

## LOCAL STONE QUARRYING AND YOUTH SOCIO-ECONOMIC EMPOWERMENT IN RURAL COMMUNITIES OF OKIGWE LOCAL GOVERNMENT AREA OF IMO STATE, NIGERIA

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### Abstract

Nature-given resources such as local stone quarries have become alternative means of livelihood among rural communities in Nigeria, particularly in Okigwe Local Government Area of Imo State in particular. This paper therefore, examined local stone quarrying and the socio-economic empowerment of youths in rural communities in Okigwe local government area of Imo State, Nigeria. The study was guided by five research objectives, along with corresponding research questions and hypotheses. The population of the study was 193. The instruments for data collection included questionnaire and in-depth interview. The theoretical framework adopted for the study was the Environmental Factor Theory. Data were analyzed using the Statistical Packages for Social Sciences (SPSS), and Spearman's rank-order correlation was employed for hypotheses testing. A Cross section design was adopted. The findings revealed that local stone quarrying significantly empowered the youths both socially and economically. These benefits were observed in areas such as income generation and enhanced social relevance when compared to youths in other occupations. It also enabled them to embark on self-help projects such as building their houses and saving money to start businesses. Moreover, it discouraged their involvement in deviant behaviours and contributed to their psychological stable in their rural communities. It was recommended that the government should encourage them by donating periodically excavating tools such as digger, shovels among others.

**Keyword:** Local Stone Quarry, Youths, Empowerment, Socio-Economic, Rural Community

### Introduction

Nigeria is blessed with a lot of resources which include both human and natural ones. These resources when put into good use contribute to progress and development of individuals, families, communities and nation as a whole. This is especially where the long expected employment opportunity from government is not forthcoming. Therefore, the utilization of these resources becomes a measure of socio-economic relief where unemployment rate is still high and where Nigerian government remains insensitive in providing solution to the socio-economic yearnings of the citizenry with particular emphasis on Nigerian youths. Therefore, no wonder most of Nigerian roads are busy with heavy vehicles such as macs, tippers, trucks and other vehicles which carry locally quarried stones from quarrying sites to various places where they are used. Local stone quarry are used for building houses, road construction, bridges and other infrastructural projects, which contribute to national development and create employment opportunities for Nigerian youths.

Youths in order to remain relevant to themselves and their communities have taken bold steps to engage in various skill acquisition activities in which local stone quarry is one. Olorede, et al, (2017) state that Nigeria like most African countries is facing socio-economic challenges in the form of poor infrastructural facilities, unemployment, inflation, poverty, low income per capita, lack of access to drinking water, and shortage of electricity supply, among others.

Therefore, youths having found themselves in such precarious situations, decided to involve themselves in nature provided resources as considered alternative means of livelihood which local stone quarry serves the purpose. The Sustainable Management of Mineral Resources Project (SMMRP, 2005) reports that studies have estimated the quarry workers in Nigeria to be 400,000. The estimation however, may have exceeded this figure, considering the time and utility of the quarry and also the increasing rate of unemployment which might have given rise to more youths going into quarry activities.

A local stone quarry refers to a naturally occurring deposit of stone that is excavated through direct labour using locally made tools. This form of stone excavation serves the same purpose with the mechanized one which makes use of highly sophisticated technologies. Socio-economic empowerments are those activities that owe a measure of social and economic upliftment and relevance to individuals who embark on such activities for a living. The

implication of this socio-economic exercise is that it guarantees a measure of economic and social satisfaction of their financial challenges in their social environments. The term youth is generally understood to mean the early stage or period of an individual in a society. Babawale (1999) defines a youth as the period that immediately follows childhood and terminates at the age of young adulthood, that is, a period when the individual is yet to attain a full adult status.

### **Statement of the Problem**

The problem statement of this research is that it is the responsibility of the Nigerian government to provide social and economic empowerment for the citizenry. However, experience has shown that the Nigerian government has failed woefully in this regard. These youths who are eminently qualified academically and skillfully are full of life and energy but unemployed roam our streets and their communities in Okigwe. The idle disposition of these energetic youths who have nothing doing has multiplier effects therefore giving rise to some outlawed behaviours and criminal activities which the members of these communities worry about due to insecurity to their lives and property following the activities of these idle youths. They include rape, robbery, drug addiction, stealing, kidnapping, ritual killing, among others which if not urgently addressed stand the chances of ruining the humanness, socio-cultural values, future of these youths and the communities in general. The situation which these youths find themselves is justified by a saying that idleness is a devil's workshop. Furthermore, the presence of these hoodlums in Okigwe and its environs constitutes a threat and overall insecurity to both lives and property of the inhabitants within the areas of the study hence local quarry serves alternative means of empowering these youths.

### **Objective of the Study**

The main objective of this project is to ascertain the effects of local quarry on youths' socio-economic empowerment in rural communities in Okigwe Local Government Area of Imo State, Nigeria.

The specific objectives are to:

1. Examine how stone local quarry relates to income generation among youths in the rural communities in Okigwe Local Government Area of Imo State, Nigeria.
2. Examine whether local quarry has reduced unemployment among youths in Okigwe Local Government Area of Imo State, Nigeria.
3. Investigate the social benefits which local quarry confers on youths in Okigwe Local Government Area of Imo State, Nigeria.
4. Investigate whether youths' involvement in local quarry has reduced deviant behaviour in Okigwe Local Government Area of Imo State, Nigeria.
5. Examine if local quarry brings about infrastructural development in the quarrying rural communities in Okigwe Local Government Area of Imo State, Nigeria.

### **Research Questions**

The study is guided by the following questions:

1. Does any relationship exist between local stone quarry and income generation among youths in rural communities in Okigwe Local Government Area of Imo State, Nigeria?
2. How does local stone quarry reduce unemployment rate among youths in Okigwe Local Government Area of Imo State?
3. Are there social benefits associated with local stone quarry among youths in rural communities in Okigwe Local Government Area of Imo State?
4. Which ways does the involvement of youths in local stone quarry reduce deviant behaviour in rural communities in Okigwe Local Government Area of Imo State?
5. Which ways has local stone quarry led to infrastructural development in rural communities in Okigwe Local Government Area of Imo State?

### **Research Hypotheses**

The following hypotheses are used in this research:

1. There is no significant relationship between local stone quarry and income generation among youths in rural communities in Okigwe Local Government Area of Imo State.
2. No significant relationship exists between local stone quarry and reduction in unemployment rate among youths in rural communities in Okigwe Local Government Area of Imo State.
3. There is no significant relationship between local stone quarry among youths and social benefits in rural communities in Okigwe Local Government Area of Imo State.
4. There is no significant relationship between local stone quarry and reduction in deviant behaviour among youths in rural communities in Okigwe Local Government Area of Imo State.

5. Local stone quarry has not relationship with infrastructural development in rural communities in Okigwe Local Government Area of Imo State.

### Review of Literature

There are many works done by scholars on quarry activities among youths in Nigeria and beyond. World Youth Report (2003) states that the United States of America defines a youth as someone who is less than 21 years. The Report further explains that a youth from the sociological interpretation is a period of transition from adolescence to adulthood, from dependence to independence, and from being recipients of services to becoming contributors to and providers of national economic, political and cultural life. A youth from the above definition can be married or unmarried, but who are economically independent and is able to contribute in the various social needs of a society. Quarrying is a mini method that involves extraction or exploitation of geo-materials such as rock as constructional materials which most takes place at the surface (Salawa & Sadiq, 2020). In addition, Enger and Smith (2002) maintained that quarrying encompasses the removal of overburden, drilling, blasting, and rock crushing for diverse applications, plays pivotal roles in meeting the manifold needs of society. The interpretation of the definition projected by Enger and Smith is that quarrying in which local stone is among, has multiple utilities which could be assessed from its utility in offering employment opportunities that guarantees income generation for the youths. In addition, it increases government's revenue and also serves as a source of raw materials to road construction, road rehabilitation and building houses. Lahiri-Dutt (2000) in Mbuyi and Ogunyemi (2019) states that local stone quarrying generates considerable employment opportunities as it is a relatively labour intensive, under-mechanized industry.

Quarry is an activity that helps in the manufacturing of materials that can be used to develop infrastructure like roads, dams, bridges, drainage, and houses (Oyedinlye & Ajayi, 2014). Lameed and Ayodele (2010) described stone quarry as a process which involves exaction or blasting of stones with chemical explosives that can be used in the development of infrastructure. Furthermore, local stone quarry therefore is the process which involves the excavation of rocks or nature-given stones from the earth's crust using such technologies as diggers, shovels, knives, sieving baskets, among other tools needed for this. The implication of this kind of activity is that direct human labour is involved which exerts energy from the excavators.

Irrespective of the potential benefits derived from quarrying activities which include income generation, reduction in unemployment, socio-economic empowerment, building houses among others, there are other negative effects which are associated with this type of activity. Mallo (1999) in Mallo (2012) revealed that the effects of cutting down trees in Jos Plateau due to quarrying mining activity has numerous ecological and economic consequences such as erosion, deforestation, desertification and increase in water courses situations. Others are loss of biodiversity, loss of farm land, and vegetal cover in the region, accounting for the rise in carbon dioxide and climate change. Mabogunje (2008) in Lameed and Ayodele (2010) observed that quarry activities have the capacity of destroying the environment and its species through release of dust, particles into the air, water and soil. That means that the side effect of quarrying which local stone is one produces pollution of air, water which may not be in the health interest of the inhabitants. Ion corroborating this, Nartley et al (2012) report that about four million death cases related to acute respiratory snags reported annually from emerging countries, resulting from worse environmental pollution.

### Theoretical Framework

The study adopts Cooper (1981) Environmental Factor Theory. The theory states that it is the economic conditions, their accessibility and availability that lure people into alternative means of embarking on local stone quarry for self-economic empowerment among youths for a living. Examples include actions, opportunities for interim consulting and availability of personnel, supporting services and accessibility to customers or consumers. The interpretation of the environmental factor theory by Cooper is that it is the economic conditions which may include hardship, poverty, and unemployment, among others that prompted youths to go into stone quarry as an alternative means of their socio-economic survival. Then, the other reason that formed their decision to go into the exercise is the presence of the nature-given resource which is the availability of the stones and then youths' ability to harness them. It then means that youths who have the capability and energy to do that kind of job are given the opportunity to do so by the members of the quarry community. The supporting of personnel is that youths who are willing to undertake this kind of self-empowerment jobs are readily accessible and supportive. In addition, their products are always demanded for since they sell their stones to the members of the public for either building of their houses and other socio-economic. Once their products are sold, they generate income for the satisfaction of their socio-economic aspirations.

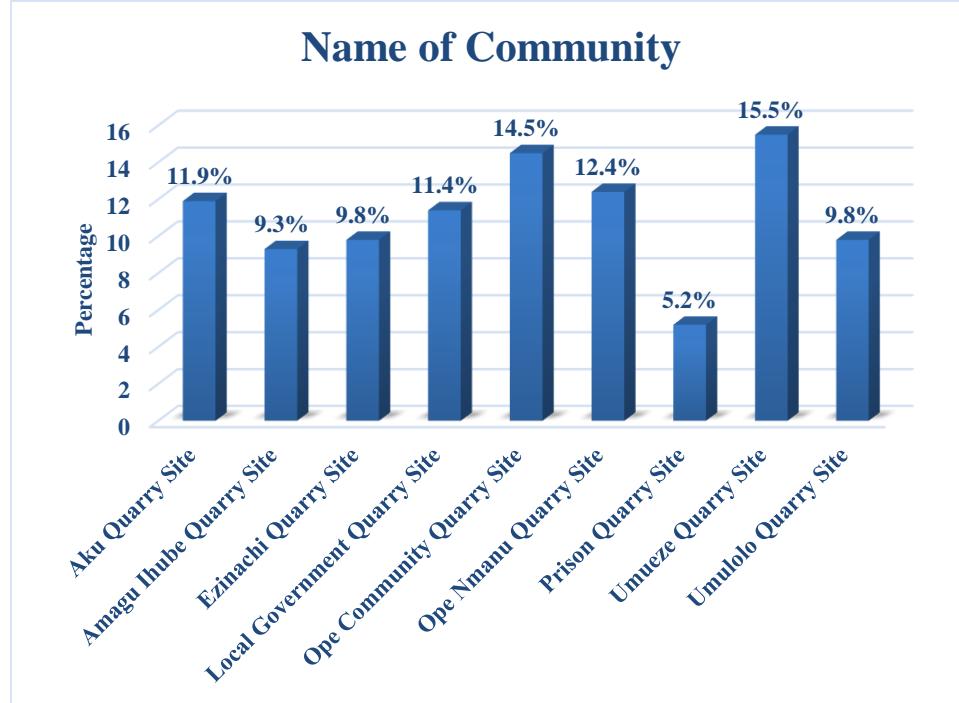
### Research Methodology

The study made use of cross sectional design. The design is useful for descriptive purposes and data collected were used to determine relationship between different variable focused on the study (Kothari, 2004). The population of the study was 193. A Spearman's rank-order correlation was used to test the hypotheses. The research was carried out in nine quarry sites in Okigwe Local Government Area of Imo State. They include Umueze, Ope, Ihube, Aku, Prison Area, Ope Nmanu, Umulolo, Local Government quarters and Ezinachi quarry sites/communities.

### Results, Data Analysis and Interpretation

A total of one hundred and ninety-three (193) copies of questionnaire distributed to understand the socioeconomic effects of local quarry sites in the rural communities of Okigwe LGA were returned and analyzed.

**Fig 4.1: Bar Chart Showing the Percentage Distribution of Participants from Communities Involved.**



The chart above showed that the highest participants were from the Umueze quarry site (15.5%) and the Ope quarry site (14.5%), followed by the Ope Nmanu (12.4%), Aku (11.9%) and Local Government (11.4%) quarry sites. Prison quarry site (5.2%) had the least participants falling behind Umulolo (9.8%), Ezinachi (9.8%) and Amagu Ihube (9.3%) quarry sites.

**Table 4.1a: Socio-Demographic Characteristics of Respondents**

Variable	Category	Frequency	Percentage (%)
Gender	Male	146	75.6
	Female	47	24.4
Age	Below 15 years	24	12.4
	15 – 20 years	42	21.8
	21 – 26 years	54	28.0
	27 years and above	73	37.8
Academic Qualification	FSCL	39	20.2
	WAEC/It's equivalent	111	57.5
	OND/HND	17	8.8
	B.Sc./MSc.	23	11.9
	PhD	3	1.6

The table above showed the demographic characteristics (gender, age and academic qualification) of respondents. The majority (75.6%) were males. Most participants (37.8%) were above 26 years old, followed by those between 21 and 26 years (28%) with the least number of respondents below 15 years (12.4%), falling behind those between the ages of 15 and 20 years (21.8%). About half (57.5%) of the participants had a WAEC/it's equivalent, while a

little below a quarter (20.2%) of them had just FSCL qualification. Few (11.9%) were BSc/MSc. holders and even fewer had OND/HND certificate while the least (1.6%) participants had PhD degree.

**Table 4.1b: Socio-Demographic Characteristics of Respondents (contd.)**

Variable	Category	Frequency	Percentage (%)
Religion	Christianity	150	77.7
	Islam	15	7.8
	Traditional	28	14.5
Marital Status	Single	73	37.8
	Married	96	49.7
	Divorced/Separated	7	3.6
	Widow/Widower	17	8.8
Daily Income	1000 to 3000 naira	55	28.5
	4000 to 6000 naira	80	41.5
	7000 and above	58	30.1
Duration of Involvement in Local Quarrying Activities	Below 2 years	38	19.7
	2 - 4 years	44	22.8
	5 years and above	111	57.5

The table above shows that the majority (77.7%) of the participants are Christians, few (14.5%) identifies as Traditionalists and even fewer (7.8%) identifies as Muslims. Half (49.7%) of the participants are married, a considerable number (37.8%) of them are also single, few are widowed (8.8%) and the least number of them are divorced/separated (3.6%). Most (41.5%) earned 4000 to 6000 naira in daily income, followed by those who earned 7000 and above (30.1%), the least number of participants (28.5%) earned between 1000 to 3000 naira as daily income. About half (57.5%) of the participants have been involved in local quarrying activities for more than 4 years while close to a quarter (22.8%) of them have been involved between 2 to 4 years, the rest (19.7%) do not have up to 2 years experience in local quarrying activities.

**Fig 4.2: Bar Graph Showing Previous Occupational Status of Participants**

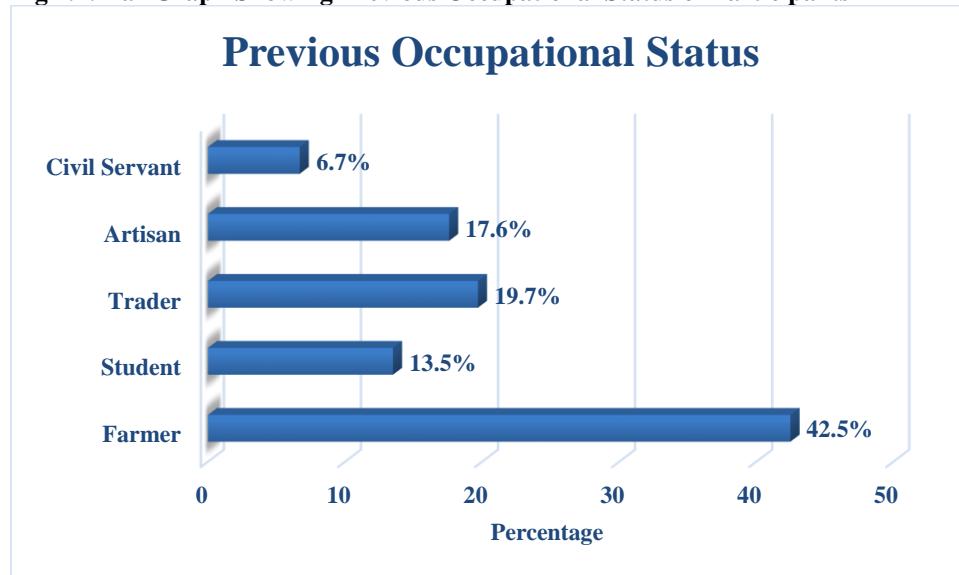


Figure 4.2 shows that most participants (42.5%) were formerly farmers, followed by those who were Traders (19.7%) and Artisan (17.6%). Some were students (13.5%) before getting involved in local quarrying while the least number of participants were once civil servants (6.7%).

**Table 4.2: Distribution showing the Perceived Effect of Local Quarrying on Youth Income Generation**

Response Category	Frequency	Percentage (%)
Increased significantly	114	59.1
Increased Slightly	57	29.5
Remained the same	13	6.7
Decreased	9	4.7
Total	193	100.0

Table 4.2 showed the perceived effect of local quarrying on youths' income generation. More than half (59.1%) indicated that generated income increased significantly and many (29.5%) also accepted that there was a slight increase. Meanwhile few (13%) agreed that their generated income remained the same, while the least number of the participants (4.7%) indicated a decrease in income after involvement in quarrying activities.

**Table 4.3: Distribution Showing the Perception of Participants on Whether Local Quarrying has Reduced Unemployment Among Youth.**

Variable	Response Category	Frequency	Percentage (%)
Reduction of Unemployment	Strongly Agree	108	56.0
	Agree	49	25.4
	Disagree	17	8.8
	Strongly Disagree	19	9.8
	Total	193	100.0

Table 4.3 showed the perception of participants on whether local quarrying has reduced unemployment among youth. Most (56%) of the respondents strongly agreed, followed by those who only just agreed (25.4%). The least number of participants were those who disagreed (8.8%) falling behind those who strongly disagreed (9.8%).

**Fig 4.3: Pie Chart Showing the Social Benefits Associated with Local Quarrying Among Youths in the Rural Communities of Okigwe Local Government Area.**

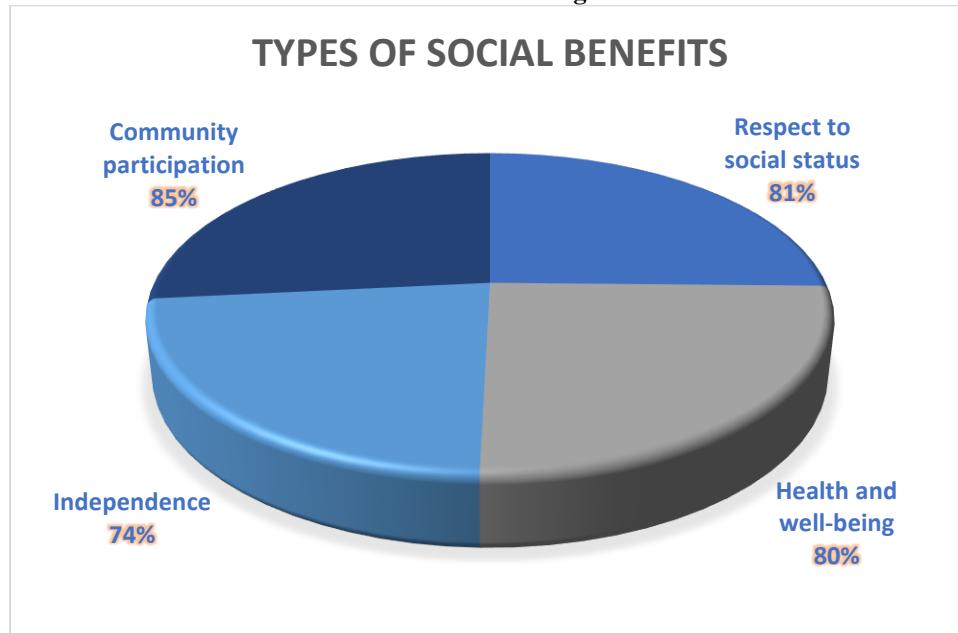


Fig 4.3 showed the types of social benefits associated with local quarrying activities in among youths. The social benefits identified, in order of their popularity includes; community participation (85%), respect to social status (81%), independence (80%) and health and well-being (74%).

**Table 4.4: Distribution Showing the Perception of Participants on Whether Youths' Involvement in Local Quarrying has Reduced Deviant Behaviour.**

Variable	Response Category	Frequency	Percentage (%)
Perception About Reduction of Deviant Behaviour	Strongly Agree	94	48.7
	Agree	56	29.0
	Disagree	25	13.0
	Strongly Disagree	18	9.3
	Total	193	100.0

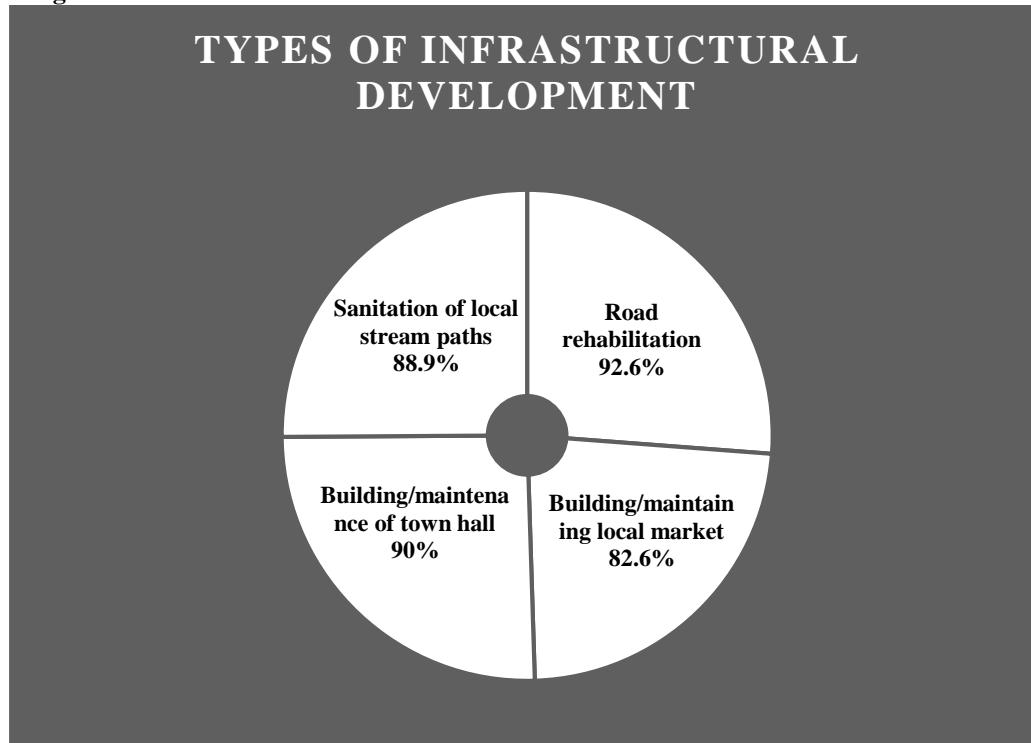
From the table above, it is seen that nearly half (48.7%) of the participants strongly agreed to the reduction of deviant behavior following youth involvement in local quarrying. More than a quarter of the respondents (29%) agreed meanwhile those who were in disagreement (13%) and in strong disagreement (9.3%) were very few.

**Table 4.5: Distribution Showing Participants' Perception on the Contribution of Local Quarrying to Infrastructural Development.**

Variable	Response Category	Frequency	Percentage (%)
Perceptions About Contribution to Infrastructural Development	Strongly Agree	116	60.1
	Agree	38	19.7
	Disagree	21	10.9
	Strongly Disagree	18	9.3
	Total	193	100.0

Table 4.5 showed the perceptions about contributions.

**Fig 4.3: Pie Chart Showing the Types of Infrastructural Development Witnessed in Rural Communities in Okigwe LGA.**



From the above chart, it is seen that the most frequent (92.6%) infrastructural development attributed to local quarrying involvement is road rehabilitation followed by building/maintenance of town hall (90%). The others include community sanitation of local stream paths (88.9%) and building/maintaining local market (82.6%).

#### Test of Hypotheses

**Hypothesis 1:** There is no significant relationship between local stone quarrying and income generation among youths in Okigwe LGA

A Spearman's rank-order correlation was conducted to examine the relationship between duration of involvement in local quarrying activities and income generation. The analysis included data from 193 participants. Results indicated a strong, positive correlation between duration of involvement in local quarrying activities and income generation,  $rs = .620$ ,  $p < .001$  (two-tailed). This suggests that longer involvement in quarrying activities is associated with higher income generation. The correlation was statistically significant at the .01 level.

**Hypothesis 2:** There is no significant relationship between local stone quarrying and reduction of youth unemployment rate in the host communities in Okigwe LGA

A Spearman's rank-order correlation was conducted to assess the relationship between involvement in local quarrying activities and reduction of unemployment. The analysis revealed a significant positive correlation between the two variables,  $r_s = .640$ ,  $p < .001$ ,  $n = 193$ . This indicates that longer involvement in local quarrying activities is associated with a greater reduction in unemployment.

**Hypothesis 3:** There is no significant relationship between local quarrying and social benefits among youths in Okigwe LGA.

A Spearman's rank-order correlation was conducted to examine the relationship between duration of involvement in local quarrying activities and perceptions about social benefit among youths in Okigwe LGA. The hypothesis posited that there is no significant relationship between local stone quarrying and social benefits. Contrary to the hypothesis, the results revealed a strong, positive, and statistically significant correlation between duration of involvement in local quarrying activities and perceptions about social benefit,  $r_s(191) = .653, p < .001$  (two-tailed). This indicates that as the duration of involvement in quarrying activities increases, perceptions of social benefit also tend to increase.

**Hypothesis 4:** There is no significant relationship between local stone quarrying and reduction of deviant behavior in rural communities in Okigwe LGA

The relationship between local stone quarrying and reduction of deviant behaviour in rural communities of Okigwe LGA was tested using Spearman, the analysis revealed a strong, positive correlation between the two variables,  $r_s = .702, p < .001$  (two-tailed). This indicates that longer involvement in local quarrying activities is significantly associated with a greater perception of reduced deviant behaviour.

### Discussion of the Findings

The study focused on Local Stone Quarry and Socio-Economic Empowerment of Youths in Rural Communities in Okigwe Local Government Area of Imo State, Nigeria. The findings showed that majority of the respondents 59.1% which is more than half indicated that they generated income increase significantly in quarrying activity. This is corroborated by the result of the hypothesis which also established a positive correlation; thereby rejecting the null hypothesis which stated that no significant relationship was established between youths involvement into quarrying and income generation. It is then concluded from the finding that local quarry promotes income generation of these youths. Qualitatively, one of the interviewees reported: I no longer depend on my parents to request money to take of my needs since I started working here”.

With respect to whether local quarry has reduced unemployment among youths, the finding showed that 56% of the respondents positively responded that local quarry really reduced unemployment among them. This observation is line with the result of the hypothesis which revealed a significant positive correlation between the two variables, using Spearman's ranking order  $r_s = .640, p < .001, n = 193$ . The conclusion therefore is that local quarry really reduced unemployment among youths in Okigwe rural communities. The finding is in line with Lahiri-Dutt (2000) in Mbuyi and Ogunyemi (2019) who state that local stone quarrying generates considerable employment opportunities as it is a relatively labour intensive, under-mechanized industry.

On the social benefit which local quarry accorded to youths in rural communities in Okigwe, Fig 4.3 showed the types of social benefits associated with local quarrying activities in among youths. The social benefits identified, in order of their popularity includes; community participation (85%), respect to social status (81%), independence (80%) and health and well-being (74%). The findings were further supported by the findings of the hypotheses in which,  $r_s(191) = .653, p < .001$  (two-tailed) was the result.

On if local quarry leads to infrastructural development, the finding revealed that it actually brought about infrastructural development which included the sanitation of local stream path in which 88.9% responded and also in the areas of building their houses and maintaining their local markets. This was shown on the greater number of responses. The same response was received from the result of the hypothesis. On the qualitative data, one of the respondents interviewed said: I used the money I generated form this site to put sola poles in my compound which gives me happiness because I no longer need NEPA”.

With respect to local quarry and reduction in deviant among youths in the study area, the finding showed that greater number of the respondents responded positively which is equally corroborated with the findings of the hypothesis which the analysis revealed a strong, positive correlation between the two variables,  $r_s = .702, p < .001$  (two-tailed). Also, concerning the infrastructural development arising from local quarry among youths in the study area, the above chart revealed that included road rehabilitation, building their houses and maintenance of town halls. Others included sanitation of local stream paths and building and maintaining their local markets which were scored 92.6%, 90% and 82.6% respectively. The implication of these responses is there are infrastructural development attributed to local quarrying in the area of study.

Still on the qualitative data however, one the interviewees, Mr Irokansi said thus “Irrespective of these benefits from quarrying activities, there are cases of difficulty in respiratory system due to excessive inhale of dusts that come from this which do not promote our health conditions”. This revelation is line with Nartley et al (2012) who report that about four million death cases related to acute respiratory snags reported annually from emerging countries, resulting from worse environmental pollution.

### **Conclusion**

The research, which focused on examining whether local stone quarrying has empowered youths in the rural communities of Okigwe Local Government Area, was carried out across nine quarry sites in the study area. The study concludes that the local stone quarrying has had a positive impacted on Okigwe youths by improving their socio-economic status. Many of these youths, had previously roamed the streets due to lack of employment opportunities have now become economically engaged. Furthermore, beyond income generation, participation in quarrying activities has made these youths socially relevant within their communities and in interactions with peers involved in other socio-economic pursuits. In addition, youths’ engagement in local stone quarrying has significantly reduced deviant behaviours in and contributed to infrastructural development within the quarry communities.

### **Recommendations**

Based on the findings of the study, the following recommendations were made:

1. The local government authority should encourage the efforts of these youths by extending the current distribution of solar energy being distributed by NNPC to various communities in Nigeria to these quarry sites to enable those of them who do night duties to function effectively.
2. The local government management should equally encourage these youths by buying some of the excavating tools such as digger, knives, shovels among others to help the quarry workers for desired productivity.
3. The health personnel in Okigwe health centres should be mobilized to create awareness on the after effects of drug addiction on the health of these youths who believe these drugs are energy boosting substances due to the nature of their work.

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### **Authors’ Contributions:**

O1 conceptualized the idea and wrote the manuscript. JAI and VN commented on it. The authors participated in the data collection. O1 did the statistical analysis and interpretation of the qualitative analysis and the other author read and approved production of the final manuscript.

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### **Data Availability:**

The data that support the findings of this study are available on request on request.

### **Declarations:**

Ethics approval and consent to participate.

The study was conducted in compliance with ethical principles. Ethical approval for this study was obtained from the Directorate of Research and Publications, Abia State University, Uturu.

### **Consent for Publication:**

Not applicable.

### **Competing Interest:**

The authors declare no competing interest.

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