

# Granite Stone Quarrying: Determinants of Employee Income in Edo State, Nigeria

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**Abstract** – Engagement in the various granite stone production activities in quarries has made life more enjoyable to the people since they derived means of livelihood – income from it. To this extent, investigation into determinants of employee income from granite stone quarrying is needful. This study specifically aims at examining the socio-economic characteristics of granite stone quarry workers, examine workers' income pattern and identify the socio-economic determinants of household income from granite stone quarry jobs. Primary data used for this study were sourced from 92 quarry workers, while descriptive and inferential statistics were used in presenting results. This study revealed that granite stone quarry workers are largely permanent staff (58.9%), indigenes, who engage in various secondary occupation along with their quarry engagements. The workers who have 6 years of experience most (80.5%) largely (71.8%) earn N60,000. The study further indicated that secondary occupation, employment category in quarry, working experience and proportion of household income were significantly associated at 1% level with income of workers; while at 5% level of significant, employee education is a determinant of income from quarry. Most (32.9%) of the workers earn between 26 to 50% of their house hold income from quarry job. A proportion of 21.72% of the respondents earning less than N20,000 have quarry engagements providing about 50% of their house hold income; while 21.73% of the respondents earning more than N60,000 have quarry works accounting for more than 50% of the house hold income. The income benefit derived from quarry engagement as depicted from this study can be improved; if adequate attention is placed on education since well-educated quarry staff earn more.

**Index Terms**— Employees, Granite Stone, Income, Nigeria

## 1 INTRODUCTION

Economic concerns have gained prominence throughout the world in the last decade. Several international protocols have been established by the global community to deal with emerging economic issues ranging from economic meltdown, to recession and in some countries outright depression. Nations are harnessing opportunities available in every sector to better the lives of its citizens. For instance, in Nigeria, the Federal Government has continuously encouraged the populace to embrace agriculture and mining of the abundant natural resources present in the country. The extraction of the nation's solid mineral resources has been termed by experts to be one of the best ways to go if Nigeria is to survive the global economic challenges [1].

Man often meets his physical needs by the products of two

basic resources - those of agriculture and of mining.

Most people in quarry regions wholly depend on these quarries for economic sustenance aside from other economic activities which they engage in alongside with their quarry jobs. The truth is that quarrying are tasking and sometimes health-threatening because the air around the quarry area is always polluted. The implication of this is that quarry workers need to be on constant health check to enjoy healthy living. The question therefore is not whether they are involved in this economic activity of quarrying to develop the nation but if what they make out of this activity is commensurate with their standard of living [2].

Nigerian economy is largely dependent on oil [3]. However, the current global economic downturn, in particular oil price fluctuation in the international market, has compelled the Nigerian government to reduce the risk of over-dependence on oil by paying considerable attention to solid mineral development. Nigerian mining really has tremendous potential for economic development [4]. [5] reported that expansion of mining has the potential to contribute 15 per cent to Nigeria's GDP by the year 2020 from the present one

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per cent. So far, various policies have been formulated to regenerate the moribund sector for economic diversification and increased revenue. One of the key components of the mining reform was establishing a modern cadastre system that grants mining permits and licences [6]. Engagement in quarry activities has made life more enjoyable to the people since they derive more income from it [7].

The above observations necessitated this research work in order to assert the determinants of household income from quarry engagements. The specific objectives are to;

1. examine the socio-economic characteristics of granite stone quarry workers in the study area
2. examine the income pattern among the workers
3. identify the socio-economic determinants of household income from granite stone quarry jobs

## 2 METHODOLOGY

Edo State (Fig. 1), which is located in the South-south part of Nigeria is selected as the study area. Granite stone quarry workers participated in supplying information, using a well-structured questionnaire on socio-economic variables of age, gender, religion, educational background, household size, years of experience in mining jobs, current employment status, job description, and various income categories. Selection of six quarries from the total currently function granite stone quarries occurred first by random sampling. One hundred individual workers of the selected quarries were chosen randomly in the second stage; and these were administered with questionnaires. A total of 92 questionnaires were later considered fit for this study based on the accuracy of responses of the respondents to the various items of questions.

Descriptive statistics and Chi - square were used in presenting the summary of the findings from this study.

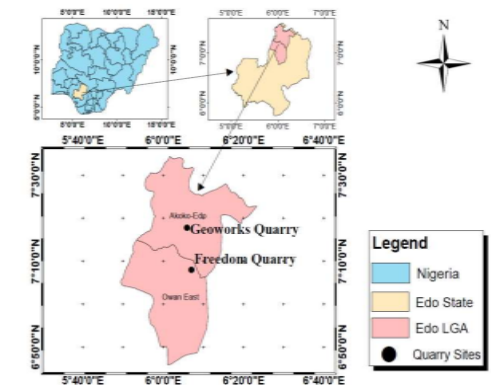


Fig. 1. Location Map of Edo State Showing the Location of the Study Area

## 3 RESULTS

The socio-economic characteristics of granite stone quarry workers is presented on Table 1. As indicated on the Table, respondents are largely indigenes (63.1%), who engage in different secondary jobs along with their primary quarry engagements for economic and social survival. Respondents are largely permanent staff (58.9%) who have to report daily for duty and are paid monthly in salaries with 80.5% having a work experience of 6 years or less. Majority of the respondents (71.8%) earn N60,000 or less from granite stone quarry jobs.

**Table 1. Socio-economic Characteristics of Granite Stone Quarry Workers**

Socio-economic items	Frequency	%
<b>Residency</b>		
Indigene	58	63.1
Non - indigene	34	36.9
<b>Secondary Occupation</b>		
Civil service	2	2.2
Commercial driving	4	4.4
Farming	20	21.7
Trading	14	15.1
Others	52	56.6
<b>Employment category in quarry</b>		
Contract staff	34	37.0
Student on IT	4	4.3
Permanent staff	54	58.7
<b>Working experience (years)</b>		
1 - 3	34	37.0
4 - 6	40	43.3
7 - 9	6	6.5
> 9	12	13.0
<b>Monthly earning from quarry job (Naira)</b>		
<= 20,000	25	27.3
20,001 - 40,000	27	29.3
40,000 - 60,000	14	15.2
> 60,000	26	28.3
<b>Proportion of household income from quarry job</b>		
<= 26%	22	23.9
26 - 50	30	32.6
51 - 75	22	23.9
> 75	18	19.6

Source: Author's survey, 2018

The result of chi-square test of association between granite stone job income categories and some socio-economic variables is presented in Table 2. The result indicated that secondary occupation, employment category in quarry, working experience and proportion of household income were significantly associated at 1% level. It is expected that people with no secondary occupation have a propensity to show more commitment to quarry engagement so as to maximize every possible benefits for their sustenance.

Permanent staff are also paid more than hired labour in the employment categories. The effect of working experience maybe related to length of years of working in granite stone quarry increasing a chance for increased productivity of employee. It is believed that the appreciable number of years of working experience possessed by the workers would enable them to perform well on the job and consequently leads to higher productivity and efficiency. Employee education categories was also found to be significantly ( $p < 0.05$ ) related to income from quarry jobs. It is believed that high literacy level of the workers has gone a long way in their productivity and efficiency as well as preventing them from the health hazards associated with the work since the workers know the importance and the use of safety measures put in place by the quarry management, thereby minimizing their exposure to work hazards.

Table 2. Test of Association between some Socio-economic Variables and Mining Income

Socio-economic Variables	$\chi^2$ -value	df	P-value	Remark
Residency	7.352	4	0.118	Not significant
Secondary Occupation	140.967	16	0.000	Significant at 1% level
Employment category in quarry	90.167	8	0.000	Significant at 1% level
Working experience (years)	114.349	12	0.000	Significant at 1% level
Proportion of household income from quarry job	48.657	12	0.000	Significant at 1% level
Employee gender	4.817	4	0.307	Not significant
Employee religion	5.306	4	0.257	Not significant
Employee Education	27.014	16	0.041	Significant at 5% level
Tribe	4.739	4	0.315	Not significant
Marital status	8.299	8	0.405	Not significant

Source: Author's data analysis, 2018

The proportion of household income obtained from granite stone quarry jobs is presented in Fig. 2 above. It is seen that most (32.9%) of the workers earn between 26 to 50% of their house hold income from quarry job. A proportion of 23.6% of the respondents have less than 26% and between 51 – 75% of the household income from quarry engagement. This tells the levels of dependence that workers have on their quarry jobs

for economic survival.

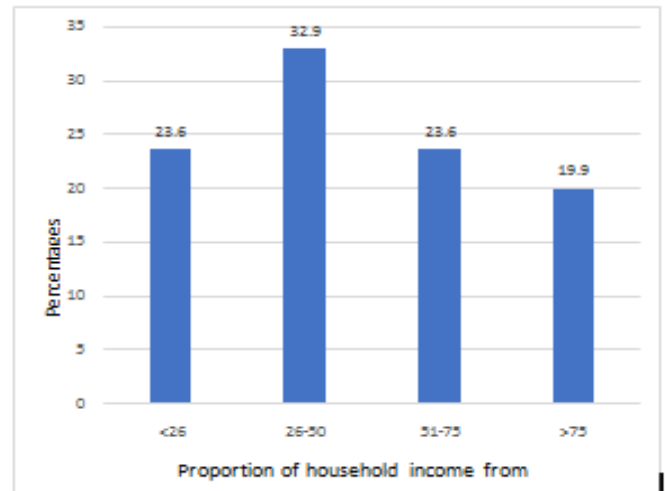


Fig. 2. Proportion of Household Income from Granite Stone Engagement

Presented in Table 3 is the cross tabulation of quarry workers' household earning per month across secondary occupation and proportion of household income from quarry. A proportion of 21.74% of quarry workers earn less than N20,000 monthly, but are not engaged in any secondary economic activity while another 21.74% of the respondents earn between N20,000 and N40,000 and are engaged in farming as a secondary job. Some 8.70% of the respondents earning between N40,000 and N60,000 trade as a secondary income generating activity. Respondents proportion who do not engage in any secondary economic activity but were earning more than N60,000 is 15.21%.

A proportion of 21.72% of the respondents earning less than N20,000 have quarry engagements providing about 50% of their house hold income; while 21.73% of the respondents earning more than N60,000 have quarry works accounting for more than 50% of the house hold income.

This implies that income category or the amount of income earned by an average granite stone quarry employee relates with the choice of taking up another income generating activities. This may very likely be true especially in places where employees are largely young men with family responsibilities and social obligations.

Table 3. Cross-Tabulation of Quarry Workers' Household Income per Month across Secondary Occupation and Proportions of Household Income from Quarry

	Household monthly earning in '000 Naira			
	< 20	20 - 40	40 - 60	> 60
<b>Secondary occupation</b>				
Civil service	2 (2.17)	0 (0.00)	0 (0.00)	0 (0.00)
Commercial driving	3 (3.26)	1 (1.09)	0 (0.00)	0 (0.00)
Farming	0 (0.00)	20 (21.74)	0 (0.00)	0 (0.00)
Trading	0 (0.00)	6 (6.52)	8 (8.70)	0 (0.00)
Others	0 (0.00)	0 (0.00)	6 (6.52)	12 (13.04)
None	20 (21.74)	0 (0.00)	0 (0.00)	14 (15.21)
<b>Proportion of household income from quarry</b>				
≤ 25%	10 (10.86)	8 (8.70)	0 (0.00)	4 (4.34)
26 - 50	10 (10.86)	10 (10.86)	8 (8.70)	2 (2.17)
51 - 75	5 (5.43)	9 (9.72)	2 (2.17)	6 (6.52)
> 75%	0 (0.00)	0 (0.00)	4 (4.34)	14 (15.21)

**4 CONCLUSION AND RECOMMENDATION**

Benefits in terms of income which are provided by granite stone quarry engagement are often not adequate to meet up with family obligations and social expectations, hence the need to engage in secondary economic activities. This study reveals that granite stone quarry workers in the study area who are largely permanent staff indigenes with mean of 6 years quarry job experience largely earn N60,000 per month which is inadequate. Other secondary occupation that they engage in includes civil service, commercial vehicle driving, farming and trading.

The following recommendations were thereby made from the findings from this study;

1. Quarry workers should be encouraged to get educated further, while they commit to the education of their children.
2. Technical training programs should be organized by quarry management on how workers' productivity can be improved, this will assist in improving the experience of granite stone workers.

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