **(IDI, Yomi 2020, Age: 41 Experience: 9 years)**

4.10.2.4 Mobile or Desktop Software Application

Although all of the respondents agreed that information systems can either be compatible with phones or desktop, three of the respondents strongly noted that they prefer the mobile version of software, because, it is easier to have people's phones close to them at all times. This therefore ensures easier access and better frequent usage of the mobile phone.

> It is pretty less expensive to get a phone that could explore software applications than computers. Likewise, mobile phones are handy and can be taken anywhere, therefore, a mobile software application for agritourism is preferable **(IDI, Yomi 2020, Age: 41 Experience: 9 years)**

> Most farmers use phones, so there is higher percentage that there will be more farmers with phones than farmers with computers. Most farmers are engrossed with their agricultural activities, so, there is tendency that they will not have the luxury of time to go near computers but their mobile phones are usually with them all the time. A mobile software application is much better
> **(IDI, Ayansola 2020, Age: 47, Experience: 18 years).**

In the light of the above, it can be opined that mobile software application will be better because of its mobility and would be quite easier for people to download to their phones. In a clime like Nigeria, it is believed that more people appraise telephones than they appraise computers. This is usually because the fundamentals of using a mobile phone can easily be passed down to people within a few hours, unlike computers. A computer is quite more sophisticated than most mobile phones, hence, more training would be needed for a newbie to appraise computers. Anybody with a phone that browses will be able to explore the information designed for agritourism. Likewise, most people know how to explore phones when compared with people that know how to explore desktop computers.

> Considering the wave of technology, mobile phones are taking over the information systems world, therefore, it is advisable to develop a software application that is mobile phone compatible because, it is easy to move around and operate anywhere
> **(IDI, Dr. Enoch 2020, Age:35, Experience: 10 years)**

Most of the respondents also agreed that the lightness in terms of mobile phones, makes it easier for more people to prefer working on their telephones to computers. There are a lot of mobile phones out there that could practically do most of the things that a computer could do, thus, the fact that those phones are handy makes it easy for people to work upon them. In the light of the aforementioned, most of the respondents prefer mobile software applications to desktop software applications. However, this does not rule out the fact that the desktop version of the mobile application should be created. At least, this will give ample opportunity for those whom would like to explore the desktop version, probably, on the basis that they either prefer desktop applications or are only closer to the desktop computers. One of the respondents opined thus;

> It is better to develop a software application that is compatible with computers and telephones, because, it is a new concept and all means must be employed, to make its

access easy for all and sundry. Those that prefer exploring the internet via computers will be able to access the software and those that only prefer mobile phones will also be able to access the software
(IDI, Hakeem 2020, Age: 39, Experience: 6 years)

It is notable that most people that work in corporate organizations work more on desktop computers because of the volume of data that they deal with. For such organization, a desktop version of software application will be preferable. Therefore, it is better to create a software application that is has both mobile and desktop versions. Individuals that either prefer mobile versions or desktop versions will be appropriately catered for, when there are both versions of the software application.

4.10.2.5 Potential Importance of Information System for Agritourism

The prospective importance of information system for agritourism is innumerable, as information systems have had innumerable advantages for other disciplines and endeavors. It has the capacity to adequately prepare minds of prospective tourists with regards to agritourism facilities and the agritourism attractions present in a precise agritourism destination. Once a prospective agritourist is convinced to visit an agritourism destination, information system could be used to book ahead of time and make other necessary payment. A respondent stated the prospective usage of information system for agritourism below;

> For instance, a prospective agritourist could choose a farm where he/she would like to visit on a leisure basis from the comfort of his/her home by using a software designed for such purpose. Such prospective agritourist can have a fore knowledge of what is expected to be sighted on such farm by seeing an overview of the respective farm via the software designed for such farm. Whatever information that a prospective agritourist retrieves from the farm software will be measured against the precise thing on the mind of the tourist. The prospective agritourist can also make payments via such software applications.

> In the same vein, the software applications can have an incorporated map such that the tourist can easily navigate his/her way through and to the farm without human assistance. The software application can appropriately direct the tourist to the different agricultural activities on the integrated farm; for instance, it can lead to the portion of the farm where maize crops are planted, the portion of

the farm that houses poultry birds and so on **(IDI, Olubiyi 2020, Age: 38, Experience: 9 years)**

Information systems makes it easy to track the population of the people coming to visit farmlands, track their activities while on the farm, decipher the preference of the visitors in terms of the available facilities on the farm, monitor transactions and so on. The software applications can be configured in such a way that when a tourist steps on a restricted section of the farm, an alarm is triggered, so as to inform the tourist to turn back from that direction, especially, when there is danger ahead or when the area is a protected area. The software applications must have transactional capability, for making payments, reporting, purchase of products and accounting. This makes it easy for people to buy directly from the farm. Generally, there are lots of data that will be generated from using information systems for agritourism. Several data from agritourism can be made easily available to the people in different parts of the world.

Information systems also makes agribusiness an easy venture, as farms can be brought closer to people and several transactions can be done. Considering the fact that it is established that software applications can be used for agritourism, then such software should have a compilation of videos and photographs, so that prospective tourists will be able to view various agricultural activities on the farm, remotely, for instance such prospective tourist will be able to see the videos of the maize planting activities and procedures vis-à-vis when they planted it, how long it's going to take to harvest it, weeding activities and so on; likewise, for animal husbandry, videos that show when the livestock are stocked, when they are vaccinated, medicated, fed and so on, can be assessed and accessed by the prospective tourists.

On the basis of the fact that information systems is a system that houses a lot of information and makes it available for both the person that saved it and those that it is being configured for, to access without any delay, it is essentially a repository. The essence of most software application is to generally make information available to people in record time. There is a saying that goes thus, "information is power". Therefore, different persons in various regions of the world are usually seeking for information at all time or at one point or the other. Hence, information systems will avail those seeking for agritourism information, whatever information that they are seeking for. It could be used as a databank, to save information of existing customers,

agritourism staff and various timely events. The information saved in the software applications could be explored when the need for internal audit arises.

> Software applications intrinsically come with a repository for storing pertinent data for its user or/and of its user. Although, in some cases they store information of users for a limited period, after which the information is expunged. In some cases, however, software applications are built to permanently save user information, especially, when there is a spreadsheet section of software application **(IDI, Dr. Enoch 2020, Age:35, Experience: 10 years)**

Hence, it has the capacity to make agritourism information readily available to people, irrespective of the distance between people and the agritourism destination. The software application can be developed to avail prospective agritourists with an overview of the precise attractions (core and ancillary) at such tourism destination. In this regard the precise core attraction will be the agricultural activities or the agricultural inclined facilities that are capable of attracting people from different ends. The ancillary attractions are the facilities that generally supports the core transactions for instance, hospitality section, internet connectivity, architectural design and so on. This will help prospective tourists to make informed decisions vis-à-vis the assurance that the destination is capable of satisfying the leisure craving of the prospective agritourist or otherwise, before embarking on leisure trips to such farms. One of the respondents' submissions go thus;

> Likewise, there are various software applications developed by various tourism destinations in other parts of the world, through which, prospective tourists see an overview of the core and ancillary tourism attractions at such destinations **(IDI, Olubiyi 2020, Age: 38, Experience: 9 years)**

It could be used to easily connect with prospective customers at different part of the nation and world at large. Likewise, prospective investors can have a closer peep into existing and flourishing agritourism destinations in other regions, in a bid to either adopt such model at face value or recast such model for adoption. The Global Positioning System (GPS) incorporated in software, makes it easy to track various tourism potentials or developed tourism attractions that are in a state of decadence or dilapidation. This makes it easy for prospective investors to wade in.

It could also be used to drive various processes in the farm, for instance, it could be programmed to welcome tourist into the farm and could also be used to guide the tourist around the farm. Likewise, information about the stock, agricultural components, farm produce and all that can be stored for the consumption of agritourist. The stored information can be used to project, plan and other purposes by the agritourism destination owner. The stored information can be accessed and harnessed for variant purposes. The information systems can also be explored for bookings and reservation. The usefulness of information systems that are just mentioned implies that information system is a veritable tool for developing agritourism.

As a matter of fact, information systems can be used to optimize the potentials and development of agritourism. Since, an agritourism venture is usually cited in the rural area, then, information systems can easily be used to place such area on the world map. The countryside of sane climes are placed in the global spotlight as a result of the fact that they have indeed explored information systems. For instance, there are various sports done in stadia of the countryside of the western World, and such sports are booked ahead by people from various regions in the Globe, as a result of the exploration of information systems. The fact that mechanized farming and various trips to farms are usually situated in rural areas or countryside of Nigeria implies that information systems can also be used for early booking and engagement of other pertinent transactions.

4.11 Corroboration of the submissions of the software developers by the selected integrated farms.

4.11.1 General Knowledge of software application

Table 4.10: General Knowledge of software applications

Valid	Frequency	Percentage
Do you know what software applications are?		
Yes	143	76.1
No	40	21.3
Not sure	5	2.7
If the farmers have software applications in their Phones		
Yes	133	70.7
No	38	20.0
Not sure	17	9.0
Frequency of usage of software applications by the farmers that have it in their phones		
Very often	78	41.5
Often	19	10.1
Sometimes	52	27.7
Never used it	39	20.7
farmers preference for type of software applications		
Software app in the phone	136	72.3
Software app in the computer	13	6.9
None of the above	39	20.7
Total	188	100

Source: Author's field survey (2020)

It is evident from above that one forty-three (76.1%) of the respondents knows what software applications are, forty (23.13%) doesn't know what software applications are and five (2.7%) are not sure. It is obvious that most of the respondents that earlier noted that they know the component of ICT, also know what software applications are, because, a larger percentage of the respondents also claim to know what know what software applications are. One hundred and thirty-three (70.7%) of the respondents claim to have software applications in their phones, thirty-eight (20%) claimed otherwise, while seventeen (9.0%) noted that they are not sure. It is obvious that most of the respondents that claim to understand what software applications are, also claim to have it in their phones. Seventy-eight (41.5%) of the respondents noted that they use software very often, nineteen (10.1%) noted that they use it often, fifty-two (27.7%) noted that they sometimes use it and thirty-nine (20.7%) noted that they never used it. Obviously, most of the respondents that claim to have software applications in their phones explore it both very often and often. One thirty-six (72.3%) of the respondents prefers software applications in their phones, thirteen (6.9%) prefer software applications in their computers while thirty-nine (20.7%) do not have any preference in this regard. It is clear that most of the respondents prefer software applications in their phones, perhaps, because it is handy and mobile.

4.11.2 Usage of Information Systems

Table 4.11: Usage of Information Systems (IS means Information System)

Question items	SA	A	D	Mean	SD	Rank
IS is useful for farm produce advertisement	147 (78.2%)	41 (21.8%)	-	1.22	0.43	9th
IS is useful for retrieving social updates could enhance farming activities	120 (62.8%)	68 (36.1%)	-	1.36	0.49	6th
IS is useful for monitoring farm activities either the farm owner is around or not	156 (83%)	28 (14.9%)	4 (2.1%)	1.18	0.45	8th
IS is useful for getting updates for my business from farm owners in different regions of the World at large	130 (69.1%)	58 (30.8%)	-	1.31	0.48	7th
IS is useful in making periodic inventory and record analysis easily and quickly	113 (60.1%)	75 (39.9%)	-	1.40	0.50	4th
IS is useful in keeping database	121 (64.4%)	64 (34.0%)	3 (1.6%)	1.37	0.52	5th
IS is useful in helping farmers to organize themselves into groups to achieve better savings and cooperatives	121 (64.4%)	67 (35.6%)	-	1.36	0.49	6th
IS is useful in reducing transport cost	113 (60.1%)	59 (31.4%)	16 (8.5%)	1.48	0.65	2nd
IS is useful in easily accessing finance and grants	108 (57.4%)	76 (40.4%)	4(2.1%)	1.45	0.54	3rd
IS enhances access to agricultural inputs	88 (46.7%)	100 (53.2%)	-	1.56	0.54	1st
Summary				13.69	5.09	

Source: Author's field survey (2020)

It is obvious from the above that most farmers understood the usage of information systems for their agricultural activities and businesses. It shows that 78.2% strongly agreed and 21.8% agreed that information system can be used for farm produce advertisements. 62.8% strongly agreed and 37.2% agreed that information system is useful for retrieving social updates that could help enhance farming activities. 83% strongly agreed and 14.9% agreed that information system is useful for monitoring farm activities either in the presence or absence of the farm owner. 69.1% strongly agreed and 30.9% agreed that information system is useful in getting updates for their businesses from farmers in other part of the Country and the World at large.

60.1% strongly agreed and 39.1% agreed that information system is useful in making periodic inventory and record analysis easily and quickly. 64.4% strongly agreed and 34.0% agreed that information system is useful in keeping database. 64.4% strongly agreed and 35.6% agreed that information system is in helping farmers organize themselves into groups to achieve better savings and cooperatives. 60.1% strongly agreed and 31.4% agreed that information system is useful in reducing transport cost. 57.4% strongly agreed and 40.4% agreed information system is useful in accessing finance and grants. Lastly, 46.7% strongly agreed and 53.2% agreed that information system is useful in enhancing access to agricultural inputs.

It is notable that all of the respondents absolutely strongly agreed and agreed that information system is indeed germane for farm produce advertisement, for retrieving social updates that can enhance farming activities, for getting updates from farmers in other parts of the world, for making periodic inventory, for helping farmers organize themselves into groups and enhancement of access to agricultural inputs. Notably, a negligible respondents' percentage disagreed about four indicators in the table above and the indicators are: information system is useful for monitoring farm activities, information system is useful for keeping database, information system is useful for reducing transport cost and information system is useful for accessing finance and grants.

In the same vein the total mean value of above table is 13.69. Notably, predictors for usage of information systems were subjected to critical rating on the basis of their mean indices. The significance of the mean scores for the indicators above simply implies that the lower the mean score the lower the perception of the respondents about the variable that captures all the indicators and vice-versal. This is so because each of the indicators

that are meant to help properly justify the set variable. In that light, it is of utmost importance to measure each of these indicators in a bid to decipher their significant implications for the research. Therefore, no statistical significant difference is existing amongst the predictors, but they were subjected to systematic rating on the basis of their mean scores as well as standard errors, hence, the indicator with the highest mean score value comes first, followed by the indicator with the closest mean score to the highest mean score and so on and so forth.

The foregoing is explained as follows; Information system enhances access to agricultural inputs (1.56±0.54), Information system is useful in reducing transport cost (1.48±0.65), Information system is useful in easily accessing finance and grants (1.45±0.54), Information system is useful in making periodic inventory and record analysis easily and quickly (1.40±0.50), Information system is useful in keeping database (1.37±0.52), Information system is useful for retrieving social updates can could enhance farming activities (1.36±0.49), Information system is useful in helping farmers to organize themselves into groups to achieve better savings and cooperatives (1.36±0.49), Information system is useful for getting updates for my business from farmers in other parts of the Country and the World at large (1.31±0.48), Information system is useful for monitoring farm activities either the farm owner is around or not (1.18±0.45), Information system is useful for farm produce advertisement (1.22±0.43).

This simply implies that the use of information systems in an ascending order according to the farmers can be rated as follow; for farm produce advertisement, for monitoring farm activities either the farm owner is around or not, for getting updates from farmers in other parts of the Country and the World at large, useful in helping farmers to organize themselves into groups to achieve better savings and cooperatives, useful for retrieving social updates that could enhance farming activities, useful in making periodic inventory and record analysis easily and quickly, useful in easily accessing finance and grants, useful in reducing transport cost and enhances access to agricultural inputs.

4.12 Regression Analysis: No Significant Relationship between Information Systems Usage and Agritourism Potentials of Integrated Farms in Ibadan.

Table 4.12: Analysis of Information Systems Usage and Agritourism Potentials (Crop production, Animal Husbandry and Farm's Environment)

Mode	Unstandardized coefficients		Standardized Coefficients		T	Sig
	B	Standard Error	B	Rank		
(constant)	22.531	2.252			10.006	.000
Tourism Potentials of Crop Cultivation	.031	.021	.093	3rd	1.470	.014
Tourism Potentials of Animal Husbandry	.445	.058	.497	1st	7.625	.000
Tourism Potentials of the Farm's Environment	-.085	.028	-.199	2nd	-3.048	.003

Source: Author's Field Survey, 2020

R=.592, R^2=.351, Adjusted R^2=.339, Std. Error= 3.386

Dependent Variable: Usage of Information Systems

Predictors: Crop cultivation, Animal Husbandry and Farm's Environment

The table above revealed that agritourism potentials (crop cultivation, animal husbandry and environment) are significantly joint predictors of information system usage (F = 29.68, p < 0.05). Hence, crop cultivation, animal husbandry and farm's environment jointly predict the usage of information systems in the Four Local Government Areas in Ibadan at 0.05 level of significance. On the basis of regression weight indicating relative importance of each of the predictors, table 4.12 findings reveals that tourism potentials of animal husbandry is the most significant predictor of the usage of information systems (β= 0.497, t =7.635, p < 0.05), followed by tourism potentials of farm's environment (β= -0.199, t = -3.048, p < 0.05), while, conclusively, tourism potentials of crop cultivation (β= .093, t =1.470, p < 0.05) with coefficient of determination of (R^2 = 0.351) which means that any variation in the usage of information systems is consequent upon 35% variations with respect to the combined predictor variables. This thus simply implies that the agritourism potentials of integrated farms (crop cultivation, animal husbandry and farm's environment) are significant joint predictors of the usage of information systems in in the Akinyele, Lagelu, Egbeda and Ido Local Government Areas of Ibadan. This could be represented using the prediction equation (Model) below:

Information Systems Usage= β_o + β_1 X_1 + β_2 X_2 + β_3 X_3

Information Systems Usage = **22.531** + **0.497** Animal Husbandry + **0.093** Crop Cultivation - **0.199** Farm's Environment

Where: β_o = constant, X_1 = Animal Husbandry, X_2 =Crop Cultivation and X_3 = Farm's Environment.

4.13 Discussion

The result reveals that more of integrated farm owners in the study area are males (66.5%). Perhaps, that may be as a result of the fact that agriculture is a technical and strength tasking venture. This corroborates Wahab and Abiodun (2018) whose research carried out on farmers in the peri-urban area of Ibadan, revealed that the male farmers (71.3%) are more in number than the female farmers. Olajide (2011) carried out an assessment on farmer's reach to agriculture's data in Iddo area of Oyo State and the research pointed out that a large percentage of farm owners belong to the male gender (83.9%). Abiona et al., (2012) opined that on the basis of technology engaged that could be energy tasking, agricultural career is mainly managed by men and it might be consequent upon common perception of male gender possessing more vim than female gender. It is notable from the result that a larger part of the respondents (a total of 104 respondents out of the 188) are over 47 year old and above; this is consequent upon the fact that most of the farmers had either retired from civil service or different private firms, as some of them noted during one of their settlers periodic meetings.

Therefore, while some of them used their gratuity to invest in agriculture some others used their savings from their last employment. This corroborates Abiona *et al.,'s* (2012) study on integrated fish farming in Ogun State that revealed that the respondents that falls within age bracket 40-50 years are more engaged in integrated fish farming (38%): The percent variation is an indicator of the fact that much commitment either financially or knowledge-wise is required for coping with agricultural procedures of integrated fish farming. Similarly, Adeola and Adetunbi (2015) noted in their study that farmers are still in their active years with a mean age of 42 ± 13.0 years. While the researcher was at one of the settlers monthly meetings at Ido Farm settlement, some of the farmers mentioned that they actually invested their life savings into their farms and they do not have any other hope aside their agricultural business, hence, they must protect it with all they have. Therefore, these farmers are ready to recruit enough hands and are financially capable to get vaccinations, medications, pest control and all that, so as to ensure continual running of their farms and consistent productivity. Amaza *et al.,* (2014) opined that, age has direct bearing on making available agricultural human-resource and the ease of adopting enhanced engagements as well as spread of farmland that farm owners cultivate at any time.

The demography of the respondents also reveals that all the respondents have attained certain level of education or the other; at the least some of them had Ordinary Level Certificate while others had higher academic qualifications. This may be due to the fact that the Local Government Areas chosen as case study are mainly peri-urban and rural in nature. Likewise, they have proximity to the urban areas, hence, they are various city dwellers that either moved to the case study areas or live in the urban areas and farm in the study area. Abiona et al., (2012) noted that impressive educational height recorded in their research may be a consequence of the metropolitan character of the study area and its impact on participants.

Adeola and Adetunbi (2015) noted that a greater percentage of the farmers studied had one type of formal education or the other with only 24.6% of them having no formal education. The fact that they have certain level of education makes it easy for them to adopt new farming techniques, learn from the extension officers and continually work towards achieving greater productivity. Amaza et al., (2014) observed that the level of farmers' education certainly influences their usage of enhanced technologies in farming and, thus, farm profitability. Furthermore, no doubt a larger part of the respondents were married which may be as a result of the elderly age distribution of most of the farmers. Olajide (2011) revealed that amongst the respondents, who are farmers in Iddo area, 67.8% are married, 11% are divorced, whilst 15.3% are single.

The study further reveals that a good number of integrated farmers (43.3%) were drawn from Ido Local Governmemt Area, which is as a result of the fact that the said Local Government Area has a farm settlement established by late Obafemi Awolowo, the Premier of western region, Nigeria. According to the Oyo State Government employees in the Ministry of Agriculture, Crops and Farms Unit, Ido Farm Settlement is referred to as the Integrated farm settlement amongst the farm settlements in Oyo State. However, it is not true that all the farmers are into integrated farming, as there are more farmers into just a single farming practice than those into integrated farming in this Farm Settlement. It is notable that some few farmers are into integrated farms in Local Government Area and are not settlers in the Ido Farm settlement.

Akinyele Local Government Area also has a sizeable number of respondents (24.5%) because of the fact there are Integrated farmers in the Ojoo and Moniya Axis of the Local Government. A chunk of the respondents (14.9%) from Egbeda Local Government Area

are integrated farmers, precisely, farmers in Asejire Water Corporation axis of Egbeda Local Government. Lagelu Local Government Area has the least percentage of respondents (14.4%) because of the fact that Lagelu Farm settlement under the Oyo State Ministry of Agriculture is a Farm settlement for Livestock farmers and it has a small land size compared to others.

The total number of farm settlers attending their various monthly meetings was never up to thirty (30). Hence, just 15 farmers in the farm settlement noted that they were into integrated farming. In the light of the above, it is evident that majority (67%) of the integrated farmers in this study are into crop cultivation and animal husbandry while lesser percentage had two or more forms of livestocks in an integrated manner on their farms. This corroborates Abiona *et al.,'s* (2012) study that revealed that respondents integrated fish cum poultry as well as fish cum crop farms. This may be due to the fact that livestock and crop cultivation is a better means of minimizing cost cum inputs and maximizing output cum profit. This is in tandem with Mukhlis *et al.,* (2018) earlier study that notes that Integrated Farming System involves the combination of various crops and livestock, as well as operationalization of different procedures in creating appropriate condition for protecting environments, maintenance of productive nature of lands and growth in the revenue of farm owners.

Majority of the farmers (75%) allow visitors to their farms for sundry reasons, while 18.1% noted that they do not allow visitors for biosecurity reasons. The study reveals that more of the respondents (51.6%) have visitors visiting their farms annually. This as a result of the fact that the farms are not substantively into agritourism, hence, most of them would have agreed to having inflow of visitors more often. Some of the farmers are however, skeptical of allowing visitors to their farms because they are afraid that the visitors may convey diseases and pathogens to their farms, that may result into mortality of their farm livestock. From a past research in Sweden it is evident that farm owners feel the risk associated with introducing diseases is limited and is not usually triggered for applying biosecurity routines (Nöremark, Frössling, Lewerin, 2010). Furthermore, Nöremark, Frössling, and Lewerin (2013) noted that with several numbers of tourists on a weekly basis, tracking contact amidst the pandemic might waste a lot of time and pose difficulty. Irrespective of this fact, most of the respondents allow visitors to their farms for different reasons.

An integrated farm owner can venture into agritourism for various reasons. Most of the farmers noted that they venture into agritourism to generate additional income, likewise, a large number also noted that they venture into it to educate the public about agricultural operations. This corroborates a comparable circumstance occurred in the UK, when a study of agriculture stays in the North East revealed that 60% of participants had diversified in order to bring in more money and ensure their long-term economic freedom (Sharpley and Vass 2006). In the same vein, Mahaliyanaarachchi (2015) noted that the satisfying parts of agritourism for many farmers is the chance of offering the people a greater knowledge of what farming is truly about, giving farmers households and relatives jobs and supplementing the family's revenue. This further aligns with Todd (2017) that noted that the primary drivers for farm owners to embrace the agritourism industry is inclusive of the need to diversify their revenue streams, financial or social considerations brought on by changes in family lifestyles, a desire to educate consumers, and a preference for laboring on the farmlands instead of off the farmlands.

There are many trips to the farms that are essentially agritourism in nature but a lot of the farmers are oblivious of them until they are sensitized about these trips in their variants. For instance, Lattanzi (2005) listed farm activities that could be classified under agritourism as follow;

a) First, free recreation that includes access to water bodies, bird watching; second,

b) educational activities that include wine making, fishing, cooking; third,

c) participant experiences that include raising a barn, farm holidays, a farm/school for kids, hay rides, pick your own fruit, crop, trail rides with overnight stay; fourth,

d) tours that include views of apple mill, vineyards, ancient farmland, vineyards, speciality animal enterprises (angora goats, llamas), farmlands, agricultural as well as stable facilities, woodlands, and natural regions; fifth,

e) Agriculture and neighborhood amusement, such as narrating stories, dancing, hay/sled/tractor rides, interactive activities, gigs, and musicals; sixth,

f) festival and events that include tribal celebrations, harvesting celebrations, heritage celebrations, bloom celebrations, Christmas lights, seasonal/crop celebrations, you name it celebrations; and seventh,

g) alternate complementary livestock goods (goat or sheep meat, cheese, milk, soap), panfish, buffalo, elk, as well as deer, constructing wood products,

firewood, game animals, gift stores, jams and jellies and other conserved meals, nurseries, and wayside markets are some examples of crops and value-added goods.

In line with the above scholar's submission there are various activities that the respondents in the present study acknowledge exist in their farms and could be attributed to agritourism. These activities acknowledged by the farmers include school trips, agribusiness, hunting/fishing, and especial events. Investment funds or capitals are quite important for all business. agriculture inclusive. The result of this study reveals that almost all the respondents (83.5%) funded their businesses themselves, and others get their funds from other sources. Perhaps, the fact that most of the farmers finance their businesses themselves is accountable for the fact that most of their farms are not on a macro scale but rather on a few plots of land. It is however clear that none of the farmers developed any cultural attributes (in form of heritage tourism) on or around their farms into a tourism attraction. There are some agritourism operators in the other parts of the World, that also develops cultural or heritage affiliations of their farms into tourism attractions. Once, the agritourism potentials of the farm are substantively developed, the aforementioned can also be developed for tourism.

The following scholar's contribution corroborates the discussion above. Burr (2011) opined that celebrations and unique occasions, directed interpretivist trips that communicate customs and heritage, living history demonstrations, art galleries, arts and crafts, music, song, and dance, ethnic cuisines, historic structures and architectural style, cruising trips, and numerous other actions are examples of cultural heritage tourism operations. Burr (2011) further opined that agritourism operators can develop the cultural heritage tourism market's potential by providing privileges for various cultural and heritage engagements and experiences, by preserving cultural and heritage resources, and by telling the story that expose the definition and relationships of cultural heritage via first-hand involvement with objects and artifacts, heritage sites, and landscapes. On the contrary, Reute (2015) noted that similar to sundry industries, many who venture into farming, especially indigenous farm owners, but also international plantation, manufacturing businesses, warehousing facilities, or fertiliser enterprises, may require funding through third parties to run their companies.

It is evident that a larger percentage of the respondents give room for visitors to visit their farms bi-annually and annually, this is premised on the fact that forty-eight (25.5%) noted visitors visit their farms bi-annually and ninety-seven (51.6%) noted that visitors visit their farms annually. Australian Regional Tourism (2022) pointed out that as it is evident that evolution of tourism has led to a concept referred to as 'visitor economy' the attractions of visitors to agricultural farmlands enunciate the concept referred to as 'visitor experience'. Obeidat (2022) noted that farmers do not have an option other than inviting individual(s) to their villages and farms, so as to sell produces.

Fifty-seven (30.3%) of the respondents offers school trips, one hundred and four (55.3%) offers agribusiness, five (2.8%) offers hunting/fishing, seven (3.7%) offers other special events. This implies that the form of the agritourism that most of the integrated farmers operate falls under the agribusiness category. Similarly, it largely establishes the fact that agritourism in the case study area is in the potential phase, otherwise, there would have been more farmers engaging in more forms of agritourism, likewise, the percentage of those that claim that they are into agribusiness as a component of agritourism will not be really disproportionate to the percentage of farmers into other forms of agritourism. Christelle and Peet (2021) noted that activities of agritourism are inclusive of recreations done outdoors, experience meant for education, entertainments, lodging and catering services and sales done on the farm. It is notable that 'school trips' have a substantive percentage this is premised on the fact that agritourism essentially gives room for learning new things while visitors are on tours. Queensland Farmers' Federation's discussion paper (2022) revealed that agritourism establishes the privilege of educating individual(s) in regards to life on the farm and agricultural practices, as well as the developing desire of people to know about how the food they consume is produced.

It is clear, that most of the respondents fund their businesses, which is agritourism inclusive, on their own. This is premised on the fact Fifty-seven (83.5%) of the respondents funded their agricultural enterprise through their personal funds, eleven (6%) noted that they funded their business through bank loans and twenty (10.6%). Baipai, Chikuta, Gandiwa, and Mutanga (2022) noted that majority of farmers self-funded their agricultural and agritourism business, but, 67.6% of these farmers were of the opinion that Government is supposed to make available funds to kick start and maintain their businesses.

The findings revealed that tourism potentials of crop cultivation activities are land preparing activities (18.6% strongly agreed and 47.3% agreed), sowing activities (31.2% strongly agreed and 42.0 % agreed), weeding (14.9% strongly agreed and 48.4% agreed), pruning of trees and vines (21.8% strongly agreed and 41.0% agreed), pest and disease control (28.7% strongly agreed and 37.8% agreed), operation of farm machinery and implements (26.1% strongly agreed and 43.1% agreed), harvesting activity (23.4% strongly agreed and 44.7% agreed), storage and preservation activity (31.4% strongly agreed and 37.8% agreed) and product packaging and branding (25.0% strongly agreed and 44.1% agreed).

It is notable no statistically significant difference amongst predictors, thus, mean indices as well as standard errors were used in rating them in descending order based on the following;

1) weeding (2.11±0.74),

2) transplanting (2.09±0.77),

3) sowing activities (1.97±0.85),

4) Pruning of trees and vines (1.97±0.83),

5) Land preparing activities (1.94±0.74),

6) Harvesting activities (1.85±0.75),

7) Pest and disease control (1.79±0.77),

8) Operation of farm machinery (1.79±0.72),

9) and storage and preservation activities (1.72±0.75).

Findings revealed a significant relationship amongst respondents' demography and the tourism potentials of crop production activities. The demographic characteristics examined are gender, age, academic qualifications and marital status. Togaymurodov, Roman and Prus (2023) pointed out that the findings that compare the respondents' demography (sex, age and academic qualification) of farmers that do not practice agritourism through the use of T-test revealed only academic qualifications has correlation with farmers with interest and those without interest in agritourism (t = 2.071; p < 0.05).

The findings revealed that tourism potentials of activities around animal husbandry are breeding of livestock (59.0% of the respondents strongly agreed and 34.6% agreed), feeding of livestock (43.6% strongly agreed and 50.5%), sight of animals (41.5% strongly agreed and 51.1% agreed), farm animal product such as cheese (43.6% strongly

agreed and 50.5% agreed), livestock vaccination and medication (35.1% strongly agreed and 61.2% agreed), feed composition and milling (37.2% strongly agreed and 53.2% agreed), livestock pens and houses (36.2% strongly agreed and 67.4% agreed), veterinary care of animal (51.1% strongly agreed and 44.7% agreed), livestock slaughtering (36.2% strongly agreed and 50.5% agreed) and animal dressing (44.7% strongly agreed and 48.4% agreed).

It is notable that there was no statistically significant difference amongst predictors of animal husbandry's activities, thus, mean scores as well as standard errors were used in rating them in descending order based on the following;

1) animal slaughtering (1.78±0.68),

2) Feed composition and milling (1.72±0.63),

3) Livestock pen and houses (1.70±0.58),

4) Vaccination and medication services (1.69±0.54),

5) Sight of animals (1.67±0.63),

6) Animal dressing (1.63±0.63),

7) Feeding of animals (1.62±0.58),

8) Farm animal products such as cheese (1.62±0.59),

9) Veterinary care of animals (1.54±0.59) and

10) Breeding of animals (1.47±0.62).

In the light of the above, it is evident that different operations of animal husbandry is capable of attracting visitors to farms. Winter (2020) stated that visitors have the prerogative of travelling to sight and engage vis-à-vis petting, swimming with, riding with and taking personal photographs with dolphins, tigers and different animals with charisma and animals at the edge of extinction. There are various attractive phases in the tourism sector; for instance, tourists can participate in the observation of animals in the safaris, tourists can meet and cuddle with cats in cafes, tourists can volunteer to work with goats in farmlands and danger tourism that involves getting closer to fearful predating animals (Essien, Lindsjo and Berg, 2020).

Findings revealed a significant relationship amongst respondents' demography and the tourism potentials of animal husbandry activities. The demographic characteristics examined are gender, age, academic qualifications and marital status. Obeidat (2022) noted that the results of the study revealed a variance between respondents of various age classifications and how they evaluate the environmental effects of agritourism.

The findings revealed that tourism potentials of the farm's environment are cultural or historical objects of attractions (52.1% disagreed and 39.9% strongly disagreed). However, a large number of the respondents opposed the following indicators as being tourism potentials, farm shops (36.7% disagreed and 59.0% strongly disagreed), unique farm machineries (33.5 disagreed and 58.0% strongly disagreed), natural landscapes (40.4% disagreed and 53.4% strongly disagreed), land capacity (37.8% disagreed and 60.6% strongly disagreed), hotels and guest houses (42.5% disagreed and 57.4% strongly disagreed), green agrarian environment (36.2% agreed and 54.3% strongly disagreed), artificial forestation (41.0% disagreed and 53.7% strongly disagreed), petting zoos (29.2% disagreed and 70.7% strongly disagreed), lastly, stream, ponds or lakes (37.2% disagreed and 52.7% strongly disagreed).

It is notable that there was no statistically significant difference amongst predictors of the farm's environment, thus, mean scores as well as standard errors were used in rating them in descending order based on the following;

1) petting zoos (3.69±0.59),

2) Land capability (3.58±0.54),

3) Hotels or guest houses (3.56±0.51),

4) Farm shops (3.56±0.56),

5) Stream, ponds or lake (3.51±0.70),

6) Natural landscapes (3.50±0.58),

7) Unique farm machineries (3.49±0.65),

8) Artificial forestration (3.48±0.59),

9) Green agrarian environment (3.45±0.66) and

10) Cultural/historical objects of attraction (3.31±0.65).

This is corroborated by Baipai (2022) submission that revealed that to enhance agritourism, there is a recommendation to engage resources in the farm's environment like water, for aqua-tourism, hills and rock structures, to instigate mountain inclined engagements. Australian Regional Tourism (2022) also pointed out that agritourism experience may be inclusive of farm-shops, trips, tutorials, field-to-fork eateries and heritage attractions. The findings show a significant relationship between demography of the respondents and the tourism potentials of the farm environment. The demographic characteristics examined are gender, age, academic qualifications and marital status. It is worthy of note that there is significant relationships between each of the agritourism

potentials and the demographic characteristics of the respondents. This simply depict that the demographic characters of the respondents (gender, age, academic qualifications and marital status) drive these agritourism potentials. All of the farmers with these demographic characteristics can invest and engage each or all of the agritourism potentials. Additionally, the demography of the respondents (such as age, sex, educational attainment, and form of ownership) can drive farmers agritourism's involvement from three positions, and the three positions are economy, societal and environment (Ćirić *et al.,* 2021).
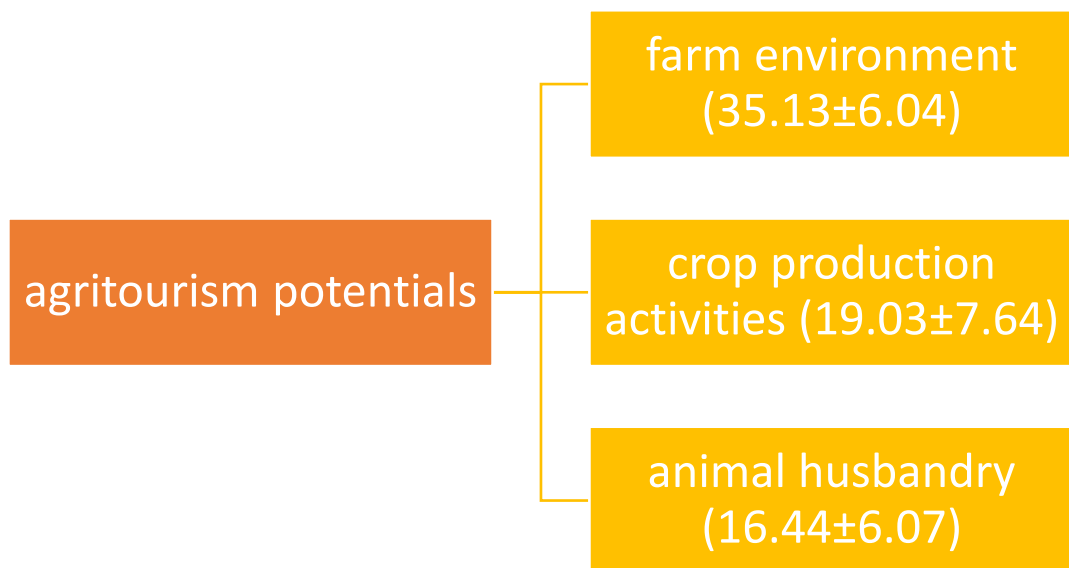
Figure 4.1: Agritourism potentials of the integrated farms in order of importance

It is worthy of note that the agritourism potentials of the integrated farms have been rated on the basis of their mean and standard deviation score. It is evident that in order of importance farm environment came first (35.13±6.04), crop production activities came second (19.03±7.64), while animal husbandry had the least rating (16.44±6.07). This simply implies that the farm environment has higher attributes that could be developed and operationalized for tourism. It has various components that can be morphed into tourism attractions. Although, not all the farms have the same potentials in their environments but some have waterbodies surrounding their farms, some have rock structures with foot prints, some have cultural/historical objects, farm shops and other components that could serve as tourism attractions outside of the precise agricultural engagement on the farm.

Obeidat (2022) noted that additionally, the availability of naturally created and formed assets for instance vegetations and waterbodies will lead to the contribution of the region's successes in agritourism. Developing these components may allay the fears of farmers that believe that contact with the farm animals may result into the farm animal contracting diseases and leading to mortalities. After the farm's environments the crop production activities in the integrated farms have the potentials of attracting more visitors to the various farms. Out of these activities, weeding has the highest rating, while, storage and preservation activities have the lowest rating. This has the chance to attract visitors that are inclined to learn production processes and procedures of specific crops. Animal husbandry has the least importance in terms of being an agritourism potentials. Out of the activities for animal husbandry, animal slaughtering has the highest rating, while, breeding of animals has the least rating. For the farmers that are afraid that their farming processes may be disrupted or that visitors may convey diseases and pests to their farms, such farmers can stage crop production and animal husbandry activities for visitors.

The in-depth interview revealed that it is absolutely possible to adopt information systems in integrated farm processes. All the respondents noted that it is definitely possible to use software applications for integrated farming processes and businesses. Some of the respondents mentioned some software developed for various forms and agriculture. The respondents noted that the fact that some software had been developed for various agricultural businesses and processes simply implies that they could also be developed for integrated farming processes and businesses. This totally aligns with the submissions of various scholars; for instance, Pivoto *et al.,* (2018) referred to it as smart

farming and noted that with the gradual introduction of automated systems in to procedure, smart farming (SF), which is based on the integration of information and communication technologies into machines, equipment, as well as sensor systems in agriculture production systems, enables the generation of a significant amount of data and knowledge. Likewise, Bacco *et al.,* (2019) noted that Smart Farming (SF) implies usage of information communication technology for farming. The list of the various software developed for agriculture by some of the key informants aligns with Bacco *et al.,* (2019) that cites 'Taranis' with the offering of a platform that uses aerial and satellite imagery jointly with Artificial Intelligence (AI) techniques in providing a Decision Support System (DSS) for Precision Farming (PF) applications; 'AgriOpenData' that provides a DSS as well, exploiting block-chain, and adding support services on top of it.

As opined by one of the respondents, a form of information systems adopted by farm is farm information systems. Sørensen (2010) notes that a system for gathering, analyzing, saving, and distributing information in the necessary manner to carry out activities and activities on rural lands is referred to by the term farm management information system. Conclusively, Banhazi *et al.,* (2012) reports the relationship between information systems and integrated farms by noting that, in order to increase operation overall sustainability and economic efficiency, highly precise agriculture techniques are currently utilized at every step of crop production as well as a growing amount in livestock production.

To further corroborate the positions of the respondents, Singh *et al.,* (2015) reported that Agriculture Information System (AIS) is a computer-based information system that has embedded in it all the interconnected knowledge that can aid farm owners to manage information as well as taking necessary decisions. Just as Agricultural Information System (AIS) is created for the use of farmers in India, a similar software application can be developed precisely for integrated farmers in Nigeria. In the same vein, there is marketing information system (MIS) that is developed for various marketing needs of agriculture and to avail customers with pertinent information (FAO, 2017). Galtier *et al.,* (2014) pointed out that powers made available via novel ICTs has made the following achievable:

1. Enhancement of information supply for meeting information demands of user;
2. Enhancement of user accessibility to data; similarly,

3. Linking MIS to sundry information systems, which thereby, leads to usage of the distributed data.

Based on the above, information systems have the capacity to improve agricultural productivity considering the fact that it easily makes farmers and either existing customers or prospective customers to connect and transact business, therefore, making it easy for farmers to make sufficient money from their business and then plunge it back into their business. Munyua and Adera (2009) noted that modern ICTs are laden with the prospective capacity to enhance agricultural productivity by communicating knowledge and information to rural agricultural communities. The fact that it is a repository of information, it keeps both the community members and customers in the know of the agricultural activities going on, on a specific farm. This could have a ripple effect of bringing more referrals to the farmer. Saidu *et al.,* (2017) opined that the internet and web-based applications can be used to share and disseminate agriculture information, advertising products and service on an extensive basis. Similarly, Yimer (2015) notes that ICT furnish current information about farming innovations, best - practice, marketplaces, pricing patterns, and seasons.

The viability of information systems on the presence of its importance for agricultural practices, precisely, integrated farms cannot be overemphasized. The fact that people could sit in the comfort of their offices or apartments and view remote farms, vis-à-vis the composition of such farm, the type of produce such farm has and so on and initiate and complete transaction(s) with such farms, makes information systems a lofty innovation for agriculture. It gives such farmer a comparative advantage over his/her peers that have not adopted information systems for their farms.

In connection to the various names of existing software developed for agricultural purposes, Sami and Sayyed (2014) opined that technology such as 'information kiosk' can be used to exchange farm information, via providing fundamental service that are nor restricted to emails, aiding educational services, medical service, farming as well as irrigated farming, and so on, but also specialized system that aids in deciphering market options as well as optimized mode of production, managing crops on an integrated basis, Farm-level Intelligent Decision Support model created for assisting to determine optimized control of machines at the farm-level system.

In addition to the above, all respondents opined that information system is a viable and veritable tool in showcasing the tourism potentials of integrated farms to prospective clients. The respondents noted the various uses that information system can serve; with

respect to advertisement, management, control, record keeping and so on and so forth. Jasiński (2012) noted that firstly, the chances to place agritourism announcement online is germane. Therefore, it will be extremely easily to make announcements about new products, inventions and activities on the farm on the software set up for agritourism. It is notable that the software applications can only be driven and utilized via the use of internet. Similarly, anything that is driven and controlled by the internet is referred may be categorized under the internet of things categorization (IoT).

This corroborates Salehi and Farahbakhsh (2014) research that revealed that the internet as a marketing and communications tool is primarily used in the tourism industry. In the same vein, Verma and Shukla (2019) noted that the Internet of things (IoT) technology is having a manifold impact on tourism sector as well as tourists are developing in terms of being mobile and flexible while gathering experiences from trips as well as lodging facilities. In connection to the various forms of information systems that were cited by the key informants in this current study, Jadhav et al., (2018) noted that with respect to plan associated to travelling as well as advices, a lot of individuals make reference to TripAdvisor, that essentially together with Facebook make up the biggest website for travelling. Matikiti-Manyevere and Kruger (2019) also noted that through literature review, there is a deduction which signifies germane roles played by social platforms on tourism, likewise, searching of knowledge to plans for trips as well as the ability of social platform to help people in making informed decisions.

A form of information system that has generally been used for agricultural endeavors is Geographic Information System (GIS). It is notable that it has been useful for map production, data queries and search, spatial analysis, spatial modeling and so on and so forth. This makes it really easier for both prospective and existing buyers of agricultural produce to garner information about specific agricultural products. Furthermore, to support the positions of the key informants, information system is viable for purchasing tourism products online. However, it is pertinent to note that such software application that would be developed must be user friendly, vis-à-vis being easy to explore, easy to understand and easy to load using the internet. A language easy to decipher and relatable to by the target individual(s) must be adopted, otherwise, there would be a lot of bottlenecks.

Hence, it is important to take a careful study of an existing software application, in a bid to know its weakness and strength. Once, the weakness is known, all energy should be channeled to ensuring that the one that will be developed will be devoid of the weakness

in the existing software application. This certainly supports the assertion of one of the key informants that opined that before a new software will be developed for agritourism, efforts must be put into place to see if such software exists in other climes, otherwise, any similar software that exists must be really studied, so as to be able to avoid its shortcomings in the proposed software. Most particularly, there must be absolute riddance to irrelevant information on the software application, in a bid to keep people concentrated upon the very information that they need to access.

The above is in tandem with the submissions of other scholars. Akukwe and Odum (2014) opined that GIS have the following influence on tourism; it provides explicit and profound information about a tourist destination, its applications assist in making plans and decision in tourism, establishment of Inventory and data base for tourism experts, tourists and different stakeholders, Monitoring of trends, events and movements and adaptive to Internet Advantage/Reduction in fraud. Meanwhile, Goyal (2010) discovered the creation of free Internet kiosks that shows agriculture data from day to day (e-Choupal), mixed with the entrance of new buyers, substantively enhanced industry price for soybeans in Central India.

Malcienė and Skauronė (2019) noted that for a lot of people, during purchase of excitement as well as virtual tourism product, it is pertinent to engage easy and simple information systems that make it possible to be quick, efficient and convenient to find the appropriate information. Anoop, Ajjan and Ashok (2015) argued that technical and language barriers were discovered to be the absolute significant barriers for acceptance of management information system (MIS) succeeded by irrelevant contents, dearth of being reliable, dearth of being aware as well as involved costs.

It is notable that most of the respondents opined that it is better to build the information system from the scratch, although, it could be expensive, tasking, time consuming, with more technicalities involved. Technical Centre for Agricultural and Rural Cooperation (CTA) (2015) noted that developing a market information system from the beginning requires substantive investment, expertise, time and risk. With respect to building an information system for agritourism, it is important that there must be profound and careful concerted efforts between the farmer or business investor and software developers. Just as opined by some of the key informants, software developers cannot have fruitful achievement without working together with experts in a field, in order to develop software application for such field. Alvarez and Nuthall (2006) noted that while

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looking at the prospective problems cited on the farm, it is pertinent that software developers should have an understanding of the farmers and work intimately with them and that the resultant systems should be adaptable to suit a range of farmer characteristics.

Lastly, it is indeed true that most of the respondents noted that it will be much better to develop a mobile software application, while some of them noted that both the mobile and web software applications are good. The former's opinion is supported by FAO (2017) that notes that management information systems are increasingly looking to smartphones as a means of gathering and collecting information. However, the latter's opinion is in tandem with Khatri (2019) that pointed out that technological innovations has developed to mobile and web 2.0 applications that goes from just business development to software application. This is in a bid to give the set of people who would rather access their computers for internet services to be able to also explore the software application.

It is however, striking that an impressive number of the farmers understand what software applications are. Similarly, most of the farmers have internet enabled phones and they thus recognize the fact that they have software applications in their phones and gadgets. A lot of the farmers noted that they very often and often use the software applications in their phones and gadgets. Most of the respondents prefer software applications to desktop versions of such application.

The above discussion is in tandem with the submission of other scholars, such as Olson *et al.,*'s (2011) work that revealed, younger people utilize a wider range of technological innovations than elderly people do, yet depending on the technological area, there are age-related disparities in use and regularity. Likewise, Saborido *et al.*, (2015) notes that there is current trend of pervasive mobile devices that will eventually lead to the Internet-of-Things. Information Communication Technology (ICT) is described as the knowledge of computer and communication networks, as well as the applications and programs running on them (Mid-Pacific ICT Center, 2014 cited in Chen, Castillo and Ligon, 2015).

The mean score for the usage of IS is 13.69. According to the analysis the usage of IS (their mean values and standard deviation values) for the farmer is rated as follow:

1) IS enhances access to agricultural inputs (1.56±0.54),
2) IS is useful in reducing transport cost (1.48±0.65),
3) IS is useful in easily accessing finance and grants (1.45±0.54).

4) IS is useful in making periodic inventory and record analysis easily and quickly (1.40±0.50).

5) IS is useful in keeping database (1.37±0.52),

6) IS is useful for retrieving social updates that could enhance farming activities (1.36±0.49).

7) IS is useful in helping farmers to organize themselves into groups to achieve better savings and cooperatives (1.36±0.49).

8) IS is useful for getting updates for my business from farmers in other parts of the Country and the World at large (1.31±0.48).

9) IS is useful for monitoring farm activities either the farm owner is around or not (1.18±0.45).

10) Information system is useful for farm produce advertisement (1.22±0.43).

In the light of the above, the various importance of information systems for agricultural activities and engagements are established. The ranks attached to the importance of information system via mean score and standard deviation value symbolizes the degree at which information system is important for a particular agricultural activity. According to this present study information system has a higher propensity to enhance access to agricultural inputs than its propensity to reduce transportation cost and so on. Its easy access to agricultural inputs is on the basis that farmers in one region can easily communicate with vendors of agricultural inputs in a totally different region. In the process of communication, the available units of the agricultural inputs can be ascertained; likewise, prices of the inputs can be negotiated and so on. It could thus be inferred that farmers in the case study explore information system to access agricultural inputs more than they use it to reduce transport cost.

Logically, once vendors of agricultural inputs have discussed with farmers extensively via information system, then, the need to expend money on transportation for such purpose might no longer be necessary. Similarly, the farmers use information systems to easily access finance and grants than they use it for making periodic inventory and record analysis easily and quickly. With a few search clicks on information system, a farmer should have access to a list of finance and grants within his or her domain. If such farmer is interested and has the necessary documentation at his or her disposal then he/she could apply for such finance and grants.

It is indicative of majority of farmers in the study area yearning for more finance and grants to expand their businesses. Logically, once their businesses are expanded, they

would employ more hands and then there would be better exploration of periodic inventory and record analysis. This is a clear pointer to the fact that information systems should also have various importance for agritourism, considering its above listed importance for agricultural activities and agriculture must first be in place before agritourism can be set up. Nevertheless, some of the above listed points may not be applicable to agritourism. Their applicability depends on the perspective that is attached to it.

The above is thus supported by various scholars and their submissions are as follow;

Sopuru (2015) opined that IS can avail farmers with the information on availability of seeds, fertilizers and pesticides in different locations. Milovanović (2014) noted that the prospective influence of ICT on agriculture can be seen via cost reduction, increase of efficiency and productivity improvement. Mobile technologies and their variable costs attached to their usage are substantively lower than equivalent travel cost and opportunity cost (Chavula, 2014). Sundry services made available to farm owners via information systems are monetary services (lending money), insurance services, legal services (advices) and so on (Milovanović, 2014).

The aim of the farm management information system is to aid in the management of the daily operations on the farm in the short term, but it could determine the long-term vision for the agricultural production (Cojocaru, 2014). Saiz-Rubio and Rovira-Más (2020) noted that a software application named 'Agrivi' is produced in the United Kingdom and it is used for weather, field mapping, and inventory planning. Nishiguchi and Yamagata (2009) noted that various instances include notes taking for previous productions while propounding novel cropping plans so as to retain crop rotation system, information collection on the whole planting region of specific crops, the review of changes to rice production, exhibiting the age of farmers, likewise, if there is anyone or otherwise to proceed from them on a map to decipher the condition in each village, and calculation of land area on sloping land.

Abubakar and Akor (2017) opined that a germane output of ICT has been the development of databases that covers precise scope of knowledge, which has in turn makes access to relevant information on precise agricultural topic easier. Saiz-Rubio and Rovira-Más (2020) noted that a software application named 'SpiderWebGIS' made in Spain gives room for consultation, management and analysis. IS can enhance farmers communication with various farm owners easily, making it realistic for them to establish

cooperatives that could exploit novel businesses and sell their products to highest bidders (CTA, 2009).

Saiz-Rubio and Rovira-Más (2020) noted that a software application named 'AgHub' made in Texas, U. S.A., is an independent solution by a cooperative that collates and safely stores data. ICT aid extension agents as well as research experts in adopting enhanced farming activities and distribute to farm owners (Chavula, 2014). Extension agents can be updated with contemporary findings and developments in the field of agriculture, and they can also engage IT in getting the farmers informed appropriately. LINKS (Livestock Information Networking and Knowledge System) is another progressing as well as growing subnational connected livestock marketing information projects which are targeted to address demands of time-conscious and reliably engaged livestock marketing information or producers, traders and policy makers in the livestock sub-sector (Angello, 2017).

Tummersa, Kassahuna, Tekinerdogan (2019) opined that in managing the big quantity of information as well as continuous tracking of farming engagement, farm owners explore Farm Management Information Systems (FMISs). This is premised on the fact that farm management information system helps manage big data that are practically impossible for farmers to manage without the aid of technology. Milovanović (2014) opined that such information via the usage of IT aids farmers and traders in making decisions as to when and how to sell their products. A pertinent advantage of technology to farming engagements is the fact that it help activities to be done in real time. It ensures that the time set for accomplishment of tasks and activities are achieved in real time. The various technologies are advantageous to farm owners for creating efficient and cheap farm produce as well as advertising programs and in giving opportunity for amelioration of poverty and improvement of their life quality (Gorla, 2009).

In the same vein it is notable from this study that agritourism potentials (crop cultivation, animal husbandry and environment) are significantly joint predictors of information system usage (F = 29.68, p < 0.05). Hence, crop cultivation, animal husbandry and farm's environment jointly predict the usage of information systems in the Four Local Government Areas in Ibadan (where integrated farmers were selected from) at 0.05 level of significance. On the basis of the fact that regression weight depicts relative contribution of each of the predictors, the findings shows that tourism potentials of animal husbandry is the highest significant predictor of the usage of information systems (**β**= 0.497 t =7.635, p < 0.05), followed by tourism potentials of farm's environment (**β**=

-0.199 t = -3.048, p < 0.05) and lastly, tourism potentials of crop cultivation ($\boldsymbol{\beta}$= .093, t =1.470, p < 0.05) respectively with coefficient of determination of (R^2 = 0.351) which means that any variation of the usage of information systems is consequent upon 35% variation in a combination of the predictor variables. It is established that information systems usage has significant relationship with agritourism potentials as shown in the figure below.
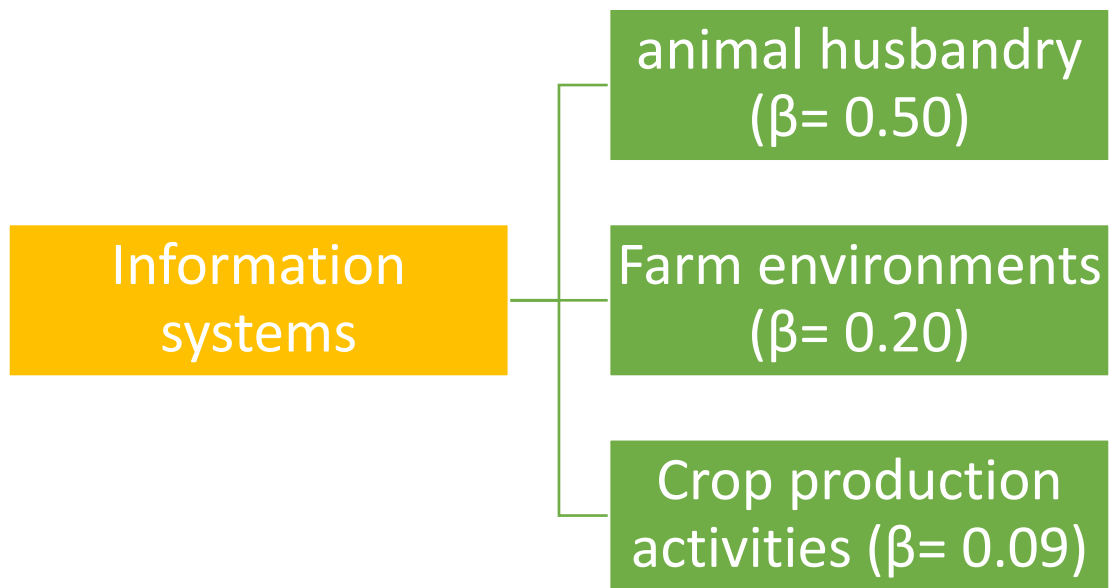
Figure 4.2: The connecting concept of IS and agritourism potentials

It can serve as a source of contemporary and relevant information source to agritourism owners; as it agrees with, Nuchakorn *et al.'s* (2019) study that revealed the significant relationship between Information system of route and form of agricultural tourism activities in Surat Thani province, in Thailand. The author thus created the information systems as well as the routes taken for agritourism engagements in Surat Thani. Vaugeois, Bence and Romanova (2017) opined that it is pertinent to create a web portal being a component of advertising strategies in promoting agri-tourism operations, which will avail the agritourism business a great opportunity to intimate consumers of every product and activity that the agritourism business provides, hours of operation, directions to the farm and any updates that customers are expected to know. The web-portal created for agritourism in these various regions of the Globe must have been of immense benefit to both the farmers cum investor and the tourist.

In the case of Nuchakorn *et al.'s* (2019), it has made it significantly easy for agritourists to navigate their ways through the agritourism destination. It must have significantly led to the reduction or obliteration of the efforts and stress that farm owners cum investors could have plunged into explaining and leading agritourist through the agritourism destination. As a matter of fact, it is trite that creation of an information system for managing an agritourism destination, will make the management of such destination seamless and effective. Anand (2013) opined that Destination Integrated Computerized Information Reservation Management Systems (DICIRMS) make available facilities for communicating as well as transaction procedures amongst every shareholder, inclusive of customers, principal and business entities responsible for distributing and marketing of destinations. Therefore, communication and transactional interaction between the customers and the agritourism destination becomes easier. Fanelli and Romagnoli (2020) asserted that it is germane that agritourism operators that are less inclined to use a website comprehend the strength of this webtool to further develop the attributes and characteristics of their farmhouses. Due to various reasons, not everyone will engage information systems for their endeavors, precisely, farm engagements. Apparently, information systems can be better explored by those that have high propensity to use it for sundry activities, inclusive of agritourism.

"Collection, process, storage, and dissemination of information necessary for carrying out the operational functions of the farm" is referred to as a Farm Management Information System (FMIS) (Salami and Ahmadi, 2010). Based on the foregoing, perhaps, the information system that will be developed for agritourism with the capacity

to collect, process, store and appropriately disseminate data in the form of information can be referred to as 'Agritourism Information System'. The agritourism management system will be configured to retrieve data from people (prospective agritourists), work on the data and then avail the people with the appropriate information. It must be an information system that will holistically factor in all pertinent activities on a typical agritourism farm, and various tasks of the agritourism farm owner or investor. Just as asserted by one of the respondents, that in coming up with an information system for tourism, an existing information system must be well studied, so that some features of it will be adopted while negative features of it will be avoided. It should be capable of making life easier and better for the agritourism farm owner and the tourists. A gateway through smooth communication between the agritourists and the farm owners can ensue must be adequately incorporated into it.

Hence, unique features of FMIS that could be adopted for agritourism information systems, according to Kaloxylos et al., (2012) are; provider's database (that stores user information), farm accounting feature, features for adding services to a market community where customers may find and utilize them, a vertically inclined communication (platform) driver for connecting different services listed with the FMS based on service use agreements, and functionality for registration services. Their major aim is to deliver information to or gather it from farm owners, analyze it, as well as offer various services (Kaloxylos et al., 2012). For a developed information system to serve the aforementioned purposes, it is important to factor in and appropriately include all the components of information system that can typically serve these functions with ease, as evident in the information systems engaged for similar business venture. Al-mamary, Shamsuddin and Aziati (2014) opined that broadly, information systems can be classified as either operational or support of business operation that has the following components, transaction processing systems, process control systems and Enterprise collaboration systems; or, support of managerial decision making that has components such as management information system, decision support system and executive information systems. Information systems used for other business activities have the foregoing. Thus, it is certain that the developed information system will perform very well for agritourism, when all the aforementioned components are appropriately infused into it.

Katengenza (2011) asserted that widely utilized mobile tech tools, including interactive videos, internet/Web-based applications, and SMS applications on mobile phones, can

be used as contemporary knowledge sources in various fields in developing nations. Considering the fact that the relationship between information systems and agritourism has been established, the foregoing clearly states the benefits that could be derived from using information systems for agritourism business. Information systems have significant importance for both the agritourism business owner cum investor and existing cum prospective tourist. This is because there are various information about agriculture and tourism that must be accessed by the prospective agritourist, the farmers and other people; hence, such information can be well arranged and kept in information systems for easy accessibility. This is supported by Technical Centre for Agricultural and Rural Cooperation (CTA) (2015) that noted that, several other services could be offered by management information systems, and they are as follow:

a) Climatic condition, present as well as projections: temperature, rainfall, wind strength, humidity

b) News: news connected to products under review

c) Trade: quantity and volume transacted at chosen market places, and across borders.

d) Warehouses: destination, worth and categories

e) Inputs: form and amounts of inputs sold (retail, wholesale and import business owners)

f) Demand: extent of consumptions as well are sequence

g) Production: crop types, area planted, stocks, yield levels, crop calendars

h) Financial: foreign exchange, tariffs, insurance

i) Regulations: taxes, standards, export requirements

Csótó, (2010) opined that in the Internet epoch, where information plays a key role in people's lives, agriculture is fast becoming an extremely data-intensive industry where farmers are obligated to retrieve and evaluate a great quantity of information from various number of devices (e.g., sensors, farming machinery, meteorological sensors, etc.) so as to attain efficiency in production and communicating appropriate information. Likewise, Sopuru (2015) noted that despite limitations of agriculture's unstructured model, information system has been successfully implemented. In the light of the background that agriculture is information intensive, it is certain that agritourism is also information intensive, hence, it can be inferred that information system's implementation is also germane to the substantive development of agritourism potentials.

The following studies also agrees with the significant connection between information systems and tourism, which can precisely be used for agritourism potentials as elicited by the findings of this research. Fadahunsi (2010) illustrated the significance of GIS and management of tourism in Nigeria by exploring it to inform potential tourists in Osun State of the availability of the tourist attraction centers. Similar to this, Ayeni (2006) created a user-friendly Multimedia GIS database that is a fantastic resource in creating different Nigerian tourist maps and for academic institutions offering courses in Nigerian tourism. In Oyo State, Nigeria, Fajuyigbe et al. (2007) created a web-based Geographical Information System (GIS) for tourism. The research showed that presenting GIS-based tourism data online and in a computerized environment would provide an unmatched channel for managing and promoting of the Oyo State tourism industry. It is also pertinent to engage GIS for agritourism activities and business in Oyo State.

With respect to the theories adopted for this study, it is notable that both of them exhibit significant applicability to the trajectories of this study. The push and pull theory is indeed applicable to the quantitative aspect of this study that is underpinned by the data retrieved from the integrated farmers. The pull motives of the integrated farms are the crop production activities, animal husbandry and the integrated farm's environment capable of attracting agritourists to the integrated farms and the farm environments. Precisely, these pull motives are the identified and highlighted indicators of crop cultivation activities, animal husbandry and the farm's environment. These indicators have been analysed and ranked using their mean and standard deviation indices. For the crop cultivation activities, the analysis revealed that weeding stands as the strongest pull indicator capable of drawing agritourists to the integrated farms in the study area. For the animal husbandry, the analysis revealed that slaughtering of livestock animals stands as the strongest pull indicator capable of drawing agritourists to the integrated farms in the study area. While, for the farm environments, the analysis revealed that petting zoos stands as the strongest pull indicator capable of drawing agritourists to the integrated farms in the study area.

The push motives are the internal or intrinsic motivations underpinned by the desires and cravings of the prospective agritourists. They include the desire of the prospective agritourists to visit a farmland for tourism or lodge in an ex-farm house. Push motives are desires inclined towards satisfying excitement, knowledge, leisure, escape, family togetherness, and fun desires of people. Push motives are basically emotions based or

triggered by emotions. The desire of individual(s) to return to the village, especially, the farm side of the village for family togetherness and to escape from the hustle of the city essentially drives push motives.

The qualitative aspect of this study is underscored essentially by social cognitive theory. This theory drives the conscience of the software developers in creating software applications that are user friendly. Software applications to be created must be easily operationalisable by people with high, medium and low level of education. This will engender easy acceptability of such software by the people. It is indeed true that in most cases people have to be tutored to be able to use some software applications. However, it must be ensured that with little training, individual(s) will be able to optimally operationalise and explore the software application created for agritourism. Therefore, the cognitive ability of people must be factored in by the software developers. Likewise, the chances that people will be able to easily deplore their cognitive abilities in quickly understanding and engaging the software application must also be considered by the software developers. However, in situations where existing software applications, also called off-the shelf software is being adopted, it is pertinent to ensure that it is only a software application with user friendly interphase that should be adopted.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of the Study

Agritourism is indeed a topical form of tourism. It is a synergy between agricultural practice and tourism. It is notable that for agritourism to be established in a particular location, there must be significant presence of agricultural activities (or the location must have been used for agricultural activities in the past), there must be accommodation facilities and there must be leisure trip of people to such destinations. Flanigan *et al.,* (2015) noted that in agritourism, agriculture becomes the 'currency' for exchange, in such a way that visitors physically contribute to the farm economy in return for their tourism experience. Agritourism cannot be done in a place where agricultural activities never existed. Just like leisure trip is prominent in the discourse of agritourism, significant agricultural activity is also germane, while discussing and conceptualizing agritourism. According to Ciolac *et al.,* (2019) agritourism is essentially made up of three elements and they are accommodation, food and tourist entertainment, respectively. Mediano (2002) also notes that agritourism is spatially constrained, on the premise that it basically takes place on the farms, while rural tourism takes place basically in rural environment.

It is solely a leisure trip to no other destinations than a spatial spread initially used for or presently being used for farming. Flanigan *et al.,* (2014) noted three discriminating characteristics of agritourism on the integration of supply and demand as follow: 1) if visitors have direct or indirect interaction with agriculture; 2) whether the product is based on a working farm and 3) if the visitor experiences authentic working agriculture. This shows that agricultural activity is at the heart of agritourism. Agritourism can be described as a form of rural tourism where the hosting house must be integrated in to an agricultural estate that gives room to visitors to engage in agricultural activities (Marques, 2006).

In the same vein, Sonnino (2004) opined that agritourism is the action of hospitality carried out by agricultural entrepreneurs that must remain connected to farming

activities. It is pertinent to note that some agritourists prefer to participate in agricultural activities while on their various leisure trips to the farms. Additionally, tourists' lodging as well as feeding, includes tourist actively participating in living and working in farmlands (Franić and Lovorka, 2007). While on the leisure trip the tourist must participate in agricultural activities in such a way that it will in no way impair the agricultural system set in place by the farm owner. Optimum safety measure must be put in place to ensure that diseases and what things that should not be brought into the farm via agritourist patronage. Tourist that deems it fit to directly participate in agritourism activity must be appropriately disinfected and advised to put on farm clothes and footwears (if there are provisions for them on the farm).

There are various forms of tourist contact with agricultural activities that can describe tourist participation in agricultural activities while on agritourism. According to Philip *et al.,* (2010) agritourism on quasi farms, functioning farms with passive contact, functioning farms with indirect contact, operating farms with direct contact that is staged, and working farms with direct touch that exhibit authenticity. Chatterjee and Prasad (2019) also designed a typology that separates tourist contact with agricultural activity as follow; passive tourist contact; indirect tourist contact; and direct tourist contact, respectively. Although, the tourists must have disengaged from work while on agritourism, however, they have opportunity to learn new things while directly or indirectly participating in agritourism. Nikolić *et al.,* (2016) noted that by learning about farming in this manner, prospective visitors who are drawn to the place by its beautiful nature have the chance to be involved in day-to-day farming engagements. New knowledge can be gained at various phases of agritourism. The tourists can gain new knowledge from the agrarian landscape of the farm environment, especially, when the environment is blessed with various forms of landforms. In the same vein knowledge can also be picked up while on the farm by participating in the farming activities. This knowledge gained can be invested into the tourists endeavors now or in the future.

It is notable that agritourism aligns with the tripod focus of sustainable development, namely, social, economic and environmental. It sustains the environment because its core mandates include sustainable usage of the environment through tourism and agricultural practice. Ciolac *et al.,* (2019) noted that better than sundry businesses, agritourism is environmental dependent because of its supply of unprocessed materials, its focus, and its sphere of operation, as well as on the growth of tourism as its pillar or supply of resource. Agricultural products basically enhance the commercial and

economic condition of the Nation where it is practiced. In the same vein, leisure trips to such agritourism destination involves the exchange of money between the tourist and the agritourism owner. Tiraieyari and Hamzah (2012) noted that as a medium for local economic diversification, agro-tourism's contribution has been towards the reduction of poverty and enhancement of livelihoods of the local people. Choenkwan *et al.,* (2016) also noted that agritourism leads to the creation of tour connected industries, for instance, outlet for souvenirs, selling of farm produce, stores beside the road, lodging facilities, eateries so on. Likewise, agritourism has the capacity to give a facelift to the social construct of the environment where it domiciles. Nguyen *et al.,* (2018) noted that locales of the community had the opinion of agricultural tourism providing better leisure spatial bound settings.

Malcienė and Skauronė (2019) noted that information systems are the elements comprising the environment: computers, software, computer networks, databases, and people. Information systems are technological inventions with the capacity to retrieve, manage and disseminate information. Essentially IS is used for storing, processing as well as transferring pertinent data to help to make decisions (Malcienė and Skauronė, 2019). Bourgeois *et al.,* (2019) noted that a major component of Information system is software that is made by developers via the process of programming; the software gives instructions to the hardware, though. Software has two broad categories and they are operating systems software and application software, respectively (Bourgeois *et al.,* 2019). However, this research focuses on application software because they are important for word processing, advertisement, virtual communication and so on. Under the category of software applications are various social media platforms and browsers that could be used to access germane information about tourism destinations in both far and near.

It cannot be denied that there are several information in tourism that must be disseminated to prospective/existing tourist(s). Such information must be well arranged and stored, so that it will be easy to give out to prospective and existing tourist based on request. Such information could include information about the precise tourism attraction, accommodation or lodging facilities, car rents and so on. Malcienė and Skauronė (2019) opined that realization of the tourist product needs such information systems that can make available information on tourist accommodation, booking and booking opportunities, transport rent, ticket reservations and other services within a short period of time. If this information is to be well arranged, stored and disseminated

in record time, then, it must be done via information systems. Khatri (2019) noted that the social media, mobile and information technology on tourism and hospitality is widely used for information search, sharing and exchange. Software application has the capacity to put tourism destination on the global view. Once the tourism destination is posted on recognized software application, it will be accessible to all and sundry, thereby, giving such tourism destination a comparative edge over competitors. Tourism and hospitality industry is a competitive industry.

It is however, pertinent, to note that before information systems can be accessed remotely, it must be connected to an internet or a local area network. If it is going to be accessed in different sites, it must be configured to the internet. Presently, these information systems are gradually moving into the Internet epoch and are beginning to explore some of the well-established networking solutions to enhance their offer to the end users (Kaloxylos, 2012). There is a big competition between a tourism destination and many other destinations competing with each-others to attract the visitors (Khatri, 2018). Hence, it will be much easier for such tourism destination to attract visitors from other parts of the world via software application connected to the internet and thereby, fostering foreign exchange.

Data were retrieved from farmers into integrated farming systems in Ido local Government Area, Akinyele Local Government Area, Egbeda Local Government Area and Lagelu Local Government Areas with the aid of well-structured questionnaire. A total of two hundred and five farmers were administered questionnaires to, but ten questionnaires were returned not filled while seven where badly filled. However, a total number of one hundred and eighty-eight questionnaires were well filled, retrieved and analyzed. The data obtained from the questionnaire was analyzed using Statistical Software for Social Science (SPSS). It was analyzed descriptively and inferentially. Qualitative data was retrieved via key informant interviews of a total of fifteen information systems expert. Those that have dexterity in software programming and writing, with well over 5 years' experience, were interviewed. Their responses were recorded and textually analyzed.

It is evident that agritourism potentials exist on many farms in the four Local Government Areas where integrated farmers were selected from, and the farm owners are oblivious of this, perhaps, as a result of their naivety of agritourism. Daily trips to the farms for businesses, meetings and so on are modes of agritourism. Many activities are classified as agritourism, including daily visits (for instance, orchard tours, hayrides),

recreational self-harvest (for instance, pick-your-own operations), hunting and fishing for a fee, nature and wildlife observation, and other outdoor activities (Wilson, 2007). A lot of the aforementioned activities occur on most of the farms from time to time. A few of the farms (especially, the ones in Water area, Asejire, Egbeda Local Government area) even have some landscapes that could also be developed alongside the agricultural activities, to constitute substantive agritourism. Anyway, based on the fact that the farm owners in the study area do not understand the concept of agritourism, they didn't develop the agritourism potentials in their farms.

Togaymurodov *et al.,* (2023) opined that neither the farmers or the residents of the farm's community understand the concept of agritourism ab-initio. Most of the visitors on the farms do not also recognize that their leisure trips to farms are referred to as agritourism. If the visitors have had understood that their leisure trips are agritourism and the farmers have a have a better understanding of the advantage of agritourism, then, the farmlands or environment would have been developed for agritourism. Togaymurodov *et al.,* (2023) noted that the research pointed out that the dearth of knowledge of agritourism and available equipment form part of the problems of agritourism development. It is notable that integrated farms were specifically focused upon because of the fact that it is a combination or two or more farming practices in an interwoven or integrated form. Such farms attract more visitors than single/mono farming system. The agritourism potentials of these farms were categorized into three, as follow;

1) crop production
2) animal husbandry and
3) the farms environment.

In the light of the operationalized theories, push and pull motives can attract visitors to the integrated farms for agritourism. Meanwhile, pull motives have higher tendencies because the findings of the study revealed that the integrated farm environments have the potentials of attracting more agritourist. In line with the indicators for pull motives that are connected with the farm's environments are natural sceneries, wide space and activities, interesting towns and villages and water activities.

Considering the fact that all of the respondents for the indepth interview opined that information systems is germane for the smooth running and existence of agritourism, then the software that will be developed for agritourism can be referred to as

'Agritourism Information System'. The agritourism information system should have transactional, repository and reservation facilities.

5.2 Conclusion

Premised on the result of the study, it is conclusively notable that the integrated farms have great agritourism potentials. The environments of the integrated farms have the potentials of attracting more tourists to the farms, followed by crop production activities and animal husbandry. This ranking was based on the mean and standard deviation indices of these agritourism potentials.

In the same vein all the respondents for the indepth interviews submitted that information system can be operationalized for the agritourism potentials of integrated farms. This is premised on the fact that software application is capable of enhancing more of the agritourism potentials of the animal husbandry section of an integrated farm, followed by the farm environments and then crop production activities of an integrated farm. Therefore, a good software application can be created to enhance the agritourism potentials of the integrated farms in the study area. For the new software application to be created for this purpose, a collaborative effort between agritourism experts and a software application programmer must be established. This is in a bid to ensure that all the technicalities of agritourism that is attributable to integrated farms are factored in appropriately.

5.3 Limitations of the Study

The limitations encountered while on this study are as follow;

1) There is dearth of concise and precise lists of farmers into integrated farming in Oyo State. The Oyo State Ministry of Agriculture and Oyo State Agricultural and Development Programme (OYSADEP) do not have the said list. Thus, the researcher had to painstakingly scout for integrated farmers with the help of the agricultural extension agents of crops and farms settlements under the Oyo State Ministry of Agriculture and the help of Poultry Association of Nigeria.

2) It took some of the software developers a very long time to create opportunities for the researcher to meet with them and interview them. Till date, some of them have not availed the researcher the opportunity to interview them.

3) Due to time constraint, the researcher could not explore more areas of Oyo State.

4) Low financial capacity of the researcher also inhibited him from being able to explore other remote and far towns of Oyo State.

5.4 Recommendations

Based on the research findings of this study, the following recommendations are presented;

1) More crop cultivation activities can be captured as tourism potentials. These activities can simply be staged or a dummy can simply be created for tourism enthusiasts to examine

2) Depending on the precise livestock on the farm, other activities can also be captured as tourism potentials. Similarly, these activities can be staged, so as to prevent the transmission of diseases to the livestock on the farm.

3) Aside created tourism attraction on the farm, the farmer should look out for and preserve natural landscapes and cultural objects. These can serve as ancillary tourism attractions.

4) Farmers into integrated farming in the study area should adopt IS for their farm processes. This will ensure that integrated farming information can be easily retrieved, stored, processed and disseminated appropriately and in record time.

5) Software experts should collaborate with agritourism expert, so that a very good software that will be operationalized for the optimization of various agritourism potentials in Nigeria can be easily created. Premised on the result of this study creating and adopting software applications for the animal husbandry as an agritourism potential should be prioritized.

6) There should more awareness of the importance of software applications vis-à-vis its usage for integrated farmers. Its capacities in making farming practices less stressful and reducing friction of distance must be made known to the farmers into integrated farming.

7) Farmers into Agritourism should further explore software applications to enhance patronage of both their farms and their agritourism venture.

8) Government should endeavor to develop the rural communities with facilities and infrastructures that are necessary for good living. Once, the rural communities have these facilities, there is tendency that agritourism will be privately developed, which in turn has the capacity to reduce rural-urban migration.

9) A regional sensitization program should be done for the farmers by Government or private organizations into agritourism, in a bid to inform them of the advantages of agritourism, vis-à-vis being an alternative source of income and helping them protect and sustain agricultural practices and heritage resources.

10) The State Tourism Board should work hard to propel the State Government to develop rural tourism. This is because if there are concerted efforts towards developing rural tourism, the chances that it will have a ripple effect on the development of agritourism is high, considering the fact that agritourism is indeed a major form of rural tourism.

11) The State Ministry of Agriculture and the Oyo State Agricultural and Development Programme (OYSADEP) should ensure that they have an updated list of all the farmers (both those on privately owned farms and those on farm settlements), with their addresses and contact information. This is to make it less onerous for individual and group researchers to access such information.

12) The primary responsibility of all Governments is the protection of life and properties of her citizens. The Government should therefore ensure that all forms of insecurities are obliterated from the agricultural zones. This is because at various times and encounters the researcher got gory news and pictures of Fulani herdsmen attack on farmers in the agrarian zones of Ibadan and Oyo State generally. Some farmers pointed the researchers to deserted portions of farmlands and pens by farmers as a result of Fulani herdsmen attack and other reasons.

13) The researcher noted that the roads that link to most of these farms are in total disrepair. Hence, the Nigerian Government should wake up to the responsibility of constructing motorable and durable road networks that will link the hinterland to the urban centres

14) Considering the fact that the tourism industry is a capital-intensive industry, farmers that are interested in agritourism can collaborate and work on developing the tourism potentials of their farms and share the dividends that accrue from it.

5.5 Contributions to knowledge

This research clearly pointed out the agritourism potentials attributable to integrated farms in Ibadan. The agritourism potentials of the integrated farms were categorized into

crop cultivation activities, animal husbandry and the farm's environment. Farm environments has better prospect of attracting agritourist than other potentials. In terms of the interconnectedness between information system and agritourism potentials, tourism potentials of animal husbandry is the most significant predictor of the usage of information systems. Therefore, information systems can be best used to enhance tourism potentials of animal husbandry, followed by tourism potentials of the farm environments and lastly, tourism potentials of crop cultivation activities.

5.6 Suggestions for Future Research

Studies in the future can focus on the relationship between precise form of information systems (Management, Transactional and so on) and agritourism attributes of farms. In the same vein, once, it is certain that agritourism has left its potential phase to a developed phase, then another study could focus on "mainstreaming gender usage of information systems and agritourism".

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QUESTIONNAIRE

Dear Respondent,

      I am a Ph.D student of the Department of Sustainability Studies, Faculty of Multidisciplinary Studies, University of Ibadan. I am carrying out a research titled "Agritourism potentials of integrated farms, in Ibadan, Nigeria. Kindly, oblige by providing the appropriate response to the following questions.

SECTION A

Gender: a) Male   ( )   b) Female ( )

Age: a) 25 – 35   ( )   b) 36 – 46   ( )   c) 47-57   ( )   d) 58 and above ( )

Academic qualification: a) O' Level ( ) b) HND/B.Sc. ( )   c) Masters ( )   d) others   ( )

Marital Status: a) Single   ( )   b) Married   ( )   c) Others   ( ).

SECTION B (Patronage of Agritourism)

What form of integrated farm do you operate? a) Livestock and crops   ( ) b) livestock and livestock ( )   c) crops and crops ( )

Do you give room for visitors to visit your farm? A) Yes ( )   b) No ( )   c) Not sure ( )

How often do visitors visit your farm? A) daily ( )   b) Weekly ( )   c) Monthly ( ) d) bi-annually ( )   e) annually ( )   f) Never ( )

Motive of the farmers allowing respondents to visit their farm(s)? a) Generate additional revenue ( ) b) Improve relationships with community ( ) c) Diversify activities on the farm ( )   (d) Educate public about agriculture/your operation ( ) e) Keep other family members involved in operation ( )   f) all of the above ( )

Do you offer any of these agritourism? a) school trips ( ) b) Agribusiness ( ) c) Hunting/ Fishing ( ) d) bird watching ( ) e) wedding/reception ( ) f) farm vacations ( )   g) camping ( ) h) other special events ( )

what activities do visitors that visit your farm engage it? a) personal funding ( )   b) bank loans ( )   c) Grants   ( )   d) all of the above ( )

SECTION C (Tourism potentials of crop cultivation activities, animal husbandry and the farms environment)

S.A means strongly agree.   A means agreed. D.K. means Don't Know. DA means disagreed.   S.D means strongly disagreed.

	S.A	A	D.A	S.D
Tourism Potentials of your farm				
a. Crop Production				
Land preparing activities				
sowing activities				
Transplanting				
Weeding				
Pruning of trees and vine				
Pest and disease control				
Operation of farm machinery and implements				
Harvesting activities				
Storage and preservation activities				
Product packaging and branding				
Animal Husbandry				
Breeding of animals				

Feeding activities of animals				
Sight of animals				
Farm animal products such as meats, cheese, milk and so on				
Vaccination and medication services				
Feed composition and milling				
Livestock pens and houses				
Veterinary care of animals				
Animal slaughtering				
Animal dressing				
Environment				
Cultural or historical objects of attraction				
Farm shops				
Unique/rarified farm machineries				
Natural landscape of the farm				
Land capability				
Hotels or guest houses				
The green agrarian environment				
Artificial forestation				
Petting zoos (ponies, baby goats, piglets etc)				
Streams, ponds or any water body.				

SECTION D (Awareness of Information System)

Do you know what software applications are? a) Yes   ( ) b) No ( ) c) Not sure ( )

Are you aware that you have it in your phone or in your computer? a) Yes   ( ) b) No ( )   c) Not sure ( )

If yes, how often do you use it? A) very often ( ) b) often ( ) c) sometimes ( ) d) never used it ( )

Which one do you prefer? A) software app on the phone ( ) b) Software app in the computer ( ) c) None of the above ( )

SECTION D (Usage of Information system)

S.A means strongly agree.   A means agreed. D.K. means Don't Know. DA means disagreed.   S.D means strongly disagreed

	S.A	D.K	D.A	S.D
Use of Information Systems				
IS is useful for farm produce advertisement				
IS is useful for social updates that could help farming activities				
IS is useful for monitoring farm activities either the farm owner is around or not				
IS is useful in getting updates in line with my business from farmers in other parts of the country and world at large				
IS is useful in making periodic inventory and record analysis easier and quicker				
IS is useful in keeping database				
IS is useful in helping farmers to organize themselves into groups to achieve				

economies of scale.				
IS is useful in reducing transportation cost				
IS is useful in easily accessing finance and grants				
IS enhances access to agricultural inputs				

APPENDIX II

INTERVIEW GUIDE

1. Appraising the possibility of adopting information system for integrated farms
   a. The concept of information system

   b. Possibility of adopting information system for integrated farming processes

   c. General importance of information system for agricultural processes

   d. Prospects of creating software application to explore agritourism potentials

      of integrated farms

2. Possibility of adopting software application for agritourism

   a. Means of coming up with a Software Application for Agritourism Potentials

   b. Major challenges of on-the-shelf software

   c. Mobile or Desktop software application

   d. Potential Importance of Information System for Agritourism

Plate 1: An integrated farm in Ido Local Government area

Plate 2: An integrated farm in Akinyele Local Government

Plate 3: Building for settlers meeting at Ido Local Government

Plate 4: Picture of an integrated farm in the study area

Plate 5: An integrated farm in Lagelu Local Government Area

Plate 6: An integrated farm in Egbeda Local Government area

Plate 7: A farm house of one of the integrated farms

Plate 8: Agricultural Machineries

Plate 9: Maize Plantation