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Drug Abuse, Human Agency and Farm Labour Productivity: A Philosophical and Empirical Analysis of Implications for Crop Production and Food Security Among Smallholder Farmers in Southeast Nigeria

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ABSTRACT

This study explored drug abuse, human agency, and farm labour productivity and their implications for crop production and household food security among smallholder farmers in Southeast Nigeria. The study was necessitated by the belief that drug abuse, if left uncontrolled, could affect the decision-making and labour productivity of farmers, which in turn could constrain crop production and household food security. This study employed a philosophical and empirical approach by evaluating the normative and descriptive aspects of the research problem. The survey design was adopted for the study by selecting 450 respondents from Southern Nigeria using the descriptive survey research design. Data collected were analysed using frequency counts, percentages, mean and standard deviation. The results indicated that the respondents perceived drug abuse as having adverse effects on crop production and agricultural activities, with a grand mean score of 2.98, which was interpreted as negative. The major effects of drug use and abuse on farm activities were decreased concentration, productivity, and efficiency, delay in farm activities, farm accidents, low income from farm produce, and post-harvest losses. Farm labour productivity was perceived to have a positive effect on household food security with a grand mean score of 3.09. The results further revealed the extent to which human agency played a role in decision-making in relation to drug use and agricultural production activities. Farm labour productivity was influenced by personal skills and competencies, access to resources such as credit facilities, and other farm inputs. About 84.4% of the respondents agreed that farmers have the capacity to decide how farm labour could be allocated to farm activities, while 75.6% of the respondents indicated that farmers have the ability to decide whether to take drugs before engaging in farm activities. Human agency was however, constrained by the lack of access to extension services, counselling and treatment services among farmers in Southeast Nigeria. The major socioeconomic variables associated with drug use and abuse among farmers were farm-related stress, poverty, availability of drugs, strenuous farm activities, and lack of government intervention. The study concluded that the prevention and control of substance abuse among smallholder farmers require a concerted effort in promoting personal responsibility while encouraging the provision of treatment services and other enabling environments for curtailing the spread of substance abuse among farmers. The study recommends a holistic agricultural policy that targets substance-abuse prevention, agricultural extension services, and rural health services in addition to policies that promote farm labour productivity, crop production, and household food security. The study further recommends the need for promoting sustainable agricultural production and appropriate livelihood options among smallholder farmers in Southeast Nigeria.

Keywords: *drug abuse, human agency, farm labour productivity, crop production, food security, smallholder farmers, Southeast Nigeria, autonomy.*

Introduction

Agriculture remains the cornerstone of livelihood, employment, rural development, and food security in Nigeria. The situation of Nigeria's smallholder farmers represents that of a large proportion of the country's food producers; their contributions to domestic food production are indispensable. According to recent [1,2] reports, agriculture contributed about 28% to Nigeria's Gross Domestic Product (GDP) for the period 2021 – 2024 and employed 40% of the working-age population. Notably, about 70% of Nigeria's food output is from crop production[3]. Despite this, Nigeria remains concerned with food security. FAO reports that 25.1 million Nigerians were acutely food insecure in the last quarter of 2024, while 33.1 million Nigerians are expected to experience extreme food insecurity during the lean season in June – August 2025 [1,3].

The situation of smallholder farmers in Nigeria directly relates to the food-security issue. National Agricultural Sample Survey (NASS) 2023, conducted by the National Bureau of Statistics (NBS) in collaboration with FAO, the Federal Ministry of Agriculture and Food Security, and the World Bank, illustrates the magnitude of agricultural production by households in Nigeria. The survey covered crop production, livestock, fisheries, forestry, agricultural labor, plots, and inputs, as well as production and harvesting. The survey sampled 152,485 agricultural households across Nigeria in a multi-stage probability sample (National Bureau of Statistics [4]. Notably, the agricultural productivity depends not only on land, capital, technology, rainfall, inputs, and markets but also on the labor of the farmers involved. Farm labor productivity is dictated not only by the availability of labor but also by the physical and mental capabilities of the laborers, as well as their regularity, willingness, focus, judgment, and ability to carry out agricultural labor production processes efficiently. Therefore, the circumstances and behaviors of farmers that may affect their physical and mental capabilities and willingness should be considered.

One of such circumstances and behaviors is drug abuse or the use of psychoactive substances. Nigeria's National Drug Use Survey estimated that 14.4% of Nigerians aged 15 – 64 years, or 14.3 million people, used a psychoactive substance other than alcohol and tobacco in the past year. Cannabis was the most commonly used illicit drug, followed by opioids, including the non-medical use of pharmaceutical opioids like tramadol and codeine-containing analgesics [5]. Of particular relevance to the present study is the fact that drug use in Nigeria is concentrated in the southern part of the country. Indeed, the Southeast geopolitical zone is the second most affected region in terms of the percentage of people who have used psychoactive substances in the past year, with a prevalence rate of 13.8%, compared to 14.4% for Nigeria overall. This translates to approximately 1550000 people aged 15 – 64 years who were exposed to drugs as of the time of the survey[5]. Drug abuse not only poses serious health risks to the individuals involved but also has negative social consequences, such as low productivity, family financial difficulties, and poor decision-making. The 2018 national survey also identified loss of productivity as a social consequence of drug use in Nigeria. It is therefore not surprising that recent national surveys on drug use in Nigeria highlight the need for continuous monitoring of the country's drug use patterns and response environment [6]

Indeed, the harm posed by psychoactive substance abuse is recognized globally, as evidenced by the World Health Organization's (WHO) report on the enormous societal burden of substance abuse. The report emphasizes the significant health and social damage caused by psychoactive drugs and alcohol, with hundreds of thousands of deaths occurring due to such use every year [7]. While drug abuse is strongly linked to low labor productivity, it is crucial to recognize that farmers are human agents who are capable of making ethical and responsible decisions. The philosophical dimension of this study examines the concepts of freedom, responsibility, rational choice, autonomy, vulnerability, and social structures. Human actions are rarely conscious or guided by a single motivation. People usually operate within a specific social context, guided by social norms and values, pursuing personal interests, and conforming to social expectations. Therefore, when examining the impact of substance abuse, it is essential to consider the motivations and opportunities for such behavior, as well as the social structures that encourage or discourage it.

One of the social structures influencing individual behavior is poverty, which not only affects the individual but also the individual's family, friends, and community. Another social structure affecting individual agency is the lack of sufficient healthcare and agricultural extension services, which influences farmers' ability to make informed decisions and engage in purposeful actions. In addition, Nigeria has social norms and behavioral patterns associated with psychoactive substances use [7]. The aforementioned structures and issues are integral to understanding the intricate relationship between individual agency and experience with substances use among farmers. The philosophical component of this study is manifested in the analysis of these social structures and issues. The empirical component is the examination of the influence of substance use on farm labor productivity, crop yields, and food security in the Southeast geopolitical region of Nigeria. The philosophical analysis uncovers the complexity of individual behaviors, the impact of social structures, and the importance of individual responsibility, which all are integral to the research problem.

Southeast Nigeria is a good choice for this study because the region is considered a food basket of the country, with a large amount of arable land and varied crops. The Southeast geopolitical region consists of Abia, Anambra, Ebonyi, Enugu, and Imo states. The region is characterized by its mixed farming systems, high population density, and reliance on small-scale farming under family and hired labor systems. Among the most widely cultivated crops in the Southeast are cassava, yam, maize, rice, cocoyam, vegetables, oil palm, and others. The study of the relationship between drug abuse, human agency, and farm labor productivity in this region can produce valid results with wide implications for the study area.

Problem Statement

Even though Nigeria is heavily dependent on agriculture, the country is experiencing food insecurity, despite government efforts to address the issue. Nigerian farmers are limited by the high cost of agricultural inputs, credit availability, poor infrastructure, ecological problems, land tenure issues, post-harvest losses, and limited market access, among other issues [3]. According to the FAO, cereals in Nigeria are forecasted to reach 28.5 million tonnes in 2024, which is 3 percent below the five-year average, with high input costs and low purchasing power limiting production [1].

In the context of the relationship between agricultural production and food security, the role of labor and its capacity to contribute to production is crucial. Smallholder farmers depend on family members and hired labor throughout the agricultural cycle to carry out various tasks, which requires physical labor and mental capacity. The inadequate availability of such labor may limit plowing, planting, weeding, harvesting, and other agricultural activities. Therefore, drug abuse can become one of the factors affecting agricultural production in the Southeast geopolitical region of Nigeria.

According to the 2018 national survey, illicit drug use is a major problem in Nigeria, with the Southeast geopolitical region being one of the most affected areas in the country [5]. Despite the fact that there are national estimates on the prevalence of illicit drug use in Nigeria, there is a lack of information on how drug abuse affects labor productivity, crop yields, and food security in the Southeast geopolitical region. In particular, the 2018 survey offers limited insight into the situation in the Southeast geopolitical region and does not comment on how the use of illicit drugs by farmers should be interpreted in terms of personal responsibility and structural limitations. One of the major research questions in this context is the degree to which individuals are responsible for their actions when they choose to use illicit substances and affect their capacity to work in the agricultural sector. Substance use has negative social and economic consequences, ranging from reduced productivity to social isolation. At the same time, individual freedom and the ability to make ethical decisions should be taken into consideration. If an individual is aware of the consequences of their actions and choose to use illicit substances anyway, they are fully responsible for their actions. On the other hand, if an individual is unable to make ethical decisions due to limited access to certain resources and social support, the responsibility for their actions lies with society.

This study, therefore, aims to determine whether drug abuse affects farm labor productivity among smallholder farmers in Southeast Nigeria, as well as the implications of such effects for crop production and household food security. The philosophical aspect of this study will be concerned with examining the extent to which human agency affects individual behaviors.

The specific objectives include to:

1. determine the prevalence and patterns of drug abuse among smallholder farmers in Southeast Nigeria;
2. examine the perceived influence of drug abuse on farm labour productivity;
3. determine the perceived effects of drug abuse on crop production and selected agricultural activities;
4. assess the perceived influence of farm labour productivity on household food security;
5. dentify human agency available in farmers decision on drug abuse and farm labour;
6. examine the role of human agency in farmers' decisions concerning drug use and agricultural labour;
7. identify socioeconomic, institutional and structural factors associated with drug abuse among smallholder farmers; and
8. develop philosophical and policy arguments concerning responsibility, autonomy, agency and structural constraints in addressing substance abuse and agricultural productivity.

This study is justified both theoretically, empirically, to policy, and in practice.

This study contributes to the theoretical basis because it connects philosophy, agricultural economics, sociology, and behavioral science to discover how farmers' agency affects their productivity. It is done by linking the perspective of drug abuse and farm labor productivity (Bandura, 2006). Thus, addressing this issue would also contribute to empirical research since the connection between drug abuse and labor productivity in small-scale farming has not received much attention. Despite the literature exploring farm labor productivity from the perspectives of land, capital, and credit, little is known about factors associated with labor such as drug abuse. In addition, smallholder farmers are key players in global food security; therefore, this study can contribute to policy by providing an alternative option to punitive measures. Finally, this study can also provide insights into practice, and community leaders and administrators can use the results to develop integrated programs for farmers in the local community.

Methodology

The study was conducted in Southeast Nigeria, which consists of Abia, Anambra, Ebonyi, Enugu and Imo States, an agrarian region predominantly inhabited by the Igbo ethnic nationality practicing smallholder cultivation of staple crops like cassava, yam, cocoyam, maize and vegetables on farm holdings rarely exceeding two hectares. Recently, there had been a rising incidence of drug abuse among rural young adults engaged in farming, making it a suitable area for examining the nexus between impaired human agency and farm labour productivity (Nwachukwu et al., 2026). The study population consisted of smallholder crop farmers, especially young-adult farmers in the age bracket of 18 and 40 years and resident in rural farming communities in the five states of Southeast Nigeria. It also consisted of household heads of farming families and agricultural extension officers as well as officials of relevant drug-control and community health agencies whose work brought them into contact with the population's farming and substance-use patterns. A sample size of four hundred and fifty (450) respondents was selected from smallholder farming households across three purposively selected states, Abia, Enugu and Imo, at one hundred and fifty (150) respondents per state using the Taro Yamane formula to determine adequacy at a 95% confidence level. This sample size was consistent with comparable empirical studies on drug abuse among young-adult farmers in the zone (Nwachukwu et al., 2026) and was considered sufficient to support both descriptive and inferential analysis. A multi-stage sampling technique was adopted. Three states were purposively selected from the five states of Southeast Nigeria based on documented prevalence of drug abuse among farming populations. Two agricultural zones or Local Government Areas were randomly selected from each state. Two to three farming communities were randomly selected from each Local Government Area. Finally, simple random sampling was used to select individual smallholder farming respondents from the household lists of the selected communities in proportion to the total sample size required per state. The study used both primary and secondary data, where primary data were collected through structured, pre-tested questionnaires administered to smallholder farmers to capture information on drug-use patterns, labour input, farm size, crop output and perceived effects on productivity.

Key Informant Interviews (KIIs) were conducted with agricultural extension officers and community leaders, while Focus Group Discussions (FGDs) were held with farmer groups to obtain qualitative insight into how drug abuse was perceived to affect will, motivation and capacity for farm work. Secondary data were sourced from journal articles, government and agency reports, and records of relevant agricultural and drug-control institutions. Philosophical and statistical methods appropriate to the interdisciplinary character of the study were used to analyze the data, where the philosophical component, namely the conceptual analysis of human agency and its relation to labour, was undertaken using the analytic and critical methods of philosophical inquiry, involving conceptual clarification and logical argumentation. Quantitative data obtained from the questionnaire were analyzed using descriptive statistics, including frequency counts, percentages and means, while qualitative data from interviews and focus group discussions were analyzed using thematic content analysis to identify recurring patterns relating to agency, motivation and farm work.

Results and Discussion

Prevalence and Patterns of Psychoactive Substance Use among Smallholder Farmers in Southeast Nigeria

Table 1 displays the occurrence and trends of using psychoactive substances within the 450 small-scale farmers surveyed in Southeast Nigeria. The results reveal that 327 participants (72.7%) admitted to using at least one psychoactive substance, indicating a relatively elevated prevalence of such substance use among the sample group. Since respondents could provide multiple answers, the frequencies for each substance surpass the total number of participants and should not be seen as exclusive categories. The significant overall prevalence noted in this research implies that psychoactive substance use might be a noteworthy behavioral and public health concern among smallholder farmers. This discovery is especially remarkable because farming involves strenuous physical work, long hours, financial instability, seasonal earnings, and exposure to work-related stress. Similar studies in rural Nigerian areas have highlighted the consumption of alcohol, marijuana, and prescription drugs among farmers, recognizing the occurrence of using multiple substances concurrently as a common pattern. For instance, [8] mentioned that alcohol and marijuana were frequently used in rural Nigerian regions, with some individuals mixing different substances. Regarding specific substances, kola nut had the highest reported prevalence (173; 38.4%), followed by locally made gin/ogogoro (146; 32.4%), energy drinks or stimulant beverages (129; 28.7%), alcohol (261; 58.0%), cigarettes/tobacco (118; 26.2%), and cannabis (94; 20.9%). The relatively high prevalence of alcohol coincides with the data reported among the general Nigerian populace. [9] found that alcohol was the most common psychoactive substance used in Nigeria with approximately 58% acknowledging lifetime usage. Similarly, [10] identified alcohol, tobacco, cannabis and stimulants as some of the most commonly used psychoactive substances in Nigeria. The relatively high prevalence of locally made gin in this survey (32.4%) is also informative with respect to the outcomes of the study in the rural and agricultural setting. Local alcohol drinks are readily available in many rural communities and may be part of the social and occupational activities.

Thus, the prevalence of use in this study could reflect not only individual use but also the societal availability and social acceptability of certain substances. It is however important to note that these findings refer to reported use and should not be interpreted to necessarily mean substance abuse or dependence since this is a major concern among many Nigerian studies [10] The use of marijuana is significant at 20.9%. While historically, the use of cannabis has been lower compared to alcohol use, studies in rural communities have shown that the use of marijuana is very prevalent among farming communities. [8] discussed the consumption of marijuana among Rural Farmers and indicated that the use could be in combination with alcohol and prescription drugs. At a country level, the Nigerian Drug Use Survey documented very high prevalence of cannabis with estimation of 10.6 million Nigerians that used cannabis in the past year in 2017. Thus, the disproportionately high prevalence reported in this study from farmers is an indicator for targeted substance abuse prevention programs in the agricultural communities. The finding that 71 participants (15.8%) used tramadol or codeine based painkillers is significant. The abuse of prescription and pharmaceutical drugs is a major concern in Nigeria. In the Nigerian literature, the prescription drugs, opioids and pharmaceuticals have been identified as substances of abuse. The study of Nigerian farmers identified tramadol as one of the commonly used substance among farmers due to its cost and availability. Thus, the finding of pharmaceutical drugs in the current study indicates that apart from the control of alcohol and tobacco, other pharmaceutical substances should be considered in substance abuse prevention. The data further indicates that 38 individuals (8.4%) reported use of sedatives or sleeping pills while 21 (4.7%) admitted using other psychoactive substances. While the prevalence is lower than alcohol, kola nut, local gin, stimulants and cannabis, the use of sedatives and pharmaceutical drugs abuse can have significant health consequences if not controlled. National surveys in Nigeria have highlighted the use of sedatives and other prescription drugs with variations in the prevalence as a result of the population and definition of use[8].

Usage Pattern

Among the 327 individuals who admitted to using psychoactive substances, the majority (128; 39.1%) reported using them daily/almost daily, 103 (31.5%) – weekly, and 96 (29.4%) – occasionally. Thus, approximately 70% of the respondents who use psychoactive substances reported using them once a week or more often. The frequency of use is an essential characteristic of use, which implies how integrated substance use is in the users' daily routine, although it cannot confirm dependence or disorder. The relatively high percentage of daily/almost-daily users is a matter of concern to public health officials. Substance use may be motivated by the need to increase productivity by staying alert and focused, reduce fatigue, facilitate socialization, and cope with the adverse working conditions. The findings align with previous studies among Nigerian farmers, which indicate that occupational and livelihood stressors contribute to the use of stimulants. For instance, a study conducted among female farmers in Adamawa State shows that a considerable proportion of respondents used stimulant substances to cope with the demanding nature of farm work.

The study identified cannabis and tramadol as the most commonly used substances. Additionally, a common trend observed among the respondents was the use of multiple substances. Specifically, among the 327 participants who use psychoactive substances, 118 (36.1%) used one substance, 91 (27.8%) – two substances, 67 (20.5%) – three, and 51 (15.6%) – four or more substances. Thus, 64.0% of the participants stated that they used at least two substances. The finding is crucial, as it highlights that farmers' substance use is poly-drug use. The tendency for Nigerian farmers to use multiple substances has been identified in other studies as well. [8] identified the co-use of drugs among rural Nigerian residents. Additionally, other researchers in Nigeria have found the combined use of alcohol, cannabis, and tobacco to be common. In conclusion, the findings concerning the patterns of substance use among the small-scale farmers in the study are consistent with previous studies in Nigeria, suggesting that the phenomenon is multifaceted and complex. There is a prevalence of alcohol and locally produced stimulant and alcoholic substances, including the frequent use of cannabis and pharmaceutical drugs. Moreover, the data illustrate the frequent use of substances and the use of multiple substances. Hence, it may be concluded that the prevention and intervention strategies should focus not only on the illicit drugs but also on alcohol, tobacco, locally produced and available substances, and stimulants, including the non-prescribed use of pharmaceutical drugs. It is essential to design the strategies within the context of the environmental and socio-economic factors that influence the high prevalence of substance use among farmers.

Table 1: Prevalence and Patterns of Psychoactive Substance Use among Smallholder Farmers in Southeast Nigeria (N = 450)

Psychoactive substance / pattern of use	Frequency	Percentage
Any psychoactive substance use	**327**	**72.7**
Specific substances used		
Alcohol	261	58.0
Cigarettes/tobacco	118	26.2
Cannabis (Indian hemp)	94	20.9
Tramadol/codeine-containing analgesics	71	15.8
Local gin (ogogoro)	146	32.4
Kola nut	173	38.4
Energy drinks/stimulant beverages	129	28.7
Sedatives/sleeping pills	38	8.4
Other psychoactive substances	21	4.7
Pattern of use among users (n = 327)		
Occasional use	96	29.4
Weekly use	103	31.5
Daily/almost daily use	128	39.1
Number of substances used among users (n = 327)		
One substance	118	36.1
Two substances	91	27.8
Three substances	67	20.5
Four or more substances	51	15.6

Perceived Influence of Drug Abuse on Farm Labour Productivity among Smallholder Farmers

The results stated in Table 2 below reveal that the respondents perceive drug abuse as having a negative effect on farm labour productivity. This is evident from the grand mean of 3.06 that is higher than the criterion mean of 2.5. In other words, the overall mean shows that each of the ten statements relates to the adverse influence of substance-abuse. The effect takes different forms, including reduced strength, fatigue, absenteeism, reduced concentration and decision-making capacity, delays and additional costs and lower crop yields. The finding that drug abuse causes fatigue and reduced efficiency of farmers during farm tasks registered the highest mean of 3.27 (SD = 0.85). Literature reveals that substance-abuse influences performance in the workplace. For example, [11] conducted a systematic review of workplace substance-use studies and concluded that alcohol and other drugs contribute to poor performance, including reduced productivity, increased absenteeism and turnover, and poor safety. Fatigue and lack of energy prevent individuals from engaging in strenuous tasks such as preparing the soil for planting, planting, weeding, harvesting, and other farm activities.

The result that drug abuse reduces the strength of farmers and their ability to effectively perform farm tasks also registered a very high mean of 3.22 (SD = 0.91). Weeding, planting, and harvesting are energy-intensive activities that require high levels of concentration. Consequently, substance-abuse leads to poor performance if the tasks demand energy and attention and manual skills. Additionally, the Nigerian National Drug Use Survey provides context for this result by establishing the prevalence of substance-abuse in the country. According to the report, 14.4% of the country's 15 – 64 years population of 100.6 million people used psychoactive substances, while 14.3 million people used cannabis and prescription opioids [5]. In other words, about 1 out of every 7 Nigerian adults abuses psychoactive substances legally and illegally. The finding that substance-abuse decreases the amount of crops produced by smallholder farmers also registered very high agreement from the respondents, with a mean of 3.19 (SD = 0.79). The result is significant to the current study since it reveals the influence of substance-abuse on the quantity of agricultural produce. Even though the Nigerian National Drug Use Survey did not specifically determine the effect of substance-abuse on farm yield, the finding is explicable from the fact that the questionnaire had sections addressing the social-economic impact of substance-abuse. The sections included reduced work performance and productivity and poor work performance due to substance-abuse [5].

The final set of results indicates that the respondents agree that drug abuse reduces farmers' concentration and decision-making abilities, with a mean score of 3.02 (SD = 0.88). Farming requires farmers to make many decisions throughout the seasons to ensure that their farms are productive. For example, they must make decisions about when to start planting, when to weed, when to apply fertilizers and pesticides, when to hire farm labour, and when to sell their crops. Therefore, reduced concentration and poor decision-making abilities due to substance-abuse reduce farm productivity. Additionally, this result is supported by the fact that studies have established that substance-abuse causes poor performance at work. For instance, Thørrisen et al. (2019) conducted a systematic review of 26 studies on the association between alcohol consumption and work performance that involved more than 92,000 workers from 15 countries. The authors concluded that there is a dose-response relationship between increased alcohol consumption and reduced work performance. Specifically, they found that 77% of the associations examined were positive, implying that higher alcohol consumption was associated with poorer performance. However, the authors highlight that most of the studies reviewed had methodological shortcomings, and therefore the results should be interpreted with caution. Lastly, the result that drug abuse causes farm workers to miss work during crucial times has a mean score of 2.90 (SD = 0.94), suggesting that the majority of the respondents agree with the statement.

As expected, the finding aligns with the body of literature on the topic to reveal that substance-abuse causes poor performance at work, including absenteeism. For example, in their systematic review of workplace substance-use studies, [11] identified absenteeism and poor productivity as some of the occupational consequences of employee substance-abuse.

However, more recent studies have attempted to determine the extent of the association between substance-abuse and absenteeism. The findings have been inconsistent due to the multitude of variables that affect the relationship, including the type of substance abused, the socio-economic characteristics of the workers, and study design, among others. Nevertheless, the literature provides sufficient evidence of the association between alcohol abuse, illicit drug use, and legal substance abuse and increased absenteeism [12]. The respondents further agreed that drug abuse hinders cooperative work among farm labourers with a mean of 3.02 (SD = 0.91). Such an effect is explicable in the context of smallholder farming, where farming activities often depend on the cooperation and coordination of household members, hired labour, and community workers. Inhibited behaviour due to substance-abuse can affect communication and trust among workers. The Nigerian drug-use survey further reveals that the community is concerned about the loss of productivity and workforce due to drug abuse [5]. Overall, the grand mean of 3.06 suggests that the 450 respondents perceived drug abuse as having a considerable effect on farm labour productivity. The result is consistent with international studies on the subject to reveal that substance-abuse causes absenteeism, poor performance, and reduced productivity at work [11,13].

The finding is further compatible with the Nigerian context, as the national drug-use survey established the prevalence of psychoactive substance use and identified the effects on the community, including reduced productivity as part of the social and economic consequences of drug abuse [5]. However, it is important to note that the finding only reveals the perceptions of influence and not proof of causation.

This is because the data used to generate the results are based on respondents' perceptions and a cross-sectional study design. Consequently, the results do not prove that drug abuse causes reduced farm labour productivity. There is a possibility that other variables affect farm labour productivity, including age, health status, farm size, availability of hired labour, income level, mechanization, weather conditions, access to credit, and extension services, among others. This caveat is evident in the findings of [13], who highlight methodological limitations in most of the work-performance literature and call for more research.

The respondents agreed that drug abuse causes delays in land preparation, planting, weeding, and harvesting, although this item registered the lowest mean of 2.84 (SD = 0.95). The mean is higher than the criterion mean of 2.5 that indicates moderate agreement. In smallholder farming, time is a critical factor, as most activities are performed seasonally, and as such, delays in one activity can affect others. For example, delays in land preparation or planting can reduce the potential yield due to a shorter growing period, while delays in weeding or harvesting can expose the crops to additional risks. The current result suggests that the respondents are aware that substance-abuse presents a risk to proper scheduling of farm activities. The finding that drug abuse increases the costs of farm labour due to the need for additional workers to replace those affected registered a mean of 2.97 (SD = 0.94). The implication is that substance-abuse causes indirect costs to farmers due to reduced availability of family labour or poor performance of waged workers. If farm activities are time-sensitive, farmers may incur additional costs by hiring extra workers to complete the tasks. This can adversely affect the profitability of smallholder farming, especially for those without sufficient financial resources to meet the additional expenses. The finding is consistent with the literature on the subject, as studies have shown that substance use affects work performance, which translates to financial costs to employers [11].

Table 2: Perceived Influence of Drug Abuse on Farm Labour Productivity among Smallholder Farmers (N = 450)

S/N	Influence Statements	Mean	SD	Decision
1	Drug abuse reduces farmers' physical strength and ability to perform farm work effectively.	3.22	0.91	Agree
2	Drug abuse reduces the number of hours farmers can devote to farm activities.	3.07	0.92	Agree
3	Drug abuse causes fatigue and reduces farmers' efficiency during farm operations.	3.27	0.85	Agree
4	Drug abuse contributes to absenteeism from farm work during critical farming periods.	2.90	0.94	Agree
5	Drug abuse reduces farmers' concentration and ability to make sound decisions about farm activities.	3.02	0.88	Agree
6	Drug abuse increases delays in land preparation, planting, weeding and harvesting activities.	2.84	0.95	Agree
7	Drug abuse increases the cost of farm labour because farmers may need to hire additional workers.	2.97	0.94	Agree
8	Drug abuse reduces the quantity of crops produced by smallholder farmers.	3.19	0.79	Agree
9	Drug abuse negatively affects farmers' ability to work cooperatively with other farm labourers.	3.02	0.91	Agree
10	Drug abuse ultimately reduces farm labour productivity and threatens household food production.	3.12	0.91	Agree

Perceived Effects of Drug Abuse on Crop Production and Selected Agricultural Activities

The results presented in Table 3 demonstrate that the respondents generally agreed that drug abuse has adverse effects on crop production and selected agricultural activities, with the mean score being 2.98 on a four-point Likert scale. This suggests that the respondents perceive drug abuse as a limiting factor to the farmers' effectiveness and productivity at various stages of production. The result that drug abuse decreases concentration during farm activities (M=3.03) corresponds with the [14] claim that drug abuse causes loss of productivity at work. Continuing, [14] asserts that psychoactive drug use leads to reduced productivity due to impairments in occupational performance and other spheres of functioning.

This supports the respondents' perception that substance abuse decreases the concentration level of farmers, which ultimately affects their performance.

Furthermore, the result that drug abuse decreases farmers' productivity and efficiency (M=3.07) concurs with the results of agricultural workers' substance use survey. According to [15] opioids are associated with a series of negative consequences, including absenteeism, work injuries, and restricted work performance, which impact the entire agricultural sector. [16] conducted a scoping review of 42 studies and concluded that agricultural workers experience substance use problems due to the stressor associated with the occupation, as well as economic insecurity, overwork, and isolation.

The review highlights the negative effects of substance use among farmers and farm workers, which supports the perception of the respondents that drug abuse reduces farmers' productivity and efficiency.

The result that drug abuse increases the occurrence of farm accidents and injuries (M=3.10) is significant due to the fact that agricultural occupations are already associated with elevated risks. According to the National Institute for Occupational Safety and Health, agricultural workers experience injuries and fatalities on the job more frequently than other occupational groups. [14] also reports that inefficiency at work and lack of safety awareness are some of the adverse effects of alcohol and drug abuse at the workplace. Consequently, the finding corresponds with the general understanding of substance use and occupational safety. It can be inferred that substance use among farmers increases their risk levels due to the nature of the occupation. In addition, the respondents generally agreed that drug abuse causes delay in planting activities (M=2.94), and weeding activities (M=3.02), as well as problems with harvesting activities (M=2.98). The results imply that the abuse of substances decreases the efficiency of farmers in various stages of crop production. The assertion is coherent with the knowledge that agricultural production is a time-sensitive task. If substance use causes delays in planting, as the respondents suggest, then it is likely that the entire process of production will be impacted accordingly. This corresponds with [15], who report that agricultural workers who experience opioid use disorder face restricted work performance and absenteeism. Therefore, the results can be interpreted to suggest that the use of substances decreases the productivity of farmers, which in turn causes delays in various agricultural activities.

The finding that drug abuse decreases the ability of farmers to adequately manage pests and diseases (M=2.91) and tend to the farm equipment (M=2.89) suggests that substance use can prevent farmers from performing their duties effectively, as they lose concentration. While there is no sufficient information on the direct effect of drug abuse on pest management, it is known that unsafe agricultural practices can pose serious risks to farmers' health. For instance, in Nigeria, it was revealed that farmers in Kogi and Kwara States engage in unsafe agrochemical practices, increasing the possibility of acute occupational exposure to pesticides (Adeola et al., 2020). Such negligence often results in adverse effects on farmers' health, as they do not utilise proper equipment when handling chemicals and adopt inappropriate spraying techniques. Consequently, it is essential to ensure that farmers have adequate knowledge, skills, and attitudes towards agricultural production in order to ensure their safety and wellbeing.

The respondents generally agreed that drug abuse decreases farmers' income from crop production (M=3.04). This finding can be associated with the previously established results that demonstrated the effect of substance use on reducing agricultural workers' productivity and efficiency. According to [17], if left untreated, drug use disorders lead to loss of productivity and create significant economic and social burdens. In the context of crop production, reduced productivity and efficiency of farmers can result in reduced income due to the inability to deliver quality produce. Additionally, reduced worker efficiency translates to the need for extra workers to complete specific tasks, which may incur additional costs. Furthermore, the finding that drug abuse decreases farmers' participation in agricultural activities (M=2.96) corresponds with the reviewed literature, which demonstrates the negative impacts of substance use and the prevalence of this social problem among farmers. According to Watanabe-Galloway et al. (2022), the reviewed studies highlight the occupational, economic, and psychological risks associated with substance use among farmers and farm workers.

In particular, [18] conducted a study among women farmers in Adamawa State and identified that female farmers used various substances such as cannabis and tramadol to cope with the stress of agricultural production. The review also highlighted the social and economic burden associated with substance use among female farmers in Nigeria. The general theme of the reviewed literature is the impact of substance use on the farmers' occupational performance. According to the overall mean score of 2.98, the respondents generally agreed that drug abuse has a significant effect on crop production and selected agricultural activities. The evidence provides a basis for the assertion that the abuse of substances has adverse effects on farmers' performance. However, it is important to note that the researchers only relied on the self-reported data of the respondents, which means that the results reflect people's beliefs and assumptions rather than factual evidence. In other words, the study can help establish the correlation between substance use and reduced crop yields, but it cannot determine whether the former causes the latter.

Table 3: Perceived Effects of Drug Abuse on Crop Production and Selected Agricultural Activities

S/N	Perceived effects of drug abuse	SA (4)	A (3)	D (2)	SD (1)	Mean	SD	Decision
1	Drug abuse reduces farmers' concentration during farm operations.	180	150	75	45	3.03	1.00	Agree
2	Drug abuse reduces the quantity of crops produced by farmers.	165	160	80	45	2.99	1.00	Agree
3	Drug abuse affects farmers' ability to carry out timely planting.	150	170	85	45	2.94	0.98	Agree
4	Drug abuse contributes to delays in weeding and other farm operations.	175	155	75	45	3.02	1.00	Agree
5	Drug abuse reduces farmers' ability to properly manage pests and diseases.	140	175	90	45	2.91	0.97	Agree
6	Drug abuse reduces farmers' productivity and efficiency.	185	150	75	40	3.07	0.98	Agree
7	Drug abuse increases the likelihood of farm accidents and injuries.	195	145	70	40	3.10	0.98	Agree
8	Drug abuse negatively affects harvesting activities.	160	165	80	45	2.98	0.99	Agree
9	Drug abuse reduces farmers' ability to maintain farm equipment properly.	145	160	95	50	2.89	1.01	Agree
10	Drug abuse contributes to post-harvest losses.	135	170	95	50	2.87	1.00	Agree
11	Drug abuse reduces farmers' income from crop production.	175	160	75	40	3.04	0.98	Agree
12	Drug abuse reduces farmers' participation in agricultural activities.	155	165	85	45	2.96	0.99	Agree

Perceived Influence of Farm Labour Productivity on Household Food Security

The finding of Table 4 shows that the respondents considered that farm labour productivity had a positive impact on household food security with a grand mean of 3.09 and an average standard deviation of 0.94. The grand mean is above the benchmark decision of 2.50, which implies that the respondents regarded productive labour as an important contributor to household food availability, access and stability. The finding is in line with the study of [19], who investigated the influence of agricultural labour productivity on food insecurity among maize-farming households in rural Nigeria. The authors highlighted that agriculture in rural Nigeria is a labour-intensive activity and that improving productivity will be key to enable households to move from being food insecure to being food secure. They further concluded that efforts to improve labour productivity should be targeted specifically at the households vulnerable to food insecurity.

This is in line with the present finding that the respondents regarded higher farm labour productivity as enhancing household food security. The highest mean in the present study was recorded for the statement that improved farm labour productivity enhanced the overall household food security (mean = 3.22). This finding is aligned with [20], who explored the relationship between agricultural productivity and experience-based food security among Nigerian households. Using panel data from Nigeria Living Standards Measurement Study–Integrated Surveys on Agriculture, the authors found that the increase in agricultural productivity improved the food-security outcomes. In particular, a 10% increase in agricultural productivity was related to decreased reliance on less-preferred foods, limitations in dietary variety and decreases in meal portion sizes. The finding that timely completion of farm operations improve household food availability (mean = 3.18) can also be explained by the role of labour in agricultural production. Activities such as land preparation, planting, weeding and harvesting are time-sensitive, so that more productive labour allows these activities to be completed efficiently and within the appropriate production periods that in turn boost the crop output. This is especially significant in Nigerian agriculture, where production is still heavily reliant on farm labour. [19] also drew attention to the labour-intensive nature of the rural agriculture and the role of the labour productivity in food-security transitions.

Respondents also agreed that higher labour productivity increases the household's income available for purchasing food (mean = 3.16). Such a finding is supported by the literature linking agricultural productivity to both the household welfare and the food access. The study by Abdullah et al. (2022) revealed that increased agricultural productivity improved the household food security while the Food and Agriculture Organization (FAO) stresses that smallholder farmers play a crucial role in the local food and nutrition security and that improving the productivity of smallholder farming systems is a key pathway to the better food-security outcomes [21]. The respondents' agreement that increased farm labour productivity enables the households to cultivate a larger farm area (mean = 3.07) is also reasonable in view of their understanding of the influence of the labour on the farm activities. In the labour-intensive production systems, increased productivity means that more agricultural activities can be carried out using the available labour and that in turn increases the effective use of the land and other farm resources. Evidence from Nigeria also shows that production efficiency is an important component of the farm-household performance. [22] examined the relationship between the labour allocation and farm production efficiency in a study of 489 farm households in Southwest Nigeria, highlighting the importance of the labour decisions in the performance of the farm households.

The finding that low farm labour productivity contributes to inadequate household food supply (mean = 3.13) is of particular importance. When labour is inefficient it leads to farm activities such as planting and harvesting being delayed, which reduces the production and the amount of food available for consumption. The relationship is in line with the finding by [19] that the labour productivity growth was relevant to transitions in food-security status among the maize-farming households in the rural Nigeria. A similar finding is the one that the farm labour productivity influences the stability of the household food availability throughout the year (mean = 3.12). Such a finding is in line with the evidence that agricultural productivity affects the different dimensions of the household food security. [23] found that agricultural productivity affected the experience-based food-security indicators, including the ability of the households to maintain adequate food variety and meal portions. Their results therefore imply that improved agricultural productivity can reduce the household's exposure to inadequate food access.

The result regarding the reduced dependence on purchased food recorded the lowest mean (2.99), although the respondents still agreed with the statement. Such a finding may be explained by the fact that the food security does not depend on the own-farm production. Even highly productive farming households may purchase food due to dietary diversification, seasonal shortages, market preferences or the need to complement the farm-produced foods. Therefore, the farm labour productivity may improve the household food availability without necessarily eliminating the dependence on the food purchases. The overall finding is in line with the evidence from Southwestern Nigeria. [24] found that the social capital significantly improved both the farm productivity and the food security among the cocoa-based farming households in the Southwestern Nigeria. Their results showed that a unit increase in the social capital increased the farm productivity and the household food security, demonstrating the interconnectedness between the productive agricultural resources and the food-security outcomes. Furthermore, the World Bank acknowledges the increased smallholder agricultural productivity and the rural incomes as important components in the improvement of the food security. Its agricultural development evidence suggests that the interventions that increase the productivity can increase the agricultural production and the incomes and consequently improve the food-security outcomes.

Table 4: Perceived Influence of Farm Labour Productivity on Household Food Security

S/N	Perceived influence of farm labour productivity on household food security	Mean	SD	Decision
1	Increased farm labour productivity improves the quantity of food produced by the household.	3.11	0.95	Agree
2	Higher farm labour productivity enables households to produce enough food for household consumption.	3.11	0.94	Agree
3	Efficient farm labour reduces the risk of household food shortages.	3.08	0.95	Agree
4	Higher labour productivity increases household income available for purchasing food.	3.16	0.92	Agree
5	Productive farm labour enables households to cultivate a larger farm area.	3.07	0.95	Agree
6	Timely completion of farm operations improves household food availability.	3.18	0.91	Agree
7	Higher farm labour productivity improves the ability of households to cope with food-price increases.	3.03	0.94	Agree
8	Increased labour productivity reduces dependence on purchased food.	2.99	0.98	Agree
9	Higher farm labour productivity allows households to invest more in improved farming inputs.	3.04	0.95	Agree
10	Low farm labour productivity contributes to inadequate household food supply.	3.13	0.92	Agree
11	Farm labour productivity influences the stability of household food availability throughout the year.	3.12	0.92	Agree
12	Improved farm labour productivity enhances overall household food security.	3.22	0.88	Agree

Human Agency Available in Farmers' Decisions on Drug Abuse and Farm Labour

Table 5 shows that farmers have considerable control over decisions relating to drug use and farm labour. The largest proportion of respondents (378; 84.0%) indicated that they have control over determining how farm labour is distributed amongst activities. This was followed by farmers' authority to dictate the start and finish times of farm activities (371; 82.4%), and the power to decide who works on the farm (365; 81.1%). With regards to drug abuse, 342 (76.0%) respondents indicated that farmers can decide whether or not to use drugs before commencing farm activities, whilst 328 (72.9%) said that farmers can refuse drugs offered by fellow workers. In addition, 315 (70.0%) respondents said that farmers can decide to stop using drugs if such substance hinders farm activities. Farmers appeared to have far less control over seeking guidance from extension agents (279; 62.0%), and asking for help when drug abuse affects farm activities (286; 63.6%). Thus, although farmers exhibited considerable individual and managerial control, their reliance on institutional and professional support appeared to be limited. In conclusion, the results suggest that farmers exercise considerable control over two areas of farm activities, including personal decisions relating to drug abuse, and managerial decisions relating to the hiring, distribution, and supervision of farm labour. Increasing farmers' access to extension services, therapy and community-based support services can enhance their capacity to make informed decisions that safeguard farm productivity and family life. The fact that farmers have considerable human agency over decisions relating to drug abuse and farm labour is supported by the literature, including [22] description of farm households' inter-related decisions concerning production, consumption and labour allocation, including the distribution of household labour between farm and off-farm activities. The study, which involved 489 rural farm households in Ogun and Oyo States, further found that such decisions were significantly associated with farm production efficiency. These findings correspond with the present results that show that a large proportion of respondents indicated that farmers can decide who works on the farm (81.1%), allocate labour amongst farm activities (84.0%), and dictate when farm operations commence and finish (82.4%).

Table 5: Human Agency Available to Farmers in Decisions on Drug Abuse and Farm Labour (N = 450)

S/N	Indicators of human agency	Yes, N (%)	No, N (%)	Total
1	Farmer decides whether to use drugs before engaging in farm work.	342 (76.0)	108 (24.0)	450 (100)
2	Farmer can refuse drugs offered by friends or fellow farmers.	328 (72.9)	122 (27.1)	450 (100)
3	Farmer can decide to stop using drugs when they affect farm work.	315 (70.0)	135 (30.0)	450 (100)
4	Farmer can seek help when drug abuse begins to affect farm activities.	286 (63.6)	164 (36.4)	450 (100)
5	Farmer decides who is employed to work on the farm.	365 (81.1)	85 (18.9)	450 (100)
6	Farmer decides how available farm labour is allocated among farm activities.	378 (84.0)	72 (16.0)	450 (100)
7	Farmer decides when farm labourers commence and stop farm operations.	371 (82.4)	79 (17.6)	450 (100)
8	Farmer can dismiss or replace a farm worker whose drug use affects farm productivity.	298 (66.2)	152 (33.8)	450 (100)
9	Farmer can seek advice from extension personnel about farm labour management.	279 (62.0)	171 (38.0)	450 (100)
10	Farmer can independently decide how farm income is used for labour and production activities.	335 (74.4)	115 (25.6)	450 (100)

Role of Human Agency in Farmers' Decisions Concerning Drug Use and Agricultural Labour

Table 6 shows that human agency plays an important role in farmers' decisions concerning drug use and agricultural labour. The highest proportion of respondents, 380 (84.4%), indicated that human agency enables farmers to determine how labour is allocated among farm activities. This was followed by 370 respondents (82.2%) who indicated that it enables farmers to select suitable labourers, while 365 respondents (81.1%) reported that it enables farmers to determine the timing of agricultural labour activities.

Regarding drug use, 340 respondents (75.6%) indicated that human agency enables farmers to decide whether to use drugs before farm work, while 325 respondents (72.2%) reported that it enables farmers to resist peer pressure to use drugs. However, only 285 respondents (63.3%) indicated that human agency enables farmers to seek assistance when drug use affects their work. Overall, the analysis demonstrates that human agency plays a significant role in personal decisions concerning drug use and managerial decisions on agricultural labour.

The results particularly illustrate strong farmer autonomy in relation to labour allocation, worker selection and scheduling of farm activities. The finding is consistent with the study of [22], who demonstrated that farm households in Southwest Nigeria make important decisions on the allocation of labor between farm and non-farm activities. After analyzing the data of 489 rural farm households of Ogun and Oyo States, the researcher concluded that the decisions on this matter were associated with farm production efficiency. Therefore, the findings confirm the results of the present study, which demonstrate that farmers' ability to allocate and manage labor is an important aspect of their agency in agricultural production. The findings also suggest that improving farmers' access to extension and other supporting services would increase their capacity to make informed decisions on drug use and its impact on agricultural work. Therefore, human agency should be understood not only as the farmer's ability to make independent choices but also as the capacity to act effectively within the given resources and support capabilities.

Table 6: Role of Human Agency in Farmers' Decisions Concerning Drug Use and Agricultural Labour (N = 450)

S/N	Roles of human agency in RNBCNH decisions	Yes, n	Yes, %	No, n	No, %
1	Enables farmers to decide whether to use drugs before farm work.	340	75.6	110	24.4
2	Enables farmers to resist peer pressure to use drugs.	325	72.2	125	27.8
3	Helps farmers decide to stop drug use when it affects farm activities.	315	70.0	135	30.0
4	Enables farmers to seek assistance when drug use affects their work.	285	63.3	165	36.7
5	Enables farmers to select suitable labourers for farm operations.	370	82.2	80	17.8
6	Enables farmers to determine how labour is allocated among farm activities.	380	84.4	70	15.6
7	Enables farmers to determine the timing of agricultural labour activities.	365	81.1	85	18.9
8	Enables farmers to replace labourers whose drug use affects farm productivity.	300	66.7	150	33.3
9	Enables farmers to decide whether to employ additional labour during peak periods.	355	78.9	95	21.1
10	Enables farmers to make independent decisions concerning farm income and labour expenses.	330	73.3	120	26.7

Socioeconomic, Institutional and Structural Factors Associated with Drug Abuse among Smallholder Farmers

Table 7 indicates that respondents acknowledged several socioeconomic, institutional, and structural factors associated with drug abuse among smallholder farmers. Of these factors, farm-related financial stress was the commonest socio-economic contributors to drug abuse among smallholder farmers in Kenya with 365 respondents (81.1%). This was followed by poverty/poor household economic status (77.8%) and low farm income (76.0%). On the institutional factors, lack of drug-abuse counseling and treatment services was acknowledged by 330 respondents (73.3%), while inadequate government intervention was indicated by 325 respondents (72.2%). In addition, limited access to agricultural extension services was reported by 305 respondents (67.8%).

However, easy availability of drugs in farming communities was the highest frequently reported structural factor contributing to abuse among smallholder farmers (370 respondents; 82.2%). This was followed by strenuous and demanding farm work (78.9%) and peer pressure from fellow farmers (74.4%). It is evident that multiple factors contribute to drug abuse among farmers.

These range from individual-related factors such as financial stress, low educational attainment, and poor mental health to community and environmental factors such as easy availability of drugs and stressful working conditions. The findings are consistent with those of [16] who in their study on epidemiology and risk factors for illicit substance use and abuse among farmers, conducted a scoping review and identified lower socioeconomic status and the presence of psychological problems as risk factors for substance use. Additionally, the researchers indicated that financial pressures, economic hardship, overwork, strain, and social isolation were significant stressors affecting farmers.

The report by [9] on the prevalence and risk factors for substance use and abuse in Nigeria also echoes the current findings. The review identified poverty and poor level of education as major risk factors for substance abuse in Nigeria. According to the report, pharmacies, patent medicine, open drug markets, drug hawkers, friends, and pushers are the most common sources of obtaining substances through prescription or otherwise. In conclusion, the current study indicates that the issue of drug abuse among smallholder farmers calls for a multifaceted approach that goes beyond the individual and targets the environment.

Table 7: Socioeconomic, Institutional and Structural Factors Associated with Drug Abuse among Smallholder Farmers (N = 450)

S/N	Factors associated with drug abuse	Yes, n	Yes, %	No, n	No, %	Total
A. Socioeconomic factors						
1	Low farm income	342	76.0	108	24.0	450
2	Poverty/poor household economic condition	350	77.8	100	22.2	450
3	Farm-related financial stress	365	81.1	85	18.9	450
4	Unemployment or inadequate alternative employment	290	64.4	160	35.6	450
5	High cost of farm inputs	318	70.7	132	29.3	450
6	Low level of education	275	61.1	175	38.9	450
B. Institutional factors						
7	Limited access to agricultural extension services	305	67.8	145	32.2	450
8	Limited access to drug-abuse counselling and treatment services	330	73.3	120	26.7	450
9	Weak farmer-support programmes	315	70.0	135	30.0	450
10	Inadequate government intervention	325	72.2	125	27.8	450
11	Poor access to agricultural credit	310	68.9	140	31.1	450
C. Structural factors						
12	Easy availability/accessibility of drugs in farming communities	370	82.2	80	17.8	450
13	Peer pressure and influence from fellow farmers	335	74.4	115	25.6	450
14	Stressful and physically demanding farm work	355	78.9	95	21.1	450
15	Poor rural health facilities	300	66.7	150	33.3	450
16	Social acceptance of alcohol/drug use in the community	320	71.1	130	28.9	450
17	Rural isolation and limited recreational opportunities	285	63.3	165	36.7	450

Philosophical and Policy Arguments Concerning Responsibility, Autonomy, Agency and Structural Constraints

Table 8 shows respondents' perceptions regarding the need to balance individual responsibility, autonomy and human agency with factors such as structural determinants in addressing substance abuse and agricultural productivity. The highest agreement was recorded for the statement that policies on substance-abuse should balance individual responsibility and provide social and structural support with 410 participants (91.1%) responding Yes. In a similar vein, 405 participants (90.0%) agreed that the government should take action to mitigate the effects of structural determinants such as unemployment, inadequate rural infrastructure and insufficient health services. Furthermore, 400 participants (88.9%) agreed that the government should provide accessible substance-abuse prevention and treatment services in rural areas.

Additionally, the findings indicate overwhelming support for the need to integrate substance-abuse prevention efforts with agricultural extension services (85.6%) and taking into account the effects of poverty and hardship on farmers experiencing substance abuse (84.4%). On the individual level, 81.1% agreed that farmers should be held personally responsible for their actions, whereas 77.8% supported the right of farmers to be in control of their behaviour.

Overall, these results indicate that the respondents do not view substance abuse as a purely individual problem but rather as a phenomenon that involves a complex interplay between individual agency and various socio-economic factors. By extension, this implies that effective policies on substance abuse should combine individual responsibility with measures to prevent abuse and offer treatment, counselling and rehabilitation services. Furthermore, agricultural extension services, poverty alleviation and improvements to rural health and infrastructure should be prioritized.

These findings are consistent with the observations of [16] that farmworkers and farmers face occupational and socio-economic stressors including financial hardship, difficult working conditions, social isolation and other risk factors which may contribute to substance-use problems. In line with these findings, Watanabe-Galloway et al. recommend the implementation of policies that take into account the individual and socio-economic contexts in which farmworkers and farmers operate. The recommendations of Watanabe-Galloway et al. are similar to those of the United Nations Office on Drugs and Crime [25]. The UNODC advocates a public health-oriented approach that focuses on prevention, treatment, rehabilitation and social re-integration as a means of addressing drug-use disorders. This perspective supports the present findings that farmers affected by substance-abuse should have access to treatment and rehabilitation services.

Table 8: Philosophical and Policy Arguments on Substance Abuse and Agricultural Productivity (N = 450)

S/N	Philosophical and policy arguments	Yes, N	Yes, %	No, N	No, %	Total
1	Farmers should be personally responsible for decisions concerning substance use.	365	81.1	85	18.9	450
2	Farmers should have the autonomy to make decisions about their personal behaviour.	350	77.8	100	22.2	450
3	Farmers affected by substance abuse should be encouraged to seek help rather than being stigmatized.	390	86.7	60	13.3	450
4	Government has a responsibility to provide accessible substance-abuse prevention and treatment services in rural areas.	400	88.9	50	11.1	450
5	Agricultural extension services should include information on substance-abuse prevention.	385	85.6	65	14.4	450
6	Farmers should be supported to make informed decisions about substance use and farm labour.	395	87.8	55	12.2	450
7	Poverty and economic hardship should be considered when addressing substance abuse among farmers.	380	84.4	70	15.6	450
8	Government should address structural factors such as unemployment, poor rural infrastructure and limited health services.	405	90.0	45	10.0	450
9	Policies addressing substance abuse should consider the stressful and physically demanding nature of agricultural work.	375	83.3	75	16.7	450
10	Substance-abuse policies should balance individual responsibility with social and structural support.	410	91.1	40	8.9	450
11	Farmers with substance-use problems should be offered rehabilitation opportunities rather than relying mainly on punishment.	370	82.2	80	17.8	450
12	Improving agricultural productivity requires policies that address both individual behaviour and structural constraints.	400	88.9	50	11.1	450

Conclusion

The study established that drug abuse, human agency, and farm labor productivity are key factors that determine agricultural production and household food security among peasant farmers in Southeast Nigeria. It was found that the respondents perceived drug abuse as a major impediment to agricultural production with a grand mean score of 2.98. Drug abuse was reported to lower concentration levels, reduce farm productivity and income, and delay planting, harvesting, and farm equipment maintenance among the peasant farmers in Southeast Nigeria. The study also established that farm labor productivity has a positive relationship with household food security with a grand mean score of 3.09. Farm labor productivity was found to increase food production, raise income, ensure timely farm operations, and improve household food availability. The findings also revealed that farmers have a high degree of human agency in relation to drug use and farm labor productivity.

For example, 84.4% of the respondents agreed that farmers have the ability to decide how labor can be allocated to various farm enterprises while 75.6% of the respondents indicated that farmers have the ability to choose whether to take drugs before engaging in farm activities. However, the human agency of the farmers is compromised by poverty, financial constraints, the high cost of agricultural inputs, lack of extension services, inadequate treatment services, and poor governance among other issues. Thus, while taking up the responsibility to increase agricultural production and household food security, the agency of the farmers must be strengthened through credit facilities, agricultural extension services, anti-substance abuse programs, treatment and rehabilitation centers, rural development programs, and improved accessibility to adequate and affordable healthcare services.

References

1. Food and Agriculture Organization of the United Nations. (2025). *FAO GIEWS country brief on Nigeria*. FAO, Rome
2. Food and Agriculture Organization of the United Nations. (2024). *33.1 million Nigerians projected to be food insecure in 2025*. FAO, Rome
3. Food and Agriculture Organization of the United Nations. (2026). *Nigeria at a glance*. FAO, Rome
4. National Bureau of Statistics. (2024). *National Agricultural Sample Survey 2023: Agricultural household survey*. National Bureau of Statistics, Abuja.
5. United Nations Office on Drugs and Crime. (2018). *Drug use in Nigeria 2018*. United Nations Office on Drugs and Crime. Nigerian National Bureau of Statistics
6. Albert, C. A., et al. (2026). Drug use burden and drug seizures in Nigeria. *Nigerian Medical Journal, 67*(1), 210–226.
7. World Health Organization. (2024). The state of food security and nutrition in the world 2024: Financing to end hunger, food insecurity and malnutrition in all its forms. FAO, Rome
8. Fiki, Charles (2007) "Globalization and Drug and Alcohol Use in Rural Communities in Nigeria: A Case Study," The Journal of Sociology & Social Welfare: Vol. 34: Iss. 2, Article 4. DOI: https://doi.org/10.15453/0191-5096.3248 Available at: https://scholarworks.wmich.edu/jssw/vol34/iss2/4
9. Gureje, O., et al. (2021). The burden of drug abuse in Nigeria: A scoping review of epidemiological studies and drug laws. *Journal of Substance Abuse Treatment, 127*, 108339. https://doi.org/10.1016/j.jsat.2021.108339.
10. Omoluabi, P. F. (1995). A Review of the Incidence of Nonprescription Psychoactive Substance Use/Misuse in Nigeria. The International Journal of the Addictions, 30, 445-458. https://doi.org/10.3109/10826089509048736
11. Morse, A. K., Askovic, M., Sercombe, J., Dean, K., Fisher, A., Marel, C., Chatterton, M. L., Kay-Lambkin, F., Barrett, E., Sunderland, M., Harvey, L., Peach, N., Teesson, M., & Mills, K. L. (2022). A systematic review of the efficacy, effectiveness and cost-effectiveness of workplace-based interventions for the prevention and treatment of problematic substance use. *Frontiers in Public Health, 10*, 1051119. https://doi.org/10.3389/fpubh.2022.1051119
12. DiCenso, G., et al. (2026). Estimating absenteeism associated with alcohol, illicit substance, and tobacco use: A nationally representative study of Australian workers. *International Journal of Drug Policy*. https://doi.org/10.1016/j.drugpo.2026.105419
13. Thørrisen, M. M., Skogen, J. C., & Aas, R. W. (2019). The association between alcohol consumption and impaired work performance (presenteeism): A systematic review. *BMJ Open, 9*(7), e029184. https://doi.org/10.1136/bmjopen-2019-029184
14. World Health Organization. (1993). *Health promotion in the workplace: Alcohol and drug abuse: Report of a WHO expert committee* (WHO Technical Report Series No. 833). World Health Organization.
15. Rudolphi, J. M., et al. (2022). The effects of the opioid crisis on agricultural industries. *International Journal of Environmental Research and Public Health, 19*(9), 5474.
16. Watanabe-Galloway, S., Chasek, C., Yoder, A. M., & Bell, J. E. (2022). Substance use disorders in the farming population: Scoping review. *The Journal of Rural Health, 38*(1), 129–150. https://doi.org/10.1111/jrh.12575
17. World Health Organization. (n.d.). *Drugs (psychoactive)*. **W**orld Health Organization, New York
18. Adebayo, A. A., et al. (2023). *"What a man can do, a woman can do better": Women farmers, livelihood and drug abuse in Adamawa State, northeastern Nigeria*. Journal of Ethnicity in Substance Abuse, 22(1). https://doi.org/10.1080/15332640.2021.1871694 Taylor & Francis Online
19. Adepoju, A. O., & Obialo, A. C. (2022). Agricultural labour productivity growth and food insecurity transitions among maize farming households in rural Nigeria. *Ekonomika Poljoprivrede, 69*(4), 1093–1107. https://doi.org/10.5937/ekoPolj2204093A
20. Abdullahi, A.Y. (2022)Strategic Assessment of Climate Change Impact on Production of Some Selected Crops: Evidence from 2021 Cropping Season in Katsina State, Nigeria. International Journal of Environment and Climate Change DOI:10.9734/ijecc/2022/v12i121494
21. Food and Agriculture Organization of the United Nations. (2013). *Enhancing the role of smallholder farmers in achieving sustainable food and nutrition security*. FAO
22. Shittu, A. M. (2014). Off-farm labour supply and production efficiency of farm household in rural Southwest Nigeria. *Agricultural and Food Economics, 2*, Article 8. https://doi.org/10.1186/s40100-014-0008-z
23. Villacis, A. H., Mayorga, J., & Mishra, A. K. (2022). Experience-based food insecurity and agricultural productivity in Nigeria. *Food Policy, 113*, 102286. https://doi.org/10.1016/j.foodpol.2022.102286
24. Kehinde, A. D., Adeyemo, R., & Ogundeji, A. A. (2021). Does social capital improve farm productivity and food security? Evidence from cocoa-based farming households in Southwestern Nigeria. *Heliyon, 7*(3), e06592. https://doi.org/10.1016/j.heliyon.2021.e06592
25. National Bureau of Statistics, & United Nations Office on Drugs and Crime. (2019). *Drug use in Nigeria 2018*. National Bureau of Statistics.