

JONATT



**THE JOURNAL OF NIGERIAN
ASSOCIATION OF TEACHERS
OF TECHNOLOGY
(JONATT)**

VOL. 11 NO. 4 (DECEMBER, 2016)

ISSN 1118-4558

Interlocking clay bricks: A panacea for unemployment in developing countries

Ezekiel Babatunde Ogunbode^{1,*}, Ernest Ituma Egba², Najiyu Abubakar³,
Jibrin Hassan Suleiman⁴ and Muhammad Muhammad Intis⁵

¹School of Environmental Technology, Federal University of Technology, Minna

²Faculty of Education, Ebonyi State University, Abakaliki

³Faculty of Engineering, Kano State University of Science and Technology, Wudil

⁴School of Technical Education, Federal College of Education (Technical), Gombe

⁵Faculty of Technology Education, Abubakar Tafawa Belewa University, Bauchi

*Corresponding E-mail: letschartup@gmail.com (Tel: +2348059956964)

Abstract

Interlocking clay brick technology is a pathway to job creation, an antidote to poverty by way of catalysing the economic life of low class individuals, revitalising housing scheme system of the developing countries like Nigeria. This study focused on the assessment of interlocking clay brick technology as a panacea for unemployment towards sustainable housing scheme in Nigeria. In conducting this research, a descriptive survey method was used. 185 copies of questionnaire were administered to construction stakeholders, civil servants and applicants from Niger, Osun, Lagos, Enugu, Ebonyi states and Abuja. Respondents were selected for the survey using the Stratified random sampling method. The techniques of analyses adopted included the statistical weighted means scores. The outcome of the investigation showed that interlocking clay brick technology provided a pedestal for adequate skill acquisition towards gainful self-employment for the youths.

Keywords: Unemployment, Interlocking clay bricks, Technology, Skill Acquisition, Youth

Introduction

Interlocking block was developed in an attempt to provide a cheaper and faster construction product for the housing sector (Anand & Ramamurthy, 2005). This technology has been disseminated and promoted by the commercial sector, and presently, the interlocking block continues to be manufactured and used due to its aesthetics and simplicity in construction (Maini, 2010). Another merit derived from the use of interlocking compressed earth block in building construction is the reduced construction time attained due to the self-aligning features and its ability to key into each other and form a rigid bond without mortar layers. Educating, training and exposition of the potentials of interlocking clay brick technology can increase the development and creation of entrepreneurs by promoting and imbibing skills which are suitable for entrepreneurial endeavour.

Interlocking brick technology is a platform for wealth creation and youth empowerment. It is a way of making many become an employed by either taking the part of quarrying, builder, sale of the interlocking brick or and brick manufacturing, thus employing others (Hubert, 1995). Many youths today are unemployed while several others are wallowing in poverty. This state possesses as insecurity to the nation. It is often said that an idle hand is the devils workshop. Youth restiveness can be minimized to background, if they can be engaged with active skills to improve their economy. Handley (2010) opined that the real reason for violence isn't ethnic or religious differences, but scramble for scarce resources and joblessness. Thus, skill acquisition by youths such as interlocking clay brick production becomes a veritable platform for tackling socio-cultural, economic, political, scientific and technological challenges facing many developing nations like Nigeria.

Aims and objectives

This study therefore examined the extent to which interlocking clay brick technology promotes acquisition of the necessary skills for gainful self-employment in Nigeria. In achieving this aim, three specific objectives were set out, namely:

1. to identify ways interlocking clay brick technology promotes acquisition of the necessary skills for gainful self-employment in Nigeria;
2. to examine the readiness of the building construction stakeholders to adopt usage of interlocking clay brick in housing projects; and
3. to evaluate the perception of the society towards interlocking clay brick technology job security.

Methodology

In conducting this study, a stratified random sampling technique was used to draw 185 sample size from the construction industry stakeholders, civil servants and applicants serving as the study population. Abuja, Minna, Oshogbo, Lagos and Ebonyi metropolitans were the selected study cities for the purpose of this study. Ninety-five (95) copies of questionnaire were administered to construction stakeholders, forty-five (45) to civil servants and forty-five (45) applicants to elicit information. Tables 1, 2 and 3 show the demographic distribution of the respondent. The five (5) point Likert scale was adopted to measure the responses, where strongly agree (SA) =5; Agree (A) =4; Undecided (U) =3; Disagree (D) =2; strongly disagree (SD) =1. The analyses of data were done using the statistical weighted means scores. In decision making therefore, mean scores of 3.00 and above were regarded as accepted, while below 3.00 were regarded as rejected.

Table 1: Demographic Information on Sex Distribution across the Study Area

SEX	LOCATION						Total
	Abuja	Minna	Oshogbo	Lagos	Ebonyi	Enugu	
Male	25(71.43)	22(73.33)	23(76.67)	22(62.86)	24(96.00)	24(96.00)	140(75.70)
Female	10(28.57)	8(26.67)	7(23.33)	13(37.14)	1(4.00)	6(4.00)	45(24.30)
Total	35(100)	30(100)	30(100)	35(100)	25(100)	30(100)	185(100)

+Percentage value in parenthesis

Table 2: Respondents Age Distribution across the Study Area

AGE	LOCATION						Total
	Abuja	Minna	Oshogbo	Lagos	Ebonyi	Enugu	
18-25	4(11.43)	6(20.00)	4(13.33)	5(14.29)	5(20)	4(13.33)	28(15.14)
26-35	12(34.29)	13(43.33)	8(26.67)	15(42.86)	11(44.00)	11(36.67)	60(32.43)
36-45	11(31.43)	7(23.33)	13(43.33)	10(28.57)	7(28.00)	11(36.67)	59(31.89)
46-Above	8(22.86)	4(13.33)	5(23.33)	10(28.57)	2(8.00)	4(13.33)	33(17.84)
Total	35(100)	30(100)	30(100)	35(100)	25(100)	30(100)	185(100)

+Percentage value in parenthesis

Table 3: Respondents' Academic Qualifications

QUALIFICATION	LOCATION						Total
	Abuja	Minna	Oshogbo	Lagos	Ebonyi	Enugu	
No certificate	8(22.86)	4(13.33)	7(23.33)	8(22.86)	17(68.00)	8(26.67)	52(28.11)
SSCE/Diploma	10(28.57)	11(36.67)	8(26.67)	7(20.00)	10(40.00)	11(36.67)	57(30.81)
OND/NCE	9(25.71)	7(23.33)	9(30.00)	8(22.86)	5(20.00)	6(20.00)	44(23.78)
BSC/HND	5(14.29)	6(20.00)	5(16.67)	6(17.14)	2(8.00)	3(10.00)	27(14.59)
MSC/PhD	3(8.57)	2(6.67)	1(3.33)	6(17.14)	1(4.00)	2(6.67)	17(9.19)
Total	35(100)	30(100)	30(100)	35(100)	25(100)	30(100)	185(100)

+Percentage value in parenthesis

Results and Discussions

Table 4 described the ways interlocking clay brick technology promotes acquisition of necessary skills required for gainful self-employment in Nigeria. The analysis shows that 80.54% of the respondents agreed that interlocking clay brick technology promotes the acquisition of necessary skill for gainful self-employment, which encourages training of skilled men for masonry job in the country; while 19.45% of the respondents disagreed. With a mean score of 4.20, it shows that respondents accepted the fact that interlocking clay brick technology provides the necessary training skills required for gainful masonry job which is readily available around the country, this gained skills will help to bridge the lacuna generated by unemployment in our society. Also, 78.92% of the respondents agreed that interlocking clay brick technology provides the platform for mastering block/brick bonding techniques needed to create job and business opportunities. Items 2, 3, 4, 6 and 7 in Table 4 had mean scores of 4.18, 4.21, 3.64, 3.79 and 3.84, respectively,

accepting the statement that points towards the rating that interlocking clay brick technology promotes the attainment of necessary skill for gainful employment which could reduce unemployment in Nigeria, while Item 5 with a mean score of 2.90 rejected the statement. However, a sum mean score of 3.82 suggested that interlocking brick technology promotes skill acquisition.

Table 4: Respondents' Rating on Ways Interlocking Clay Brick Technology Promotes Acquisition of the Necessary Skills for Gainful Self-Employment in Nigeria

S/N	Items	SA	A	U	D	SD	Mean
1	It encourages training of skilled men for masonry job	95 (51.35)	54 (29.19)	16 (8.65)	17 (9.19)	3 (1.62)	4.20
2	It provides platform for mastering block/brick bonding techniques	104 (56.22)	42 (22.70)	17 (9.19)	13 (7.03)	9 (4.87)	4.18
3	Brick alignment skill is enhanced through interlocking clay brick technology	78 (42.16)	86 (46.49)	7 (3.78)	10 (5.41)	4 (2.16)	4.21
4	It creates room for acquisition of block/brick molding skill	56 (30.27)	64 (34.60)	18 (9.73)	37 (20.00)	10 (5.41)	3.64
5	Innovative electrical wiring skill is acquirable through clay brick technology	33 (17.84)	34 (18.38)	38 (20.54)	42 (22.70)	38 (20.54)	2.90
6	It encourages the development of new wall finishes skill	54 (29.19)	77 (41.62)	24 (12.97)	22 (11.89)	8 (4.32)	3.79
7	It provides room for acquiring block preservation skill	58 (31.35)	81 (43.78)	16 (8.65)	19 (10.27)	11 (5.95)	3.84
Grand Mean							3.82

+Percentage value in parenthesis

Table 5 presented a measure of the readiness of the building construction stakeholders to adopt usage of interlocking clay brick technology in housing projects. The responses were on whether the building profession is willing to adopt the use of interlocking clay brick in building construction. About 68.65% of the respondents agreed that the building profession is willing to adopt the use of interlocking clay brick in building construction; while 18.92% disagreed. However, a mean score of 3.75 indicated that the building profession is willing to adopt the use of interlocking clay brick in building construction. It was also observed from the Table that items 2, 3, 6 and 7 have mean scores of 3.42, 3.44, 3.84 and 4.09, respectively. This put forward the readiness of the building construction stakeholders to adopt usage of interlocking clay brick in housing projects. Items 4 and 5 with a mean score of 2.31 and 2.47 rejected the statement. Nevertheless, a sum mean score of 3.33 upheld the opinion that the building stakeholders are willing to adopt the usage of interlocking clay brick in housing projects.

Table 5: Rating of Respondents on the Readiness of the Building Construction Stakeholders to Adopt Usage of Interlocking Clay Brick in Housing Projects

S/N	Items	SA	A	U	D	SD	Mean
1	The building profession is willing to adopt the use of interlocking clay brick in building construction	56 (30.27)	71 (38.38)	23 (12.43)	25 (13.51)	10 (5.41)	3.75
2	Estate managers speak well about utilizing interlocking clay brick for erection of building	40 (21.62)	58 (31.35)	44 (23.78)	26 (14.05)	17 (9.19)	3.42
3	Structural engineers recognise interlocking clay brick as a strong and reliable walling material	54 (29.19)	47 (25.41)	32 (17.30)	31 (16.76)	21 (11.35)	3.44
4	Electrical engineers are friendly with the use of interlocking clay brick	12 (6.49)	31 (16.05)	22 (11.89)	58 (31.35)	62 (33.51)	2.31
5	Mechanical engineers approve the use of interlocking clay bricks in building construction due to its friendliness during water and liquid waste piping and pipe management	19 (10.27)	26 (14.05)	33 (17.84)	51 (27.57)	56 (30.27)	2.47
6	Sponsors of housing project are ready to adopt interlocking clay brick as a walling material	71 (38.38)	56 (30.27)	26 (14.05)	22 (11.89)	10 (5.41)	3.84
7	Quantity surveyors have no objection in the use of interlocking clay brick in housing project	85 (45.95)	67 (36.22)	10 (5.41)	10 (5.41)	13 (7.03)	4.09
Grand Mean							3.33

Note: SA=Strongly Agreed, A=Agreed, N=Neutral, D=Disagreed, SD=Strongly Disagreed +Percentage value in parenthesis

Table 6 was used to describe the response of the respondents on the societal perception on interlocking clay brick technology job security. The analysis showed that about 88.11% of the respondents agreed that the continuity of interlocking clay brick housing project is assured as a result of availability of the raw materials; while 8.11% disagreed. Be that as it may, a mean score of 4.26 revealed that respondent's perception of the interlocking clay brick technology job security is positive. Items 2, 3, 4, 5, 6 and 7 in Table 6 has mean scores of 3.89, 3.74, 3.67, 3.14, 4.02 and 3.40 accepting the statement that points towards the rating that perception of the interlocking clay brick technology job security is positive. The statement was supported with a mean score of 4.26 which was an agreed situation.

Table 6: Respondents Rating on the Societal Perception on Interlocking Clay Brick Technology Job Security

S/N	Items	SA	A	U	D	SD	Mean
1	The continuity of interlocking clay brick housing project is assured as a result of availability of the raw materials	88 (47.57)	75 (40.54)	8 (4.32)	9 (4.87)	6 (3.24)	4.26
2	The low cost of interlocking clay brick materials is a ticket for job security.	67 (36.22)	72 (38.92)	16 (8.65)	19 (10.27)	11 (5.95)	3.89
3	The ease of building services and maintenance for interlocking clay brick buildings promotes job security	56 (30.27)	71 (38.38)	25 (13.51)	21 (11.35)	12 (6.49)	3.74
4	The high probability of good pay for workers makes interlocking clay brick technology a secured job	57 (30.81)	69 (37.30)	18 (9.73)	22 (11.89)	19 (10.27)	3.67
5	The architectural façade associated with interlocking clay brick technology enables job security	41 (22.16)	48 (25.95)	25 (13.51)	37 (20.00)	34 (18.38)	3.14
6	The low health hazard in the use of interlocking clay brick technology for housing project promotes job security	78 (42.16)	67 (36.22)	14 (7.57)	18 (9.73)	8 (4.32)	4.02
7	Job satisfaction attributes of interlocking clay brick technology enables job security	44 (23.78)	55 (29.73)	38 (20.54)	27 (14.60)	21 (11.35)	3.40
Grand Means							3.73

Note: SA=Strongly Agreed, A=Agreed, N=Neutral, D=Disagreed, SD=Strongly Disagreed
+Percentage value in parenthesis

Conclusion

This paper examined the potential of interlocking clay brick technology as a path way to the provision of jobs, as well as a platform for entrepreneurial skill development in our society. The study revealed that interlocking brick technology has a great potential of providing job opportunity to youths through acquisition of competent skills. Thus, skill acquisition by youths such as interlocking clay brick production becomes a veritable platform for tackling socio-cultural, economic, political, scientific and technological challenges facing many developing nations like Nigeria.

Recommendations

1. Interlocking brick technology should be encouraged by the stakeholders because of its viable market in Nigeria.
2. Interlocking brick technology should be promoted as a strong ground for developing potential entrepreneurs, especially in the building industry.

References

- Anand, K. B., & Ramamurthy, K. (2005). Development and evaluation of hollow concrete interlocking block masonry system. *The Masonry Society Journal*, 23 (1), 11-19.
- Handley, M. (2010). The violence in Nigeria: What's behind the conflict. Retrieved on 20/03/2012 from <http://www.tune.com/time/world/article.10,8599,1971010.html>.
- Hubert, G., Pascal O., & Thierry, J. (1995). *Compressed earth blocks: Manual of design and construction*. Eschborn, Germany: Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ).
- Maini, S. (2010). *Earthen architecture in the world*. Retrieved on 11/09/2016 from http://www.earthauroville.com/?nav=menu&pg=earthworld&id1=26&lang_code=en