

**STIMULANTS CONSUMPTION AND PRODUCTIVITY OF HIRED FARM
LABOURERS IN SOUTHWESTERN NIGERIA**

BY

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CERTIFICATION

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DEDICATION

This research work is dedicated to the Almighty God who is the Alpha and Omega, the one who said “Though your beginning was small, your latter end shall greatly increase” and he kept on fulfilling this great promise in my life. All glory and honour be to His most holy name.

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ABSTRACT

Smallholder farmers who account for 80-90 percent of agricultural production in Nigeria rely mainly on hired labour for farming. In order to enhance work output and attract better wages, hired farm labourers consume large quantities of stimulants which unfortunately have harmful effects on them. Previous research focused on health impacts of stimulant consumption among hired labourers, while data on its influence on their productivity has not been well documented. Hence, the influence of stimulant consumption on productivity of hired farm labourers in southwestern Nigeria was investigated.

A five-stage sampling procedure was used. Ogun State, due to high influx of foreign farm labourers through its international borders and Oyo State due to prominence in food production in southwestern Nigeria were purposively selected for the study. Thereafter, 20% of agrarian Local Government Areas (LGA) located around the border in each state (Imeko Afon, Egbado North, Egbado South and Ipokia in Ogun; Irepo, Saki West, Atisbo, Iwajowa, Ibarapa North and Kajola in Oyo) were randomly sampled. Three communities in each LGA were randomly selected, while ten percent of Growth Enhancement Support Scheme Farmers (GESSF) were purposively sampled due to prominence of hired farm labourers. Ten percent of the GESSF hired farm labourers were randomly sampled to give 271 hired farm labourers. Interview schedule was used to obtain data on hired farm labourers' personal characteristics (age, sex, marital status, nationality, labour experience and labour status), pattern of engagement and reward system, stimulant consumed (types: alcohol, analgesic, caffeine, cannabis based; and quantities), reasons for stimulant consumption, sources of stimulants, common health problems experienced, frequency of visits to health centres, attitude towards stimulant consumption, use of labour-saving devices, and labour productivity using standardised scales. Labour productivity was measured in terms of total daily income per number of hours worked. Indices of visits to health centres (low:1.00-5.99; high:6.00-19.00), attitude towards stimulant consumption (negative:55.00-107.99; positive:108.00-143.00), use of labour-saving equipment (low:0.00-4.99; high:5.00-11.00) and labour productivity (low:90.35-113.99; high:114.00-1375.00) were generated. Data were analysed using descriptive statistics and linear regression at $\alpha_{0.05}$.

Hired farm labourers were aged 32.3 ± 9.6 years, male:96.0%, married:65.2% and non-nationals: 57.4%. They were mostly full-time farm workers:79.0% and received cash:73.9% or motorcycles: 41.7% as reward. Stimulants consumed were alcohol (*gegemu*: 242.2 ± 656.1), analgesic (tramadol: 132.6 ± 191.4), caffeine (kolanut: 10.7 ± 7.6) and cannabis (*marijuana*: 10.7 ± 8.6) based. Reasons for consuming stimulant included accumulation of labour strength:85.5% and relaxation:81.9%. Major sources of stimulants were hawkers:70.3% and patent medicine stores:59.8%. Common health problems perceived to be associated with stimulant consumption were chronic weight loss (21.44 ± 28.8), stimulant dependency (13.06 ± 22.8) and migraine (5.58 ± 6.9). Proportion (P) of those who had low visits to health centres upon experiencing stimulant-induced health problems was 65.2%, while 48.6% had negative attitude towards stimulant consumption. Hired farm labourers classified into low category of use of labour-saving equipment and labour productivity were 57.6% and 82.6% respectively. Labour productivity was significantly influenced by nationality ($\beta=0.237$), attitude to stimulant consumption ($\beta=-0.299$), consumption of alcohol ($\beta=-0.372$) and analgesic-based stimulants ($\beta=-0.276$).

The consumption of alcohol and analgesic-based stimulants reduced productivity of hired farm labourers.

Keywords: Hired farm labourers, Stimulant consumption, Labour productivity, Cannabis-based stimulant

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LIST OF ACRONYMS

ABV	Alcohol By Volume
ADP	Agricultural Development Programme
CNS	Central Nervous System
FGD	Focus Group Discussion
FGN	Federal Government of Nigeria
FRSC	Federal Road Safety
GES	Growth Enhancement Support
GESSF	Growth Enhancement Support Scheme Farmers
HIV	Human Immunodeficiency Virus
HOD	Head of Department
IDI	In- Depth Interview
IACP	International Association of Chiefs of Police
IITA	International Institute of Tropical Agriculture
LG	Local Government
LGA	Local Government Area
NAFDAC	National Agency for Food and Drug Administration and Control
NDLEA	National Drug Law Enforcement Agency
NHS	National Health Service
PPMC	Pearson Product Moment Correlation
THC	Global Framework for Climate Services
UCH	University College Hospital
UK	United Kingdom

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Sustainable agricultural production depends on fertile land, readily available finance, labour, and relevant technology. Among the recognized factors of production required for sustainable agricultural production by small scale farmers, human efforts (labour) constitutes the most vital resource. As opined by Akanni and Dada (2012), it is this human resource that determines the other non-human resources, plans for their use, allocates them and executes the necessary production activities. This human resource in Nigeria's agriculture is made up of small-scale farmers. Rosiestep (2013) reported 90% of Nigeria farmers as small-scale farmers with farm holdings of 0.5 – 2.5 hectares. Mgbenka and Mbah (2016) noted that by global benchmarks, any farmland below 10 hectares is categorized under small-scale farming. Akinsuyi (2011) also reported that in Nigeria over 80% of the farmers are smallholders. However, many challenges face these small- scale farmers. The productivity and growth of smallholders are constrained by inadequate accessibility to capital (Odoemenem and Obinne, 2010). They lack capital so they hardly acquire land for agriculture. Filli et al (2015) hold the view that small scale farmers usually devote lower than 20% of what is needed on improved seeds, fertilizer, animal feeds and chemicals because they have inadequate access to credit. As opined by Mgbenka and Mbah (2016), the available industries of seeds and planting material are not only underdeveloped, but the qualities of their supplies are also often not up to standard. Small-scale farmers have limited access to modern agricultural technology due to lack of funds to make tangible investments in capital, inputs and labour (Odoemenem and Obinne, 2010).

Governments have invested in labour saving technology for small holder farmers for years but there have been a complex and insidious mixture of social, economic, and technical issues that have constrained widespread adoption. Many technologies and tools have often been designed without farmer preferences and input in the design and there is a lack of consideration for local manufacturing. The small-scale farmers may be willing to mechanize but are confronted with the problems of the high cost of machinery

purchase and hiring, lack of skill of labour-saving implements and technologies, fragmented farm holdings which make mechanization uneconomical, land degradation, climate-change, topography, equipment management which demands after –sale services, repair and maintenance (Prabakar et al, 2011).

In recent years, small holder farmers have had a lot of problems with sufficient labour in the rural areas. Able-bodied men are no longer interested in farming; they would rather become motorcyclists, taxi drivers or migrate to big cities to enjoy social amenities and white-collar jobs that pay more money than farm labour (Mgbenka and Mbah, 2016). This has resulted in high cost of farm labour, with labour becoming a major constraint in small scale-farming in Nigeria (Oluyole and Lawal 2010, Gocoswski and Oduwole, 2003). The strenuous nature of agricultural activities makes small-holder farmers hire additional labour on their farms. As reported by Baba, et al (2011), farmers have developed various strategies to combat labour scarcity. One is the use of hired farm labour. Farmers willing to cultivate large hectarages of land have to depend on hired farm labourers. Education and employment opportunities in the urban areas have reduced available farm labour in the rural areas. Okunneye (2000) noted that hired labour contributes up to 88% of the total labour-use on farms, thus, emphasizing its importance in agricultural activities. Availability of labour has been found to have an impact on planting precision, weed control, timely harvesting and crop processing. As opined by Ashmira and Supradip, 2022, labour shortage has become a global problem, with an aging farmer population that further limits the supply of manual labour. The younger generation is less likely to pursue farming, and children in farming families often move to urban cities for better career prospects.

In recent times, the focus is shifting back to agriculture to salvage the economy and restore the lost glory of Nigeria. Youths are being encouraged to be involved more in agriculture and retirees are moving back into agricultural production. The problem of labour scarcity however, needs to be seriously considered because a greater percentage of the agricultural sector still relies heavily on hired farm labourers for meaningful productivity. Hired labour use stimulants to energise themselves to be more productive and earn more money. This appears to work initially as stimulants energize them to

work more without feeling serious pain. However, apart from feeling high and low at each consumption, there is a long-term payment for continual stimulant consumption, as they become weak and unable to engage in any farm labour, they get sick and are easily susceptible to diseases, they become addicted to the stimulants, their productivity reduces, they have little or no appetite for food and at times some of them die, thus, the available farm labour keeps reducing (Popoola, 2014).

1.2 Statement of the research problem

The rate of stimulants consumption in Southwest Nigeria in recent times is quite alarming (UNODC, 2018). As the name indicates, stimulants are assumed to stimulate activities within the consumers, especially labourers. However, the continual and increased consumption of stimulants has been found to have several devastating and cumulative effects, on the consumers themselves, the family members, the communities where they reside as well as the society at large. According to Allan, Alston, Dowling, Clifford, and Ball (2011) and Pela and Ebie (1982), stimulant consumption could lead to poorer physical and mental health and several health challenges such as viral hepatitis, chest, heart, kidney infections, suppression of immunity leading to the easy spread of infections including Human Immunodeficiency Virus (HIV) and many sexually transmitted diseases. The effects of stimulant consumption on the brain might lead to poor intellectual functioning, poor impulse control, and emotional instability. The individual engaged in such might have an offensive smell, depression, confusion, stress, loss of self-control, frequent minor illnesses, memory lapses, weight loss, bloodshot eyes, insomnia, frequent injury, unhealed infections, high blood pressure, tuberculosis, neurological disorder, and psychiatric problems (Pela and Ebie, 1982). Of significance mention is the effects of stimulant consumption on labourers' productivity as affirmed by Allan, 2011, Pela and Ebie, 1982; Burke, O'Sullivan, and Vaughan 2005; Isralowitz, 2004).

Most farmers in Southwestern Nigeria rely on hired labourers to carry out their farm activities effectively and efficiently. Despite the high rate of unemployment in Nigeria, the youths are not willing /or ready to work as labourers. However, there is a prevalence of people whose outlooks and languages differ from the ones in Southwestern Nigeria. Their place of origin is not ascertained. The smallholder farmers in Southwest Nigeria rely on

these people for farm labour, nevertheless, their pattern of engagement and reward systems are not known. It is widely known that these labourers engaged in incessant consumption of stimulants, the types of stimulants consumed, the reasons for such consumption, the sources of obtaining such stimulants, the perceived health challenges faced because of continuous consumptions, as well as their use of health facilities in the areas where they operate is not certain. There is also a dearth of information on the attitude of the labourers on stimulant consumption and the effects of such consumption on labour productivity. Given all these, the study was carried out to provide answers to the following research questions.

1. What are the patterns of engagement and reward systems of hired farm labourers in the study area?
2. What are the stimulants consumed (types and quantity) by hired farm labourers in the study area?
3. Are there reasons why hired farm labourers consume stimulants in the study area?
4. What are the sources of stimulants commonly patronized by hired farm labourers in the study area?
5. What are the perceived health problems (symptoms and diseases) observed by hired farm labourers due to stimulant consumption in the study area?
6. How frequently do hired farm labourers visit health centres in the study area?
7. What are the attitudes of hired farm labourers towards the consumption of stimulants in the study area?
8. Are there available labour-saving equipment (awareness and level of use by hired farm labourers) in the study area?
9. What is the productivity of hired farm labourers and how is it affected by stimulant consumption in the study area?

1.3 Objectives of the study

The general objective of the study was to evaluate stimulants consumption and labour productivity of hired farm labourers in Southwestern Nigeria. The specific objectives were to:

1. ascertain the patterns of engagement and reward system of hired farm labour in the study area;
2. identify the stimulants consumed (types and quantity) by hired farm labourers in the study area;
3. ascertain the reasons for consumption of stimulants by the hired farm labourers in the study area;
4. identify the sources of stimulants patronized by hired farm labourers in the study area;
5. identify the perceived health problems (symptoms and diseases) associated with stimulant consumption experienced by hired farm labourers in the study area;
6. determine the frequency of visit to health centres by hired farm labourers in the study area;
7. examine the attitudes of hired farm labourers towards the consumption of stimulants in the study area;
8. ascertain the labour saving equipment (awareness and level of use) available in the study area; and
9. evaluate the productivity of hired farm labourers consuming stimulants in the study area.

1.4 Hypotheses of the study

The study tested the following hypotheses:

1. There is no significant relationship between hired farm labourers' personal characteristics and labour productivity in the study area.
2. There is no significant relationship between hired farm labourers' visits to health centres and labour productivity in the study area.
3. There is no significant relationship between hired farm labourers' awareness of labour saving equipment and labour productivity in the study area.

4. There is no significant relationship between hired farm labourers' use of labour saving equipment and labour productivity in the study area.
5. There is no significant relationship between hired farm labourers' attitudes towards stimulant consumption and labour productivity in the study area.
6. There is no significant relationship between hired farm labourers' quantity of stimulants consumed and labour productivity in the study area.
7. There is no significant relationship between frequency of occurrence of diseases and quantity of stimulants consumed in the study area.

1.5 **Justification of the study**

The study is informed by the challenges observed on the field facing hired farm labourers. A few of the challenges are: infectious diseases; exposure to pesticides; lung problems; skin disorders; hearing disorders; vision problems; and strained muscle and bones. It has been established that agricultural labourers are at much greater risk of death than workers in every other industry except construction (International Labour Organization, 1996 - 2017). Agricultural labour is seasonal. Activities in agriculture are not all-year round the timeframe in which they must occur is determined by the seasons and weather. Urgency to accomplish these tasks compels agricultural workers to work in the field during the planting seasons and in all weather conditions including extreme heat, cold, rain, bright sun, and dampness. High air temperature and humidity put agricultural workers at special risks of heat stress. Work performed in agriculture often requires quick wrist and hand movements, stooping and repetitive lifting, and working with the soil, climbing, and carrying heavy loads all these make musculo- skeletal injuries inherent to agricultural labour (International Labour Organization, 1996 - 2017).

Farm labourers come into direct contact with crops and soil, which might be treated with pesticides and inorganic fertilizers which can pose additional risks. Occupational illnesses like respiratory illnesses, dermatitis, and eye injury could be as a result of exposure to pesticides. Most wear no protective clothing, a few that does wear special clothing and equipment that restricts the evaporation of sweat thereby blocking the body's natural way of cooling itself. Unsanitary conditions and lack of portable water

predispose them to infections like dysentery and cholera. Farm labourers at times resort to irrigation ditches and run off ponds when safe water is not available for drinking or washing. Non-portable water could be contaminated by pesticides, fertilizers and organic wastes. Drinking and bathing in such water expose farm workers to potentially harmful chemicals and water borne diseases. Many farm workers travel frequently and over significant distances. According to (National Agricultural Workers Survey [NAWS], 2005) 43% of farm labourers are classified as “shuttle migrants” i.e. they travel between farm jobs; 18% of farm workers are classified as “follow-the-crop migrants” that is they hold at least two farm jobs a year which are more than 120 kilometres apart and require the farm labourer to set up a temporary abode. This adds additional potential hazard. On top of all these is the consumption of stimulants.

Farm labourers are playing a vital role in sustainable agricultural development so they need to be recognized and cared for. They form over 40% of the world's agricultural labour force and, along with their families; they are part of the core rural poor in many countries. Presently, the lives of farm labourers, and the dangerous and oppressive working conditions they face, remain invisible to most people in many countries. The only time anyone speaks about them is in moments of extreme tragedy, which is often quickly forgotten because they are considered as a set of people nobody should bother about (Hurst et al, 2007). The findings of the study will reveal to policy makers the need to attend to these low level workers if agriculture is to truly return to its former position as the main stay of the nation, if poverty alleviation programmes is to truly get to the rural poor, and if some serious diseases are to be well controlled and reduced in the country.

1.6 Operational definition of terms

Drug/substance abuse: consumption of alcohol, drugs or any psychoactive substance without prescription.

Hired farm labourers: these are people who assist farmers in carrying out farm operations like production, processing or marketing of crops for a reward in cash, kind or both.

Hired Farm Labourers productivity: in this study was calculated as number of hours or man days put in by hired farm labourers to achieve a given labour output (in Naira).

Labour-saving equipment are implements that assist in addressing certain on-farm and off-farm labour constraints and are capable of reducing the time and effort required in performing certain tasks

Long- handled hoe, a device that reduces the extent to which an individual using it bends his back when working on the farm thus minimizing back pain.

Pattern of consumption: Consumption of stimulants by direct chewing, drinking, sniffing, smoking, swallowing, inhaling and injecting.

Perceived symptoms: effects of stimulant consumption observed on hired farm labourers.

Problematic level of stimulant consumption: addiction to stimulants

Productivity was considered as the measure of an individual's efficiency in performing a particular task by converting input to output.

Psychoactive substances are substances that (when inhaled, injected, consumed) affect how the brain works and causes changes in mood, awareness, thoughts, feelings, or behaviour of the consumer.

Stimulants consumption: This is the consumption of substances that induce temporary changes in physical functions by suspending pain.

Stimulants: These are naturally occurring or synthetic substances that affect the central nervous system and enhance brain activity by inducing changes in mental or physical function when consumed or injected into the human body.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Conceptual Review

The four main factors of agricultural production are:

Natural resources comprising: land, water, and soil.

Capital: This refers to capital goods (equipment, machinery, and other inputs like seeds, seedlings, and chemicals that are used in production).

Entrepreneurship: This is the drive (individual) that combines all the three other factors to earn a profit.

Labour: This is the physical exertion, mental exercise or use of intellect done for a reward in the agricultural venture.

2.1.1 What is Labour?

Labour is a unique factor of production. It is human efforts.

Redmond (2008) defined labour as:

- Production of raw materials
- Manufacturing or transformation of raw materials into objects useful to humans
- Distribution of useful objects from one place to another as determined by human demand
- activities involved in the management of production such as accounting and clerical work; and personal services such as those rendered by physicians and teachers.

Labor could refer to the number of workers in the economy, and the effort they put into producing goods and services. Kumar (2016) referred to labour as one of the most important components out of the four factors of agricultural production.

Kimberly (2021) defined labour as the amount of physical, mental, and social effort used to produce goods and services in an economy. It supplies the expertise, manpower, and service needed to turn raw materials into finished products and services.

Labor is one of the most important inputs in agricultural production. How it is measured and valued is critical for establishing the cost of producing agricultural commodities and accurately portraying labour's relative share of the total cost of production.

2.1.2 **Characteristics of Labour**

Characteristics of labour are listed by Investopedia as:

- Labour is perishable- it cannot be stored.
- It is inseparable from the labourer.
- It is human effort (not tangible but produces a tangible effect).
- It is heterogeneous. It is not uniform, every labourer is unique. The quality and efficiency of labour depend on the skills, work environment (how conducive), incentives and other inherent qualities of the labourer.
- Labour has poor bargaining power; most often the employer determines the amount of wage to pay the labourer.
- Labour supply is inelastic, not easily mobile.

2.1.3 **Categorization of labour**

Labor can be categorized in different ways. For example, Jochem and Rigas (2017) categorized labour:

1. By skill level;

- i. Unskilled labor that does not require training. It's usually manual labour, such as farm labourers.
- ii. Semi-skilled labour, which may require some education or training. An example is manufacturing jobs.
- iii. Skilled labour. Require high leveled training. Labour from highly-skilled professionals for example; lawyers, tax accountants and veterinarians.

2. Labor can also be categorized by the nature of the relationship with the employer. Most workers are wage employees. This means they are supervised by a boss. They also receive a set weekly or bi-weekly wage and often receive benefits. Wage could be in cash or kind.

3. By the time allotted to carry out the work– Contract labour

Contract labor is when a contract specifies the work to be produced within a time frame.

2.1.4 Farm Labour

This includes all unpaid family labour, hired labour, contract labour, and exchange and used in agricultural production (Iowa State University, 1998). Farm labour is considered to include what is sometimes distinguished as traditional labour, management, and other overhead time. It also includes labour acquired through farm labour contractors and all semiskilled services used in farming, such as mechanics for machinery and building repair, and book keepers (Iowa State University, 1998).

2.1.5 Types of Farm Labour

The following are the labour types common in crop production in southwestern Nigeria.

(a) Family labour

This is the most common of all labour types in Nigeria. It used to be the main labour type available for crop production. Then, polygamy was the order of the day and farmers had large families comprising of wives, children and most often extended family members residing with them. This made it possible to keep large hectarages of crop farms. As opined by Abila (2012), family labour often has no tangible remuneration except feeding, housing and the farmer attending to pressing needs of the family and extended members assisting him on the farm. Family labour still features in all labour arrangements as farmers and their spouses are involved in the supervision of most farm operations. All types of labour aside from family labour are classified as hired and the farmer will pay back in cash or in kind.

b) Communal Labour

Communal labour is another labour type that may be readily available to small scale farmers. This is labour rendered by friends, cooperative/ peer group members. This is labour exchanges like rotational farm cultivation ('aaro) and 'owe'. The farmer pays

back by joining others to also work in other cooperative/ peer group members' farm till all members farms are established for the season.

(c) **Contract labour**

This is labour with a contract arrangement. Contract farm labourers from neighbouring countries and states in Nigeria, take up residence on the farmer's farm with contracts to work for the farmer for one to two years for the payment of a reward agreed on at the beginning of the contract or arrived at for every operation and summed up through the contract period (Abila, 2012). Contract labour could be partial or full.

(i) **Partial contract labour**

In partial contract labour, farm labourer does not take up residence on the farm. Farmer provides feeding on the day the labour is engaged on the farm. Payment is the lowest and always in cash (Abila, 2012). It has the lowest reward. Providers are contract farm workers who use their free time or off days. It is mainly for supplementary income.

(ii) **Full contract labour**

In full contract labour, farm labourer takes up residence with farmer who provides free accommodation and feeding all through the contract period except on workers' weekly free day, mostly Sundays (Abila, 2012). On such days, farm labour engage in hired labour called 'job'. Payment for this job is with an item which is the value of labour for the contract period; the payment is also complemented with cash. Contract farm labourers return to their countries or states after each contract term or at the end of each season for contracts more than one season. Contract farm labourers are available first to the farmer ('oga loko') who employed them and they ask for permission to offer their services on their work free days to other farmers. This provides a form of insurance against labour shortages for critical operations on the farmer's farm.

2.1.6 **Nature of Farm Labourers**

Farm labourers form a heterogeneous group with varied terms and conditions of engagement. There is full-time farm labour, casual farm labour, seasonal farm labour, migrant farm labour, piece rate labour or those receiving payment in 'kind'. (Hurst, Termine, and Karl, M. 2007). They are referred to as waged workers because they do not own or rent the land on which they work nor the tools and equipment they use and so they are a group

distinct from farmers. They form a heterogeneous group with terms and conditions of employment that vary greatly with different categories. Most farm labour do not receive any form of social security or unemployment benefit, holidays with pay, sickness or maternity leave (Hurst et al, 2007).

2.1.7 Sources of Farm Labour

Nmadu and Adebola (2015) reported that a combination of family and hired sources contributed most of the labour supply for crop production:

- Family only
- Hired only
- Friends only
- Mechanized only
- Communal only
- Family and Hired
- Family and Friends
- Family and Mechanized
- Family and Communal

2.1.8 Classification of Farm Labourers

Deepak (2016) classified farm labourers into four broad categories:

- i. Bonded or Semi- Free Labourers
These work under conditions of virtual slavery. Being in need they secure money advances, and offer services in place without a plan to repay, thereby such labourer becomes a lifelong bond slave of the creditor. While working on the farm, he receives inadequate food supply and cannot free himself. His next generation could be bonded because he has insufficient funds and no plans to pay back.
- ii. Dwarf- Holding Labourers
These are small land owners, tenants, part-time farmers and share croppers. They have other sources of livelihood but augment with farm work. They suffer from disguised unemployment, they do not make earnings from cultivation. They do not migrate because of their tiny holdings which do not

feed them. The farmer could send the wife and children to work on other farms while concentrating on the small farm.

iii. Under-employed Landless Labourers

Industrial, These migrate from place to place in search of some sort of work, agricultural, or casual unskilled work. They follow one crop from one area to another over lengthy period of employment. They travel in family group or distance

iv. Full time Landless Labourers

These are employed on a more or less long term basis. They are plantation labourers, dairy farm workers, employees of capitalistics and well to do farmers. In order to retain them, the landholders usually advanced loans or allotted plots of land free of interest or rent to them.

2.1.9 Labour scarcity in agriculture

Labour scarcity is a major factor impeding agricultural development. It limits farmers' productivity levels and leads to changes in cropping pattern (Akinfenwa, 2019). Farm labour is considered the most limiting factor of production in small scale farming in Nigeria, because its value accounts for about 75% of total cost of production in most food crop enterprises (Panwal, 2017; Nweke, 1980). Hence, the predominance of small scale production could be attributed to inadequate supply of household labour as well as the relatively poor financial position of the farmers (Panwal, 2017). The scarcity of farm labour has impacted negatively on planting precision, better weed control, timely harvesting and crop processing (Akinfenwa 2019; Oluyole *et. al.*, 2011).

Prabakar, Devi and Selvam (2011) adduced some reasons for labour scarcity in agriculture, these include: higher wages in other locally available jobs, seasonal nature of agricultural jobs, presumption of low esteem of agricultural jobs. In Nigeria, labour is a major constraint in peasant farming which still remains the major mode of farming. Many farmers willing to expand their farms cannot because of non- availability of labour for land clearing and cultivation even when they have sufficient land to expand. Most people that engage in farm labour are now commercial motor cyclists (Akinfenwa,

2019) More than any other challenges, unavailability farm labour is fast becoming a major challenge to agricultural development in Nigeria.

2.1.10 Possible ways to alleviate the scarcity of farm labour

To ensure increased and sustainable agricultural production in Nigeria, the negative impacts of the farm labour and their attendant effects on agricultural productivity demands that an enduring solution be created. Panwal (2017) suggested the following as ways of addressing the shortage of farm labour:

- a. Drastic reduction of migration from rural to urban areas by providing electricity, potable water, feeder road construction, setting up of schools and health centres in rural areas. The availability of these would collectively discourage migration and make farm labour more readily available in rural areas.
- b. Introduction of necessary technologies for weeding. For instance the use of herbicides for controlling weeds can help to reduce labour input on the farm.
- c. Increasing the cultivation of legumes which can serve to cover the ground in the chosen crop combination embraced by smallholders can contribute to reducing labour used for weeding by their ability to smother or suppress weed growth.
- d. When storage and marketing facilities are provided, they will not only increase farmers' incomes but indirectly make farm labour available. Research has found that poor farm incomes are mainly accountable for farmers' engagement in off-farm activities even at peak period of labour demand on the farm, considering returns are often higher in off-farm activities.
- e. Raising farm income by means of effective pricing policy to an equivalent level will go a long way in attracting farmers and migrant labour from urban to rural areas.

Additionally farm labour shortages could be addressed through the use of Intermediate Farm Tools and Equipments (IFTE). Anazodo (1988) described intermediate labour-saving equipment as technologies of very simple design that have been developed systematically above the traditional hand-tools but below the conventional engine-powered technology. They do not necessarily incorporate high technology precision

parts, that is, parts that can be produced only by specialized manufacturers. They may be powered by animal or human or engine and their manufacture require only locally available raw materials except for the engine in some cases. A list of IFTE; therefore, included ox-ploughs, ox-drawn harrow, ox-ridgers, ox-cultivators, ox-carts, trailers, seed planters, threshers, grinders, decorticators, milling machines and other equipment such as reapers, harvesters, sprayers, storage bins and simple hand tools. The quantity of human labour required on a farm with IFTE will be reduced considerably so the labourers need not use stimulants to enhance their productivity.

2.1.11 Labour-saving equipment

Farm work is physically stressful, requiring long periods of bending, standing and performing repetitive actions in uncomfortable body positions (Hurst *et al.*, 2007). Lethargy, improperly fabricated working tools/implements, difficult topography, exposure to weather elements and poor health increase the likelihood of the occurrence of accidents on the farm (Hurst *et al.*, 2007). The introduction of farm machineries or labour-saving devices would help to reduce farm owners' sole reliance on hired farm labour. For instance, the use of labour-saving equipment can help to carry out up to 80% of harvesting (ILO, 2017).

Labour-saving equipment are the devices that reduce labour input when performing farm work thereby reducing the time and energy expended, as well as the total cost of production (Lawal *et al.*, 2013). Considering the effects on economic agents, labour-saving equipment are introduced as they can possibly increase returns and decrease labour costs and associated risks (Sunding and Zilberman, 2001). According to Gallardo and Sauer (2018), labour-saving equipment can significantly influence the demand and supply of labour, hence they can have major implications on policy. They reported that from a policy viewpoint, labour-saving equipment can lead to a reduction in the demand for labour and augment concentration among farms.

There are certain labour-saving equipment that are being employed by farmers to produce, process and market their farm produce with the goal of reducing both the cost and time spent on production along the value chain (Lawal *et al.*, 2013). Farmers believe there is a greater role for labour-saving equipment in farming but do not have access to

such farm equipment. Most small scale farmers are striving to get the required cash to lease or buy labour-saving equipment. When farmers have money, most times, such money is insufficient to purchase farm equipment; and they consider unfavourable the terms associated with the acquisition of loans or leases (ILO, 2017). As such, manual or hired labour remains particularly important for small scale farmers, who are least likely to be in the position to afford to lease or purchase machinery as a result of lower profit margins.

2.1.12 Factors influencing the use of labour-saving equipment

With respect to factors affecting the use of labour-saving devices by farmers, Gallardo and Sauer (2018) identified the following:

- Labour-saving equipment must be economically viable for farmers to use. The moment a technology is found to be feasible, its diffusion can be determined by different factors, such as: the associated risks to its use; cost of investment; uncertainties connected with the functioning of the innovation and its reliability; its suitability for carrying out specific agricultural operations; and the conditions of the environment in which it will be used.
- Macro-economic characteristics also determine the acceptance and spread of labor-saving-equipment. For instance, official procedures such as structures relating to labour supply, labour contracting, and supply of human capital have collectively or otherwise been recognised as factors preventing the adoption of labour-saving equipment. (Whatley, 1985; Heinicke and Grove, 2008).
- The non-consistent development of labour-saving equipment within agricultural industries. The adoption and diffusion of labour-saving equipment were effective for majority of crops (such as grains, and cotton) cultivated annually; however this has not been the same for specialised crops (such as vegetables and fruits). Increases in productivity resulting from technological innovations of systems approach (i.e. advancements in seeds, fertilizer application, and management of pests) have given rise to an increase in the need for labour, however labour-saving equipment for specialised crops are yet to be fully developed or extensively adopted.

2.1.13 Unmanned Agriculture

An unmanned farm is a farm where farming activities are carried out without direct involvement of man. It is a new production mode which does not require labour force but adopts diverse novel technologies such as Internet of Things (IoT), Big Data, Artificial Intelligence (AI), Fifth- Generation (5G) communication technology and robots, for performing all farm production operations through remote control, whole- process automatic control of facilities, machinery and equipment or autonomous by robots. (Wang et al, 2021). In the developed world, challenges of agriculture and other factors like, growing population and increasing labor shortage, maturing IoT and navigation technologies, and COVID-19 pandemic are accelerating the use of robots in the agricultural sector (Ashmira and Supradip, 2022).

Automation in agriculture is now the main concern and the emerging subject in the developed world. The population is increasing, thus demand for food is increasing, traditional methods being used by farmers are insufficient to fulfill these requirements, thus new automated methods are now introduced.

Artificial Intelligent (AI) has brought revolution. The technologies have protected the crop yield from various factors like climate changes, population growth, employment issues and food security problems. AI has been used for irrigation, weeding, spraying through drones and robots. These technologies have saved excess use of water, herbicides, and pesticides; maintained the fertility of the soil; and helped in efficient use of manpower while improving quality and increasing productivity (Achim et al, 2017).

Untapped market potential and scope for automation in agriculture, increased the use of electrification technology in agricultural robots, and the use of real-time multimodal robot systems in fields has created several opportunities for the manufacturers of driverless tractors, milking systems, and drones (Achim et al, 2017).

Agricultural robots automate slow, repetitive, and dull tasks for farmers, allowing them to focus more on improving overall production yield.

Examples of Agricultural robots in use in the developed world

- i. Unmanned Aerial Vehicles (UAVs) or drones: - The use of drones and driverless tractors is making field farming automatic.
- ii. Milking robots and drones:-
- iii. Automated harvesting systems,
- iv. Driverless tractors, and
- v. Unmanned Ground Vehicles (UGVs)
- vi. Robots used in nurseries or greenhouses,
- vii. Sorting and packing robots, and
- viii. Weed control robots.

Plate 1: shows the example of an Unmanned Aerial Vehicle (UAV) with powerful camera



Plate 1: Unmanned Aerial Vehicle.

Image adapted from Achim et al (2017) Opinion: Smart farming is key to developing sustainable agriculture

2.2 **Psychoactive Substances**

Psychoactive substances are substances that (when inhaled, injected, consumed) affect how the brain works and causes changes in mood, awareness, thoughts, feelings, or behaviour of the consumer.

A psychoactive substance, psycho pharmaceutical, psychoactive agent, or psychotropic drug, is a chemical substance that changes nervous system function and results in alterations in perception, mood, consciousness, cognition, or behavior.^[1] These substances may be used medically; recreationally; to purposefully improve performance or alter one's consciousness; as entheogens for ritual, spiritual, or shamanic purposes; or for research.

2.2.1 **Categories of Psychoactive Substances**

IACP (2022), Byju and Divya (2021) and World Drug Report (2021) categorized Psychoactive substances as follows:

i) **Central Nervous System (CNS) Minor tranquilizers / Depressants**

CNS depressants slow down the operations of the brain and the body. Depressants are prescribed to induce sleep, alleviate anxiety and muscle spasms and prevent seizures.

Examples of CNS depressants include barbiturates, alcohol, anti-anxiety tranquilizers (e.g., Thorazine, Valium, Librium, Prozac, and Xanax), GHB (gamma hydroxybutyrate), Rohypnol, and many other anti-depressants (Paxil, Zoloft,).

ii) **CNS Stimulants**

CNS stimulants elevate the blood pressure, accelerate the heart rate and "speed-up," or over-stimulate, the body. Stimulants come in both legal and illegal forms. Prescription stimulants include Adderall, Dexedrine, diet aids like Preludin, Fastin, Meridia, and street drugs such as methcathinone, cocaine, and other synthetic cathinones known as "bath salts." Examples of other CNS stimulants include "crack" cocaine, amphetamines, and methamphetamine ("crank").

iii) **Hallucinogens**

Hallucinogens gives the consumer a false image of things. Hallucinogens are both naturally occurring (plants and fungi, magic mushrooms) and synthetic. As most

hallucinogens have no accepted medical use, they are termed as illegal. Examples include psilocybin, Lysergic acid diethylamide (LSD), Molly or Ecstasy (MDMA) and peyote.

iv) **Dissociative Anesthetics**

Dissociative anesthetics include psychoactive substances that inhibit pain by cutting off or dissociating the brain's perception of the pain. Phencyclidine (PCP), its analogs, and dextromethorphan are examples of dissociative anesthetics.

v) **Narcotic Analgesics / Opioids**

Narcotic analgesics induce euphoria, relieve pain, and create mood changes in the consumer. Examples of narcotic analgesics include opium, codeine, heroin, demerol, darvon, morphine, methadone, Vicodin, and oxycontin. Narcotics include opium, opium derivatives, and synthetic versions.

vi) **Inhalants / Aerosol cans**

Inhalants include a wide variety of breathable substances that produce mind-altering results and effects. Examples of inhalants include paint, Toluene, gasoline, plastic cement, hair sprays, paint thinners, and various anesthetic gases.

vii) **Cannabinoids / Cannabis**

Cannabis is the scientific name for marijuana. The active ingredient in cannabis is delta-9 tetrahydrocannabinol, or THC. This category includes cannabinoids and synthetics like Dronabinol. Marijuana is classified under the Controlled Substances Act as a hallucinogen. Marijuana is a psychoactive drug derived from the Cannabis sativa plant with the main constituent THC ((delta9-tetrahydrocannabinol) believed to be the primary ingredient producing the psychoactive effect.

Cannabis is the most commonly used psychoactive substance worldwide according to the latest Global Drug Survey (UNODC 2021).

2.2.2 **What are Stimulants?**

Lauren (2022) defined stimulants as a class of substances that increase certain types of cell signaling and amplify various physiologic processes throughout the brain and body. In particular, many types of stimulant drugs are associated with heightened dopamine release, which can result in a powerful sense of well-being, increased energy, attention, and alertness (Lauren, 2022).

Stimulants are substances which when consumed stimulate or activate the central nervous system. They are usually referred to as ‘uppers’. Since the central nervous system comprises the brain and spinal cord, stimulants may be considered as substances which when taken stimulate the brain, thereby increasing the consumers energy level and alertness. (Drug Policy Alliance, 2018). Stimulants can also be referred to as substances taken to keep somebody away from sleep or taken to increase the physical activities of an individual (Agbonghale and Okaka, 2014).

2.2.3 Reasons adduced for stimulant consumption

The following reasons were given by Oshodi, Aina and Onajole (2010) for stimulant consumption:

- To have good times with friends.
- To experiment.
- To alter moods.
- To feel good.
- For relaxation.
- To relieve tension.
- To overcome boredom.
- For curiosity and desire to find out the effectiveness of a particular drug.
- Influence of peer group.
- Environmental conditions
- Because of promotion (advert) and availability.
- For enjoyment
- Because of lack of parental supervision

2.2.4 Significant effects of stimulants

Stimulants can be ingested orally, snorted, smoked, or injected. When taken, it causes elevated mood and excitement, as well as increased arousal and alertness, acting to speed up signals into the brain (Favrod-Coune and Broers, 2010). Significant effects as reported by Byju and Divya, 2021 include:

- ❖ Immediate physical effects might result in extreme rough behaviour. This could lead to fights and unrest in the society, rape cases now on rampage in the society could be partly traced to increase in psychoactive consumption.
- ❖ Very high dosages could lead to death in extreme cases.
- ❖ Dullness, being antisocial, depression, tiredness and aggressiveness are reported effects of alcohol and drug abuse.
- ❖ Intravenous drug consumption might lead to the transmission of many infectious diseases like Acquired Immune Deficiency Syndrome (AIDS) if the same syringe is shared among multiple people. Psychoactive substance consumers care less whether syringes are sterilized or not so this could be a route increasing the spread of AIDS.
- ❖ Alcohol consumption ultimately leads the failure of vital organs like the liver and kidneys.

2.2.5 Negative effects of stimulants

All stimulants are not the same; they have varied effects on people and their health.

As reported by Lauren (2022) any amount of stimulant abuse can cause damage to the consumer. Every stimulant is slightly different in its specific effects, all stimulants share a set of side effects that can wreak havoc on the consumers system when abused (Lauren (2022)). Negative effects of stimulants could be short term, long term, psychological, and long term physical effects.

i. Short Term Effects

Short term effects of stimulants reported in literature by Lauren 2022, and Newman 2017 include:

- Reduced or complete loss of appetite
- Increased heart rate or palpitations
- Increased body temperature and blood pressure
- Insomnia
- Panic, muscle shakes or tremors
- Hallucinations
- Irritability or agitations.

- ii. **Long term side effects (clinical)**
 - Heart failure
 - Increased blood pressure
 - Irregular Heart rate
 - Nutritional deficiencies
 - Impotence
 - Chronic insomnia
 - Seizures
- iii. **Long term side effects (psychological)**
 - Depression
 - Hallucinations
 - Delusions
 - High distrust
 - Persistent anxiety
- iv. **Long term side effects (physical)**
 - Extreme weight loss
 - Reduced sexual functioning
 - Gastrointestinal problems
 - Muscle deterioration
 - Chronic weakness
 - Cardiovascular damage
 - Breathing problems
 - Headaches
 - Brain hemorrhage
 - Stroke
 - Seizures

2.2.6 **Stimulant Dependence**

A chronic stimulant consumer is also at high risk of developing tolerance to, dependence on and eventually addiction to stimulants

Tolerance is a contributing factor to the development of both dependence and addiction and occurs when a person becomes so physiologically accustomed to the high levels of stimulant drug that they need more and more of it to feel the desired euphoric effects.

Physical dependence can develop when a person uses stimulants often or in high doses. Dependent individuals may experience a stimulant withdrawal syndrome when use of the drug stops or slows.

Addiction is characterized by the continued seeking out and using of a substance despite knowledge and feeling of its negative consequences.

2.2.7 Categories of stimulants

Stimulants are categorized into natural and synthetic stimulants. There are different categories of stimulants, including caffeine, tobacco, cannabis, cocaine, methamphetamine, alcohol and prescription stimulants such as Adderall and Vyvanse (Drug Policy Alliance, 2018).

i. **Natural stimulants**

Caffeine: Caffeine is an alkaloid that naturally occurs in plants. It precisely occurs in plants as 1, 3, 7-trimethylxanthine, it is the stimulant that is most widely consumed and socially acceptable, with it being consumed daily by up to 90% of the population (Favrod-Coune and Broers, 2010). The most extensively used psycho-stimulants globally (i.e. coffee and tea) contain numerous chemical components that are beneficial and harmful to human health, among which are antioxidants (e.g. catechins, polyphenols, and flavonoids) and caffeine along with other psychoactive substances that have not been identified that stimulate the sympathetic system of the human body (Corti *et al.*, 2002).

Caffeine is rapidly absorbed by the human body. Neuro-psychological effects of caffeine include heightened level of alertness, energy and concentration, particularly if users are exhausted or work at night (Smith, 2002). Negative effects of caffeine to the body on the other hand comprise nervousness, anxiety, insomnia, irritability and at times panic attacks (Uhde, 1990; Bruce *et al.*, 1992).

ii. **Tobacco (nicotine):** Nicotine is a naturally occurring stimulant found in plant. The prevalent use of nicotine is principally from tobacco, making nicotine the second

most used psycho-stimulant after caffeine (Favrod-Coune and Broers, 2010). It is an alkaloid naturally found in the leaves of tobacco, with each puff of cigarette containing almost fifty micro-grams of nicotine (Favrod-Coune and Broers, 2010). With respect to its intake into the human body, nicotine absorption is via the lung as well as the gastrointestinal system, however absorption via the oral mucosa has been identified as the primary absorption route used by smokers who don't inhale and for smokeless users of tobacco (Schevelbein *et al.*, 1973).

Nicotine is a central nervous stimulant. It stimulates cognitive abilities through enhancement of attention, learning and memory (Favrod-Coune and Broers, 2010). Nicotine increases cardiovascular risks. It momentarily raises the pressure of blood (Pickering *et al.*, 1995). It could cause cancer, given that it can act as a carcinogen. Nicotine withdrawal syndrome symptoms comprise depressed mood, irritability, anxiety, restlessness, reduced concentration, insomnia, heightened hunger and eating and tobacco craving (Hughes and Hatsukami, 1986). Cigarette smoking is very addictive and usually hard to quit, hence the intake of cigarettes is not as the intake of other goods (Grinblatt, 2017).

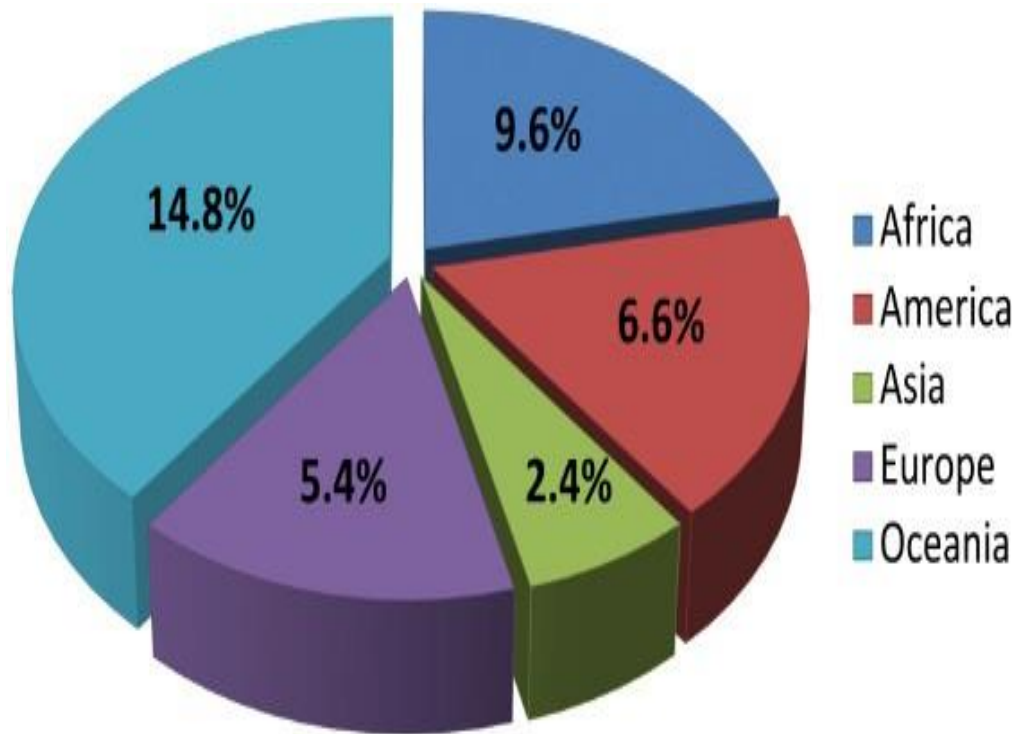
iii. **Cannabis/marijuana:** Marijuana is a grayish-green mixture of the dried flowers of *Cannabis sativa*. Ways in which marijuana is consumed by people are different: it can be smoked in hand-rolled cigarettes referred to as 'joints'; in pipes/water pipes at times referred to as 'bongs'; and rolled in cigar wraps called 'blunts' (Timberlake, 2009). The main psychoactive substance that gives marijuana its intoxicating characteristics that people seek is delta-9-tetrahydrocannabinol (THC), a chemical substance present in resin supplied by both the buds and leaves mainly in the female cannabis plant (National Institute on Drug Abuse, 2020).

Cannabis is the most widely consumed unlawful drug worldwide, estimated to be consumed by 2.9–4.3% of the global population aged 16 - 64 years (UNODC, 2010). While the prevalence of unlawful drugs including amphetamine-like substances (ALS) and cocaine were found to be stable between 2009 and 2011, the degree to which cannabis and opioids have been used have risen since 2009 (Porcu and Castelli, 2017). The use of cannabis is often connected with the simultaneous consumption of other

psycho-active substances like alcohol, cocaine and ALS (Gouzoulis-Mayfrank and Daumann, 2006).

Marijuana is most times seen as a 'gateway drug', and the intake of it could predict an appreciably greater risk for consequent intake of other heavy unlawful drugs such as ALS (Porcu and Castelli, 2017). Research has shown that reductions in learning, memory or verbal fluency, along with self-reported problems that are psycho-pathological in nature (e.g. anxiety, depression, paranoia, and compulsive behaviour) are largely connected with the use of marijuana and not with ecstasy (Gouzoulis-Mayfrank and Daumann, 2006).

Figure 2.1 showed that in 2009, 14.8% of African continent consumed cannabis, at least once and its popularity amongst persons aged 15-64. This was the highest in 2009 among all the other continents of the world.



Source: UNODC (2010)

Figure 2.1 Approximated figure of people who consumed cannabis/ marijuana not less than once in 2009, as well as its popularity among the population aged 15-64years by continent

iv. **Synthetic stimulants**

Alcohol: is produced when yeast anaerobically ferments or breaks down the sugars in foods. Examples of this process is when the sugar in grapes other fruits is used to produce wine; production of beer from malted barley sugar; production of cider from apple sugar; and when vodka is produced from the sugar present in potatoes, beets or other plants (CDC, 2010).

Alcohol is categorized as a sedative drug, meaning high doses can depress the central nervous system. It however, functions as a stimulant at lower doses (Roehrs et al, 2001).Alcohol can thus instigate emotions such as euphoria and talkativeness, while drowsiness, respiratory depression, coma or at times loss of life can be the outcome of consuming too much of it (Brust, 2005; Vonghia *et al.*, 2008; Lohr, 2005). Zhakari (2006) stated that along with the acute and possibly deadly sedative effect of consuming large doses of alcohol, it also has consequences on the organs of a person and such consequences, are contingent on the concentration of alcohol in the blood over time (Zhakari 2006).

It is recommended that men should not drink more than 3 - 4 units of alcohol daily, while women should not drink more than 2 - 3 units daily; and 10ml of pure alcohol is equal to 1 unit (Department of Health, UK, 2008). Measures of usual weekly consumption advanced by the National Health Services (NHS, 2016) indicates that 'lower risk' (not more than 14 units for men and women), 'increasing risk' (above 14 and up to 50 units for men, above 14 and up to 35 units for women) and 'higher risk' (above 50 units a week for men, above 35 units for women).

Analgesics: An analgesic can simply be described as any drug that reduces or kills pain. It is any member of the group of drugs which gives analgesia i.e., the inability to feel pain by using different medication. Analgesic drugs are the most commonly administered drugs worldwide. Because most of them are sold over the counter, coupled with the fact that no prescription is needed, they are easily accessible within the

neighborhood and this responsible for them being widely used (Abougambou *et al.*, 2019). Along with anti-inflammatory drugs, analgesic serves to relieve mild to moderate pain, and lowers inflammation (swellings) as well as fever (Modi *et al.*, 2012). Analgesics can effectively relieve somatic pain (e.g. musculoskeletal pain in joints, muscle and headache).

Most pain-relieving drugs belong to one of these categories (*Arthritis Research UK, 2016*):

- **Non-opioid analgesics:** Paracetamol is an example of a non-opioid analgesic, and it is commonly available over the counter from pharmacies and supermarkets. It is used for relieving mild to moderate pain e.g. headaches, injuries and osteoarthritis, or it can be added to painkillers that are stronger. A few side effects are associated with short-range use of paracetamol. With respect to long-term use precaution could be required due to the likelihood of side-effects on the kidney and cardiovascular system.
- **Anti-inflammatory analgesics:** These can also be referred to as non-steroidal anti-inflammatory drugs (NSAIDs). They can also be procured over the counter from pharmacies and supermarkets, but several of them (for example, naproxen, diclofenac) can only be procured on prescription. Mild to moderate pain can be treated using such drugs. Certain side-effects are associated with their use, especially on the kidney, cardiovascular system and stomach.
- **Compound analgesics:** Co-codamol is an example of this category of drugs. Co-codamol mixes paracetamol and an opioid analgesic dose like codeine. Compounds that contain lower dosages of codeine can be procured over the counter from pharmacies and supermarkets. Mild to moderate pain (e.g. injuries) can be treated using compound analgesics. Side-effects of using compounds that are made from codeine and dihydrocodeine include loss of concentration, nausea and constipation.
- **Opioid analgesics:** Tramadol, morphine and codeine are example of this category of analgesic and are available only on prescription. They are actually the strongest categories of pain killers which can be used for treating moderate to severe pain. Their use is not without side effects (e.g. nausea and vomiting,

constipation, drowsiness and dizziness). Relative to non-opioid analgesics they can cause more side-effects.

Cough syrups: Steven (2018) reported that cough syrups normally contain dextromethorphan (DXM) or codeine. It is also referred to as robo, dex, C-C-C, candy, drank, DM, drex, red devils, velvet, skittles, tussin, rojo and vitamin D. It is available over the counter in medicine stores and supermarkets. Products containing DXM include tablets, capsules and syrups and often carry the label DM, cough suppressant or tuss. Excessive intake of DXM by an individual can result in out-of-body sensations and hallucinations. The drug can likewise depress the brain from functioning properly, especially parts of the brain controlling breathing and functioning of the heart. Excessive intake of DXM can also cause blurred vision, unclear speech, faintness, hyperthermia, difficulty in controlling the limbs, and even death.

2.2.8 Extent of Psychoactive Substance consumption in Nigeria

UNODC (2018) gave the extent of drug use in Nigeria in 2017, as follows:

Psychoactive Substance	No of Users (million)
Cannabis	10.60
Opioids	4.60
Cough syrup	2.40
Tranquilizers and sedatives	0.48
Ecstasy	0.34
Solvents and Inhalants	0.30
Amphetamines & prescription stimulants	0.24
Cocaine	0.92

The most abused psychoactive substance was cannabis followed closely by opioids and cough syrups. An estimated 14.3 million people reported the use of any psychoactive substance in 2017 (prior to the research in 2018) while the least abused drug was cocaine.

Figure 2.2 shows the estimated number of drug users in Nigeria in 2017, UNODC (2018).



Figure 2.2: Info graphic of drug use in Nigeria in year 2017
 Source: UNODC (2018).

2.2.9 The prevalence of drug use in Nigeria by geopolitical zones and states in 2017 (UNODC, 2018)

The map of Nigeria in Figure 2.3: show percentage prevalence of drug users in Geopolitical zones and states of Nigeria in year 2017 (UNODC (2018)).

Zone	Prevalence (%)
Southwest	22.4
Southsouth	16.6
Southeast	13.8
Northeast	13.6
Northwest	12.0
Northcentral	10.0

The southwestern zone had the highest prevalence of drug use with approximately 22.4% compared to the northcentral zone at about 10.0 % prevalence rate. States like Oyo, Lagos, and Gombe have high prevalence. Youths between the ages of 25-39 years constituted the bulk of drug abusers in Nigeria with cannabis, pharmaceutical opioids and cough syrups being the highest abused substance (UNODC, 2018).

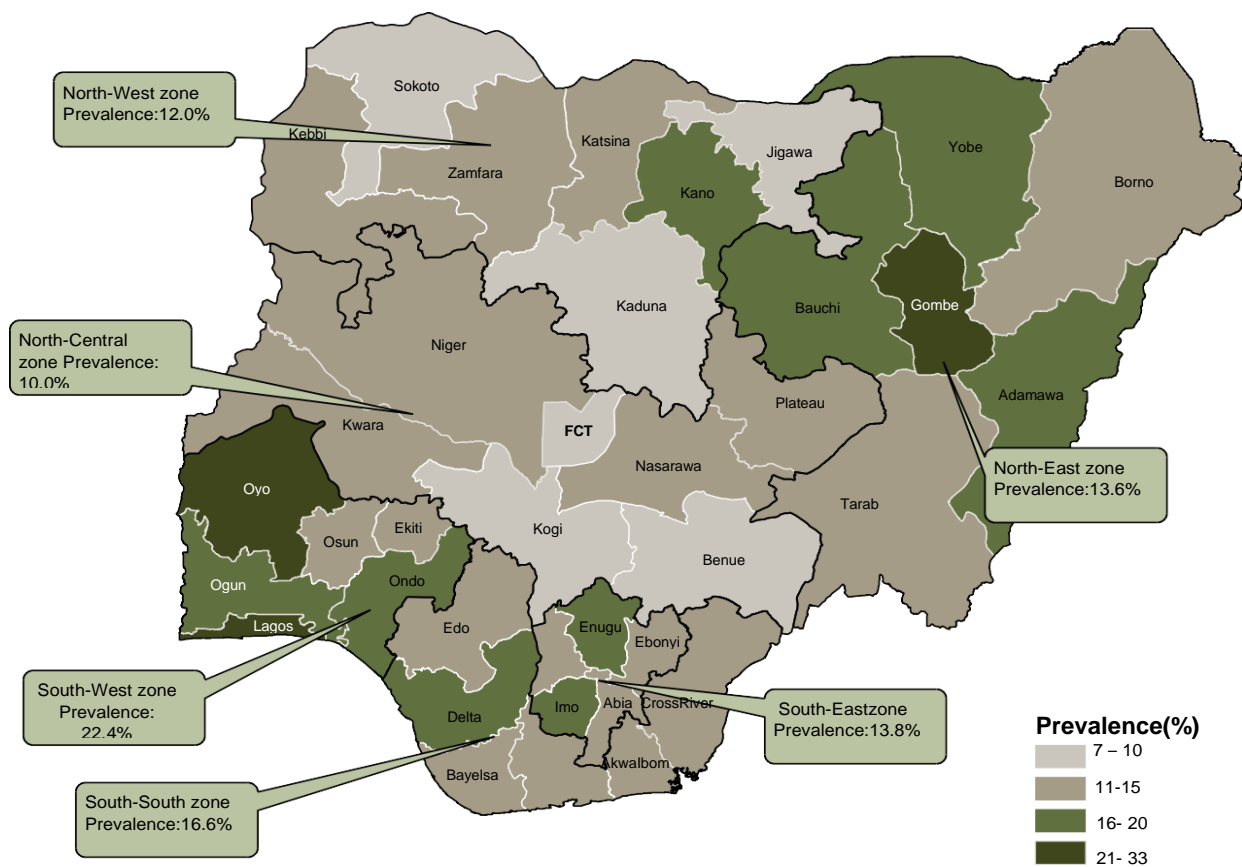


Figure 2.3: Map of Nigeria showing drug use prevalence in geopolitical zones and States in 2017
 Source: UNODC (2018).

2.2.10 Stimulating and sedating nature of stimulants

It is common knowledge that when an individual consume certain stimulants such as alcohol, he or she could get high and feel sleepy. This is referred to as sedating and depressing characteristics of stimulants. Stimulation and sedation appear as opposite states in a continuum, however they may simultaneously be experienced by a person upon the intake of a stimulant like alcohol (Hendler *et al.*, 2013). Due to individual differences, when or how much of alcohol is consumed, and the conditions upon which a person becomes stimulated and sedated by alcohol differs (Holdstock and de Wit, 1998). Also, the time it takes for someone to respond to alcohol can vary with time; research has found that persons and animals under experiment can relatively develop sensitivity to stimulating drugs such as amphetamine and cocaine across several periods of using them (Robinson and Berridge, 2000).

When stimulants make farm labourers high after it is consumed, they would consider it a positive effect while the reverse would be the case. This is in line with Corbin *et al.* (2008), when they opined that stimulating effects are largely experienced to be positive and are considered to encourage drinking behaviour. Whereas certain sedating feelings (e.g. reduction in anxiety) are also pleasurable, but some (e.g. impairment of motor nerves) are generally seen as unpleasurable (Morean and Corbin, 2010).

Just like alcohol, cannabis likewise induces a similar pattern of disrupted feelings. Cannabis causes fluctuation of moods. Fluctuation of moods is what constitutes the basis for the addictive nature of cannabis, just like other stimulants used for recreation (Parrott *et al.*, 2017). Farm labourers who regularly use cannabis and other drugs for instance may feel better at a particular time, but later begin to have feelings of anger, anxiety or certain negative moods when they stay offdrugs. The repetition in fluctuation of moods serves to rationalise the strong addictive potential of cannabis (Parrott *et al.*, 2017).

The stimulating and sedating nature of stimulants is shown in Figure 2.4

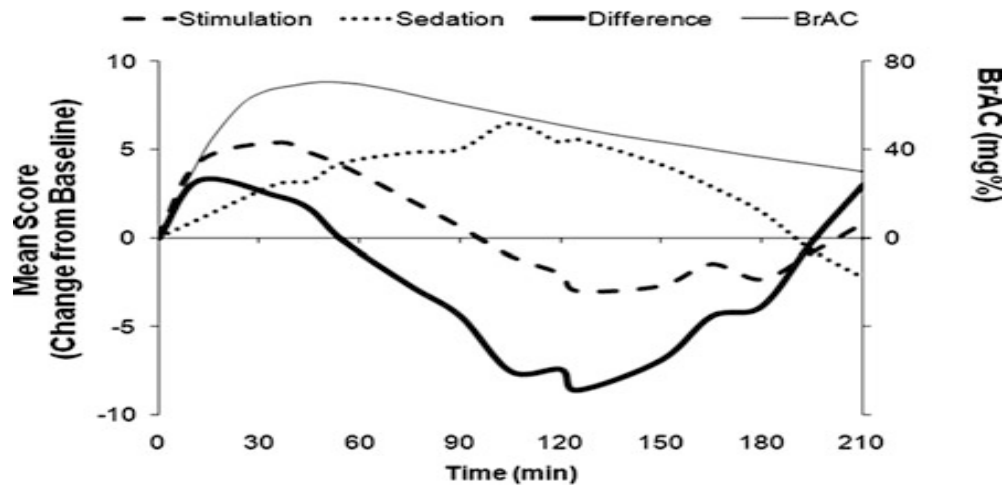


Figure 2.4: Biphasic alcohol effects scale showing time sequence of stimulation and sedation scores, after oral intake of 1g/dose by forty-four healthy social drinkers. Primary *y-axis* = average change from baseline scores. Secondary *y-axis* = Average concentration of alcohol in breath (thin solid line).

Scores of Stimulation scale (dashed line) crest early (about 45 minutes) and drop to and a little below baseline figures before 90 minutes after the dose administered orally. Scores of Sedation scale (dotted line) indicate a slower change and later crest (about 90minutes) and return to baseline before 180minutes. The difference between stimulation and sedation scores (solid thick line) typifies the biphasic effects of alcohol (Ramchandani et al, 2011).

2.2.11 Farm labourers and stimulant consumption

People who consume stimulants encompass a diverse cross-section of a population, comprising an expansive range of ages, different racial as well as ethnic groups, various sexes, persons of all socio-economic status, together with rural and urban dwellers (Drug Policy Alliance, 2018). It suffices to say that stimulant consumption is not limited to farm workers but cut across every fabric of the society, even though its use is rife among them.

The intake of stimulants for long has been a major part of the life of farm folks (Gossage *et al.*, 2014), and the reasons for the use of stimulants can vary from one farm labourer to another. Motives for such can include the following (Drug Policy Alliance, 2018):

- Energy enhancement
- Euphoria/elation
- Wakefulness/alertness
- Concentration/focus and attention
- Enhancement of performance
- Increased productivity
- Boosting of confidence
- Self-medication
- Enhancement of sexual desire/longevity
- Pleasure/recreation
- Acceptance in one's social circle
- Suppression/management of stigma
- Reduced inhibition
- Loss of weight loss, and
- Suppression of appetite

The reasons identified above suggest that possible motives for which a farm labourer may consume stimulants may go beyond functional purposes (e.g. accumulation of work strength) to include other adaptive reasons (e.g. relaxation, weight loss). Alan *et al.* (2012) supported this view by stating that other reasons for consuming stimulants include relaxation/leisure after work, relief from boredom, preventing depression, for

socialisation or acceptance by friends, for quenching thirst and for the fun of getting drunk.

It may well be said that the consumption of stimulant constitutes a workplace culture of farm life, which according to Pidd *et al.* (2006) is key to shaping attitudes about the stimulant intake, along with the level of awareness and readiness to recognise intake as problematic, the patterns of intake of incoming young workers, as well as the development of values in which intake of stimulants serve as a behaviour indicating a collective and evident group characteristic.

Consistent consumption of stimulants which is a habit among farm labourers is thought to be exhibited in terms of dangerous consumption, in which chronic level of consumption result in negative (physical or mental) health consequences (Gossage *et al.*, 2014). The words 'risky', 'harmful', 'hazardous' or 'problematic' have to do with stimulant use behaviours which could lead to negative health results, injury or death (Parry *et al.*, 2005). Given that the degree of excessive intake of stimulants is higher for those who are less educated and of low socio-economic status (Parry *et al.*, 2005; Peltzer *et al.*, 2011), the same could be said to be equally applicable to the hired farm labourers of this study, who were observed to be less educated and of lower social status.

Farm labourers are usually focused on the present, hence the intake of stimulants is of importance to many of them and evidence has shown that they prefer to purchase stimulants than to attend to essential needs. (Falletisch, 2008). The consequences of doing so include the following:

- Disruption of social activities,
- Loss of productivity,
- Forgoing the procurement of essential materials for the purchase of alcohol,
- Farm injuries,
- Domestic violence, and
- Neglect of child (Gossage *et al.*, 2014).

2.2.12 Farm labourers' use of stimulants and occurrence of injury

Farming is considered a hazardous industry and indications exist that intake of stimulants (especially alcohol) contribute to some job-related injuries and accidents on the farm (Allan *et al.*, 2011). Stallones and Xiang (2003) studied the association between consumption of alcohol and injuries of farm workers in Colorado, USA. They found out that farm dwellers that used alcohol were characterised by higher injury rates compared to non-users, and the rate of injury increased in line with the quantity of alcohol consumed. It was further revealed that farm workers who regularly consumed higher amounts of alcohol reported the highest rates of injury. Similarly, Wang *et al.*, (2010) conducted a study in a province in north-eastern China and discovered that the risk of farm work related injuries increased with as the quantity of alcohol taken daily, the rate of consumption of alcohol (i.e. number of days in which they used alcohol), and the period over which they used alcohol (number of years). In contrast, a study carried out in Canada observed that consumption of alcohol was connected with a reduced farm injury risk, even though this finding was not significant statistically (Pickett *et al.*, 1996). An additional finding of note is that from a study carried out by Singh *et al.* (2005) in India about wheat thresher injuries. The study identified some significant factors contributing to injuries, among which is fatigue, in which farm workers were consuming alcohol to get over and to enhance performance at work.

2.2.13 Farm labourers' access to health services

Agriculture is indeed among the most risky of all economic sectors and a lot of farm workers get injured as a result of work-related accidents and ill health yearly (ILO, 2011). This is consequent on the physically demanding nature of the bulk of farm work, which demands farm workers to stand, stoop, bend, and carry out repetitive activities in uncomfortable body positions for extended periods (Hurst *et al.*, 2007). The likelihood of farm accidents or injuries is heightened by exhaustion, inadequately fabricated implements, problematic topography, exposure to weather elements and generally poor health of farm workers added the source. As a result of the risky nature of farm jobs and the usually distant location of farms, the provision of health care becomes a crucial employment benefit for farm workers (Hurst *et al.*, 2007). However, an important part of

sustainable farming which must be looked into is the absence of public health care services in rural areas.

A lot of hindrances limit farm workers, especially migrants, from accessing health care services. These limitations are provided below:

- Most times they unable to patronise private health services due to the fact they cannot afford them or areas in which they work lack health care facilities.
- Another issue is that where health care facilities are available, means of transportation may not be available to go to where they are located.
- Farm workers usually are not cognisant of their eligibility for social service programmes, or given that they are not locally resident in the area may disqualify any chance of getting access to such facilities.
- Language along with barriers relating to the culture of the local people may prevent migrant farm labourers from getting health care services.
- Sick leave is not provided for farm workers. Hence in an attempt not to miss an appointment with a health care centre during work hours, a farm worker is at a risk of losing a day's wages or even the job (Hurst *et al.*, 2007).

The limitations affecting access to health care services by migrant farm workers identified above were similarly those mentioned by National Center for Farmworker Health (2001). These include: lack of transportation, insurance and sick leave; the threat/fear of wage and/or job loss; language barriers between migrant workers and local health care service providers; and limited hours of operation of local clinics. Due to illiteracy, farm workers however, do not seek treatment for acute health conditions but for chronic conditions (Hansen and Donohoe, 2003).

Plate 2 shows a picture of psychoactive substances.

Psychoactive substances



Plate: 2

Psychoactive substances, including street drugs and medications:
From Wikipedia (last edition on 20 February 2022)

1. Cocaine (extracts from leaves of Coca bush)
2. Crack cocaine (free base form of cocaine that can be smoked)
3. Methylphenidate (Ritalin) – Stimulant drug
4. Ephedrine
5. Molly or ecstasy (MDMA)
6. Peyote (mescaline) – small, spineless cactus
7. Lysergic acid diethylamide (LSD) blotter – Psychedelic drug
8. Psilocybin mushroom (Psilocybe cubensis)
9. Salvia divinorum (leaves induce hallucinations)
10. Diphenhydramine (Benadryl)
11. Amanita muscaria - mushroom
12. Tylenol 3 (contains codeine)
13. Codeine with muscle relaxant
14. Pipe tobacco
15. Bupropion (Zyban) - Antidepressant
16. Cannabis
17. Hashish (flower buds of Cannabis)

2.3 Labour Productivity

The amount of goods and services that the labor force creates is called productivity. If a certain amount of labour and a fixed amount of capital creates a lot, that's high productivity. The higher the productivity, the greater the profit. High productivity gives the worker, company, industry, or country a competitive advantage.

Labour productivity measures the efficiency of workers in an organization. It refers to the quantity of output obtained for a given quantity of input. The output is measured in units like kilogrammes, tonnes, gallons, litres etc, while input is expressed in terms of wages paid, time, or number of workers.

Labour apparently constitutes a very important factor of agricultural production. Access to labour markets is highly imperative for many poor people in rural areas as engaging themselves as labourers appears to be their only source of income (Hurst *et al.*, 2007). Often, the only asset possessed by waged agricultural workers is their labour. Hence there is the need to improve the functioning of rural labour markets given that it is principally the only effective way of enhancing the productivity and livelihoods of poor rural dwellers (Wage Labour and the Rural Poor, 2002)

The way labour is measured and valued is important for ascertaining the cost at which agricultural produce or products are produced and to correct represent the relative share of labour in the total production cost (Iowa State University, 1998). While labour productivity is the technical efficiency of human work use in the production of valuable goods, labour efficiency on the other hand is stated as the level of labour productivity (Bervidova, 2001).

2.3.1 Measuring Labour Productivity

According to Lodha (2015),

Labour productivity can be measured in the following ways :

1. Output per man hour = $\frac{\text{Output}}{\text{Man hours used}}$
2. Output per rupee of wages paid = $\frac{\text{Output}}{\text{Total Wages}}$
3. Output per worker = $\frac{\text{Output}}{\text{Total No. of Workers}}$
4. Sale value per worker = $\frac{\text{Sales Value}}{\text{Total No. of Workers}}$
5. Added value per rupee of wages = $\frac{\text{Added Value of Product}}{\text{Total Wages}}$
6. Wages per unit of product = $\frac{\text{Direct Wages}}{\text{No. of Units}}$

International Labour Organisation defined Labour productivity as an important economic indicator that is closely linked to competitiveness, economic growth, and living standards within an economy. Giving this formula:

$$\text{Labour Productivity} = \frac{\text{Total Volume of Output (GDP)}}{\text{Labour (no of employees or hours worked)}}$$

Eby (2019) gave formulae on how to calculate labour productivity at all levels: Organisation, Employee, and software. These formulae are:

$$\text{Labour Productivity} = \frac{\text{Total Output}}{\text{Total Input}}$$

$$\text{Labour Productivity} = \frac{\text{Total Output}}{\text{Total Input}}$$

$$\text{Efficiency} = \frac{\text{Standard Labour Hours}}{\text{Amount of time worked}} \times 100$$

$$\text{Partial Factor Productivity} = \frac{\text{Output}}{\text{Input}}$$

$$\text{Total Factor Productivity} = \frac{\text{Output}}{\text{Input}}$$

2.3.2 Improvement of Labour Productivity

Labour productivity in an organization can be improved by doing the following (Lodha, 2015):

1. Reduction of labour turnover.
2. Introduction of incentive schemes
3. Setting up different standards for workers.
4. Provision of fair remuneration to workers.
5. Avoidance or discouragement of overtime.
6. Checking workers at idle time.
7. Conduct proper recruitment, selection and training of personnel
8. Provision of fringe benefits like free e.g subsidized food, free accommodation, medical facilities, etc
9. Motivation of workers and creation of a will to work with zeal in them.
10. Provision of proper and congenial atmosphere for work.

2.3.3 Agric Labour Productivity

In Agriculture, farm labour encompass all hired, contract, exchange and unpaid family labour (traditional labour) used in agricultural production and processing. It encompasses semi-skilled services used in farming such as building repair and book keepers, and mechanics for machinery.

2.3.4 Stimulant use and labour productivity

The link between low productivity and stimulant use is well established. The effect of stimulants on farm labourers' productivity is a function of the type and quantities of stimulants consumed, as well as of the performance requirements of the jobs in question. Thus stimulant abuse, especially alcohol, goes to the heart of workplace health and safety (Allan *et al.*, 2012).

For instance, Allan *et al.* (2012) reported that work performance and fitness for work are likely to be negatively impacted by high level consumption of alcohol. They observed that farm workers indicated various impacts emanating from the consumption of alcohol

during work hours, at work breaks (or in the hours before work), and especially at nights. Such impacts are decreased work focus and concentration, risky driving and operation of machine, near-accidents/accidents, reduced performance of work, sick days and job loss.

Just like alcohol, research has also found a nexus between smoking and labour market performance, and there seems to be an agreement in the connection between smoking and lower wages (Grinblatt, 2017). Smokers may require or take more work breaks and sick days (Berman *et al.* 2014), resulting in reduced productivity. It has been shown that workers who use stimulants in the US are more likely to be absent from work for three or more days on the average than workers who do not use stimulants. The consequence of this is that farm workers who use stimulants end up being less productive than those who do not use stimulants.

Given that the maintenance of productivity is principal to rural farm workers, nonetheless, the negative impacts associated with the use of stimulants (Elliott-Schmidt and Strong, 1997), farm workers may not bother to seek medical help on time. Therefore, comprehending this masculine behaviour is necessary to overcoming limitations to improved health status for farm workers (Albrecht *et al.*, 1998). However, in as much as the linkages between consumption of stimulant and performance/productivity are already known, increasing attention is thus being given to intervention policies for farm workers (Allsop and Pidd 2001).

2.3.5 Farm labourers' access to health services

Agriculture is indeed among the most risky of all economic sectors and a lot of farm workers get injured as a result of work-related accidents and ill health yearly (ILO, 2011). This is consequent on the physically demanding nature of the bulk of farm work, which demands farm workers to stand, stoop, bend, and carry out repetitive activities in uncomfortable body positions for extended periods (Hurst *et al.*, 2007). The likelihood of farm accidents or injuries is heightened by exhaustion, inadequately fabricated implements, problematic topography, exposure to weather elements and generally poor health of farm workers added the source. As a result of the risky nature of farm jobs and the usually distant location of farms, the provision of health care becomes a crucial

employment benefit for farm workers (Hurst *et al.*, 2007). However, an important part of sustainable farming which must be looked into is the inadequate public health care services in rural areas.

A lot of hindrances limit farm workers, especially migrants, from accessing health care services. These limitations are provided below:

- Most times they are unable to patronize private health services due to the fact they cannot afford them or areas in which they work lack these health care facilities.
- Another issue is that where health care facilities are available, means of transportation may not be available to go to where they are located.
- Farm workers usually are not aware of their eligibility for social service programmes, or given that they are not locally resident in the area may disqualify any chance of getting access to such facilities.
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- Sick leave is not provided for farm workers. Hence in an attempt not to miss an appointment with a health care centre during work hours, a farm worker is at a risk of losing a day's wages or even the job (Hurst *et al.*, 2007).

The limitations affecting access to health care services by migrant farm workers identified above were similarly those mentioned by National Center for Farmworker Health (2001). These include: lack of transportation, insurance and sick leave; the threat/fear of wage and/or job loss; language barriers between migrant workers and local health care service providers; and limited hours of operation of local clinics. Due to illiteracy, farm workers however, do not seek treatment for acute health conditions but for chronic conditions (Hansen and Donohoe, 2003).

2.3.6 Health risks or problems associated with stimulant consumption

Ill health in farm labourers can be caused by different factors. ILO (2011) identified some of the factors to be especially the following: using farm machines, vehicles, tools and animals to work on the farm; exposure of farm workers to extreme noise and

vibration from farm machines and vehicles; accidental falls from heights; raising weighty materials resulting in disorders of the muscular and skeletal system; exposure to chemicals; and agents of infectious diseases; nature of work general to rural settings, including exposure to severe heat, harsh weather and wild animal attacks on farm workers.

Another major contributory factor causing ill health of farm labourers is excessive use of stimulants, especially of alcohol, goes to the heart of workplace health and safety (Allan *et al.*, 2012). The effect of stimulant use is a deteriorating health, which may cause mental ill health and untimely death of farm labourers among other things (Orija, 2008). Farm labourers who are addicted to stimulants become more irritable, moody and absent minded. They equally become more demanding with regard to funds, increased appetite and they complain often of aches and pains in the body.

Researchers and clinicians, along with stimulant users have documented a number of health risks associated with stimulant use (Drug Policy Alliance, 2018):

- Physical and cardiovascular effects: Excessive use of stimulants is connected to critical or chronic cardiovascular issue including increased rate of the heart, high pressure of the blood, pain of the chest, and heart attack. It is also connected to risk of stroke, elevated temperature of the body, issues of mental health (such as hallucinations, paranoia, and anxiety), loss of weight, and deprivation of sleep.
- Over-amping: Over-amping generally means the different effects (negative or uncomfortable physical and psychological effects) a person is likely to feel when he or she consumes stimulating drugs. Some of these include paranoia, increased rate of the heart, violence, discomfort, worry and perspiring (Ditmore, 2013). Given that it is a better representation of feeling too stimulated, people often prefer using ‘over-amping’ as a terminology than ‘overdose’.
- Risky injection practices: Individuals who often inject stimulants into their body are at risk of contracting blood-related diseases (e.g. HIV and Hepatitis C), owing to them sharing syringes and equipment. Also, if adequate care is not taken during the administration of injections and if sites used for administering

injections are not given proper care, they are at risk of developing injuries and infections by bacteria.

- Sexually transmitted infections: Excessive use of stimulant is also connected to unprotected sex or highly risky sexual activity. For instance, statistics from the Los Angeles County in 2015 revealed that individuals who consumed methamphetamine were diagnosed to have sexually transmitted infections two times more than people who did not use methamphetamine.

Table 2.1: Health effects and risk of addiction of major stimulants identified in this study (Goldstein and Kalant (1990))

Stimulant category	Acute toxicity	Chronic toxicity	Relative risk of addiction
Alcohol	Psychomotor weakening, weakening of thinking capacity and judgment, irresponsible or aggressive behaviour; reduced body temperature, depriion of the respiratory system	Hypertension, stroke, liver diseases (cirrhosis, hepatitis), pancreatitis, gastritis, brain issues (cognitive deficits, organic brain damage), foetal alcohol syndrome, withdrawal syndrome (shakes, seizures, delirium tremens)	3
Caffeine	Restlessness, excitement, muscle tension, jitteriness, insomnia, cardiac arrhythmias, gastric discomfort	Hypertension, withdrawal headaches, anxiety and depression	5
Cannabis (marijuana)	Psychomotor weakening; synergism (with alcohol and sedatives)	Mental slow down and apathy, damage of the brain (weakening of memory and learning), weakening of immune response	4
Tobacco (nicotine)	High doses (hypertension, bradycardia, diarrhoea, muscle twitching, respiratory paralysis), nausea, tachycardia, tremor	Diseases (coronary, cerebral and peripheral vascular), withdrawal irritability, gastric acidity, peptic ulcer, gangrene, weakened attention and concentration, stunted growth of foetus, impulsive abortion	2
Analgesic (opiates)	Sedation, analgesia, emotional blunting, dream state; nausea, vomiting, spasm of ureter and bile duct; depressed respiration, coma, synergism (with alcohol and sedatives); weakened heat regulation; sex hormones suppression	Disorders of hormone secretion by hypothalamus and pituitary gland, constipation, vomiting, withdrawal cramps, diarrhoea, gooseflesh, lacrimation and rhinorrhea	2

Source: Adapted from Goldstein and Kalant (1990) Drug Policy Striking the right balance.

2.4 **Theoretical and conceptual framework**

2.4.1 **Theoretical framework**

The following theories were examined and served as basis for the conceptualization of the study:

1. Social Control Theory
2. Self-control theory
3. Behavioural Theory
4. Agnew's General Strain Theories

2.4.1.1 **Social control theory**

Hirschi's social control theory asserts that ties to school, family, and other aspects of society serve to reduce one's propensity for deviant behaviour. As such, social control theory posits that crime occurs when such bonds are weakened or are not well established. Control theorists argue that without such bonds, crime is an inevitable outcome (Lilly, Cullen and Ball 1995). According to Hirschi, these bonds are based on attachment to those both outside and within the family, including teachers, friends, and co-workers; commitment to activities in which an individual has invested energy and time, such as career or educational goals; involvement in activities that serve to both further bond an individual to others and leave limited time to become involved in deviant activities; and finally, belief in wider social values.

These four aspects of social control are thought to interact to insulate an individual from criminal involvement (Siegel and McCormick, 2006). For Hirschi, delinquent behaviors, like psycho active substance consumption, would be a likely outcome of ineffective ties to these things, that is, improper socialization. Specifically, it is likely to occur if there is improper attachment (to school and parents), improper commitment (to educational and occupational success), improper involvement in conventional activities (e.g., scouting and games), and inadequate beliefs in such things as the legitimacy and morality of the law.

Hirschi's theory is very relevant to this study because hired farm labourers find agricultural work far away from their home/village/town/country, their tribes and people. No relative can control their behaviour. Most of them have little or no education; they are not in school so no teacher or school official could control them. They are isolated from law-abiding peers in the resident village, they could have strong moral bond at home, they are likely to have none in the village they are now residing.

They have no attachment to anyone. As opined by Hirschi, people could engage in drug use because of improper socialization, inadequate attachment and commitment. Agricultural labour is considered as a job of low esteem not desired by anyone so farm labourers moved to villages/areas/countries where little or nothing is known about them before they engage in it.

2.4.1.2 **Self-control theory/general theory of crime**

Gottfredson and Hirschi (1990) further developed their conception of the causes of crime and encapsulated it within a theory which they refer to as self-control or the general theory of crime. General theory of crime posits that low self-control is a key factor underlying criminality. Gottfredson and Hirschi focused on the conception that self-control, or lack of it, could be used to explain criminal behaviour. They posited that crime occur through the following process:

(1) an impulsive personality (2) lack of self-control (3) the withering of social bonds (4) the opportunity to commit crime and delinquency (5) deviant behaviour (Siegel and McCormick, 2006). Baron (2003) later found a relationship between low self-control and violent behaviour, positing low self-control as the most powerful predictor of violent offending.

Farm labourers are generally the poorest of the poor being controlled by contract labourers and farmers. They have little or no social bonds, there is ample opportunity to commit crime because of the isolated area of the community they reside in with poor living conditions where there is no segregation between male and female or between adult and children. Most often there is no potable water; they sleep on tattered mats or bare floor with little or no privacy.

2.4.1.3 **Behavioral theory**

Behaviour theory maintains that all human behaviour including violent behaviour is learned through interaction with the social environment. Behaviorists argue that people are not born with a violent disposition. Rather, they learn to think and act violently as a result of their day-to-day experiences (Bandura, 1977). Behavioral theorists have argued that the following four factors help produce violence: 1) a stressful event or stimulus – like a threat, challenge or assault – that heightens arousal; 2) aggressive skills or techniques learned through observing others; 3) a belief that aggression or violence will be socially rewarded (for example, reducing frustration, enhancing self-esteem, providing material goods or earning the praise of other people); and 4) a value system that condones violent acts within certain social contexts.

This theory is relevant to this study in that farm labourers are engaged in stressful work through involvement in agricultural labour especially during the peak seasons of planting or harvesting where they hardly rest by engaging in timeless farm activities that engage them from early hours of the day till night for seven days of the week without rest or holiday. They are constantly under threat from labour contractors or farmers. They believe the use of stimulants will energize them to work more and increase their income, thus further making them to be stressed and aggressive.

2.4.1.4 **Agnew's General Strain Theory**

Agnew's (1992) general strain theory posits that strain is directly related to negative emotions, which may lead to a number of negative outcomes, including delinquency. The specific strains discussed in the theory include the failure to achieve positively valued goals (e.g., status or money), the removal of positively valued stimuli (e.g., loss of a valued possession), and the presentation of negatively valued stimuli (e.g., physical abuse). While many specific types of strain may fall into these categories, Agnew has attempted to specify the conditions under which strain may lead to crime. Strains that are 1) high in magnitude, 2) seen as unjust, 3) associated with low social control, and 4) create some incentive to engage in criminal coping are most likely to lead to violence and delinquency. General strain theory, however, is particularly interested in delinquent

adaptations. General strain theory identifies various types of delinquent adaptations, including escapist (e.g., consumption of psychoactive substances), instrumental (e.g., property offences), and retaliatory (e.g., violent offences) outcomes. Coping through violence and illegal behaviour may be especially true for adolescents because of their greater influence from peers, limited legitimate coping resources, and inability to escape many stressful and frustrating environments. Agnew et al. (2002), for example, found that individuals with the personality traits of low constraint and negative emotionality were more likely to respond to strain with crime. Such individuals are overly active, impulsive, and quick to lose their tempers.

Farm labourers most often have little or no money or valued possessions; they are physically abused frequently due to the kind of environment they reside and the kind of people that lives around them. They experience strain that is associated with low social control so they engage in escapist adaptation, that is stimulant consumption.

2.4.2 Conceptual framework

Miles and Huberman (1994) defined conceptual framework as a written or visual presentation that explains either graphically, or in narrative form, the main things to be studied- the key factors, concepts or variables, and the presumed relationship among them. It is a schematic representation, presenting the various variables being measured in the study, the inter- relationship among these variables and the eventual outcome envisaged. The conceptual framework in this study has been designed as an interface for three variable categories. These are the independent, intervening and dependent variables.

Independent variables

The independent variables of the study were: patterns of engagement and reward system of hired farm labour; stimulants consumed (types and quantity) by hired farm labourers; reasons for consumption of stimulants by the hired farm labourers; sources of stimulants patronized by hired farm labourers; common health problems (symptoms and diseases) associated with stimulant consumption experienced by hired farm labourers; frequency of visit to health centres by hired farm labourers; attitude of hired farm labourers

towards the consumption of stimulants; and labour saving equipment (awareness and level of use).

Intervening variables

These are variables not measured in the study, but which have the tendency of influencing the outcome of the study such that the independent variable could not solely account for the outcome of the study. Examples are culture of the people, community laws, migration laws, natural disaster, climate change, government tax and policy.

Dependent variable

Labour productivity was the dependent variable of the study.

Explanation of the conceptual framework

As presented in Figure 2.5, the personal characteristics of hired farm labourers would influence the pattern of their engagement or the duration to which they are involved as hired farm labourers as well as the reasons for which they consume stimulants. For instance, an aged hired farm labourer may not possess the requisite strength and stamina to engage in farming activities for a whole calendar year but occasionally. Similarly, an individual who is fully dependent on proceeds derived from working as a hired farm labourer by virtue of his farm labour status may give the excuse of acquisition of labour strength and stamina as a reason for intake of stimulants. Reason for use of stimulants is in turn linked with the types and quantity of stimulant consumed, as well as availability of labour saving equipment. For example if labour saving devices are available with which farming activities can be done, hired farm labourers may choose not to use stimulants with the motive of acquiring energy for work. Availability of labour saving equipment would influence their attitude towards stimulant consumption in the sense that such labour saving equipment may discourage the use of stimulant (unfavourable or negative attitude). The attitude towards stimulant consumption would affect the quantity of stimulant consumed, which would in like manner reduce the extent to which hired farm labourers experience common health problems associated with consumption of stimulants. It is expected that development of health problems by hired farm labourers

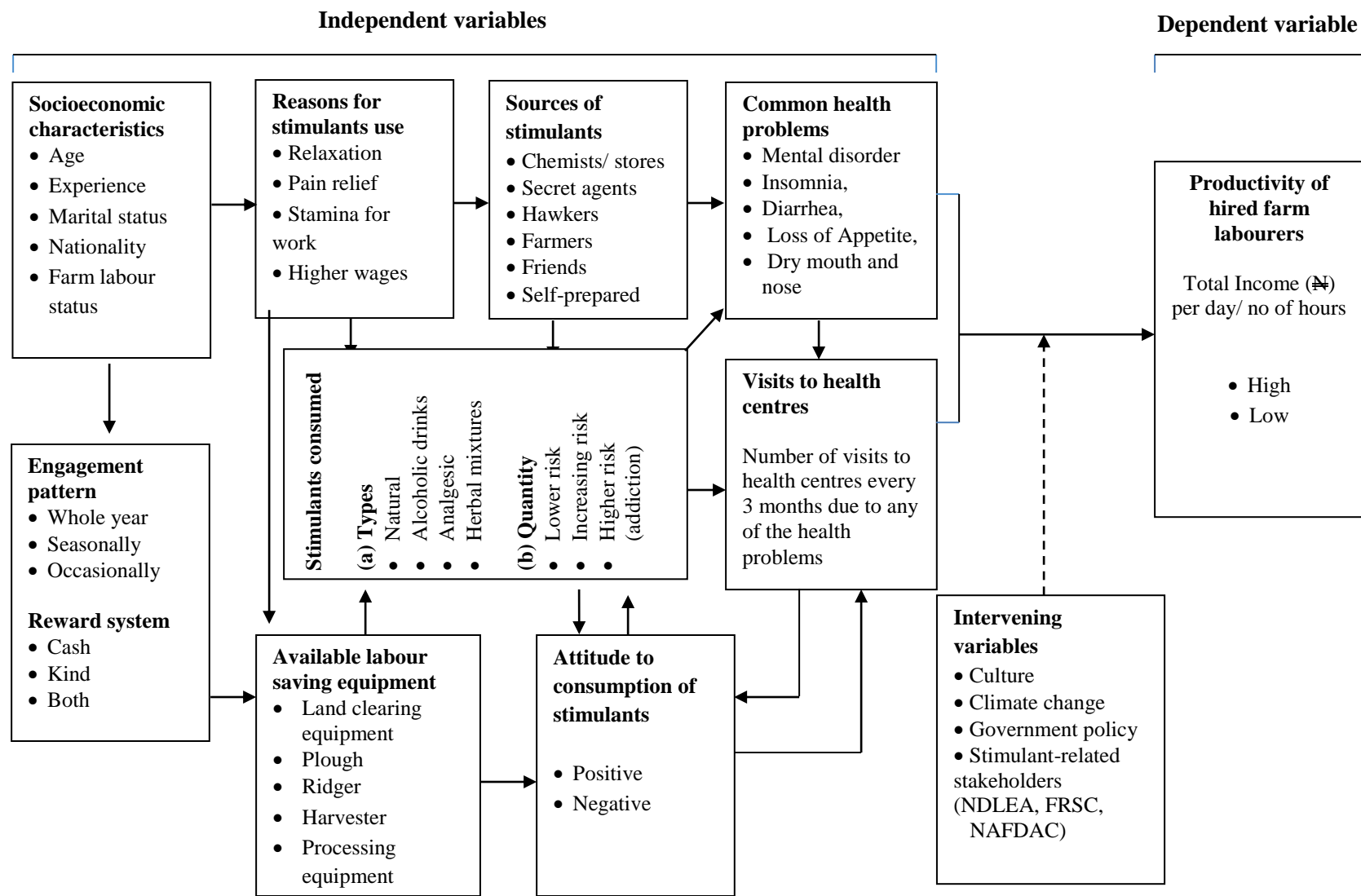


Figure 2.5: Conceptual framework for stimulants consumption and productivity of hired farm labourers in Southwestern Nigeria

due to stimulant use would negatively affect their capacity to properly function on the farm thereby negatively affecting their level of productivity ultimately.

CHAPTER THREE

METHODOLOGY

3.1 The study area

The study was carried out in the Southwestern agro-ecological zone of Nigeria. The area lies between longitudes 2° 3' and 6° 00' E and latitudes 6° 21' and 8° 37' N, with a total land area of 79,665 square kilometers representing approximately 12% of the country's total land area and an estimated population of 32,483,140 representing approximately 20% of the country's population (National Bureau of Statistics, 2012). The zone includes Ogun, Osun, Ekiti, Ondo, Oyo and Lagos States. They are mainly Yoruba speaking states with various dialects. Southwestern Nigeria is bounded in the North by Kwara and Kogi States, in the East by Edo and Delta States, in the West by Republic of Benin and in the South by Gulf of Guinea. Not less than 65% of the people in this area depend on agriculture as their main source of livelihood. The Southwestern region has been declared notorious for the production, consumption and trafficking of stimulants (National Drug Law Enforcement Agency, 2008; Akannam, 2008; and Larewaju, 2008).

Figure 3.1 shows the Local Government Areas in the Maps of Oyo and Ogun States and Nigeria where the study was conducted.

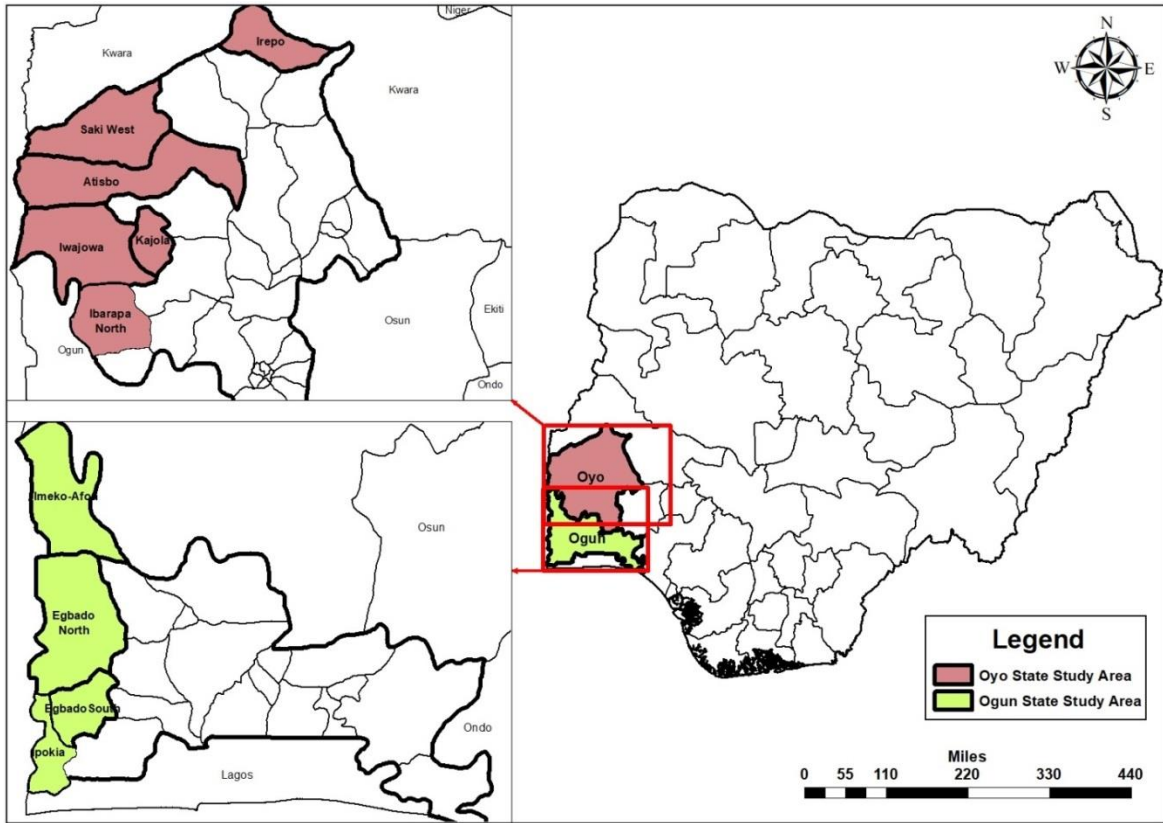


Figure 3.1: Maps of Oyo and Ogun States and Nigeria indicating areas in which the study was conducted

Source: Researcher.

3.2 **Research design**

In an attempt to adequately provide responses to the questions of this study, mixed methods research approach was adopted. Mixed methods research as a research type which for purpose of attaining width and depth of understanding and confirmation of study findings combines quantitative and qualitative data (Johnson *et al.*, 2007). The explanatory sequential mixed method design type was considered appropriate and thus employed in this study. It required that quantitative data were obtained and after which they were subjected to analyses. For better understanding and corroboration, qualitative data were also collected and analyzed to buttress quantitative findings.

Accordingly, a survey of hired farm labourers was done to gather quantitative data. Qualitative data were also gathered through Focus Group Discussions (FGDs) with hired farm labourers, together with conduction of In-depth Interviews (IDI) with farm owners, medical personnel and local leaders in communities in the study locations.

3.3 **The study population**

The population of this study comprised all hired farm labourers in Southwestern Nigeria for quantitative research. These included labourers that collect one form of reward in cash, in kind or both after assisting farmers in production and processing activities while those involved in the qualitative research (FGD, IDI) of the study included contract labour masters, extension agents, farmers that hire farm labourers, opinion leaders, key informants, chemist owners and clinic staff at village dispensaries in Southwestern, Nigeria.

3.4 **Sampling procedure and sample size**

A multi-stage sampling procedure was adopted for this study as shown in Table 3.1. The first stage involved purposive selection of two out of the six states in the Southwest that is, Ogun and Oyo States due to the high influx of foreign farm labourers through their international borders and prominence in food production. The second stage of the sampling procedure involved a purposive selection of agrarian LGAs around the borders of each state. Random selection of 20% of the agrarian LGAs followed (Imeko Afon,

Table 3.1: Sampling procedure and sample size of hired farm labourers

Sampled states	No of agrarian LGs in the State	Selected LGs 20% (Border LGs)	Farmers Registered under GES	10% of registered farmers	10% of hired farm labourers in each LG
Ogun	20	Imeko Afon	1,400	140	14
		Egbado North	3,000	300	30
		Egbado South	1,100	110	11
		Ipokia	3,000	300	30
Oyo	28	Irepo	4,700	470	47
		Saki West	2,700	270	27
		ATISBO	2,700	270	27
		Iwajowa	4,000	400	40
		Ibarapa North	2,400	240	24
		Kajola	2,100	210	21
Total		10	27,100	2,710	271

Egbado North; Egbado South; and Ipokia in Ogun; Irepo; Saki West; Atisbo; Iwajowa; Ibarapa North; and Kajola in Oyo). The third stage involved sourcing for a list of farmers registered under Growth Enhancement Scheme Support (GES) in the selected LGAs from State ADPs and selecting 10% of the farmers engaging hired farm labourers. At the fourth stage, three communities in each LGA and 10% of Growth Enhancement Support Scheme Farmers (GESSF) were purposively sampled due to prominence of hired farm labourers with them. Ten percent of the GESSF hired farm labourers were randomly sampled to give 271 respondents. All hired farm labourers identified in each of the sampled communities were given an equal chance of being involved in the questionnaire administration.

3.5 Reliability of instrument

Reliability of the interview schedule was done using split half method to determine the degree to which consistency was maintained in the variables. The questionnaire was administered to 30 hired farm labourers in Aba Ayo via Bakatari, Ido Local Government, Oyo State. A reliability coefficient of 0.70 was obtained and considered appropriate for the study.

3.6 Validation of instrument

Content validity of the research instruments was achieved through interactions with the Research Supervisor, professionals in Agricultural Extension and Rural Development Department, contact was made with lecturers in Agricultural Economics Department on measurement of productivity, and IITA was contacted on calculation of labourers productivity.

3.7 Methods of data collection

Primary and secondary data were used for this study. Primary data were collected using a semi-structured questionnaire administered to hired farm labourers at the farm level in the study area. Qualitative data were obtained through the use of Focus Group Discussions (FGD) with farmers, farm labourers, and contract labour masters. In-depth Interviews (IDIs) were conducted with extension agents, key informants, local chemist owners, hospitals and clinic staff at village clinics/ dispensaries in the study area. Review of literature and IDI with stakeholders in University College Hospital, National Drug Law Enforcement Agency, National Agency for Food and Drug Administration and Control and Federal Road Safety Corps served as secondary sources of data.

3.8 Measurement of variables

Independent variables

3.8.1 Socio-economic characteristics

1. Age: This was measured at the interval level as hired farm labourers stated their actual age in years. A class interval of 10 was then used to organize and describe the data.

2. Sex: This was measured at the nominal level. Hired farm labourers indicated if they were male or female.
3. Household size: This was measured at the interval level, hired farm labourers stated the number of males and females in their household. A class interval of 4 was used to present and describe the data.
4. Marital status: This was measured at the nominal level. Hired farm labourers stated if they were single, married, widowed, divorced or separated.
5. Religion: This was measured at the nominal level. Hired farm labourers were asked to state if they practice Christianity, Islam or traditional religion.
6. Nationality: This was measured at the nominal level. Hired farm labourers were asked to indicate whether they were Nigerians or foreigners.
7. Educational attainment: This was measured at the ordinal level. Hired farm labourers' level of educational attainment was captured as follows: non-formal education, primary education, vocational training, secondary education, technical school, Higher education and others. Scores of 0, 1, 2, 3, 4 5 and 6 were assigned to the educational attainment respectively.
8. Primary occupation: This was measured at the nominal level. Hired farm labourers were asked to choose from a list of options provided to them.
9. Farm labour experience: This was measured at the interval level. Hired farm labourers indicated the number of years in which they have been involved in farm labour activities. The data was then presented and described using a class interval of 2.
10. Farm labour status: This was measured at the ordinal level. Hired farm labourers were asked to indicate if they were fully dependent, partially dependent or not dependent on their work as farm labourers for income. Ordinal scores of 2, 1, and 0 were then assigned to the status respectively.
11. Farming activities engaged in: This was measured at the interval level. Hired farm labourers were required to indicate how frequently they engaged in a number of farming activities with the following response options: always, occasionally and never, with scores of 2, 1 and 0 respectively.

3.8.2 Pattern of engagement in farm labour and mode of reward

This was measured at the nominal level. Hired farm labourers were asked to state their pattern of engagement from a list of options that comprised: working throughout the year; working during the on-season and working occasionally. Thereafter, they were asked to indicate from a list the mode of reward given to them after working on the farm. The reward included motorcycles, money and farm produce.

3.8.3 Stimulants consumed (types and quantity) by hired farm labourers

This was measured at both nominal and the interval level. A list of stimulants and psychoactive substances was presented to the hired farm labourers, first they were asked to indicate the ones they consume on a two-point scale of Yes and No, with scores of 1 and 0 assigned, respectively. Thereafter, they were then required to state the quantity and frequency of consumption per day/every other day/ week/ month with scores of 4,3,2,1 respectively. An index of consumption was determined as an interaction between Quantity consumed and frequency as:

Level of consumption = Quantity consumed x Frequency of consumption

The standardized score of each of the stimulant was obtained. These were summed up to give a score which represented the consumption level of stimulants among hired farm labourers. The mean consumption score was obtained and compared with the permissible limit to categorise hired farm labourers into low risk, high risk, or drug dependent and implications were drawn on the perceived health and wellbeing of farm labourers.

3.8.4 Reasons for use of stimulants

This was measured at the interval level. Hired farm labourers were presented with a list of probable reasons for use of stimulants and were asked to respond on a two-point scale of Yes and No, with scores of 1 and 0 assigned, respectively. The percentage value for each reason was generated and used to determine the order of their importance to the hired farm labourers.

3.8.5 Sources of stimulants consumed

This was measured at the interval level. Hired farm labourers were presented with a list of possible sources of stimulants and were asked to respond on a two-point scale of Yes and No, with scores of 1 and 0 assigned, respectively. The percentage value for each reason was generated and used to determine the order of their importance to the hired farm labourers.

3.8.6 Perceived health problems (perceived symptoms and diseases) associated with stimulant consumption

This was measured at the interval level. Hired farm labourers were presented with a list of symptoms associated with the consumption of stimulants to indicate the ones they perceive as affecting them on a 3-point scale of severe, mild and not experienced, with scores of 2, 1 and 0 assigned, respectively. The weighted mean scores for each of the symptoms were generated and used to rank them in order to which they were experienced by the hired farm labourers. Further, they were presented with a list of possible diseases associated with stimulant consumption and asked to respond on a two-point scale of Yes and No, with scores of 1 and 0 assigned, respectively. Maximum and minimum scores obtainable were 13 and 0. Thereafter, they were required to indicate the number of times such perceived symptoms occurred within a quarter of a year (every 3months).

3.8.7 Frequency of visit to health centres

This was measured at the interval level. The hired farm labourers were asked to state the number of times they visited health centres upon the occurrence of diseases associated with stimulant consumption within a quarter of a year (every 3 months). The mean number of visits (5.70 ± 4.89) to health centres was generated and used to categorize the hired farm labourers into high (6.00 – 19.00) and low (1 – 5.99) level of visits.

3.8.8 Attitude towards the consumption of stimulants

This was measured at the interval level on a five-point Likert scale of Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree, with scores of 5, 4, 3, 2, and 1

assigned, respectively for positively worded items. The scores were reversed for negatively worded items. Maximum and minimum scores obtained were 143 and 55 respectively. The mean score (107.53±14.61) was generated and used to categorise the hired farm labourers into favourable (108.00 – 143.00) and unfavourable (55.00 – 107.99) attitude towards the use of stimulants.

3.8.9 Available labour saving equipment (awareness and use)

This was measured at the interval level. The hired farm labourers were provided with a list of labour saving equipment to tick the ones they were aware of on a two-point scale of Aware and Not aware with scores of 1 and 0 assigned, respectively. Maximum and minimum scores obtained were 17 and 0, respectively. The mean score (6.89±5.65) was generated and used to categorise the hired farm labourers into high (7 - 17) and low (0 - 6) level of awareness.

Use of the equipment was measured on a three-point scale of Always used, Occasionally used, and Not used with scores of 2, 1 and 0 assigned, respectively. Maximum and minimum scores obtained were 11 and 0, respectively. The mean score (4.64±3.21) was generated and used to categorize the hired farm labourers into high (5.00 – 11.00) and low (0 – 4.99) level of use.

3.8.10 Dependent variable

Labour Productivity, the dependent variable is the productivity of the hired farm labourers and it is mathematically expressed below:

$$\text{Labour productivity (₦/hour)} = \text{Total Income (₦) per day} / \text{No of hours}$$

The minimum labour productivity obtained was ₦90.35 while the maximum was ₦1, 375. The mean labour productivity score (₦114.04±111.49) was generated and used to categorize the hired farm labourers into low (₦90.35 - ₦113.99) and high (₦114.00 - ₦1, 375.00) level of productivity. The computed mean labour productivity obtained in this study was subsequently compared to current farm labour wage. The average wage per hour for hired farm labourers is ₦144 (IITA, 2019) and ₦140 in the open farm labour market.

3.9 Methods of data analysis

Data analysis was carried out using both descriptive and inferential statistical tools. The descriptive tools used included frequency counts, percentages and means. Inferential statistics like Chi-square (χ) and Pearson Product Moment Correlation (PPMC) were used.

Hypothesis 1 = Chi-square and PPMC

Hypothesis 2 - 7 = PPMC

Multiple linear regression analysis was used to determine the factors influencing labour productivity of hired farm labourers in the study area. The explicit form of the model is presented as:

$$Y = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_9 X_9 + e_i$$

Where:

Y = Labour productivity of hired farm labourers

X₁ = Age

X₂ = Sex

X₃ = Education level

X₄ = Household size

X₅ = Nationality (Migrant status)

X₆ = Symptoms

X₇ = Occurrence of diseases

X₈ = Visit to health centres

X₉ = Awareness of labour saving equipment

X₁₀ = Use of labour saving equipment

X₁₁ = Attitude to stimulant consumption

$\alpha_0, \beta_1 - \beta_8$ were parameters estimated

e_i = Error term

3.10 Ethical considerations

The study recognised the rights of individuals (hired farm labourers/ clinic staff/ farmers/ extension agents and labour masters) who took part in it. Throughout the course of this study, ethical considerations measures were followed to guarantee the protection of the rights of individuals who completed the interview schedule (hired farm labourers) and other FGD and IDI hired farm labourers. No interview schedule was administered or FGD or IDI conducted without the informed consent of the study participants. Provisions for privacy and confidentiality were also ensured, as surveys, FGDs and IDIs were conducted in a confidential setting, one-on-one so that no one else can hear the respondent's answers. Study participants were also assured that information supplied or obtained would be used for research purpose.

ADP staff served as enumerators. Time was taken to explain in details the focus of the research and the hired farm labourers were assured of freedom to withdraw from continuing to answer the questions put to them during the administration of interview schedules, IDI or FGD.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Socio-economic characteristics of farm labourers

Age: The age distribution of hired farm labourers as presented in Figure 4.1a shows that about three-quarters (72.5%) of the hired farm labourers were within the age range of 21- 40 years, while the mean age was 32.25 ± 9.75 . This indicated that the hired farm labourers in the study area are young and in their active years of life. They are, as a result, expected to possess the required energy that is needed to provide labour for farm activities such as land preparation, planting, weeding, harvesting and processing. Hence, there is a high tendency for them to consume stimulants; this corroborated the findings of Allan *et al.*, (2011) who reported that older farm workers are less likely to consume much stimulants as their body is easily affected by the consumption of large amount of stimulants. This finding also corroborates the report of Drug Abuse (2021) that ‘Young adults between the ages of 25-39 constitute the bulk of drug abusers in Nigeria.’

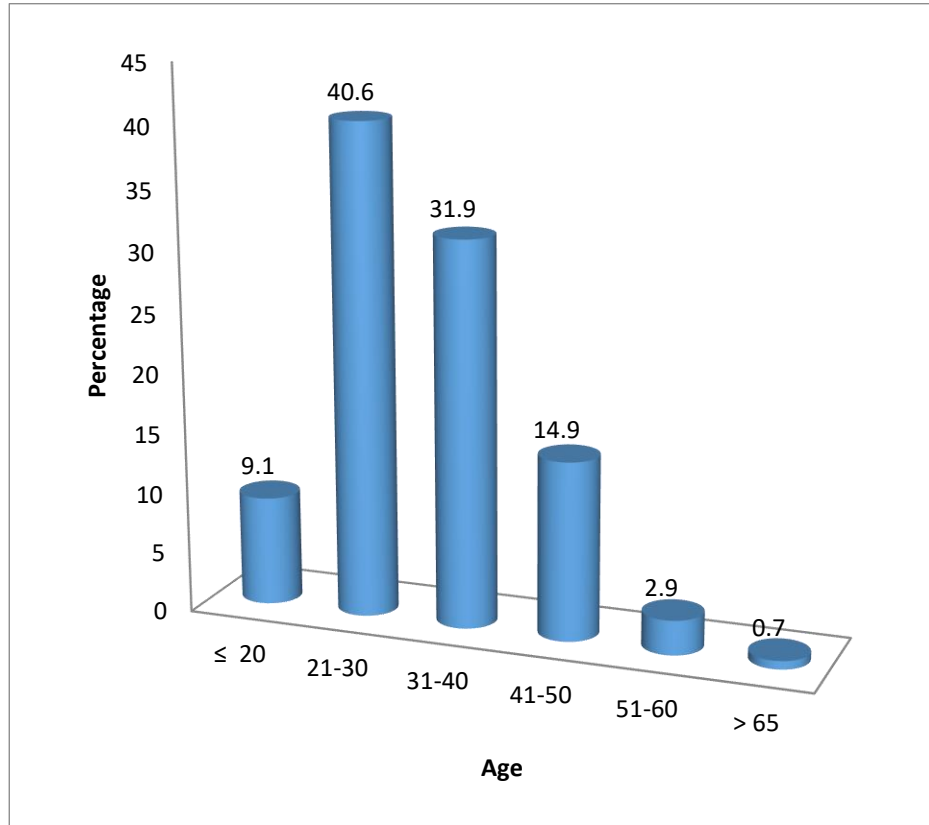


Figure 4.1a: Age distribution of hired farm labourers

Sex: The result in Figure 4.1b shows that most (96.0%) of the hired farm labourers were male, this highlights the dominance of male in the provision of labour for farm activities. Male dominance is also an indication of the energy required for farm labour. Moreover, this reinforces the common perception that males dominate the agricultural sector relative to females (Oladeji, 2011). According to Allan *et al.* (2011), younger male farm workers have a high propensity to engage in the highest level of stimulant consumption.

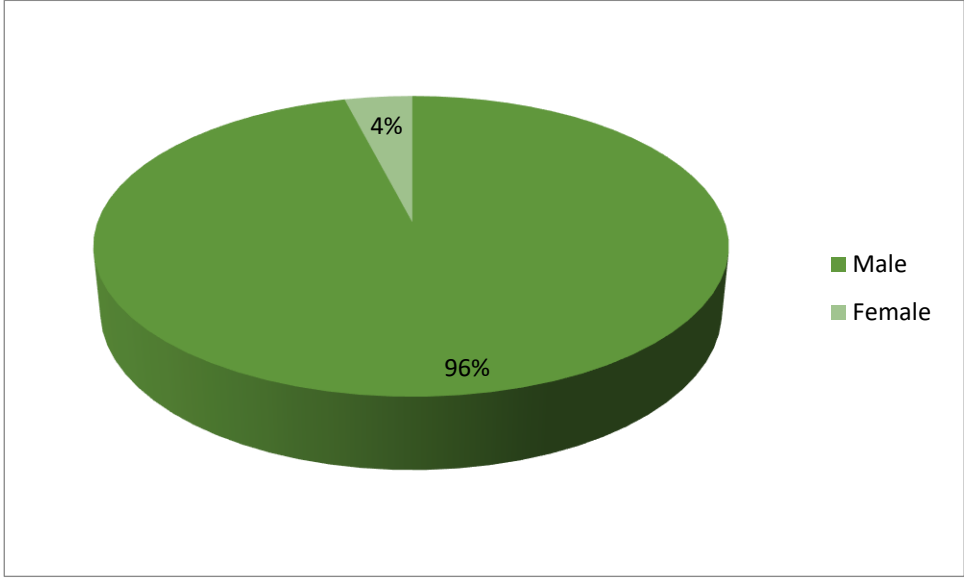


Figure 4.1b: Sex distribution of hired farm labourers

Marital status: Almost two-thirds (65.2%) of the hired farm labourers were married, while 33% were single as presented in Figure 4.1c. Generally, unlike unmarried individuals, married people are expected to provide labour on the farm to enhance their family income. It is worth noting that marriage bequeaths responsibilities (Akinbile, 2007). Hence, income realized from being farm labourers can be used to augment other income streams. However, since married farm labourers are expected to display a level of responsibility and become family oriented, the tendency to consume stimulants reduces. Most of the hired farm labourers are migrants, being far from family members could make them indulge more in stimulant consumption.

Hired farm labourers that are single (33%) are likely to have less family responsibility, but they are more active and require energy for farm labour, so they could indulge in high consumption of stimulants. Effect of peer pressure amongst singles is high so they could indulge more in stimulant consumption.

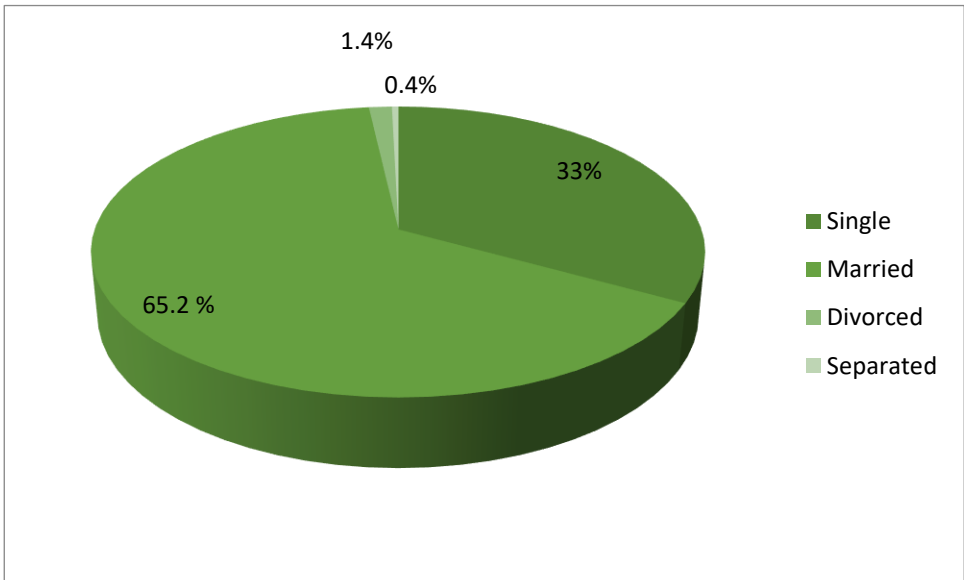


Figure 4.1c: Marital status of hired farm labourers

Education: The educational status of the hired farm labourers given in Figure 4.1 indicates that more than forty percent (44.2%) of them had no formal education, 33.7% attained primary education, while only 15.2% had secondary education. This means that most of them are not educated, which largely explains why they are farm labourers. This is because increasing literacy level among youths reduces their chances of acting as farm labourers (Agwu, Nwankwo, and Anyanwu, 2015). In other words, most of the hired farm labourers would not be farm labourers if they were more educated. Higher educational levels among youth increases their chances of securing white collar jobs which are accompanied with better salaries than being farm labourers. Hence, according to Faridi and Basit (2011) more educated rural dwellers are likely to be more involved in off-farm labour markets.

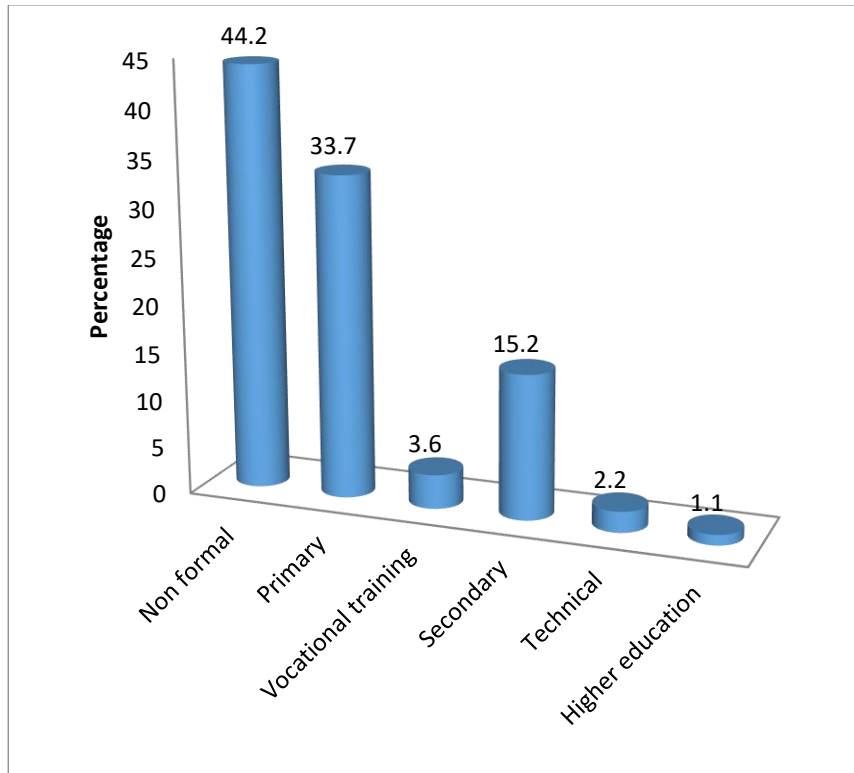


Figure 4.1d: Educational status of hired farm labourers

Household size: More than two thirds (71.4%) of the hired farm labourers had household sizes of 1 - 4 persons, 23.2% of them had between 5 and 8 persons, while 4.7% of them and 0.7% had between 9 and 12 and greater than 12 persons, respectively (Figure 4.1e). The mean family size of the hired farm labourers was 5 persons. It indicates that most of the hired farm labourers had a moderate family size. Working as farm labourers might make them engage in the consumption of stimulants. Allan *et al.* (2012) for instance observed farm workers' use of alcohol daily to be heavy.

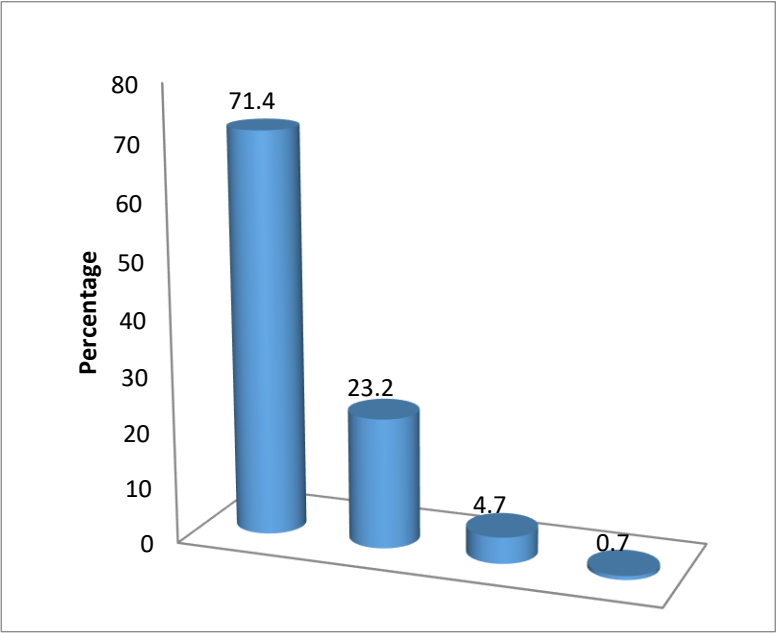


Figure 4.1e: Household size of hired farm labourers

Religion: More than half (56.9%) of hired farm labourers were Christians, one-third (33.0%) were Muslims while 10.1% were traditional religious adherents as shown in Figure 4.1f. This finding infers that working as farm labourers has no religious undertone as it is an honest means of attaining a level of financial independence. More so, it is often said that there is dignity in labour.

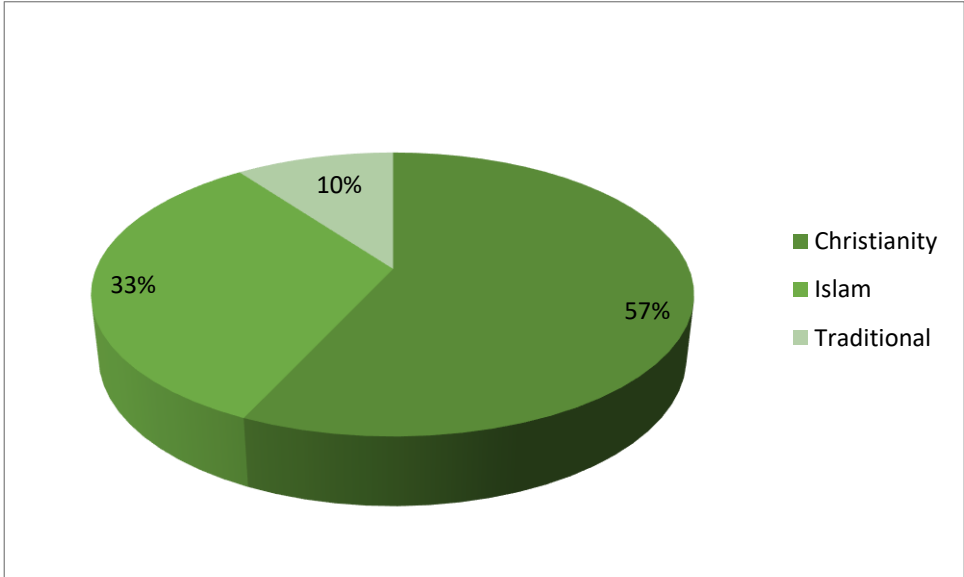


Figure 4.1f: Religion of hired farm labourers

Nationality: Figure 4.1g indicates that more than half (57.4%) of the hired farm labourers were immigrants from Benin Republic and Togo, which are neighbouring West African countries, while 42.6% were Nigerians. Individuals from other West African countries, especially Benin Republic who migrate from their countries in search of greener pastures most times form the bulk of farm labourers in Southwestern Nigeria. For instance, 47.4% of the hired farm labourers are from Benin Republic. For immigrants from such countries, working as farm labourers is a major economic activity for them in Nigeria. Hired farm labourers who are Nigerians are mainly Igedes and Tivs from Benue state (24.6%); and Yorubas (10.1%). Igedes and Tivs are widely known as farm workers, renowned for making big yam heaps and ridges. Yorubas on the other hand often display unwillingness to work as farm labourers except when seriously pressed economically (field experience of ADP Extension Agents).

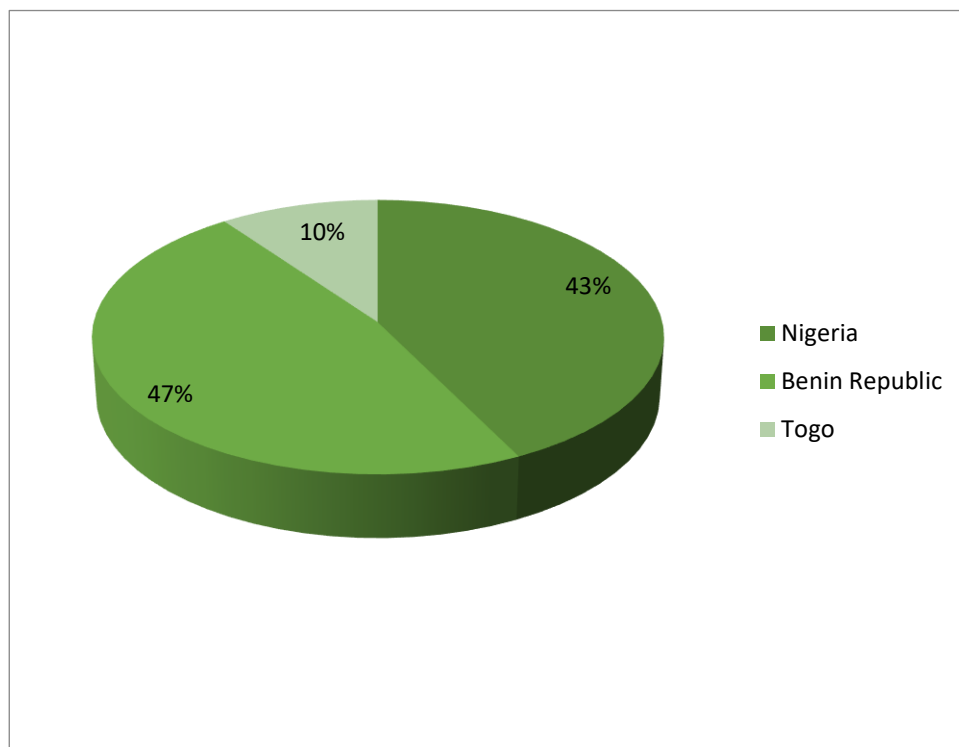


Figure 4.1g: Nationality of hired farm labourers

Primary occupation: Findings in Figure 4.1h reveal that approximately two-thirds of the hired farm labourers (62.3%) depended solely on being hired as farm labour for their livelihood, 30.7% of them are given farm portions by their hosts to cultivate while been hired, and 7% of them engaged in other off-farm activities like trading, hunting, charcoal making, local gin production; and religious activities, to support their main livelihood (farm labour). This shows that beside farm labour as a major occupation, the hired farm labourers also engaged in other off-farm livelihood activities with the aim of generating additional income. Combination of on-farm and off-farm livelihood activities by individuals ensures financial security as it allows individual to maximize opportunities resulting from the farm and other economic opportunities (Corsi and Salvioni, 2006).

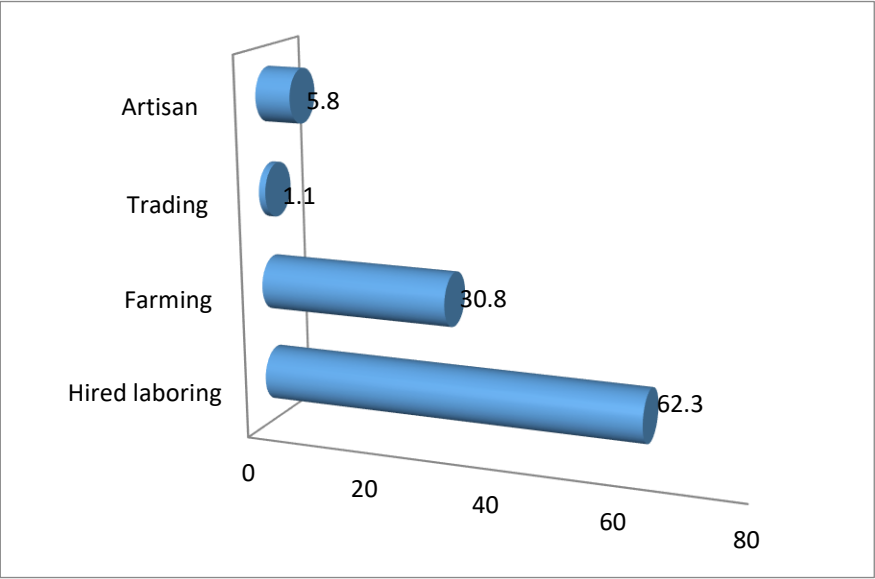


Figure 4.1h: Primary occupation of hired farm labourers

Farm labour experience: About one third (37.4%) of the hired farm labourers had been hired farm labourers for over 10 years, mean number of being hired farm labourers is for 7-8 years, (Figure 4.1i). This broadly indicates that the hired farm labourers had reasonable years of working as farm labourers. They are therefore expected to possess the know-how of working as farm labourers. As opined by Sanyaolu (2008) experience gives a sign of acquisition of knowledge and hands-on skills.

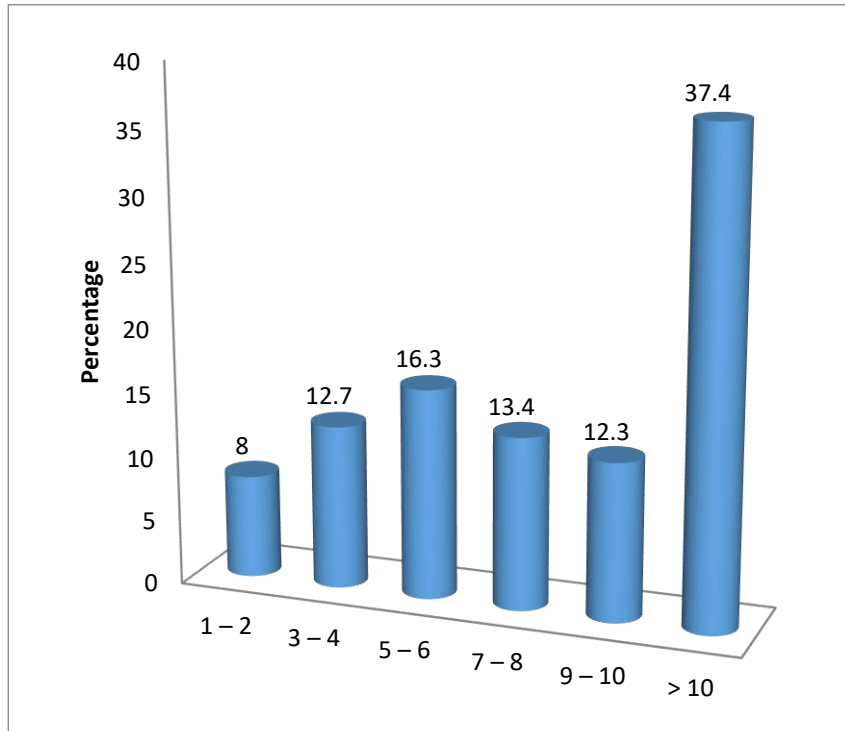


Figure 4.1i: Farm labour experience of hired farm labourers

Farm labour status: As presented in Figure 4.1j, more than half (56.9%) of the hired farm labourers, were fully dependent on the farm labour as a means of livelihood and reside with farmers; 16.7% were partially dependent on the farm labour market and reside with farmers only during the period of peak labour activity; while 26.4% were farm labourers but do not reside with farmers. Hired farm labourers who are partially or not dependent on the farm labour market for their means of livelihood are usually not permanent residents and most times tend to migrate elsewhere during the off-peak season of on-farm activities as adduced by Alha and Yonzon (2011) that hired farm labourers frequently migrate since they depend primarily on available jobs during the peak period of on-farm activities.

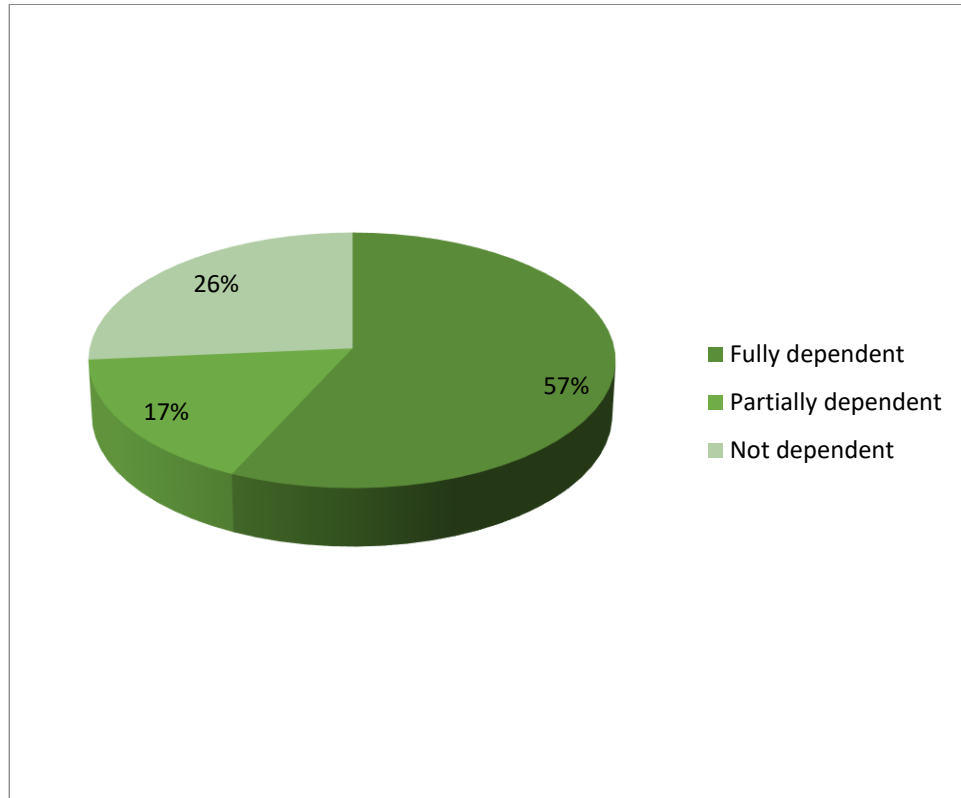


Figure 4.1j: Farm labour status of hired farm labourers

Farming activities engaged in by the hired farm labourers

Table 4.1 indicates that weeding ($\bar{X} = 1.85$) was the most prominent farming activity the farm labourers were involved in. This implies that weeding is the most labour-intensive of all the activities partly because it is repetitive and tasking during the farming season. Panwal (2017) likewise identified weeding as the most labour intensive farming activity small scale farmers have to contend with, primarily as a result of the manual weed control methods used. Atser *et al.* (2017) reported that weeding takes 50-80% of total labour budget. The fast growing nature of weeds in the southwestern part of the country further compounds the issue for farmers in the area. Weeding therefore is critical to crop farming. Result also showed that planting ($\bar{X} = 1.80$) was ranked high by the hired farm labourers. Planting can be tasking and time consuming depending on how it is done. For example, row planting that adheres to precise and predetermined distances can be quite tasking and time consuming compared to broadcasting of seeds. However, row planting makes removal of weeds easier.

In the same vein, land preparation activities such as land clearing ($\bar{X} = 1.79$) and heaping ($\bar{X} = 1.65$) were also ranked high by the hired farm labourers. The farm labourers make use of hoes and cutlasses for land preparation, this can be labourious and time consuming. Other activities such as harvesting (mean = 1.62) and processing ($\bar{X} = 1.05$) are less labourious relative to others. These farm activities occur at different times on the farm across the year, implying that labour is required for their performance throughout the year. Availability of labour at the appropriate time becomes necessary for them to be carried out. However, Oluyole, Egbetokun, Oni and Aigbekaen (2011) submitted that scarcity of farm labour has a negative effect on adequate planting, proper weed management, prompt harvesting and processing of farm produce. Most small scale farmers often scale down their farm activities by reducing their farm size due to shortage of labour (Bishop-Sambrook, 2003).

Table 4.1: **Hired Farm labourers' engagement in farming activities**

SN	Farming activities	Always		Occasionally		Never		Mean
		F	%	F	%	F	%	
1	Land clearing	221	80.1	53	19.2	2	0.7	1.79
2	Heaping	196	71.0	64	23.2	16	5.8	1.65
3	Planting	227	82.2	42	15.2	7	2.5	1.80
4	Weeding	238	86.2	35	12.7	3	1.1	1.85
5	Harvesting	182	65.9	84	30.4	10	3.6	1.62
6	Processing	76	27.5	139	50.4	61	22.1	1.05
Grand mean								1.63

Source: Field survey, 2018.

The following FGD excerpts buttress the above findings:

“Weeding usually takes a hired farm labourer two to three days. \. farming activities hired farm labourers involve in are land clearing, making of heaps and harvesting with respect to crops such as yam, cassava, maize, tomato, watermelon, cucumber, etc.” (FGD, Ita Egbe, Ipokia, Ogun State, Nov. 28th, 2018)

“Activities that farm labourers in this area are involved in include land clearing before the beginning of a cropping season, making of heaps/ ridges, planting, weeding, harvesting, processing and in some cases marketing of the produce in nearby markets. These activities are performed for both food and tree crops.” (FGD, Iganna, Iwajowa LG, Oyo State, September 12th, 2018)

4.2 Pattern of engagement in farm labour and mode of reward

4.2.1 Pattern of engagement in farm labour

Activities on the farm beginning with land preparation to processing of farm produce occur at different periods of the year. The seasonal calendar which shows the different farm operations to be carried out on the farm determines the labour requirement and labour distribution for each farm operation. Figure 4.2a reveals that more than three-quarters (79.0%) of the hired farm labourers engaged in farm labour throughout the year. They are referred to as full-time or permanent farm workers (Hurst, Termine and Karl, 2005). Most of them reside with the farmers who engaged them as labourers on their farm. This category of labourers are available for both on-farm and off-farm agricultural activities. Also, 19.9% of the hired farm labourers engage as farm labourers on a seasonal basis. They are known as temporary or seasonal farm workers. (Hurst et al, 2005). Some are part-time labourers and are more involved in on-farm operations such as land preparation, planting and weeding. They are mostly migrant labourers who are not permanently resident in the study area. Those who occasionally (1.1%) engaged as farm labourers do so to satisfy pressing economic demands.

Excerpts from interaction with some of the participants during FGD corroborate the findings:

“Usually, most of us are engaged for 10 - 12 months. During this period, farm owners take responsibility of the feeding and healthcare provision for sick farm labourers. Farm labourers work from Monday to Saturday, but Sunday is a free day which we use for our personal activities.” (FGD Ilara, Imeko-Afon LGA, Ogun State, November, 27th 2018)

“We engage as farm workers performing farm-related activities for one year.”(FGD Ofeegun, Iwajowa LG, Oyo State, September 10th, 2018)

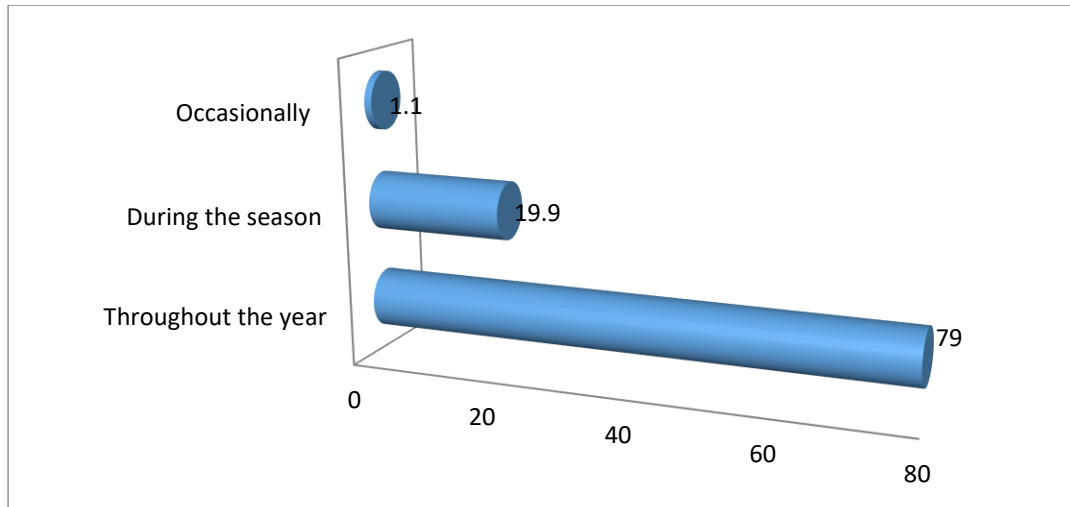


Figure 4.2a: Farm labourers' pattern of engagement in farm labour

4.2.2 Mode of reward

Reward for farm labourers can be in cash or kind. Hired labourers may collect money per farm operation carried out or at the close of the season, some of the hired farm labourers indicated they collect ₦200,000 after a year of farm labour. Reward could be in kind, some of the hired farm labourers indicated that they receive motorcycle at the end of one year of labour depending agreement between farm owners and labourers. As indicated in Figure 4.2b, monetary reward (73.9%) is the most common mode of payment for farm labourers. It follows that most farm labourers engage themselves in farming operations with the aim of making money to cater for their existence. Payment in kind in the form of motorcycles (41.7%) and farm produce (19.2%), were other means of rewarding the services rendered by the hired farm labourers. Motorcycle and Cash (₦200,000 - ₦250,000) as rewards are long-term payment formats, in that a farm labourer would have to work on a farm owner's plot for stated period of time usually for one year (10 – 12 months) before collection.

This is corroborated by these FGD findings from the two states:

“Farm owners reward us based on agreement. Rewards can be in form of motorcycle, money (between ₦200,000 - ₦250,000) or farm produce.”(FGD Ilara, Imeko-Afon LGA, Ogun State, November, 27th 2018)

“We are rewarded for work done with either Bajaj motorcycles, monetary payment, transistor radio and/or handsets/ phones.” (FGD Iganna, Iwajowa LG, Oyo State, September 12th, 2021)

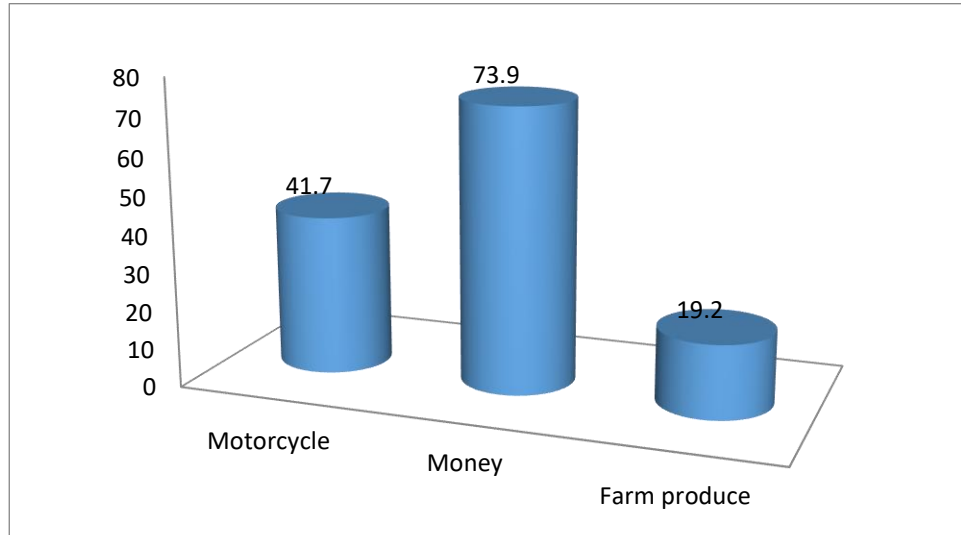


Figure 4.2b: Mode of reward for hired farm labourers (multiple response)

4.3 Types of stimulants and frequency of consumption of stimulants

4.3.1 Types of stimulants consumed

Natural stimulants

Table 4.2 shows that of all the natural stimulants, cigarette (tobacco) is consumed by 67.0% of the hired farm labourers. Farm labourers often smoke when working on the farm and while relaxing after labour. Most of them do not see cigarette as a stimulant. Likewise, 40.6% indicated they use snuff, which is another variant of tobacco. It is worth stating that tobacco leaves contain a natural alkaloid called nicotine as the active stimulating agent which has a half-life of 2 hours (Favrod-Coune and Broers, 2010). Also, 62.7% and 25.0% of the hired farm labourers alluded to the use of kolanuts and coffee/ Nescafé, respectively. Obed (2013) reported that excessive chewing of kolanut is associated with an increased risk of mouth and gastrointestinal cancer. Caffeine is a natural alkaloid found in coffee, specifically 1,3,7-trimethylxanthine (Favrod-Coune and Broers, 2010). Research has it that coffee, together with tea, are the most widely used psycho stimulants in the world (Corti *et al.*, 2002). As adduced by Agbonghale and Okaka (2014), though the stimulating effect of the caffeine in coffee is mild, it however, has the capacity to increase the rate of physical activities when consumed by farm labourers before or when working on the farm.

Alcoholic drinks

The results in Table 4.2 indicate that 72.8% of the hired farm labourers consumed beer, implying that beer was the most utilized alcoholic energizer in the study area. Normally, intake of beer provides an avenue for the consumption of alcohol (Ibarrola-Rivas, Kastner and Nonhebel, 2016). In the same vein, palm wine (63.4%) and local gin (*ogogoro*) (59.1%) were the other most consumed alcoholic stimulants by the hired farm labourers. Beer, palm wine and local gin/*ogogoro* are all alcoholic drinks, which contain alcohol as the active stimulating ingredient. Allan *et al* (2011) similarly reported high intake of alcoholic drinks among farm workers in Australia. The high use of these drinks by the hired farm labourers could be because they are readily available, accessible and affordable in the study area and across the country. For instance, palm wine is normally

tapped from some species of palm tree, so it is readily available. Some even believe that it is an anti-malarial juice. Similarly, local gin (*ogogoro*) is brewed in the rural areas by women as a means of livelihood and sold to villagers. More than half of hired farm labourers (59.1%) consume local gin in the study area.

More than half (55.4%) and about two-fifths (39.1%) of the hired farm labourers consumed *Otika (burukutu)* and Seaman's Schnapps, respectively. *Otika (burukutu)* is a locally brewed fermented beverage drink made from guinea corn and millet, thus making it readily available in the local areas. Seaman's Schnapps is obtainable in small plastic bottles of 120mls and sachets of 30mls making it very easy for farm labourers to put some bottles or sachets in their pockets while going to the farm. Stout is consumed by 30.8% of hired farm labourers, which majority of the rural dwellers do not consider as a stimulant, some claimed they mix it with milk and use it as a tonic. *Erujeje* is a brand name for a ginger flavoured liquor that is 42.0% alcohol; and 29.3% of the hired farm labourers indicated they consume it. *Gegemu* and Club punch are been consumed by 7.2% and 8.3% of hired farm labourers respectively. *Gegemu* is a drink (a powerful hallucinogen extracted from *Datura* plant) while Club punch is a blended gin of about 40.0% alcohol that comes in 120mls bottles; and sachets of 30mls and 50mls respectively.

Energy drinks

Intake of canned energy drinks is common among young adults. Energy drinks contain caffeine as the main active ingredient. Depending on the capacity, a can of energy drink usually contains around 50mg to 505mg of caffeine which may be equal or higher than the caffeine content of a cup of coffee that is usually between 77mg and 150mg (Reissig *et al.*, 2009; Bigard, 2010). Results showed that Power Horse (32.2%) and Bullet (18.5%) were the commonly consumed energy drinks by the hired farm labourers in the study area. This is because energy drinks are usually advertised as having the ability to boost energy and increase alertness in humans (HealthLinkBC, 2017).

Herbal mixtures

About half (51.4%) of the hired farm labourers consumed *Jedijedi*, made from a mixture of plant extracts and alcohol. It is often consumed by individuals involved in physical activities to alleviate back or waist pains. Farm labourers, after working on the farm for a particular period of the day, most times end up developing back or waist pains due to frequent bending of the back and waist. *Jedijedi* is relatively cheap and readily available as it is frequently hawked by local women to whom its sale is a means of livelihood. *Orijin* bitters and *Alomo* bitters among others are also used by 42.0% and 33.0% hired farm labourers respectively. Many of them actually believe that bitters are strength-enhancing drugs. The National Agency for Food and Drug Administration and Control (NAFDAC) has discovered that some of the products are adulterated with 'poisonous' methanol which could cause neurological problems and death (Muanya 2015).

Analgesics (pain relieving drugs)

More than three quarters (78.6%) of the hired farm labourers indicated that they used Paracetamol. This is understandable as farm labour demands a lot of strength, makes farm labourers weak and causes body pains often. Panadol, a stronger analgesic than Paracetamol but with a similar function was used by 56.9% of hired farm labourers. These analgesics are most times consumed beyond the recommended dosage, predisposing their body to danger of overdose. Alabukun, a powdery salicylate, was used by over half (55.1%) of the hired farm labourers to increase strength to relieve pain. Salicylate is a bitter compound present in certain plants, used as a fungicide and in the manufacture of aspirin and dye stuffs. Alabukun is occasionally combined with alcohol by the farm labourers to generate a more stimulating effect (report from field workers). Though generally used as a medicine, Alabukun is considered by users of heroine as an excellent substitute, as it can likewise be inhaled (United Nations, 1999). Tramadol is consumed by 34.4% of the hired farm labourers. In 2021, NAFDAC discovered a hike in the consumption of tramadol, which the health officials declared to have a negative health effect, thus it was banned by the Federal Government. The side effects of tramadol use include drop in blood pressure, confusion, respiratory disorder, heart rhythm problem (Caporuscio, 2019).

4.3.2 Quantity of stimulants consumed

Marijuana and kolanut were the most consumed stimulants by the farm labourers, both have the same mean ($\bar{X}=10.71$) as shown in Table 4.2. Marijuana ranking high is not a surprise because it is the most widely abused illicit drug worldwide (World Health Organization, 1997). World Drug Report (2021) also reported cannabis as the most commonly used drug worldwide according to the latest Global Drug Survey (World Drug Report, UNODC, 2021). It has tetrahydrocannabinol (THC) as the major psychoactive component which gives it its intoxicating property. Typically, it contains between 5 and 20% of THC (Shipman, 2019). It has no validated dosage as a result of less available proof on dosage and interval (Canadian Pharmacists Association, 2019). This, notwithstanding, marijuana use is associated with increased risk of psychiatric disorders such as psychosis (schizophrenia), depression, anxiety and substance use disorders/addiction (Ratano *et al.*, 2017).

The psychoactive substance in kolanut is caffeine. Hired farm labourers indicated they consume kolanuts before or during the day's activity on the farm, as the caffeine in it helps to enhance physical activity. The maximum daily intake limit of caffeine for adults is 400mg/day (Health Link BC, 2017). Moderate intake of kolanut, which naturally contains caffeine, has a beneficial role of reducing risk of different chronic diseases, however high or heavy consumption can be harmful (Poole *et al.*, 2017). Excessive doses of kolanut may be unhealthy. The fatal dose is estimated to be about 10-14g, which is equivalent to 150-200g of caffeine per kilogram of body weight (RxList, 2019). The source added that even though there is at present not enough scientific information on the adequate intake limit for kolanut, it should be taken into consideration that natural stimulants are not often safe hence the importance of dosages.

Quantity of alcoholic drinks consumed

It is recommended that men should not drink more than 3 - 4 units of alcohol daily, while women should not drink more than 2 - 3 units daily; and 10ml of pure alcohol is equal to 1unit (Department of Health, 2008). The average quantity of the different alcoholic drinks consumed by the farm labourers on a weekly basis is shown in

Table 4.2. The stimulating or psychoactive substance present in these drinks is alcohol. Sachets, cans or bottles used for packaging these drinks usually indicate the quantity of pure alcohol or alcohol by volume (ABV) that they contain.

In a week, the alcoholic drink the hired farm labourers drank mostly was Chief Schnapps ($\bar{X} = 223.36$). A 50ml sachet of Chief Schnapps contains is 42% alcohol, thus 223.3mls would contain 938mls. Since 10ml of pure alcohol = 1 unit, 938ml of alcohol becomes 9.38 units. It implies that the average quantity of alcohol consumed by the hired farm labourers per week from Seaman's Schnapps is 9.38 units, which falls within the weekly limit of 14 units and also within the lower risk. Measures of usual weekly consumption advanced by the National Health Services (NHS, 2016) indicates that 'lower risk' (not more than 14 units for men and women), 'increasing risk' (above 14 and up to 50 units for men, above 14 and up to 35 units for women) and 'higher risk' (above 50 units a week for men, above 35 units for women).

Ogogoro or local gin, which is quite common and readily available particularly in rural areas, ranked second ($\bar{X} = 206.99$). A biochemical analysis found the ABV of *ogogoro* to be 61% (Idonije, Festus, Asika, Ilegbusi and Okhiai, 2012). Adhering to the risk levels above, it implies that the average quantity of alcohol consumed by the farm labourers per week from *Ogogoro* is 12.63 units, which is within the weekly limit of 14 units.

Though the alcohol units consumed by the hired farm labourers fall within the lower risk category, however, drinkers within this category can still have alcohol-related problems if they drink too quickly, have health problems, or are older (Piano, 2017). This is as heavy episodic drinking (against moderate drinking) is the most frequent pattern of alcohol consumption in Nigeria (Demers, Room and Bourgault, 2000). Hence, the farm labourers need to reduce the quantity of alcohol consumed, depending on their state of health and how alcohol affects them. According to the NHS (2016), as the quantity consumed increases another risk of alcohol-related harm increases, it also increases the risk of alcohol-related harm. In fact, alcohol ranked third among the global risk of diseases by the WHO (Mathers, Stevens and Mascarenhas, 2009).

Quantity of energy drinks consumed

While a can of energy drink can contain substances such as sugar, vitamins, minerals, amino acids, the stimulating substance in it is caffeine. Up to 180 mg of caffeine can be in a single-serve energy drink, even as the maximum daily intake limit of caffeine for adults is 400mg/day (HealthLinkBC, 2017). The smallest size of energy drinks comes in a 250ml can, which was used as the basis of measurement. Table 4.3 shows that Power Horse ($\bar{X} = 2188.37$) was the most consumed energy drink by the hired farm labourers. The mean value suggests that an average of 8.75 cans (i.e. 2188.37 over 250) of Power Horse is consumed weekly by a farm labourer, translating to at least 1 can per day. Considering that about 180 mg of caffeine can be in a can of energy drink, it implies that approximately 1575mg (i.e. $8.75 * 180$) of caffeine is consumed per week, while 225mg (i.e. 1575 over 7) is consumed per day. Though 225mg still falls below the daily intake limit of 400mg, Nowak and Jasionowski (2015) submitted that regular intake of energy drinks may not only result in an overdose of caffeine, but might cause certain health issues such as loss of bone mass, overweight, hypertension, cardiovascular diseases and osteoporosis in older age.

Quantity of herbal mixtures consumed

The psychoactive substance present in herbal mixtures is alcohol as sachets or cans used for packaging these drinks usually indicate the quantity of Alcohol by Volume (ABV) that they contain. As shown in Table 4.2, Alomo ($\bar{X} = 679.10$) ranked first as the most consumed herbal mixtures in an average week. Alomo contains 42% of ABV. Therefore, it implies that the average quantity of pure alcohol consumed by the hired farm labourers per week from Alomo is 28.52 units, which doubles the weekly limit of 14 units. It also means that the hired farm labourers' intake of Alomo is within the 'increasing risk' (above 14 and up to 50 units for men, above 14 and up to 35 units for women) category. In the same vein, Bitters which also has an ABV of 42% was ranked second ($\bar{X} = 545.79$). This means that the average quantity of pure alcohol consumed by the hired farm labourers per week from Bitters is 22.92 units, which exceeds the weekly limit by approximately 10 units. It likewise falls within the 'increasing risk' category. It implies that, the intake level poses high risk of alcohol-related harm as it can negatively impact

the health of farm labourers, especially when the substances are consumed regularly by the farm labourers.

Quantity of analgesic consumed

Table 4.2 shows that panadol ($\bar{X} = 160.22$) and tramadol ($\bar{X} = 132.60$) were the two analgesics consumed mostly by the farm labourers weekly. Panadol is a non-opioid analgesics used for treating mild pain to moderate pain such as headaches, minor injury, and muscular pains. Just like paracetamol, panadol comes in 500mg tablets and can be administered up to four times daily in two 500mg tablets doses; but at doses higher than 4,000mg (i.e. eight tablets) daily, it can cause damage to body organs e.g. liver (Arthritis Research UK, 2016). Going by the maximum daily limit of 8 tablets, the maximum weekly limit is therefore 56 tablets. With the mean weekly intake of 160 tablets, it follows that the farm labourers consumed an overdose of 104 tablets of panadol which is not without health-related consequences. Health problems such as rashes (though rare), blood disorders, liver damage (and less frequently renal damage) have been reported from over dose (WHO, 2004). Excessive intake of paracetamol is reckoned as the commonest overdose drug and cause of acute liver failure globally. (Larson *et al.*, 2005; Lancaster *et al.*, 2015).

Unlike paracetamol, tramadol is an opioid analgesic used for treating moderate to severe pain. Tramadol is available in 50 mg tablets and can be administered up to four times daily in two 50 mg tablets doses (Arthritis Research UK, 2016), indicating a maximum daily limit of 8 and equivalent to a maximum weekly limit of 56 tablets. A *mean weekly* intake of 132 tablets as shown in Table 4.3 implies that the farm labourers consumed an overdose of 76 tablets of the drug weekly. The associated side effects of overdose from tramadol include; nausea and vomiting, constipation, drowsiness and dizziness, respiratory depression, psychiatric reactions (reduced concentration or confusion), dependency and addiction (Arthritis Research UK, 2016).

Table 4.2: **Types and frequency of use of stimulants with Quantity consumed**

SN	Stimulants	Used		Ave Qty consumed weekly (bottles/wraps/sticks/ sachets)	Rank
		Yes	%	Mean/SD	
1	Natural stimulants				
	Coffee/Nescafe	69	25.0	3.35±3.92	6 th
	Kolanut	173	62.7	10.71±8.55	1 st
	Marijuana/ Indian hemp (igbo)	58	21.0	10.71±8.55	1 st
	Tobacco leaves (snuff)	112	40.6	4.98±5.91	5 th
	Tobacco leaves (chewing taba)	24	8.7	7.51±9.00	4 th
	Cigarette	185	67.0	7.69±6.71	3 rd
2a	Alcoholic drinks				
	Beer	3	1.1	7.23±6.39	7 th
	Stout	201	72.8	59.43±78.29	6 th
	Erujeje	85	30.8	3.67±6.29	8 th
	Clubbing punch	81	29.3	2.18±4.05	9 th
	Chief schnapps	23	8.3	223.36±214.60	4 th
	Palm wine	108	39.1	224.01±211.10	3 rd
	Local gin/ogogoro	175	63.4	206.99±384.56	5 th
	Otika/burukutu	163	59.1	1867.84±2891.07	1 st
	Gegemu	153	55.4	242.16±656.05	2 nd
b	Energy drinks				
	Power horse	89	32.2	2188.37±3501.37	1 st
	Bullet	51	18.5	900.51±1301.60	2 nd
	Monster drink	21	7.6	900.51±1301.60	2 nd
c	Herbal mixtures				
	Bitters	116	42.0	545.79±911.34	2 nd
	Alomo	91	33.0	679.10±1162.37	1 st
	Jedijedi	142	51.4	218.64±234.06	4 th
	Striker bitters	61	22.1	250.77±325.77	3 rd
	Black wood	70	25.4	194.28±231.59	5 th
3	Analgesic (pain relieving drugs)				
	Tramadol	95	34.4	132.60±191.37	2 nd
	Panadol	157	56.9	160.22±237.60	1 st
	Paracetamol	217	78.6	15.82±26.92	3 rd
	Aspirin	73	26.4	6.94±9.12	4 th
	Alabukun	152	55.1	6.75±9.57	5 th
	Codeine	32	11.6	5.04±8.93	6 th
	Really extra	63	22.8	2.88±4.10	7 th
4	Cough mixtures				
	Codein	75	29.9	5.49±4.91	1 st

Source: Field survey, 2018.

4.4 Reasons for use of stimulants

The result in Table 4.3 shows that, 85.5% of the hired farm labourers indicated that they use stimulants to accumulate strength. This finding is consistent with Poulos and Pasch (2015) who observed that enhancement of energy levels was a major reason why people use stimulants. Safefood (2002) reiterated that stimulants are known to provide energy for use of the body during physical performance of an activity or exercise. Farm labourers believe that the consumption of stimulants enhances their physical performance, assist in boosting their stamina; and give them the ability to work for longer hours. This is given credence to by the fact that 84.1% of the hired farm labourers indicated that they use stimulants to keep up with longer hours of work on the farm compared to when they do not use them. For instance, United Nations (1999) identified the use of stimulants to be particularly associated with enhancement of stamina among individuals.

The findings above are corroborated by the following excerpts:

“We primarily consume stimulating substances to boost our energy for the day’s work.” (FGD Idoleyin-Isanyin, Ado Odo Ota LG, Ogun State, November 27th, 2018)

“Intake of stimulants helps to enhance a farm labourer’s daily productivity by supplying energy needed for working on the farm.” (FGD Iganna, Iwajowa LG, Oyo State, September 13th, 2018)

The result shows that 81.9% of the hired farm labourers indicated that stimulants help them to relax after the day’s work. This suggests that stimulants are perceived as relaxants after physical exertion of energy on the farm, as indicated by Safefood (2002). Also, 72.8% stated that they consume alcohol (especially gin) to prevent cold, while 76.4% use stimulants to relief pain. Farm labourers may feel feverish after working on the farm, which may result in them developing cold, head and body aches. This finding suggests that the stimulants act as medications and remedies for cold and pain (Safefood, 2002). Stimulants, in particular caffeine, significantly reduce sensitivity to pain, as they act as analgesic to relieve pain (United Nations, 1999).

Table 4.3: **Hired farm labourers' reasons for use of stimulants**

SN	Reasons	Yes	%
1	Stimulants help in accumulating labour strength	236	85.5
2	Stimulants help to relax after a day's work	226	81.9
3	I use stimulants for relief from pain	211	76.4
4	To keep up with long hours of work on the farm	232	84.1
5	I use stimulants to increase my labour earnings	198	71.7
6	I use stimulants for recreation purpose only	110	39.9
7	I use stimulants because of factors that are beyond my control	116	42.0
8	Stimulants use make me more physically alert for farm labor	233	84.4
9	I take gin to prevent cold	201	72.8
10	I use stimulants to boast my social status	120	43.5
11	To keep loneliness away	115	41.7
12	For good business connection	93	33.7
13	Because it is free at the club	59	21.4
14	It is normally served at ceremonies	135	48.9

Source: Field survey, 2018.

Further, 71.7% indicated they use stimulants to increase their income. This is consequent on the fact that stimulants enhance the performance of farm labourers, by not only increasing their ability to work but also increasing their stamina and enthusiasm to work for longer hours. This is consistent with research finding suggesting that stimulants (e.g. caffeine) reduce reaction time to pain during the performance of activities thereby increasing the rate or speed at which such activities are performed (Smith, 1999; Herz, 1999). As a result they will be able to do more work within a short period of time, thereby translating to generation of more income.

Almost half (48.9%) of the hired farm labourers used stimulants because they are readily available at ceremonies. A belief that is partly responsible for this is that a man who does not serve strong drinks at his function is weak. This is further emphasized by 43.5% hired farm labourers indicating that they use stimulants to boost their social status. This implies that they might not be really interested in consuming stimulants, but they want to “belong” among their peers. Also, 42.0 % of the hired farm labourers indicated they indulge in the use of stimulants due to factors beyond their control, “as they just must belong and they don’t want to be termed as a weakling”. Forty-one percent (41.7%) of the hired farm labourers indicated that they used stimulants to check loneliness. Loneliness could cause depression and subsequently which and subsequently, suicide. Allan *et al* (2012) affirmed that farm workers consumed stimulants to control depression.

Buttressing the view is the quote below:

“Farm labourers at times consume stimulating substances to avoid depression.” (Idoleyin-Isanyin, Ado Odo Ota LG, November 26th, 2018)

4.5 Sources of stimulants

As shown in Table 4.4, more than two-thirds (71.4%) of hired farm labourers indicated that they obtain stimulants from the markets (village routine markets of three, five and seven days). Likewise, farm labourers also obtain stimulants from hawkers (70.3%). Almost all main villages have hawkers who display different types of stimulants for sale, which makes such stimulants readily available for purchase. Almost sixty percent (59.8%) of the hired farm labourers indicated patent medicine stores as their source of stimulants. Stimulants purchased from patent medicine stores are known as pharmaceutical stimulants. Messina (2014) observed a high prevalence of diversion and misuse of pharmaceutical/ prescription stimulants among people who drink alcohol. They consider them to be safe because they are pharmaceuticals (Green and Moore, 2009). Drinking joints or club houses (52.5%), ceremonies (46.4%) and secret agents (35.5%) were other sources from which the farm labourers accessed stimulants. These all point to the fact that the use of stimulants is increasingly becoming popular in rural areas of Southwestern Nigeria.

The quotes below support the popularity of these substances:

“We often get stimulants on market days from patent stores, drinking joints and those served at ceremonies.” (FGD Iganna, Iwajowa LG, Oyo State)

“Stimulating substances are available at open stores, garages, markets and road side.” (FGD Ilara, Imeko-Afon, Ogun State)

Table 4.4: Sources of stimulants available to hired farm labourers

SN	Sources of stimulants	Yes	%
1	Patent medicine stores	165	59.8
2	Secret agents	98	35.5
3	Hawkers	194	70.3
4	Market days	197	71.4
5	Motor park garages	112	40.6
6	Drinking joints/club houses	145	52.5
7	Ceremonies	128	46.4

Source: Field survey, 2018.

4.6 Perceived health problems (symptoms and diseases) associated with stimulant consumption

4.6.1 Perceived symptoms associated with consumption of stimulants

Table 4.5a shows that red coloration of the eyes ($\bar{X} = 0.82$) was the most prominent symptom associated with intake of stimulants in the study area as perceived by the hired farm labourers. An immediate and obvious symptom associated with intake of alcohol is red eyes, which can be an indication of being drunk, to which Brust (2005) said it could lead to blurred or double vision in the short term. He added that in the long term, chronic consumption of alcohol can lead to decreased vision. Thus, a farm labourer who is under the influence of alcohol could easily be predisposed to injuries while working on the farm as a result of blurred or decreased vision. Excessive intake of stimulants, particularly alcohol can induce high level of sweating or perspiration ($\bar{X} = 0.80$). Heavy consumption of alcohol is known to gravely lower the level of blood sugar (hypoglycaemia), predisposing users to symptoms such as sweating, trembling, faintness, blurred vision and ultimately brain damage if left untreated (Alcohol Advisory Council of New Zealand, 2012).

Stimulants intake can predispose one to joint pains ($\bar{X} = 0.66$). This can occur when a farm labourer indulges in chronic and heavy consumption of alcohol, which makes him develop a painful condition due to death of bone tissue otherwise known as osteonecrosis (Derk and De Horatius, 2005). Similarly, headache ($\bar{X} = 0.63$) was adduced to be a symptom associated with the intake of stimulants. Explaining how this occurs, Bajaj and Singh (2018) pointed out that stimulants that contain alcohol can lower the body's blood pressure through widening of the blood vessels that supply blood to the brain thereby producing pain and sensitivity that causes headache. A farm labourer may develop headache within few hours after consuming alcohol or sixteen hours later (Seppa and Sillanaukee, 1999).

Corroborating the above findings, some of the study participants stated thus:

“Body pains as well as headaches/ migraines are common ailments often complained of by farm labourers in this clinic” (IDI with a nurse at Tapa Clinic, Ibarapa North LG, Oyo State, September 10th, 2018)

“Symptoms of stimulant intake often experienced by farm labourers who visit this clinic include backache, headache, wounds and injuries.” (IDI with a nurse at Idolehin Clinic, Ikorodu, Ogun State, November 26th, 2018)

Insomnia ($\bar{X} = 0.51$) can likewise result from the consumption of stimulants. Caffeine, for instance, possesses psychoactive properties that can cause disturbances during sleep when excessively consumed. Lohsoonthorn *et al.*, (2013) also indicated that the use of stimulants is associated with poor quality of sleep. This means a farm labourer who suffers from this condition will manifest by directly affecting his level of productivity on the farm, as the body may not be fully prepared for work due to physical stress or inadequate rest or energy. Ethanol has a dehydrating effect by causing increased urine production (diuresis), which could cause thirst, dry mouth ($\bar{X} = 0.38$), dizziness ($\bar{X} = 0.35$) and vomiting ($\bar{X} = 0.20$) (Brust, 2005; Bajaj and Singh, 2018).

Lack of physical coordination ($\bar{X} = 0.30$) was also a symptom experienced by the hired farm labourers. This implies that intake of stimulants can affect the functioning of cerebellum, which is responsible for body movement and coordination (National Institute on Drug Abuse, 2014). The implication of this on a farm labourer is that it could lead to self-inflicted injuries, as he may not be able to assume the right body posture or balance when performing farm activities using farm tools like cutlasses and hoes.

The manifestation of these symptoms is bad for the body as it could lead to damage of vital body organs. Muanya (2015) reported that the *indiscriminate consumption of packaged stimulants such as herbal bitters may have negative effects on body organs like the spleen, pancreas and heart which may result in sudden death. National Agency for Food Drug Administration Control has found out that some of the stimulants are adulterated with poisonous methanol which could cause neurological problems and death* (Muanya, 2015). Stressing the dangers posed by such substances, a study participant noted thus:

“The use of stimulant is a major social challenge of our time that requires family, community, religious and government intervention to curb.” (IDI with HOD Psychiatry Unit, University College Hospital, Ibadan, Oyo State, July 10th, 2018)

Table 4.5a: Symptoms associated with consumption of stimulants by hired farm labourers

SN	Symptoms	Severe	Mild	Not experienced	Mean	Rank
1	Dilated pupils and swollen eyes	16 (5.8)	50 (18.1)	210 (76.1)	0.30	
2	Red eyes	53 (19.2)	119 (43.1)	104 (37.7)	0.82*	1 st
3	Dry mouth and nose	16 (5.8)	72 (26.1)	188 (68.1)	0.38	
4	Excessive activity, restlessness	30 (10.9)	90 (32.6)	156 (56.5)	0.54*	6 th
5	Aggression	10 (3.6)	56 (20.3)	210 (76.1)	0.28	
6	Cold or chronic sinus/nasal problems	25 (9.1)	111 (40.2)	140 (50.7)	0.58*	5 th
7	Cough	27 (9.8)	136 (49.3)	113 (40.9)	0.69*	3 rd
8	Nose discharge	10 (3.6)	88 (31.9)	178 (64.5)	0.39	
9	Loss of appetite	25 (9.1)	71 (25.7)	180 (65.2)	0.44*	8 th
10	Poor sleep	17 (6.2)	97 (35.1)	161 (58.3)	0.51*	7 th
11	Nauseated feeling and vomiting	2 (0.7)	52 (18.8)	222 (80.4)	0.20	
12	Palpitations/ increased heart rate	11 (4.0)	67 (24.3)	198 (71.7)	0.32	
13	Headaches	17 (6.2)	141 (51.1)	118 (42.8)	0.63*	4 th
14	Diarrhea	4 (1.4)	41 (14.9)	231 (83.7)	0.18	
15	Breast and chest pain	11 (4.0)	78 (28.3)	187 (67.8)	0.36	
16	Lack of physical coordination	5 (1.8)	62 (22.5)	209 (75.8)	0.30	
17	Loss of memory	6 (2.2)	40 (14.5)	230 (83.3)	0.18	
18	Pain in the heart	5 (1.8)	38 (13.8)	233 (84.4)	0.17	
19	Weight loss	13 (4.7)	59 (21.4)	204 (73.9)	0.31	
20	Unhealed infections	7 (2.5)	8 (2.9)	261 (94.6)	0.08	
21	Cravings	17 (6.2)	37 (13.4)	222 (80.4)	0.26	
22	Sweating	40 (14.5)	140 (50.7)	96 (34.8)	0.80*	2 nd
23	Muscle pull	20 (7.2)	61 (22.1)	195 (70.7)	0.37	
24	Dizziness	14 (5.1)	69 (25.0)	193 (69.9)	0.35	
25	Tremors	2 (0.7)	29 (10.5)	245 (88.8)	0.12	
26	Joint pain	38 (13.8)	107 (38.8)	131 (47.5)	0.66	
27	Eye itching	7 (2.5)	60 (21.7)	209 (75.7)	0.27	

Source: Field survey, 2018.

4.6.2 Diseases experienced

Given the general disposition of most individuals towards health-related issues is most times lukewarm until when such issues begin to pose a threat to their productivity, farm workers may fail to heed to warning systems that can predispose them to stimulant-induced diseases. Prolonged and chronic consumption of stimulants can predispose farm labourers to certain diseases, as Allan *et al.* (2011) reckoned that there are significant costs and consequences associated with their use. They stated that chronic use can result in diseases manifesting in form of poorer physical and mental health which does not only end up reducing the productivity of farm workers but also raising the risk of injury.

As shown in Table 4.5b, rhinitis (stuffy nose) experienced by (44.6%), insomnia (44.2%) and migraine (43.8%) were the most common diseases associated with stimulant use in the study area. It is perceived that the psychoactive properties of some stimulants for instance make them capable of causing sleep disturbances when consumed. Regular intake of such can lead to caffeine overdose and insomnia (Temple, 2009).

Dependency was indicated by 29.3% of the hired farm labourers, that is they are addicted to stimulants. This happens when a farm labourer's body needs more of a particular stimulant to achieve the desired effect, where its use interferes with his life, when he keeps on using the stimulant irrespective of its perceived negative physical or mental effects, and where if it is not consumed it might lead to withdrawal symptoms (Alcohol Advisory Council of New Zealand, 2012). Heavy or problematic use of stimulants may lead to high blood pressure (18.8%) which is a cardiovascular problem, and physical problems such as weight loss (14.5%) and stroke (0.4%) (Drug Policy Alliance, 2018). Interviews with study participants also support the above findings as shown below:

“Dangers associated with excessive intake of pain relieving drugs are that it predisposes users to sleeplessness, hypertension, stroke, heart failure and death.” (IDI with a medical officer, Ilara PHC, Imeko-Afon LG, Ogun State, November 28th, 2018)

“Farm labourers who visit this clinic often manifest health problems such as high blood pressure, low blood pressure; and stomach discomfort as a result of high intakes of stimulants.” (IDI with a medical officer at Ihunbo Clinic, Ipokia LG, November 28th, 2018)

Occurrence of Perceived diseases

With respect to the frequency of occurrence of perceived diseases within a space of three months, chronic weight loss ($\bar{X} = 21.44$) and stimulant dependency ($\bar{X} = 13.06$) were the diseases the farm labourers had experienced most on an average of 21 and 13 times, respectively within the three months as shown in Table 4.5b. More than 60 medical conditions are caused by alcohol (Babor *et al.*, 2010). For instance, dependence is usually characterized by chronic and prolonged drinking as well as addiction to alcohol (Rowland and Toumbourou, 2009). Heavy or problematic use of stimulants has been linked to weight loss (Drug Policy Alliance, 2018).

Migraine ($\bar{X} = 5.58$) was the third perceived disease the farm labourers had experienced most, with a minimum of five times within the stated period. This reinforces the finding above of how perceived stimulant-induced migraine is common among the hired farm labourers. Migraine has a link with alcohol use. Alcohol can reduce the body's blood pressure through enlarging the blood vessels that supply blood to the brain thereby producing pain and sensitivity that causes headache, and a negative mood before drinking alcohol can cause migraine headaches (Bajaj and Singh, 2018).

Insomnia ($\bar{X} = 4.76$) was also perceived at an average of 4 times in three months among the hired farm labourers. Dependency resulting from alcohol can lead to inability to sleep when a farm labourer individual stops drinking (Rowland and Toumbourou 2009). Also, caffeine for instance possesses psychoactive properties that can cause disturbances during sleep when excessively consumed. Lohsoonthorn *et al.*, 2013 also indicated that the use of stimulants is associated with poor quality of sleep. This means a farm labourer who suffers from this condition will manifest this by directly affecting his level of productivity on the farm, as the body may not be fully prepared for work due to physical stress or inadequate rest or energy. The least experienced disease was stroke ($\bar{X} = 2.0$). Heavy or problematic use of stimulants has been linked to risk of stroke (Drug Policy Alliance, 2018). Alcohol is connected to several health-related conditions that are risk factors for stroke such as high blood pressure, diabetes, weight gain and liver damage (Stroke Association, 2014).

Table 4.5b: Diseases experienced and frequency of occurrence

SN	Diseases	Yes	Mean no. of occurrence in a quarter (3 months)	Rank
1.	Ulcer	57 (20.7)	4.07	
2.	Arthritis	69 (25.0)	3.37	
3.	Rhinitis	123 (44.6)	2.84	
4.	Chronic obstructive pulmonary disease	11 (4.0)	2.75	
5.	Insomnia	122 (44.2)	4.76	
6.	Migraine	121 (43.8)	5.58	
7.	Diarrhoea	43 (15.6)	2.45	
8.	High blood pressure	52 (18.8)	3.59	
9.	Stroke	1 (0.4)	2.0	
10.	Stimulant dependency	81 (29.3)	13.06	2 nd
11.	Chronic weight loss	40 (14.5)	21.44	1 st
12.	Parkinson's disease	22 (8.0)	5.18	
13.	Frequent cough	97 (35.1)	3.64	

Source: Field survey, 2018.

4.7 Frequency of visit to health centres

As reported by Gossage *et al.*, (2014), chronic consumption of stimulants can lead to adverse mental or physical health outcomes, it can also influence the rate at which stimulant users visit health centres. This is partly due to the fact that individuals who indiscriminately use drugs usually have a great need to obtain regular healthcare (Murri *et al.*, 1999; McGeary and French, 2000). As indicated in Table 4.6a, all the diseases identified among the farm labourers as induced by stimulant consumption required that they visit health centers at least once in three months, except for high blood pressure and Parkinson's disease which both had at least two visits to health centres. It is expected that hired farm labourers who seek medical attention by visiting health centres around them manage health-related diseases occasioned by stimulant use. Medical service obtained through visits to health centres may help to correct the farm labourer's indiscriminate intake of stimulating substances, make possible the early detection of health-related problems connected with stimulant use, and provide support for prevention of relapse.

Table 4.6a: Diseases experienced and frequency of visits to health centres

SN	Diseases	Yes	Mean no. of visits to health centres in a quarter (3 months)	Rank
1.	Ulcer	57 (20.7)	1.76*	4 th
2.	Arthritis	69 (25.0)	1.82*	3 rd
3.	Rhinitis	123 (44.6)	1.49	
4.	Chronic obstructive pulmonary disease	11 (4.0)	1.25	
5.	Insomnia	122 (44.2)	1.45	
6.	Migraine	121 (43.8)	1.76*	6 th
7.	Diarrhoea	43 (15.6)	1.45	
8.	High blood pressure	52 (18.8)	2.14*	1 st
9.	Stroke	1 (0.4)	-	
10.	Stimulant dependency	81 (29.3)	1.33	
11.	Chronic weight loss	40 (14.5)	1.30	
12.	Parkinson's disease	22 (8.0)	2.00*	2 nd
13.	Frequent cough	97 (35.1)	1.69*	7 th

Source: Field survey, 2018.

Categorisation of hired farm labourers based on visit to health centres

Results in Table 4.6b show that most (65.2%) of the farm labourers were characterized by low rate of visit to health centres. This implies that most farm labourers in the study area do not patronize health centers for medical check-up in the advent of medical problems resulting from stimulant use. It may be that most of the hired farm labourers with risky stimulant use behaviour do not perceive that they have a consumption problem, or even if they do they decide not to seek medical counsel by visiting health centers but rely on helping themselves. Another reason may be because they perceive they have a need for routine healthcare, but often lack access (Murri *et al.*, 1999; McGeary and French, 2000). Whatever the case is, reliance on self-help or reluctance to seek help, coupled with restricted access to healthcare and health education are part of the reasons for the poorer health condition of rural people (Australian Institute of Health and Welfare, 2008).

Table 4.6b: **Categorisation of farm labourers by level of visits to health centres**

Level	Frequency	Percentage	Mean	Std Dev
Low (1 – 5.69)	180	65.2	5.70	4.89
High (5.70 – 20)	96	34.8		

Source: Field survey, 2018.

4.8 Attitude towards consumption of stimulants

The hired farm labourers' attitude towards consumption of stimulants is as shown in Table 4.7a. More than three-quarters (79.0%), agreed that use of stimulants lengthen their work span. It confirms an earlier finding of this study that noted that stimulants help to boost the stamina or energy levels of farm workers. This is consistent with Poulos and Pasch (2015) who adduced that people use stimulants mainly to enhance their energy level. United Nations (1999) also identified the use of stimulants to be particularly associated with enhancement of stamina among individuals. This may be the reason why 61.8% agreed that smoking during farm work enhances their productivity, as they perceive it supplies additional energy.

Also, three-quarter (76.1%) of the hired farm labourers agreed that consumption of alcohol energises them. This is in accordance with the submission of National Institute on Drug Abuse (2014) that some stimulants possess the capacity to activate brain neurons because of their chemical structure that can behave like a natural neurotransmitter. The brain neurons become activated as the stimulants attach to them. In relation to financial gain, 72.5% of the hired farm labourers perceived that consumption of stimulants increase their labour earnings. This is important to note since the primary objective of farm labour is to generate income, they are favourably disposed to consuming stimulants.

It was further revealed that 63.8% disagreed that consumption of stimulants causes memory loss, while 19.9% were undecided about this. This is because long-term drug abuse can result in non-conscious memory systems which can trigger impairment in cognitive function (NIDA, 2014). Additionally, 65.3% disagreed that the consumption of stimulants is not common among farm labourers. This implies that the hired farm labourers take cognizance that consumption of stimulants is rife or prevalent among farm labourers. Research has found a relationship between stimulants use and occupational status. Tomar, Kasar, Tiwari, Rajpoot and Nayak (2016) found the acute spread pattern of alcohol consumption among farm workers and labourers. The low level of education of the respondents might also inform their stimulant consumption.

Also 70.0% and 65.3% of hired farm labourers agreed that they use stimulants to prevent cold and for relief from pain, respectively. The drudgery associated with farm work might leave labourers with some health challenge symptoms such as headache, cold and body pains. This finding suggests that stimulants act as medications and remedies for cold and pain (Safefood, 2002). Stimulants, in particular caffeine, significantly reduce sensitivity to pain (United Nations, 1999), as they act as analgesic to relieve pain. As a result, 69.7% of the hired farm labourers agreed that stimulants help to relax the body after physical exertion on the farm, owing to the fact that they provide energy and relief for the body after the activity or exercise (Safefood, 2002).

Almost three fifths (58.0 %) indicated that consumption of stimulants enhance their sexual performance. This is highly risky in the study area and could lead to increase rapist activities.

More than half (55.3%) of the farm labourers disagreed with the view that the consumption of stimulants weakens the body, while 22.3% were undecided. Similarly, about half (48.2%) disagreed with the statement that the use of stimulants negatively affect one's health, while 27.5% were undecided. These findings give an indication that the hired farm labourers are aware that the use of stimulants can have negative as well as positive health effects.

Table 4.7a: Attitude of hired farm labourers towards consumption of stimulants

SN	Statements	SA	A	U	D	SD	Mean
1	Taking alcohol activates me to work	43.8	30.8	5.4	11.6	8.3	3.90
2	Smoking during farm work does not enhance my productivity	4.1	21.4	16.3	34.1	14.1	2.87
3	Consumption of stimulants help to increase my labour earnings	29.0	41.7	9.1	14.5	5.8	3.74
4	Alcohol intake is a form of relaxation and is not peculiar to hired farm laborers	20.7	34.8	16.7	21.7	6.2	3.43
5	Codeine helps in relieving me of pain from strenuous farm activities	12.3	25.0	37.0	15.9	9.8	3.14
6	Smoking makes one die young	28.3	30.8	17.0	15.9	8.0	3.56
7	Smoking during farm work enhances my productivity	26.1	36.6	15.2	15.2	6.9	3.60
8	Farm laborers cannot be efficient without alcohol	12.7	24.6	20.3	33.7	8.7	3.00
9	Farm labour is impossible without drinking alcohol	10.1	21.0	15.6	41.3	12.0	2.76
10	Taking dry gin makes me weak	8.3	18.5	18.8	43.1	11.2	2.70
11	India hemp strengthens me to do farm work	18.5	17.4	32.6	18.5	13.0	3.10
12	Consumption of stimulants reduce money realized from farm work	15.6	33.3	13.0	22.5	15.6	3.11
13	Alcohol intake is compulsory for all labourers	5.1	12.7	19.2	37.3	25.7	2.34
14	Codeine increases pain of farming activities	3.6	8.0	40.6	30.1	17.8	2.50
15	Smoking increases one's life	4.7	6.9	20.7	34.8	33.0	2.16
16	Farm laborers become weak without some cigarettes	13.0	27.5	17.4	27.2	14.9	3.00
17	Stimulants consumption is not common among farm labourers	4.3	11.2	18.1	46.4	19.9	2.34
18	Farm labour is possible without drinking alcohol	17.0	51.1	13.8	14.9	3.3	3.64
19	Bitters detoxify	17.4	34.1	38.8	4.7	5.1	3.54
20	Bitters prevent malaria	15.2	43.1	26.8	9.1	5.8	3.53
21	Stimulants causes diarrhea	4.7	12.3	33.0	30.8	19.2	2.53
22	I use stimulants for relief from pain	19.2	46.7	15.6	10.5	8.0	3.59
23	Use of stimulants allow me to work for longer hours on the farm	38.8	40.2	8.3	10.1	2.5	4.03
24	I use stimulants for recreation purpose only	8.3	25.4	19.9	37.0	9.4	2.86
25	I use stimulants because of factors that are beyond my control	11.2	25.7	24.3	23.6	15.2	2.94
26	I take gin in order not to have cold	21.7	45.3	10.9	17.0	5.1	3.62
27	I use stimulants to boast my social status	14.9	28.3	18.5	28.3	10.1	3.09
28	Stimulants improve my sexual performance	22.5	35.5	19.6	15.6	6.9	3.51
29	Stimulants help to relax after a day's work	18.5	51.4	13.4	12.7	4.0	3.68
30	Stimulants affect my health negatively	7.2	17.8	27.5	31.5	15.9	2.69
31	Consumption of stimulants makes one weak	4.3	15.9	23.9	38.4	17.4	2.51
32	Consumption of stimulants reduce money realized from farm work	15.6	33.3	13.0	22.5	15.6	3.11
	Grand mean						3.13

Source: Field survey, 2018.

Categorisation of attitude towards consumption of stimulants

As indicated in Table 4.7b, slightly above half (51.4%) of the hired farm labourers were positively disposed to consumption of stimulants ($\bar{X}=107.53\pm 14.61$) in other words they appreciate the deleterious effects the consumption of stimulant can inflict on their health, even though it does not stop them from still consuming such. Given that 48.6% were negatively disposed to stimulant use (or are not mindful of the deleterious effects stimulant consumption can inflict on their health), it implies that the hired farm labourers were almost equally split in their attitude towards the use of stimulants. This result therefore indicates an asymmetry in the farm labourers' attitude: while some of them favour the consumption of stimulants which they consider appropriate in providing the required energy or strength to work on the farm, others felt they could still do their work without using stimulants. It could well be said that the latter category possesses more conservative norms and attitude in relation to the use of stimulants (Galvan and Caetano, 2003), or they are better informed of the negative health-related consequences of illicit use of stimulants which is the otherwise for the former category thus suggesting the need for programmes on drug education.

Table 4.7b: **Categorisation of hired farm labourers' attitude towards consumption of stimulants**

Attitude	Frequency	Percentage	Mean	SD
Negative (55 – 107)	131	48.6	107.53	14.61
Positive (108 – 143)	140	51.4		

Source: Field survey, 2018.

4.9 Availability of labour saving equipment (awareness and use)

4.9.1 Awareness of labour-saving equipment

Labour-saving equipment are devices capable of reducing the time and effort required in performing certain tasks (FAO, 2019). Table 4.8a shows the different categories of labour saving equipment that can be used to carry out various activities on the farm. Findings show that hired farm labourers' awareness level of land preparation labour-saving equipment was higher than other categories of labour saving equipment. Most (83.3%) of the hired farm labourers were aware of plough and the long-handle hoe (68.2%).

The excerpt below attests to the hired farm labourers' awareness of the plough and long-handle hoe.

“Farm labourers are aware of the plough being an important labour-saving equipment, though we don't have access to it. We are also aware of long-handle hoes.” (FGD Iganna, Iwajowa LG, Oyo State, September 11th, 2018)

Harrow (67.0%), maize planter (53.3%) and ridger (43.1%) awareness of hired farm labourers respectively. However, there was a generally low awareness for harvesting labour-saving equipment such as groundnut digger/shaker (19.6%) and leafy vegetable harvester (20.3%). The low awareness level for harvesting labour-saving equipment could be due to the fact that harvesting activities are not as labour-intensive as other farming activities particularly land preparation activities. As such the need to seek information about equipment that can be used for harvesting may not arise.

Table 4.8a: Hired farm labourers' awareness of labour saving equipment

SN	Labour saving equipment	Aware
A. Land preparation		
1	Plough	230 (83.3)
2	Harrow	185 (67.0)
3	Ridger	119 (43.1)
4	Long-handle hoe	188 (68.2)
B Planters		
5	Mechanical cassava planter	104 (37.7)
6	Semi-automatic cassava planter	73 (26.4)
7	Soybean seed planter	109 (39.5)
8	Maize planter	147 (53.3)
9	Cocoyam planter	67 (24.3)
C Weeding		
10	Mechanical weeder	94 (34.1)
11	Manually-operated ridge profile weeder	65 (23.6)
D. Irrigation		
12	Sprinklers	136 (49.3)
13	Drip irrigation	104 (37.7)
E. Harvesting		
14	Rice Harvester	95 (34.4)
15	Groundnut digger/shaker	54 (19.6)
16	Leafy vegetable harvester	56 (20.3)
17	Cassava lifter	73 (26.4)

Source: Field survey, 2018.

4.9.2 Categorisation of awareness of labour-saving equipment

Awareness of the different categories (land preparation, planting, weeding, irrigation, and harvesting) of labour-saving equipment that can be used to perform farm operations is necessary for the spread and adoption of such equipment. As seen in Table 4.8b, a little above half (53.3%) of the farm labourers had low awareness on labour-saving equipment, while 46.7% had high awareness. Since most of the farm labourers had low awareness, this finding gives an outlook that the farm labourers work on plots of land owned by small-scale farmers, where farming operations are manually carried out primarily due to financial constraint. As earlier observed, the hired farm labourers generally had more awareness about land preparation labour-saving equipment than other categories of labour-saving equipment.

Table 4.8b: **Level of awareness of labour-saving equipment**

Level	Frequency	Percentage	Mean	Std Dev
Low (0 – 6)	147	53.3	6.89	5.65
High (7 – 17)	129	46.7		

Source: Field survey, 2018.

4.9.3 Use of labour-saving equipment

With respect to use of the various labour-saving equipment (Table 4.9a), plough ($\bar{X} = 1.42$) was the most frequently utilized after which is long-handle hoe ($\bar{X} = 1.16$). Long-handle hoe is very popular among the farm labourers, majority of who are migrants from neighbouring West African countries such as Togo and Benin Republic, where it is often used for farming activities. The fact that the long-handle hoe is very cheap and can be operated manually with the human hand makes it readily available, unlike the plough that is expensive and also needs to be coupled with a tractor before it can be operated mechanically. Across Nigeria, issues such as limited availability and high hiring cost are common factors constraining the use of tractors. This therefore limits the use of labour-saving equipment like plough, harrow ($\bar{X} = 0.59$) and others which require coupling with a tractor before they can be operated.

Table 4.9a: **Hired farm labourers' use of labour saving equipment**

SN	Labour saving equipment	Use of labour saving devices				Mean
		Always	Occas	Seld om	Not used	
A. Land preparation						
1	Plough	73 (26.4)	73 (26.4)	26 (9.4)	104 (37.7)	1.42
2	Harrow	15 (5.4)	47 (17.0)	24 (8.4)	190 (68.8)	0.59
3	Ridger	1 (0.4)	15 (5.4)	10 (3.6)	250 (90.6)	0.16
4	Long-handle hoe	87 (31.5)	20 (7.2)	18 (6.5)	151 (54.7)	1.16
B. Planters						
5	Mechanical cassava planter	4 (1.4)	10 (3.6)	2 (0.7)	259 (93.8)	0.12
6	Semi-automatic cassava planter	3 (1.1)	4 (1.4)	3 (1.1)	266 (96.4)	0.07
7	Soybean seed planter	3 (1.1)	7 (2.5)	2 (0.7)	264 (95.7)	0.09
8	Maize planter	6 (2.2)	14 (5.1)	3 (1.1)	253 (91.7)	0.18
9	Cocoyam planter	3 (1.1)	3 (1.1)	0	270 (97.8)	0.05
C. Weeding						
10	Mechanical weeder	10 (3.6)	9 (3.3)	4 (1.4)	253 (91.7)	0.12
11	Manually-operated ridge profile weeder	8 (2.9)	2 (0.7)	3 (1.1)	263 (95.3)	0.07
D. Irrigation						
12	Sprinklers	4 (1.4)	20 (7.2)	4 (1.4)	248 (89.9)	0.20
13	Drip irrigation	0	13 (4.7)	3 (1.1)	260 (94.2)	0.11
E. Harvesting						
14	Rice Harvester	1 (0.4)	4 (1.4)	2 (0.7)	269 (97.5)	0.05
15	Groundnut digger/shaker	1 (0.4)	5 (1.8)	2 (0.7)	268 (97.1)	0.05
16	Leafy vegetable harvester	4 (1.4)	2 (0.7)	2 (0.7)	268 (97.1)	0.07
17	Cassava lifter	1 (0.4)	3 (1.1)	0 (0.0)	272 (98.6)	0.03

Source: Field survey, 2018.

4.9.4 Categorisation of use of labour-saving equipment

Data in Table 4.9b show that most (57.6%) of the farm labourers were characterized by low level of use of labour-saving equipment relative to 42.4% who had high level of use. This implies that most farm labourers in the study area do not use labour-saving agricultural technologies that cannot only reduce the time spent in carrying out farm practices such as land preparation, planting, weeding, irrigation and harvesting, but also the effort required to perform such tasks. This does not translate to unwillingness of the farm labourers to adopt labour-saving equipment for use, but rather shows to a certain degree their inability to access such equipment. In line with this, Bishop-Sambrook (2003) argued that the main factors determining their use stem from affordability and availability. Labour-saving equipment would only boost productivity and income if farm labourers are targeted and supported with necessary information, skills and financial resources (FAO, 2019). But when this is absent, which often is this case, farm labourers would resort to consuming stimulants that they feel can provide them with the required energy to perform farm operations. Low use of labour-saving equipment is further supported below:

“Insufficient or lack of funds/ capital frustrates farm owners from acquiring labour-saving equipment.” (FGD Ilara, Imeko-Afon LGA, Ogun State, November 27th, 2018)

“We do not have access to labour saving equipment due to their unavailability mainly because of high cost of purchase. Another reason is due to lack of technical expertise for their use.” (FGD Iganna, Iwajowa LG, Oyo State, September 10th, 2018)

Table 4.9b: **Level of use of labour saving-saving equipment**

Level of use	Frequency	Percentage	Mean	Std Dev
Low (0 – 4)	159	57.6	4.64	3.21
High (5 – 11)	117	42.4		

Source: Field survey, 2018.

4.10 Labour productivity

Productivity is considered as the measure of an individual's efficiency in performing a particular task by converting input to output. Accordingly, a hired farm labourer's productivity becomes the effort or hours he or she commits into working on the farm in order to generate a concomitant output. Table 4.10a shows that an overwhelming majority (93.1%) of the hired farm labourers had a productivity of not more than ₦200 per hour ($\bar{X} = ₦114.04$ per hour). Data further indicated that 2.9% had a productivity of between ₦201 and ₦400 per hour, while 4.0% had productivity above ₦400 per hour. Putting the average productivity of ₦114.04 per hour into context, it implies that the productivity of most (82.6%) farm labourers' in the study area is statistically low as presented in Table 4.10b. This is contingent on the fact that the average productivity for farm labourers is put at ₦144 per hour by IITA (2019) whereas it is ₦140 in the open labour market. It could well be said that hired farm labourers whose mode of reward is in kind (i.e. who received motorcycles and live with farm owners) are better off than those who received cash.

The low productivity may be traced to problematic or prolonged and chronic intake of stimulants which can as well eventually predispose them to certain diseases as earlier observed in this study. Farm labourers are often bothered about what is going on currently or in the short term thus consuming stimulants irrespective of the effect or amount it costs, which according to Gossage *et al.* (2014) causes loss of productivity. Problematic use of stimulants is known to be at the heart of productivity owing to the fact that it reduces the capacity of the farm workers and also creates farm risk (Allan *et al.*, 2012). The authors consider stimulant consumption to be associated with intoxication and hangovers which can result in farm accidents, decreased productivity and also poor relationships with fellow farm workers. Literature on illicit use of substance similarly identifies among other things strong nexus between the use of stimulants and physical injury, reduced productivity in the workplace, and health-related problems (Collins and Lapsley, 2008; Griffiths and Christensen, 2008).

Table 4.10a: **Productivity of hired farm labourers**

Labour productivity (Naira/ hour)	Frequency	Percentage	Mean	SD
≤ 100	104	37.7	114.04	111.49
101-200	153	55.4		
201-300	6	2.2		
301-400	2	0.7		
> 400	11	4.0		

Source: Field survey, 2018.

Table 4.10b: **Level of productivity of hired farm labourers**

Labour productivity	Frequency	Percentage	Mean	Std Dev
Low (90.35–113.00)	228	82.6	114.04	111.49
High (114.00–1375.00)	48	17.4		

Source: Field survey, 2018.

4.11 Tests of hypotheses

4.11.1 Test of relationship between socio-economic characteristics and labour productivity

There was a significant relationship between the hired farm labourers' primary occupation ($\chi^2=12.173$, $p=0.002$) and productivity. The reason for the relationship between primary occupation and productivity may stem from the fact that the hired farm labourers devote more of their time and effort to working as hired labourers both in on-farm and off-farm agricultural activities which would, therefore, enhance their level of productivity. The combination of on-farm and off-farm livelihood activities by individuals ensures financial security, as by maximizing opportunities available to them (Corsi and Salvioni, 2006).

The result in Table 4.11 also indicates a significant relationship between migrant status of the farm labourers and labour productivity ($\chi^2 = 20.574$, $p = 0.000$). It implies that since the major economic activity of migrant labour was providing farm labour, it is imperative that they would work harder than any native labourer to ensure a higher labour productivity. This is significant for those rewarded financially. The hired farm labourers desire to take something substantial home might prompt their actions for enhanced productivity.

The result in Table 4.11 indicates that there was no significant relationship between age of the farm labourers and labour productivity ($r = -0.066$, $p = 0.274$). This infers that age is not the key factor to the increased productivity. An earlier finding of this study described the hired farm labourers as youth who, according to Allan *et al.* (2011), have more tendencies to consume stimulants unlike older farm workers. A similar scenario is also applicable to insignificant relationship between household size and labour productivity ($r = -0.056$, $p = 0.352$), suggesting that the hired farm labourers' household size has no bearing with their productivity.

Table 4.11: Chi-square and correlation analysis between farm labourers' socio-economic characteristics and labour productivity

Variable	χ^2	Df	r-value	p-value	D
Age	-	-	-0.066	0.274	NS
Sex	0.779	1	-	0.378	NS
Household size	-	-	-0.056	0.352	NS
Education	5.647	5	-	0.342	NS
Primary occupation	12.173	2	-	0.002	S
Migrant status/nationality	20.574	4	-	0.000	S

Source: Field survey, 2018.

4.11.2 Test of relationship between visit to health centres and labour productivity

The correlation analysis in Table 4.12 indicates a significant relationship between frequency of hired farm labourers' visit to health centres and labour productivity ($r = 0.259$, $p = 0.044$). Considering the fact that the well-being of farm workers is connected to productivity or work performance (Elliot-Schmidt and Strong, 1997), it suggests that the rate at which the hired farm labourers visit health centres with the purpose of maintaining a good health condition significantly influences their productivity. However, since the general disposition of farm labourers towards health-related issues most times is often lackadaisical until when such issues begin to pose a threat to their productivity, farm workers may fail to heed to warning systems that can predispose them to stimulant-induced diseases. It is expected that hired farm labourers who seek medical attention by visiting health centres around them would be able to better manage health-related diseases occasioned by stimulant use. Medical advice obtained through visits to health centres may help to correct the farm labourer's indiscriminate intake of stimulants, and also make early detection of health-related challenges, as well as provide support for prevention of relapse.

Table 4.12: **Correlation analysis of frequency of visit to health centres and labour productivity**

Variables	r-value	p-value	D
Frequency of visit to health centres and productivity	0.259	0.044	S

Source: Field survey, 2018.

4.11.3 Test of relationship between awareness of labour saving equipment and labour productivity

The correlation analysis in Table 4.13 reveals that there was no significant relationship between hired farm labourers' awareness of labour saving equipment and labour productivity ($r = -0.091$, $p = 0.132$). This implies that mere cognisance of labour-saving equipment which can help to solve certain labour constraints and capable of lowering the time and effort required in performing certain tasks does not in any way impact the productivity of the farm labourers if such equipment are not put to use by them. This notwithstanding, ignorance hinders extensive adoption of labour saving technologies (Bishop-Sambrook, 2003) that can be used to enhance labour productivity on the farm.

Table 4.13: Correlation analysis between awareness of labour-saving equipment and labour productivity

Variables	r-value	p-value	D
Awareness of labour-saving equipment and productivity	-0.091	0.132	NS

Source: Field survey, 2018.

4.11.4 Test of relationship between use of labour-saving equipment and labour productivity

A significant relationship was observed between use of labour-saving equipment and labour productivity ($r = -0.137$, $p = 0.023$) as shown in Table 4.14. This indicates that the use of labour-saving equipment or devices is a key determinant of the hired farm labourers' level of productivity in the sense that more work will be done within a shorter time period with the use of equipment such as plough, harrow and long-handle hoe. However, the negative significant relationship between the use of labour-saving equipment and productivity depicts that the productivity of the farm labourers decreases with increasing use of labour-saving equipment. It is assumed that when equipment such as plough, harrow, manual or mechanical weeder, are used on the field, it reduces the level of work done by the farm labourers. These equipment decrease labour input thus lessening the energy spent and general production cost (Lawal et al, 2013). This will in turn reduce the productivity of the hired farm labourers in terms of reward in cash or kind derived from working on the farm.

Table 4.14: **Correlation analysis between use of labour saving equipment and labour productivity**

Variables	r-value	p-value	D
Use of labour-saving equipment and productivity	-0.137	0.023	S

Source: Field survey, 2018.

4.11.5 Test of relationship between attitude towards stimulant consumption and labour productivity

The result in Table 4.15 indicate that there was no significant correlation between attitude towards stimulant consumption and labour productivity ($r = 0.038$, $p = 0.534$). This finding points out that the farm labourers' favourable or unfavourable disposition towards the intake of stimulants is not a key predictor of their level of productivity. Stimulants are consumed for the accumulation of strength or ability to engage in physical activities for longer periods of time on the farm. This is consistent with Poulos and Pasch (2015) who adduced that enhancement of energy levels was a major reason why people use stimulants.

Table 4.15: Correlation analysis between attitude towards stimulant consumption and labour productivity

Variables	r-value	p-value	D
Attitude towards stimulant consumption and productivity	0.038	0.534	NS

Source: Field survey, 2018.

4.11.6 Test of relationship between quantities of stimulants consumed and labour productivity

As shown in Table 4.16, significant correlations were observed between the consumption of tobacco based stimulants ($r = 0.250$, $p = 0.004$), alcohol based stimulants ($r = -0.189$, $p = 0.020$) and labour productivity. The significant relationship observed between intake of tobacco (i.e. through snuffing, chewing the fresh leaves, cigarette) and labour productivity suggests that the hired farm labourers are more productive as they consume more tobacco. This finding favours the use of tobacco to accumulate strength so as to boost productivity. This is especially so because the correlation between energy demanding activities such as agriculture and smoking is high (Haque *et al.*, 2020). Though the intake of tobacco based stimulants may enhance productivity in the short run, however in the long run the resulting negative effects they can have on the farm labourers will lead to reduction in productivity. For instance, it can hamper farm workers' productivity by inhibiting their capacity to perform manual tasks on the farm (Andrenski and Breslau 1993). This may lead to them requiring more breaks and sick days from work (Berman *et al.*, 2014), resulting in less rewards in form of cash or kind.

In reference to alcohol-based stimulants and labour productivity, the significant but negative correlation value infers that labour productivity of the hired farm labourers decreases with an increasing intake of alcoholic based stimulant. This agree with the finding of Allan *et al.*, 2012 that problematic use of alcohol has been found to negatively affect workplace productivity because of how it lowers the capacity of farm workers and creates risk on the farm.

Generally, problematic use of these stimulants can interfere with farm labourers' daily activities in the sense that a farm labourer who is ill as a result of illicit substance use for instance would possess reduced capacity to work or may out rightly be absent from work for a number of days. Additionally, excessive use of stimulants does not only expose or increases the risks of injury or make farm labourers' prone to accident when working on the farm, but makes others vulnerable in certain conditions.

Table 4.16: Correlation analysis between quantity of stimulants consumed and labour productivity

Variables	r-value	p-value	D
Caffeine based stimulants	-0.039	0.676	NS
Tobacco based stimulants	0.250	0.004	S
Alcohol based stimulants	-0.189	0.020	S
Analgesic based stimulants	-0.113	0.200	NS

Source: Field survey, 2018.

4.11.7 Test of relationship between frequency of occurrence of diseases and quantity of stimulants consumed

Table 4.17 reveals a significant correlation between the quantity of stimulant consumed and frequency of occurrence of diseases ($r = 0.169$, $p = 0.016$). This infers that the higher the quantity of stimulants consumed by the farm labourers, the greater the risk of developing stimulant-induced diseases. This corroborates the report of World Health Organization (2011) for example on alcohol that, problematic use of alcohol is a major contributing factor to death, disease and injury through health impacts such as alcohol dependence, liver cirrhosis, cancers and injuries. The level of risk of disease a farm labourer may be exposed to from the consumption of stimulants is associated with the quantity consumed and the pattern of consumption (WHO, 2011). Heavy consumption at regular intervals can heighten the degree of health-related risks. Rehm *et al.*, 2003 reiterated that, the quantity of stimulant consumed and the pattern of consumption can lead to three mechanisms that directly impact disease and injury of the farm labourers, which are: toxic and other effects on organs and tissues; intoxication; and dependence.

Table 4.17: **Correlation between quantity of stimulants consumed and occurrence of diseases**

Variables	r-value	p-value	D
Quantity of stimulant consumed and frequency of occurrence of diseases	0.169	0.016	NS

Source: Field survey, 2018.

4.11.8 Factors determining the labour productivity of hired farm labourers

The multiple regression of the result in Table 4.18 indicates that labour productivity was significantly determined by nationality ($\beta = 0.237$), tobacco based stimulants ($\beta=0.443$), alcohol based stimulants ($\beta=-0.372$), analgesic based stimulants ($\beta=-0.276$), awareness of labour saving equipment ($\beta = 0.335$) and attitude to stimulant consumption ($\beta = -0.299$). With the coefficient of determination (R-squared or R^2) being 0.737, it implies that 73.7% of the variations in the dependent variable were accounted for by the independent variables included in the regression model.

How productive a hired farm labourer is would be determined by whether they are indigenes or migrants to the location where they operate as farm labourers. Individuals from neighbouring West African countries, especially Benin Republic who migrate from their countries in search of greener pastures most times form the bulk of farm labourers in southwestern Nigeria. For such immigrants, working as farm labourers is a major economic activity to them.

Similarly, the negative β -value for consumption of alcohol and analgesic based stimulants infers that the hired farm labourers productivity decreases with increasing intake of stimulants that have alcohol as their active or stimulating substance, so also with the intake of analgesic substances. This is explainable from the fact the intake of alcohol or analgesic stimulants result in negative effects on the perceived health of hired farm labourers' and subsequently lead to a reduction in productivity. This finding agrees with Allan *et al.* (2012) who reported that, 'problematic use of alcohol has been found to negatively affect workplace productivity because of how it lowers the capacity of farm workers and creates risk on the farm'.

Tramadol and paracetamol were *analgesics observed to be excessively consumed by the hired farm labourers. Associated side effects of overdose from tramadol include; nausea and vomiting, constipation, drowsiness and dizziness, respiratory depression, psychiatric reactions (reduced concentration or confusion), dependency and addiction (Arthritis Research UK, 2016). In the same vein, excessive intake of paracetamol is reckoned as*

Table 4.18: **Multi-linear regression analysis of factors contributing to labour productivity of hired farm labourers**

Variables	Std error	Beta	T	Sig.
Constant	117.078	-	2.557	0.016
Age	0.864	-0.012	-0.102	0.920
Educational attainment	17.042	-0.210	-1.737	0.093
Nationality (Migrant status)	15.655	0.237	2.064	0.048*
Caffeine based stimulants	5.830	-0.222	-1.683	0.104
Tobacco based stimulants	9.157	0.443	3.528	0.001*
Alcohol based stimulants	5.754	-0.372	-2.490	0.019*
Analgesic based stimulants	4.129	-0.276	-2.465	0.020*
Perceived symptoms	1.797	-0.257	-1.830	0.078
Occurrence of diseases	0.300	0.185	1.204	0.239
Visit to health centres	0.594	0.191	1.717	0.097
Awareness of labour saving equipment	1.681	0.335	2.629	0.014*
Use of labour saving equipment	3.091	0.154	-0.929	0.361
Attitude to stimulant consumption	1.002	-0.299	-2.097	0.045*
R = 0.858				
R ² = 0.737				
Adjusted R ² = 0.615				

Source: Field survey, 2018. *Significant factors of labour productivity

the most common drug overdose and cause of acute liver failure in parts of the world (Larson *et al.*, 2005; Lancaster *et al.*, 2015).

Consumption of stimulants can interfere with farm labourers' daily activities in the sense that a farm labourer who is ill as a result of illicit substance use for instance would possess reduced capacity to work or may out rightly be absent from work for a number of days. Additionally, excessive use of stimulants does not only expose or increases the risks of injury or make farm labourers' prone to accident when working on the farm, but makes others vulnerable in certain conditions.

Awareness of the different categories (i.e. land preparation, planting, weeding, irrigation, and harvesting) of labour-saving equipment is necessary for the spread and adoption of such equipment. The equipment can help to solve certain on-farm and off-farm labour constraints and capable of lowering the time and effort required in performing certain tasks. Unawareness however hinders extensive adoption of labour saving technologies (Bishop-Sambrook, 2003)

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The general objective of the study was to assess the effects of stimulants consumption on hired farm labourers' productivity in Southwestern Nigeria. The specific objectives of the study were to: describe the socio-economic characteristics of hired farm labourers; ascertain the pattern of engagement in hired labour and reward systems; identify the types of stimulants in the study area; ascertain the reasons for consumption of stimulants by the hired farm labourers; identify the sources of stimulants commonly patronized by hired farm labourers; identify the health, diseases and symptoms associated with stimulant consumption as perceived by hired farm labourers, farmers, health workers and social workers; determine the attitude of hired farm labourers towards the use of stimulants; identify available labour saving equipment and find out the awareness level of these equipment among farmers; and to evaluate the level of productivity of farm labourers. The hypotheses of the study were: there is no significant relationship between hired farm labourers' personal characteristics and labour productivity, there is no significant relationship between hired farm labourers' visits to health centres and labour productivity, there is no significant relationship between hired farm labourers' awareness of labour saving equipment and labour productivity, there is no significant relationship between hired farm labourers' use of labour saving equipment and labour productivity, there is no significant relationship between hired farm labourers' attitudes towards stimulant consumption and labour productivity, there is no significant relationship between hired farm labourers' quantity of stimulants consumed and labour productivity, there is no significant relationship between frequency of occurrence of diseases and quantity of stimulants consumed, there is no significant relationship

between the use of stimulant and productivity of hired farm labourers; there is no significant relationship between the use of stimulants and perceived health of hired farm labourers and there is no significant difference between hired farm labourers' level of stimulant use and productivity.

A multi-stage sampling procedure was used. Ogun and Oyo States, due to high influx of foreign farm labourers through their borders and prominence in food production in southwestern Nigeria were purposively selected for the study. Thereafter, 20% of agrarian Local Government Areas (LGA) located around the border in each state (Imeko Afon, Egbado North, Egbado South and Ipokia in Ogun; Irepo, Saki West, Atisbo, Iwajowa, Ibarapa North and Kajola in Oyo) were randomly sampled. Three communities in each LGA were randomly selected, while ten percent of Growth Enhancement Support Scheme Farmers (GESSF) were purposively sampled due to prominence of hired farm labourers. Ten percent of the GESSF hired farm labourers were randomly sampled to give 271 hired farm labourers.

Quantitative data were obtained with the use of structured interview schedules, while qualitative data were obtained through the use of FGDs (with hired farm labourers) and IDIs (with local gin brewers, chemist owners and clinic staff at village dispensaries). Data were analyzed using both descriptive (frequency, percentages, mean and standard deviation) and inferential (Chi square and PPMC) statistical tools. All hypotheses were tested at the 0.05 level of significance.

Findings revealed that about three-quarters (72.5%) of the hired farm labourers were within the age range of 21-40 years ($\bar{X} = 32.25$), almost two-thirds (65.2%) were married and most (71.4%) had household sizes of 1 - 4 persons ($\bar{X} = 4.55$). More than half (56.9%) were Christians, while more than half (55.8%) of them had at least one level of formal education or the other. Fifty seven percent (57.4%) were immigrants from neighbouring West African countries of Benin Republic and Togo. Approximately two thirds of them (62.3%) depended solely on hired labour for their livelihood.

Weeding ($\bar{X} = 1.85$) was the most prominent farming activity the farm labourers were involved in, followed by planting ($\bar{X} = 1.80$) which was ranked high by the hired farm labourers, while land preparation activities such as land clearing ($\bar{X} = 1.79$) and heaping

(\bar{X} = 1.65) also ranked high. The pattern of engagement in farm labour activities showed that more than three-quarters (79.0%) of the hired farm labourers engaged as farm labourers throughout the year, otherwise referred to as full-time or permanent farm workers, with most (73.9%) rewarded in cash while (41.7%) and (19.2%) were in kind (motorcycle and farm produce) .

With respect to stimulants use, cigarette or tobacco (67.0%) and snuff (40.6%) were the most utilized natural stimulants, while beer (72.8%), palm wine (63.4%) and local gin or ogogoro (59.1%) were the most utilized alcoholic stimulants by the hired farm labourers. The energy drinks commonly consumed were Power Horse (32.2%) and Bullet (18.5%), while Jedijedi (51.4%), Orijin bitters (42.0%) and Alomo bitters (33.0%) ranked high among herbal mixtures consumed by the hired farm labourers. Paracetamol (78.6%), *Panadol* (56.9%) and *Alabukun* (55.1%) were prominent analgesics used by them.

The data showed that marijuana and kolanut had the same mean (\bar{X} =10.71) and were the most consumed natural stimulants by the farm labourers on a weekly basis. The alcoholic drink consumed the most were chief schnapps (\bar{X} = 223.36) and ogogoro (\bar{X} = 206.99), which contained pure alcohol of 9.38 units and 12.63 units respectively. Furthermore, power horse (\bar{X} = 2188.37) was the most consumed energy drink by the farmer labourers, with approximately 1575mg of caffeine consumed weekly. Panadol (\bar{X} = 160.22) and tramadol (\bar{X} = 132.60) were the most consumed analgesics. *The hired farm labourers consumed an overdose of 104 tablets of panadol and 76 tablets of tramadol weekly.*

The major reasons for consuming stimulants include:- accumulation of strength for labour (85.51%), keeping up with longer hours of work on the farm (84.1%) and relaxation after the day's work (81.9%). Also, the major sources of obtaining stimulants included open market days (71.4%), hawkers (70.3%) and patent medicine sellers (59.8%).

While the perceived symptoms associated with stimulant consumption were red coloration of the eyes (\bar{X} = 0.82), profuse sweating or perspiration (\bar{X} = 0.80) and joint/body pains (\bar{X} = 0.66), commonly perceived diseases with stimulant consumption

were rhinitis (44.6%), insomnia (44.2%) and migraine (43.8%). In a similar vein, chronic weight loss (\bar{X} = 21.44) and stimulant dependency (\bar{X} = 13.06) were the perceived diseases the farm labourers came down with most within a space of three months, while the least contracted perceived disease was stroke (\bar{X} = 2.00). Hence, virtually two-thirds (65.2%) of them were characterized by low level of visit to health centres. Slightly above half (51.4%) of the hired farm labourers were favourably disposed to consumption of stimulants, as against 48.6% of them who were unfavourably disposed.

The findings showed that there was a high awareness on land preparation labour-saving equipment such as plough (83.3%) and harrow (67.0%). It was higher (\bar{X} = 1.42) compared to the awareness for other categories of labour-saving equipment. The hired farm labourers were low awareness of harvesting equipment such as groundnut digger/shaker (19.6%) and leafy vegetable harvester (20.3%). Categorization of hired farm labourers' awareness of the different categories (i.e. land preparation, planting, weeding, irrigation, and harvesting) labour-saving equipment revealed that more than half (53.3%) were characterized by low awareness. With respect to utilization of such equipment, plough (\bar{X} = 1.42) and long-handle hoe (\bar{X} = 1.16) were the most utilized labour-saving equipment, while 57.6% of the hired farm labourers were categorized as having low level of use of the labour-saving equipment.

The productivity of most (93.1%) of the hired farm labourers was low (\bar{X} = ₦114.04) per hour when compared to the average productivity of farm labour pegged ₦140 per hour. The result of the categorization of the hired farm labourers' productivity also showed that majority (82.6%) had low productivity, implying that the productivity of most farm labourers' in the study is quite low relative to the average productivity for farm labourers which is put at ₦140 per hour. Prolonged and chronic intake of stimulants was adduced to be primary responsible for the low productivity.

Inferential tests (Chi-square and PPMC) indicated significant relationships between socio-economic characteristics of the hired farm labourers such as primary occupation (χ^2 = 12.173, p = 0.002) nationality (χ^2 = 20.574, p = 0.000) and productivity. Correlation analyses gave significant relationships between consumption of tobacco

based stimulants ($r = 0.250$, $p = 0.004$), alcohol based stimulants ($r = -0.189$, $p = 0.020$), visits to health centres ($r = 0.259$, $p = 0.044$), use of labour-saving equipment ($r = -0.137$, $p = 0.023$) and productivity. The multiple regression analyses identified nationality ($\beta = 0.237$), tobacco based stimulants ($\beta=0.443$), alcohol based stimulants ($\beta= -0.372$), analgesic based stimulants ($\beta= -0.276$), awareness of labour saving equipment ($\beta = 0.335$) and attitude to stimulant consumption ($\beta= -0.299$) as the factors influencing labour productivity in the study area.

5.2 Conclusion

Although a key motivation for the consumption of stimulants by hired farm labourers was accumulation of strength, this was however found to have negatively impacted on their level of productivity in the long run. Regular and heavy consumption in certain cases resulted in stimulant dependency thereby predisposing them to other common perceived health problems associated with stimulant use. Hired farm labourers who developed common health problems associated with stimulant consumption were unlikely to have patronized healthcare services for medical check-up, as findings showed that most of them were characterized by low rate of visit to health centres.

Data showed that low level of awareness of available labour-saving equipment was matched with low level of use of the equipment, suggesting farming operations are manually carried out in the study area. The potential impact of this is that hired farm labourers resorted to consuming stimulants that they felt could provide them with the required energy to perform farm operations. This was thought to have one way or the other influenced the asymmetry in their attitude to stimulant use, in that while some of them favoured the consumption of stimulants which they consider appropriate in providing the required energy or strength to work on the farm, others reasoned they could still do their work without using stimulants.

5.3 Recommendations

Healthcare workers at the study area should be encouraged to open on Sundays (or run shifts) which is the day off of hired farm labourers to give them easy access to medical care which the nature of their work at times make it uneasy for them to visit during the local clinic hours, because the well-being of farm workers is connected to productivity

or work performance. This is in line with the positive role played by visit to health centres on farm labourers' productivity.

Campaigns should be undertaken by government and NGOs to discourage problematic use of stimulants among farm labourers. Problematic use of stimulants does not only bear negatively on productivity by lowering the capacity of farm workers and predisposing the farm to risk, it is also a major cause of diseases and death.

Early intervention in making public the deleterious effects of stimulant is urgently recommended as consumption of stimulants has become really rampant among all facets of the society involved in energy intensive labour.

Research into each stimulant and type of health risk and diseases is recommended.

An implication of shortages of farm workers in rural areas is increase in cost of hired farm labour which can in turn influence the extent to which hired farm labourers accept the use of stimulants. Efforts should be made by government at stemming frequent migration of rural dwellers who work as farm labourers to urban areas in search of better living standards.

All stakeholders (family, community, religious bodies and the three tiers of government) should join forces together to curb this major social challenge of stimulant consumption that has eaten deep into every fibre of the society.

Regulation of labour charges to regulate the labour relations of hired farm labourers, contract labourers and farmers.

Efforts should be made to consider gradual reduction of small scale farmers' total dependence on hired farm labourers by provision of subsidy on alternative labour saving technologies.

Automated agriculture through drones and robots should be demonstrated to small – scale farmers across the country to boost gradual adoption.

5.4 Contributions to knowledge

1. The study found that the consumption of different categories of stimulants, such as alcohol, analgesic, caffeine and tobacco-based stimulants for accumulation of labour strength is common among hired farm labourers.
2. The negative link between consumption of stimulants and labour productivity of hired farm labourers was made explicit.
3. The study evidently observed that foreigners from neighbouring West African countries such as Benin Republic and Togo constitute the bulk of hired farm labourers in Southwestern Nigeria.
4. The poor patronage of healthcare services for medical check-up upon the occurrence of stimulant-induced problems, which is generally a common feature among farm workers, was confirmed in the study.
5. The use of labour saving equipment was shown to have a key influence on labour productivity. Labour productivity was found to decrease with increasing use of labour saving equipment, as the use of such equipment reduces the level of work hired farm labourers would have to do.

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Appendix

Interview schedule for perceived effect of energizers (stimulants) consumption on hired farm labourers health and productivity in southwestern Nigeria

I am a PhD student of University of Ibadan carrying out a study on Perceived Effects of Energizers Consumption on Hired Farm Labourers Health and Productivity in Southwestern Nigeria. The following questions are strictly for this research work. Please give sincere responses.

Section A: Socio-economic Characteristics

Please tick or write as applicable:

- Section K.** Age (years).....
- ii. Sex: Male (), Female ()
- iii. Marital status: Single (), Married (), Widowed (), Divorced (), Separated ()
- iv. Household size: No of males () No of females ()
- v. Religion: Christianity (), Islam (), Traditional (), others ()
- vi. Country of Origin: Nigeria (), Ghana (), Togo (), Benin Republic (), Others.....
- vii. Ethnic group () Egede (), Ibo (), Hausa (), Fulani (), Yoruba ()
Others.....
- viii. Educational attainment: Non formal (), Primary education (), Vocational training () Secondary education (), Technical School (), Higher education (), Others.....
- ix. Livelihood activities: (1)....., (2).....
(3)..... (4).....(5)..... (Rank in order of importance)
- x. Primary Occupation.....
- xi. Farm Labor Experience: Number of years: 1-2years (), 3-4 years (), 5-6 years(), 7-8 years (), 9-10 years(), Over 10 years()
- xii. Farm labour status: Fully dependent (resides with the farmer) (), partially dependent (resides on the farm during farm labour), Not dependent ()

Section B: Farming activities.

Please tick the farming activities you involve in and how often:

S/N	Farming Activities	Always	Occasionally	Never
1	Land Clearing			
2	Heaping			
3	Planting			
4	Weeding			
5	Harvesting			
6	Processing			

Others: _____

Section C: Pattern of engagement in farm labour and mode of reward

What is the pattern of your involvement in farm labour work? Tick as appropriate.

Section K. Throughout the year _____ During the on-season _____
 Occasionally _____

ii. Mode of reward: What type of reward do you receive? Tick as applicable:

Type of reward	Yes	No	Period of Labour (1year/During the season or Activity)
Motorcycle			
Money			
Farm Produce			

Others types of reward you collect.....

Section D: Types and Frequency of Use of Energizers

Please tick yes/no if you use the following, also indicate quantity and frequency of use.

S/N	Stimulants/ psychoactive substances	Uses		Quantity (bottles/ wraps/ sticks/ sachets)	Frequency of consumption				
		Ye s	No		Daily	Every other day	Weekl y	Mont hly	As occasion demands
1	Natural energizers								
i.	Coffee/ Nescafe								
ii.	Kolanut								
iii	Bittercola								
iv.	Indian Hemp (Igbo)								
v.	Tobacco leaves (snuff)								
vi	Tobacco leaves (chewing- taba)								
vii	Cigarette								
S/N	Stimulants/ psychoactive substances	Uses		Quantity (bottles/wrap s/ sticks/ sachets)	Frequency of Consumption				
		Yes	N o		Daily	Every other day	Weekl y	Monthl y	As occasion demands
2)	Alcoholic drinks								
ai	Beer								
ii	Stout								
iii	Erujeje								
Iv	Clubbing punch								
V	Chief schnapps								

vi	Palm wine								
vii	Local gin (Ogogoro)								
viii	Otika/Buruk utu								
Ix	Gegemu								
b.	Energy drinks								
i.	Power Horse								
ii.	Bullet								
iii.	Monster drink								
c.	Herbal mixtures								
i.	Bitters								
ii.	Alomo								
iii.	Jedijedi								
Iv	Striker bitters								
V	Black wood								
3)	Analgesic (Pain relieving drugs)								
i.	Tramadol								
Ii	Panadol								
iii	Paracetamol								
iv.	Aspirin								
v.	Alabukun								
vi.	Codeine								
vii.	Really Extra								

4.	Cough Mixtures (e.g Coflin)								
5.	Others								
I									
Ii									
Iii									
Iv									

Section E: Why energizers?

Please tick yes/no to these reasons why you use energizers.

S/N	Reasons	YES	NO
1	Energizers help in accumulating labor strength		
2	Energizers help to relax after a days work		
3	I use energizers for relief from pain		
4	To keep up with long hours of work on the farm		
5	I use energizers to increase my labor earnings		
6	I use energizers for recreation purpose only		
7	I use energizers because of factors that are beyond my control		
8	Energizers use make me more physically alert for farm labor		
9	I take gin in order not to have cold		
10	I use energizers to boast my social status		
11	To keep loneliness away		
12	For good business connection		
13	Because it is free at the club		
14	It is normally served at ceremonies		

Others.....
.....
.....
.....
.....

Section F: Sources of energizers

Please indicate the sources of the energizers in your community by ticking appropriately:

- Patent ()
- Secret Agent ()
- Hawkers ()
- On Market days ()
- Motor park Garage ()
- Drinking joint/ Club house ()
- Ceremonies ()

Others:

.....

Section G: Symptoms associated with consumption of Energizers

Which of these symptoms have you ever experienced and how severe?

Please tick appropriately:

S/N	Symptom	Very severe	Severe	Not experienced
1	Dilated pupils and Swollen eyes (Oju wiwu)			
2	Red eye (Oju pipon)			
3	Dry mouth and nose (Enu ati imu gbigbe)			
4	Excessive activity, restlessness (Aifarabale)			
5	Aggression (Jija nigbagbogbo)			
6	Cold or chronic sinus/nasal problems (Ofinkin)			
7	Cough (iko)			
8	Nose discharge			
9	Loss of Appetite (Aile jeun)			
10	Poor sleep (Sisun segesege)			
11	Nausated feeling and vomiting (Ebi)			
12	Palpitations/ Increased heart rate			
13	Headaches (Ori fifo)			
14	Diarrhea (Igbe gbuuru)			
15	Breast and chest pain (Aya didun)			
17	Lack of physical coordination			
18	Loss of memory (Gbigbagbe nkan)			
19	Pain in the heart (Okan riro)			

20	Weight loss (Riru)			
21	Unhealed infections (Egbo to ko latisan)			
22	Cravings			
23	Sweating (Lilagun yobo)			
24	Muscle pull			
25	Dizziness (Ooyi)			
26	Tremors (Gbigbon jigijigi)			
27	Joint pain(Orike ara riro)			
28	Eye itching (Oju yiyun)			

Section H: Which of these diseases are you experiencing?

Please indicate if you are experiencing any of these diseases now, number of occurrences per quarter and no of visits to health centre or maternity per quarter.

S/N	Diseases	Affected by the disease		Frequency of Occurrence (No of times in a quarter i.e 3 months)	Rate of visits to health centres due to any of the disease (No of times in a quarter i.e 3 months)
		Yes	No		
1	Ulcer (ogbe inu)				
2	Arthritis (Awoka)				
3	Rhinitis (ofinkin)				
4	Chronic obstructive pulmonary disease (aisan okan)				
5	Insomnia – lack of sleep				
6	Migraine (Ori fifo laidawoduro)				
7	Diarrhea (Igbe gbuuru)				
8	Multiple organ failure				
9	High blood pressure (Ifunpa giga)				
10	Stroke (Aisan eje riru)				
11	Stimulant dependency				
12	Chronic Weight loss (Riru hangogo)				

13	Insomnia (Airorun sun)				
14	Parkinsons disease (shaking of hands)				
15	Frequent cough				

Section I: Attitude of the hired farm labourers towards the consumption of 187nergizers.

Tick Strongly Agree (**SA**), Agree (**A**), Undecided (**U**), Disagree (**D**) and Strongly Disagree (**SD**) to the following:

S/N	Statements	SA	A	U	D	SD
1	Taking alcohol activates me to work					
2	Smoking during farm work does not enhance my productivity					
3	Consumption of energizers increase my labour earnings					
4	Alcohol intake is a form of relaxation and is not peculiar to hired farm laborers					
5	Codeine helps in relieving me of pain from strenuous farm activities					
6	Smoking makes one die young					
7	Smoking during farm work enhances my productivity					
8	Farm laborers cannot be efficient without alcohol					
9	Farm labor is impossible without drinking alcohol					
10	Taking dry gin makes me weak					
11	India hemp strengthens me to do farm work					
12	Smoking during farm work increases productivity					
13	Consumption of energizers reduce money realized from farm work					
14	Alcohol intake is compulsory for all labourers					
15	Codeine increases pain of farming activities					
16	Smoking increases ones life					
17	Farm laborers become weak without some cigarettes					
18	Energizers consumption is not common with farm labourers					
19	Farm labor is possible without drinking alcohol					
20	Bitters detoxify					
21	Bitters prevent malaria					
22	Energizers causes diarrhea					
23	I use energizers for relief from pain					
24	Use of energizers allow me to work for longer hours on the					

	farm					
25	I use energizers for recreation purpose only					
26	I use energizers because of factors that are beyond my control					
27	I take gin in order not to have cold					
28	I use energizers to boast my social status					
29	Energizers improve my sexual performance					
30	Energizers help to relax after a days work					
31	Energizers affect my health negatively					
32	Consumption of energizers makes one weak					
33	Energizers gives me memory loss					

Section J: Awareness and level of use of labour saving equipment

Pls indicate if you are aware of these labour-saving equipment and indicate your level of use.

S/N	Labour saving equipment	Aware	Level of use			
			Always	Occasionally	Rarely	Not usrd
A	Land Preparation					
1	Plough					
2	Harrow					
3	Ridger					
4	Long handled hoe					
B	Planters					
5	Mechanical Cassava planter					
6	Semi-automatic Cassava planter					
7	Soybean seed planter					
8	Maize planter					
9	Cocoyam planter					
C	Weeding					
10	Mechanical weeder					
11	Manually-operated ridge profile weeder					
D	Irrigation					
12	Sprinklers					
13	Drip irrigation					
E	Harvesting					
14	Rice Harvester					

15	Groundnut digger/shaker					
16	Leafy vegetable harvested					
17	Cassava lifter					

State reasons for not using the equipments:

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Section K. Labour Productivity

Please indicate no of hours you spend and the reward you take per acre for the following activities.

S/N	Activity	Total Man-Hour	Total Labour Output in Naira	Other Rewards in kind
1	Land Clearing			
2	Heaping			
3	Weeding			
4	Harvesting			

Thank you for your time and sincere responses.

Appendix

Photographs taken during administration of Interview Schedule, Focus Group Discussions and In-Depth Interviews



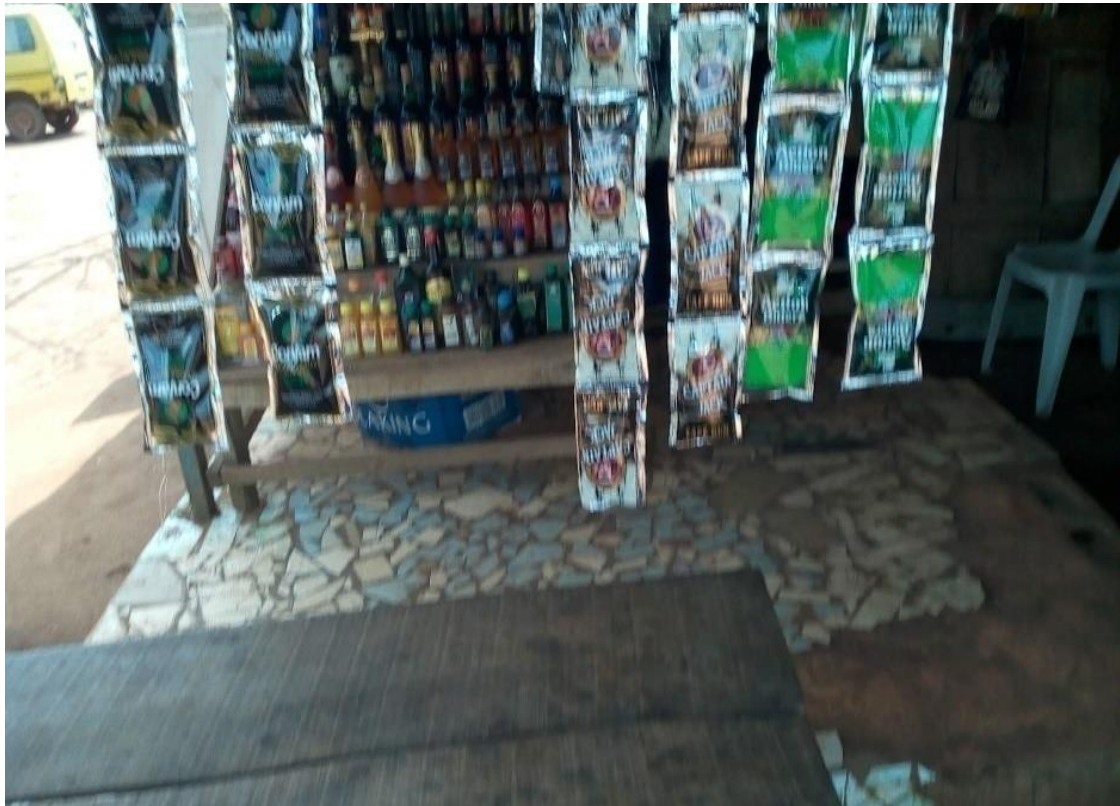
3: Focus Group Discussion Iangan, Ibarapa North LG, Oyo State



4: Stimulants displayed for sale at Imeko Afon, Ogun State



5: Stimulants in various plastic bottle sizes at Ofegun, Kajola LG, Oyo State



6: Stimulants in sachets displayed for sale at Kisi, Irepo LG, Oyo State



7: Focus Group Discussion at Idogo village, Egbado North LG, Ogun State



8: Focus Group Discussion at Ita Egbe, Ipokia LG, Ogun State



9: Questionnaire administration at Tede, Atisbo LG, Oyo State



10: In-depth interview at Iwajowa health clinic, Oyo State



11: Kolanut shown by a hired farm labourer at Ilara, Imeko Afon LG., Oyo State



12: Group photograph after questionnaire administration at Imeko Afon, Ogun State



13: A hired farm labourer showing cigarette at Ilara, Imeko Afon, Ogun State



14: Local Government Health Clinic Signboard, Idolehin, Ogun State



15: In-depth interview at Idolehin, Ado-Odo health clinic, Ogun State



16: Focus Group Discussion at Imose, Ado Odo LG, Ogun State



17: Onimeko Palace, Ogun State



18: Focus Group Discussion at Ayete, Ibarapa LG, Oyo State