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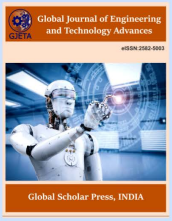

(RESEARCH ARTICLE)

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Skills, improvement needs of rural small scale tomato farmers, production management in Ebonyi State

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Abstract

The low production of tomato fruit vegetable in our diet has created a lot of concerns to the researchers. However, Report of Insufficient Skills of Rural Small Scale tomato farmers in production operation, is another serious observational worries to the researchers. Therefore, the researchers seek to investigate empirically skills improvement Needs of Rural Small Scale tomato farmers in production operation. Survey research design was adopted. The researchers formulated 3 research questions and 3 objective to guide the study. The population for the study was one hundred and six (106) (respondents) rural small scale tomato farmers the registered in the (3) Agriculture zone in Ebonyi State. There was no sampling as the population was manageable for the study. 456 items questionnaire was developed by the researchers from the tomato production operational managements in pre-planting, planting and post-planting-operations was used in collecting data for the study. The data collected was analyzed using need gap analysis. It was found out that Rural Small Scale tomato farmers needed improvement in pre-planting skills operation, planting skills operation and post-planting skills operations. It was recommended that all the skill items in this study should be used by extension Agents to the rural small scale tomato farmers training, workshops and seminar both Government and Non-government Agent to boost production of the fruit vegetables.

Keywords: Skills; Improvement Needs; Otomato Farmers; Rural Small Scale; Production Management

1. Introduction

Tomato is an annual crop that belong to the family (SOLANUM) with the botanical name solanum sycopercium, which requires an option temperature of 20°-24°c for growth, yield and best fruit qualities. However, Eze, (2021) maintains that tomato needs appropriate rainfall for survival and for best production in the farm. In the same vain Mohamed, (2022) stress that tomato production has two stages first in Nursery stage, two in Main field stage with four different varieties such as cherry tomatoes, juicy calad tomatoes, meat paste tomatoes and sweet tomatoes. Suleman (2020) stressed that Nursery stage in tomatoes production are eight steps. Which include

- Selection of tomatoes varieties
- Seed treatment before broadcasting
- Site selection for making nursery beds
- Site cleaning
- Making nursery beds
- Broadicating of seeds on prepared beds
- Covering seeds with soil and mulch materials
- Watering. Ogba, (2021) stress that farmers that have interest in tomatoes production have choice for the types of tomatoes variety that survive in his environment, resist pest, diseases, and produce much fruits within a

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specific period of time. In the view of Amed (2021) tomatoes seed treatment is very important, before sowing and how to treat seeds with chemical, such as Thiram and Trisodium phosphate as it prevent disease and pest into the crop through soil. He stress that Thiram protect tomatoes from fungi and other soil born disease. While, Trisodium phosphate protect tomato seed from mosaic virus. Ogba and Ndem (2018) stressed that site is to be selected in making bed for tomato nursery not in rock, stones, trees root, and site exposed to sun-shine as it will hinder tomato survival, while cool with shades from trees, free pests, goat, rats among others is best for making nursery beds. IFAD (2020) maintains that cleaning site from grasses, dirt and other unwanted materials before making and planting prevent pests, diseases attack and makes, work unattractive to work environment.

Ugwoke (2018) option that tilling the soil before broadcasting seeds, help to form beds of different shapes, support seeds root to get established, easily for nutrients absorptions since, beds are used to raise crops that cannot be sown individually within short time as it take time to complete planting operation. Odo (2021) stress that broadcasting tomato seeds, should scattered in order to prevent damages during transplanting. He stress that seeds broadcasted on Nursery bed should be covered up with soil to prevent ants and birds from picking out seeds, mulching martial should be applied to reduce sun intensities on crops and encourage germination FAO (2020) food and Agricultural organization stress that tomatoes plant depend on water for survival, through sprinkling at early stage of nursery. But in the main field if tomatoes water is poured by splashing to dissolve nutrients in the soil for crop absorption.

Abubakar (2021) see soil colour as indication on the characteristics that support Tomato crop survival in organic and inorganic. He stress that soil testing help to find out the minerals and nutrients which are scarce in the soil before sowing tomato seed crops. In the same Vein Amed (2018) maintains that tomatoe(s) Bed preparation requires mapping out as guide while tilling to creat furrow spaced, bed heights, bed lengths, and bed with wide will be in uniform. He stress that hired workers can be allowed to make straight beds, since, mapping out help in accurate spaces, of tomato crops. In the same vein, Usuman (2019) maintains that transplanting of tomato to mainfield is early in the morning at coolness of the day till 5.30pm respectively. He stress that garden fork or trowel should be always used to plant root crops to avoid destruction.

Azubuike (2020) stress that post planting operation in tomatoes productions requires good management and carefulness in selecting fertilizer and its application in tomatoes. He stressed that eartening up of the tomatoes beds after fertilizer application, is two week after sprouting out or transplanting and weeds should be cleared. Odo (2021) see both top dressing and broadcasting as appropriate but not to be done during hot or sunny hours to avoid damages to the crop. He option that remolding (Earthening adding of more soil to the beds prevent crop root from coming out on surface of the beds to increase bed size, height, add nutrient to the soil as good management. Ogba (2022) maintains that tomatoes stacking is very important, when to stack tomatoes plant, to stand upright and prevent stem, branches breakages, during fruiting. He stressed that normal period is about 5-10cm heights as they continue to grew and receive supports from the stacked stand.

Lawal (2021) described tomato crop protection as safeguarding crops from various attack, which include weeds, pest, diseases among others. He maintains that when weed is growing with tomatoes plants chances of getting diseases, through pest, residing within the weeds. He option that chemical control of weed in tomatoes using herbicides selected and mixing in water for spraying is appropriate. Ezike (2021) maintains that cultural method of weed control is most common and less capital involved as hoe, cutlass, and hand picking is used. He stress that use of fire to control grasses are not advisable, and biological method like using Animals to eat up the weed will surely eat both crops and the weed not advisable. In another, development Njoku (2022) stress that pest control, prevent causing dangerous distruction of Tomato crops, pest like goat, rat, man (thief) can be controlled by fencing but fleabites, fruits and aphids which attack tomatoes flowers can be controlled by spraying chemical (pesticides) or hand picking pest, uprooting and burning of infected once. He stress that crop protection is a good management practices in tomato production.

Ogba (2021) stress that deviation from normal state of health can cause a lot lost to tomatoes crops production. He stress that diseases of tomatoes are many and requires control and prevention in tomatoes. Like anthracnose fruit roots, early blight and sartorial leaf spots, are fungi diseases and are transmitted to tomatoes crops through air borne, he maintains that. Its control is through spraying the farm with fungicides, destroying seriously affected tomato plant, sanitation help in keeping the farm free from pest and disease in the same vein, Igboke, (2022) stress that soil borne disease affect tomatoes production, and need to fumigate the soil before transplanting withfuradium to prevent spreading. In another development Ogba (2018) stressed the importance of harvesting tomatoes fruits early. When the fruit have matured enough with yellowish colour in appearance as it help to sustain the tomatoes fruit strongness, prevent decay; as pest feed on ripped tomatoes fruit in the farm. He stress that half ripped harvested tomatoes fruit can be stored for a longer time, without decay and prevent diseases and pest transmission from farm to store. Ikwe (2022) option that time of harvesting tomatoes fruit early, not using knife or any sharp objects as this may cause injuries to

both tomatoes plants and to fruits. Harvesting tomatoes should not be by uprooting the tomato plant as this will lead to end of productivity (death) of the plant. He stress that harvesting by hand plucking out the fruits carefully and surely reduce fruit breakage in storage, tomato fruits should not be eaten when harvesting to determine quantity. Per, time. Asogwa (2021) stress that tomatoes preservation is very important to ensure its availability constant in the market. He stress that tomato fruits well preserved can be taken to areas of its scarcity thereby making high profit and available all the time.

Ogba (2021) maintains that tomato fruits can be preserved or store using many ways such as refrigeration, at controlled temperature, have ability to retain its strong nature without decaying. He stress that the doors of freezers prevented dirt disease from entering into freezer that attack tomatoes fruits. He option that canning tomato fruits can be after grinding them and mixing some preservative before following into cans or bottles and can last for any period of time in the same vein, Okonkwo (2020) see sun drying of tomato fruits by exposing the fruit to the sun which help drying up the water in the fruits: which makes pest and diseases attacked difficult he describe sun drying as very important. Since no expenses are incurred in the process of preserving tomato fruit. The researchers see skills as professional tacties initiative that guides an individual in performing works of life: In the view of Okories, (2018) skill is a documented system of doing something perfectly in working, of life or job which requires training arising from standard performance. Skills in the contest of this study is that which guide tomato farmers in the rural areas for production and management. However, improvement is how to progress, attain to higher level, improvement in the view of Nweke (2021) improvement is the change needed to attain to standard expected of the individual in performance of his work-professionally. Improvement in the contest of this study, is the normal skills addition in order to enable rural small tomatoes farmer, production be in abundant and remove scarcity of the fruit. However, need implies what somebody requires to attain a great high. It may be financially, knowledge, among others. Need in the contest of this study is the initiative expected of rural tomatoes farmer for their best production output for small of scale farmers. Ogba (2o22), small scale farmers are the farmers, which their main component as mother, father, brothers sisters, uncle, nephew among others relatives that are living within. The rural environment cultivating different crops and rearing animals for their consumption and sales to solve their immediate problems. However, management is the coordinating activities expected of the farmers in their farm for the production purposes. Management in the contest of this study connotes the principles of production factors, which rural small scale tomatoes farmers needed to improve on, as the standard needed they are now, rather expecting to choose for better performance in tomatoes production, increase profit, make available adequate quantity for supply to the people that need it. Management according to United Nation Educational and Scientific Organization (UNESCO) in Okeke (2021) maintains that it is social process that integrated achievement of goods. In this study managing deals with best skills human being (rural farmers) can use to achieve highest production rate in tomato in planning, organizing, material resources, directing workers, controlling them. However, many researchers have done research on tomatoes production but research have not been conducted on skills improvement need of tomato farming as the best management and production practices in Ebonyi State. Therefore, the researchers want to establish empirically the skills improvement needs of small scale tomato farmers in Ebonyi State. This is to boost the tomato production for supply to the thousands of people that are in need of it. Tomatoes as an annual fruits is one of the, major sources of vitamins and other nutrients required in our diets.

1.1. Purpose of the Study

The main purpose of the study is to determine the skills improvement needs of rural small scale tomato farmers in farming operations for production. Specifically the study sough to:

- Identify the skills improvement needs of rural small scale tomato farmer in pre-planting operations.
- Ascertain the skills improvement needs of rural small scale tomato farmers in planting operation.
- Determine the skills improvement needs of rural small scale tomato farmers in post planting operation.

2. Methodology

2.1. Research design

The study made use of survey research, design survey design according to Colorado (2018) is a type of research design in which the researcher makes a list of questionnaire to extract specific data from a particular group of people. The study adopted the design because questionnaire was used in collecting data from the rural small scale tomato farmers on skill improvement need on pre-planting, planting and post-planting activities for production and management.

2.2. Area of the Study

The study was carried out in Ebonyi State. The state is bounded at Enugu State in the West, Benue in the North Cross River in the East and Abia State in the South. The state has three(3) Agricultural zone Ebonyi North, Ebonyi Central and Ebonyi South Agriculture zone.

2.3. Population of the Study

The population of the study was 106 rural small scale tomato farmers (Registered) in Ebonyi North Agricultural zone in the State.

2.4. Sample and Sampling Technique

There was no sampling for the study the entire population was used in the study since it is a manageable size of population.

2.5. Instrument for Data Collection

The instrument for data collection was 50 items statement on skills improvement needs of rural small scale tomato farmers questionnaires developed from the literatures reviewed, called (SINRSSTFQ) the questionnaire had two coloum as needed and performance, the needed category had 4 response option of Highly Needed (HN) moderately Needed (MN) Slightly Needed (SN) not Needed (NN) Values of 4,3,2, add I respectively.

The performance category had 4 response option of Highly performance (HP) Average performance (AP) Low Performance (LP) and No Performance (NP) with rating response of 4,3,2, and 1 respectively.

2.6. Validation of the Instrument

The instrument was face validated by three (3) experts one in measurement and Evaluation in Science Education two in Technology and Vocational Educational department (Agric Education option) in the same faculty of Education of Ebonyi State University Abakaliki. The experts were asked to look at the adequacy of the items, relevant, in line with the research question to correct the structured items that are not appropriate statement to elicit good information. The corrections of the validates was used to prepare the final questionnaire items for the study.

2.7. Reliability of the Instrument

The reliability of the instrument was determined using crown back alpha (a) method and a reliability coefficient which yielded 0.86. The high coefficients indicate that the instrument is very reliable.

2.8. Method of Data Collection

The researchers administered the instruments with the help of two research assistance trained for one day. One hundred and 6 copies of the questionnaire distributed and 100 copies were returned. The retrieval rate of 95%.

2.9. Method of Data Analysis

The skills improvement Needs of rural Small scale tomato farmers in Ebonyi North Agricultural Zone were computed using Need Gap Analysis. The need Gap Analysis were computed as follows:

$\bar{x}$ n = weighted mean of Needed category

$\bar{x}$ p = weighted mean of performance catogory

- Where the need Gap value is positive (xv) it means that improvement is needed because the level at which the rural small scale tomato farmers could perform the pre-planting operation items is lower that what is needed.
- Where the nee Gap, value if Negative (-ve) it implies that improvement is no Needed because the level at which the rural small tomato farmers could perform the planting operation items is higher than what is needed.
- Where the value of need gap is zero (o) it means that improvement is not needed because the level at which the rural small scale tomato farmers could perform the post-planting operation items, is equal to the level that is needed.

- **Research Questions 1:** What are the skills improvement need of rural small scale tomato farmers in pre-planting operation.

The data for answering research question I are presented in table 1.

Table 1 Need gap analysis of mean ratings of the responses of rural small scale tomato famers in pre-planting operations in poductions management. Key In = Improvement need (Nursery Raising)

S/N	Tables Statement Pre-Planting operational skills	Mean of needed ($\bar{X}$ n)	Mean of performance ($\bar{X}$ P)	Needed Gap value ($\bar{X}$ n-p)	Remark
1	Selection of different tomatoes varieties to be planted	3.22	1.16	2.06	IN
2	Cherry tomatoes	3.24	1.14	2.14	IN
3	Juicy salad tomatoes	3.27	1.21	1.96	IN
4	Meaty paste tomatoes	2.59	1.12	1.46	IN
5	Sweet tomatoes	2.51	1.11	1.41	IN
6	Nursery site temperature 20-24^{oc}	3.25	1.14	2.11	IN
7	Appropriate rainfall for survival (20-24)	2.68	1.45	1.23	IN
8	Tomatoes seed are broad casted in nursery bed.	3.41	1.32	2.09	IN
9	Site selection for Nursery bed	3.58	1.32	2.16	IN
10	Clearing the site	2.58	1.42	1.17	IN
11	Cultivating beds or seed	3.32	1.21	2.11	IN
12	Covering seed with soil and match mattering	2.59	1.61	0.98	IN
13	Watering these bed with watering can.	3.43	1.33	1.38	IN
14	Watering seed bed early in the morning and late in the evening.	2.52	1.13	2.08	IN
15	Soil testing to cheek physical properties (soil testing)	3.01	1.52	2.49	IN
16	Soil colour (black has organic matter for crop	2.55	1.33	1.22	IN
17	Surviving testing soil to cheek available nutrients and to replish.	3.30	1.62	1.68	IN

Key = IN = Improvement Need. INN = Improvement Not Needed.

- **Research Question 2:** What are the skills improvement, Needs of Rural small scale tomato farmers in planting operations

Table 2 Need Gap analysis of Mean rating response of Rural small scale tomato farmers in planting operation**.**

S/N	Tables Statement (Planting operational skill Site selection, clearing, testing socio, treatment, transplanting	Mean field operation	Mean Needed ($\bar{x}$ n)	Mean Need Value Gap ($\bar{x}$ p)	Remark
1	Site selection of land preparation for tomato transplanting	3.21	1.51	1.9	IN
2	Site clearing, stumping and removal	3.31	1.32	1.99	IN
3	Soil tillage for furrow spaces	3.22	1.25	1.97	IN
4	Soil tillage for bed height, length, with and uniform	3.51	2.14	1.37	IN
5	Soil cultivation for Ridges, Beds for Transplanting	2.58	1.16	1.42	IN
6	Treatment soil with furadium to reduce wilting	3.35	2.21	1.14	IN
7	Treatment of soil against inorganic virus (Trisodium chemical)	3.21	2.20	1.01	IN
8	Treatment of oil against soil borne diseases fungi Urani chemical.	3.41	1.26	2.15	IN
9	Transplanting with Trowel or fork to avoid damage of root of tomato plants from Nursery Bed.	3.52	1.28	2.24	IN
10	Top dressing in fertilizer application is good method in Tomato production.	3.56	1.28	2.25	IN
11	Earthling up of beds after planting increase nutrient in the soil and support plants.	3.52	1.21	2.31	IN
1 2	Staking up tomato prevent fruit decay, stem and branch breaking after yield.	3.48	1.32	2.16	IN
13	Fencing the farm is a skill of preventing unauthorized person into the farm.	3.32	1.25	207	IN

Table 3 Need Gap Analysis of Mean rating response of rural small Tomato farmers in Post planting operation

S/N	Tables Statement (post planting) Weed control pest & disease control, Harvest marketing, preservation	Mean field operation	Mean Needed ($\bar{x}$ n)	Mean……..Need Value Gap ($\bar{x}$ p)	Remark
1	Weed control skill in harud picking and cutlass weeding is normal.	3.32	1.32	2.00	IN
2	Selective herbicides spraying normal skill in weeding.	3.41	1.32	2.09	IN
3	Cultural method of weeding in Tomato production is ideal.	3.32	1.31	2.01	IN
4	Biological method of weed control in tomato is not normal.	3.33	1.13	2.20	IN
5	Pest control using biological method in tomato is good to save cost.	3.25	1.14	1.84	IN

6	Pest like flea beetles, applied, fruit worm can be controlled by pesticides.	3.22	1.32	1.9	IN
7	Anthracnose fruit root, early blight an septoria leaf spot is controlled by spraying fungicides.	3.21	1.20	2.01	IN
8	Harvesting yellowish colour in appearance help to sustain fruit stringiness.	3.22	3.23	1.99	IN
9	Harvesting tomatoes fruit with sharp knife is not recommended skill because its sharpness causes injuries to tomato plant.	2.54	1.55	0.99	IN
		3.21	1.25	1.96	
10	Using knife to harvest tomato is bad skills because it cause diseases and pest infestation	2.61	1.52	1.09	IN
11	Uprooting tomatoes plant as harvesting skills is not good as it lead to end of production of plant.	2.67	1.54	1.13	IN
12	Using hand to harvest tomatoes fruits carefully from the stem is good skills.	3.27	1.25	2.02	IN
13	Harvesting tomatoes fruits and thrown from distance cause breakage which is bad skills.	2.35	1.46	1.89	IN
14	Eating tomato fruits while harvest fruit is bad skills and should be avoided.	3.21	1.13	1.90	IN
15	Recording quantity harvested is a recommended skills for checking production capacity.	2.53	1.32	1.21	IN
16	Tomatoes preservation I recommended skills, to make it available in the market all your round.	3.22	1.55	201	IN
17	Tomatoes distribution from area of Abundant to Area of scarcity is good skill.	2.57	1.57	1.02	IN
18	Refrigeration control temperature, has retaining ability to reduce decay is good skill,	3.23	1.61	1.66	IN
19	Canning is good skill in preserving tomatoes fruit.	2.51	1.24	1.27	IN
20	Harvesting on time interval skills prevent decay of tomato.	3.21	1.23	1.99	IN
21	Half ripped harvesting skills prevent pest and disease transmission from farm to store.	3.22	1.41	1.31	IN

3. Findings of the Study

Table 1, reveals that the need gap values of items 1-17 of the tomato pre-planting operations: (Nursery Raising) for production management were positive (-v). This indicate that rural small scale tomato farmers needed improvement in pre-planting operation of tomato (2.06 to 2.49).

Table 2, reveals that the need gap values of items 1 to 13 of the planting operation ranged from 1.09 to 2.31 were positive (-ve). This ndicated that rural small scale tomato farmers in Ebonyi North Agricultural Zone needed improvement in planting operations of tomato-production management.

Table 3, revealed that the need gap values of items 1 to 21 of the post-planting operation ranged from 2.00 to 2.20 and were positive (-v). This indicates that rural small tomato farmers needed improvement in tomato production management.

4. Discussion of Finding

From the study, it reveals that all the rural small scale tomato farmers are in agreement that skills improvement are needed in pre-planting operation for tomato production in Ebonyi North Agricultural Zone. The 17 items presented in table I all were accepted by the respondents. This study is in line with the study of Ogba (2020) who stress that all the pre-planting skills are crucial in tomato production ranging from site selection, clearing, the farm, stumping, raising nursery bed, and seed broadcasting and tomato variety that survive in the environments pest, disease, among others. This study is also in line with the study of Amed (2021) who stress that bed preparation, for both stage of life requires treatments, including seeds with chemical to prevent fungi, which is soil borne, into crops, he stress that pre-planting activities are curial, issues in skills improvement needed for best agronomics practices. This study is in line with the study of Mohamed (2022) who carried out research on skills required in paper production in pre-planting and planting required for effective delivery in Kano State Colleges of Education. This findings in pre-planting and Planting operations on paper production skills were in agreement with this study.

The findings on research question two reveals that rural small scale tomato farmers required all the (13) items in planting operations of tomato production for best production practice in Ebonyi North Agricultural Zone. The findings were in Agreement with the study of Abubakar (2021) who carried out research on the skill required by secondary school teachers for effective delivery on Tebferia Occidentali, production in North-central agricultural zone in Taraba state. Where it was found out that all the 15 items in planting operations skills were needed by the farmers for best production of Teleferia in the zone.

The findings in-research-question(3)-reveals that they are (21) items in post planting operations for production of tomato. All the (21) items skills were required by rural small scale tomato farmers as skill improvement Needs for post planting operations. The respondents all were in agreement that (21) item presented in that table (3) are accepted as the best Agronomy practice in skill-improvement need for production in the area (Ebonyi North Agricultural zone in the state. This study is in line with the study of Ogba (2018) who carried out a study on skills required for post-production in cucumber fruit production in Ebonyi State by registered crop farmers hand picking of fruits, carefully, without knife, throwing the fruit at a distance causes brakage and spoil, harvesting at time-interval, prevent damages, half ripped harvesting prevent pest and disease transmission among others as skills required for post-production operations. This study is also in line with the study of Okonkwo (2020) who maintained that there is no significant difference in the mean rating of sun drying of paper and okoro as the best practice in fruit drying in diseases attack, pest, control among others.

5. Conclusion

The way and manner rural small scale tomato farmers go about in production of the fruit vegetable, which is very important in every household diet. Which is not available but scarce, calls for serious concern: to examine the rural small scale tomato farmers skills improvement needs in pre-planting, planting and post planting operations for production excellent, improve on their management capacity for massive production and its availability for consumption. This explains the ways rural small scale tomato farmers Need to increase on their production initiative toward high tomato production, in the rural areas, which can be distributed to their areas of scarcity, while farmer financial level will as well increase. However, the identified improvement needed should be a guide for high production of tomato fruit vegetables.

Recommendations

Based on the findings of the study the following Recommendations was made:

That since all the 56 items on skills improvement needs presented to the respondents were all accepted as needed after analysis:

- The Extension Agents in the ministry of Agriculture should adopt it and use them in Seminars, workshops and Training to Rural small scale tomato farmer for maximum production of the fruit vegetables in our diets.
- The Non-government Agency like FAO, should adopt the findings of this study and use them to Train such rural farmers in the state among other.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

[1] Abubakar, S.O. (2021) Material resources management and utilization in tertiary institution Sokoto, mariba press.

[2] Amed, M.O. (2018). Agricultural Resources marketing and distribution for controlling scarcity, Madugru, Zuba press.

[3] Amed, M.O. (2021) Assessing the Technical, Vocational Education on skills development among youth in crop production. A paper presented at annual conference of Educational Association Abuja Nigeria.

[4] Asogwa, V.C. (2021) Ohatao (2013) Entrepreneurial skills designed by instructors for training students in horse husbandry for job creation and wealth generation. Journal of Emerging Trends in Education Research and policy studies 4(4) 670-677.

[5] Azubuike S.N. (2020). Critical analysis for inadequate tools for crop production Asava, Zubu press.

[6] Colorado (2018) Educational Research Statistics and Analysis, Onitsha, Humble press.

[7] Eze, C.S. (2021). Plant management technique and method, in school farm, Enugu Noble publisher.

[8] Ezike, S.A. (2021). Educational Analysis Records, Issues and practices Enugu, FNS press.

[9] Food and Agricultural organization (FAO) 2017, Government, coordination and distribution along commodity, value chain Rome, 4-5th April, Trade proceeding.

[10] Igboke, S.U. (2022). The statistical Records of farmers production and surplus, issues and practices. Abakaliki, SNP publisher.

[11] Ikwe, B.S. (2022). The development knowledge among children living in the Aride zone of Yobe State in Nigeria A paper presented at the annual conference of youth Development unpublished.

[12] Mohamed, R.N. (2022). Climatic soil requirement needs for fruit vegetable in temperate Environment. Issues and practice, Ebonyi Technology and Vocational Education Journal (ETVEJ) 3(12) 15-23.

[13] Njoku, B.O. (2022). The Distribution Trends in Ecological system in Nigeria Nsukka Sab, publisher.

[14] Nweke, F.A. (2021). Agricultural Development plans and policy Anambra, Cap. Publisher.

[15] Odo, A.A. (2021). The principle guide in the New Trend for crop production: Nsukka, Njoku press.

[16] Odo, R.N. (2021) Assessment for adequate instructional material for practical Agriculture in selected secondary school in Uzo-Uwani District M.Ed. Dissertation Unizike, Unpublished.

[17] Ogba and Ndem (2021) community partnership in Technical, Vocational Education and Training in vocational Development in secondary school in Ebonyi State. International Journal of Education and practice, 5(12) 28-40).

[18] Ogba, E.I. (2018). The principles, methods and management of crop protection Education: Abakaliki, Avemaria publisher.

[19] Ogba, E.I. (2022). Farm tools and machineries for school farm in universities in the South East, Nigeria. Its Assessment on Availability, and utilization, Ebonyi Technology and Vocational Education. Journal (E.TVEJ) 5(12) 12-28.

[20] Ogba, E.I. (2022). The methods, Technique and management of Farm Technology Tools and Machine Development Abakaliki, Amaro, publishers.

[21] Ogba, E.I., (2021) The principle of school farm management, for production of vegetable: international journal of Educational Research, 5 (8) 25-38.

[22] Ogba, E.I. (2021). Effective Teaching method, management and principles. Abakaliki, Avemaria

[23] Okonkwo, S.O. (2020). Dry season vegetable production techniques among women in the Northern-Agricultural zone in Adamawa state. International Journal of educational research 8(23-35).

[24] Okories, J.O. (2012). Vocational and industrial education Buachi. Researchers publishers.

[25] Lawal, R.O. (2021). Resources Need of farmers in south-West Agricultural zone in Delta State. International Journal of Educational Administration and statistics. 4(12) 19-35.

[26] Suleman, S.R. (2020). Principle and practice on vegetable production. Nsukka, Cap, publisher Ltd.

[27] Ugwoke. E.S. (2018). Principles of crop production in the New Trend for Vegetable crops. Awaka, Sinco publisher.

[28] UNESCO (Unesco (2020) Education for all Global monitoring report: Education for all by 2025 oxford university press Uk.

[29] Usuman, S.N. (2019). Chemical Analysis on vegetable crops as nutrient needs Mina, Suka press.