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Family Size and Economic Welfare: Econometric Analysis of the Islamic Perspective

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The conventional wisdom in economic analysis postulates an inverse relationship between family size and welfare because the higher the number of children a family needs to cater for, the more problematic for the family to succeed economically. Economic analyses stemmed from Malthusian thinking which has given thrust to modern day global population policy. In contrast, the Islamic perspective suggests a direct association between the two, strongly supported in Q17:31, which says, 'Kill not your children for fear of poverty: We shall provide sustenance for them as well as you. Verily, the killing of them is a great sin'. This paper investigates the effects of family size and composition using the Harmonized National Living Standard Survey data subjected to frequencies and ordinary least square regression to respectively discern the relationship and estimate the impact of household size on household welfare. The paper empirically establishes that economic analysis linearly relating the two phenomena is not only over simplistic but is also devoid of deepened consideration of other factors that produce a positive relationship which the Islamic view suggests.

Keywords: Fèrtility, poverty, Islamic economics

Introduction

Global population grows each year by approximately 80 million people (Arthur, 2005) and nearly all of the growth is concentrated in developing countries where fertility rate has remained high and where, concurrently, poverty remains one of the greatest challenges. Fertility rate has been falling over time globally while, despite the worldwide reductions on the average, sub-Sahara Africa still records a high rate. World fertility rate fell to 2.53% in 2012 from 2.9% in 1990 as that of sub-Saharan Africa dropped to 5.5% from 6.05% in the same period (WDI, 2014). Nigeria can be counted among countries whose fertility rate has experienced a decline even if slightly from 6.2% to 6.02%. World GDP growth was just 3.1% in 2012 while sub-Saharan Africa and Nigeria recorded 4.4% and 4.3% respectively. Poverty headcount ratio at $1.25 a day in SSA was 46.8% in 2011 while Nigeria recorded 62% in 2010 (WDI, 2014). Therefore, it appears that poverty and fertility rates are positively correlated while the latter coexists with low growth. The perception that high population growth constitutes a binding constraint to economic growth and efforts directed at poverty alleviation seems correct on the face value. However, studies which analysed the question of whether and the extent to which family size or household population affect economic welfare of households have generated controversial results rendering the nexus a continuous empirical exploration.

Received wisdom lends credence to the position that inappropriately managed large family size may have several adverse implications on health, nutrition, educational attainment of children, social status of families as well as standard of living of a household. On the one hand, a relatively large family size may beget some undesirable implications such as poor health, low status and income, low levels of education, pressure on existing infrastructure due to overexploitation, poor childcare and nutrition which affect living standard. On the other hand, a relatively small family size is believed to assist in providing adequately for the needs of its members, with such a small family being able to benefit from the necessities of life. This standard view of family size stemmed from the Malthusian theory of population which stated that because human populations grow exponentially while food production grows at an arithmetic rate, humans would have no resources to survive on in the future. Malthus (1798) then urged population control to avoid catastrophic occurrence and advocated later marriages as preventive check on population growth as well as disease, war and famine as positive check. The Malthusian League argued successfully for post-marriage birth control. The accepted doctrine by the political and business classes resulted in the proliferation of ideas leading to population .control policy backed by the production of contraceptives and marketing same to developing countries especially those whose fertility rates are deemed inconsistent with sustainable world development. According to Malthus (op. cit), fertility of the poor – rather than chronic or periodic unemployment – was the main source of poverty. Population growth and poverty are the chief stimuli for the poor to seek work and thus a necessary stimulus to industry.

One of the severe manifestations of population control is the incidence of ageing populations globally with attendant economic implications such as increased expenditure on health and aged care, reduction in labour force participation rates (Productivity Commission, 2005)[1] and productivity, among others. In the report, Australia's aged population (65 years and above) was predicted to grow to 25% of the population in 2044/45 from half that proportion in 2005. China's population control policy introduced in 1978 aimed at alleviating socio-economic and environmental problems which were applauded to have reduced the country's population by 200 million in three decades also produced the phenomena of aging population, contracting labour force and a skewed sex ratio at birth.[2] It appears, therefore that human intervention in nature's cause cannot but produce further distasteful implications that it continues to grapple with.

In Nigeria, over the years, policy control on choice of family size has not been formally enunciated though you find in such policies as National Health Insurance Scheme which stipulated registration of one spouse and four biological children for a male employee to participate in the scheme[3]. The perception of using children as the basis of future collateral and allowing nature to decide whether one gets pregnant and gives birth was practised until modern inculcation of birth control education which was based on the belief that such practice contributed to poor quality of health, mal-nutrition and degradation of the environment.

Be the above as it may, we find that the conventional wisdom in economic analysis postulates an inverse relationship between family size and welfare because the higher the number of children a family needs to cater for, the more problematic for the family to succeed economically. This economic relationship stemmed from Malthusian thinking which has given thrust to modern day global population policy. In contrast, the Islamic perspective suggests a direct association between the two, strongly supported in Q17:31, which says, *'Kill not your children for fear of poverty: We shall provide sustenance for them as well as you. Verily, the killing of them is a great sin'.* One may view this Qur'an verse as having both short-term and long term implications. In the short term, the new-born has access to mother's breast milk for the next two years after birth and therefore, the parents need not fear poverty from its birth. In the long run, the baby depends on other foods and has to be trained with resources before adulthood after which comes eventual responsibility to care for the parents in return. It is the long-term economic implication of fertility

[1] Government of Australia (2005) Economic Implicat'ons of an Ageing Australia, Productivity Commission, Research Report 16.

[2] Hvistendahl, M. (2010) "Has China Outgrown the One-Child Policy?". Science 329 (5998): 1458-1461. Doi: 10.1126/science.329. 5998. 1458 20847244.

[3] National Health Insurance Scheme (2012) Operational Guidelines. Accessed at nhis.gov.ng 10/5/2015.

that seems to concern economists who believe larger family size becomes problematic for the family welfare particularly in view of the additional expenditure to nurture the additional children.

We postulate that the analysis of the issue of family size and household welfare transcends the short term. However, in the very long term, children are expected to pay back to the family by supporting their family either by helping to cater for some of the siblings, or providing some unconditional cash transfer to care for parents and siblings. In real life situations of certain societies, some children who become rich in adulthood come back to build houses for their parents to reside in their old age or provide rental income for the upkeep of such parents. This is supported in Qur'an 17:23 *"And your Lord has decreed that you worship none but him. And that you be dutiful to your parents. If one of them or both of them attain old age in your life, say not to them a word of disrespect, nor shout at them but address them in terms of honour"*. In effect, we hypothesise that a large family will contribute to family welfare because Allah truly provides for the additional children in the short term as well as in the distant future if they are well nurtured according to the dictates of Allah. *"And there is no creature on earth but that upon Allah is its provision, and He knows its place of dwelling and place of storage. All is in a clear register"* (Q11:6). It can be inferred from the verse that God declares that He has provided sustenance for all His creatures including the worms, ants and reptiles in the bowels of the earth. If God has provided for these creatures of His, He could certainly not have forgotten His noblest creature (man). Most assuredly, He has provided for man. It is left to them to find it and make use of it.

The children by performing their duty to their parents will contribute to the economic emancipation of the family in the long term. One of the ways that parents nurture their children is through the provision of quality education. It is instructive to note that seeking knowledge was mandated by Allah who taught Adam who became successful over the angels (see Q2:31-34). According to the Quran 39:9 "... *Say: "Are those who know equal to those who know not?"* and Quran 58:11 *"Allah will exalt in degree those of you who believe, and those who have been granted knowledge"*. Allah tells us in these verses the supremacy of the knowledgeable person over the ignorant, such that parents who give their children the required education would have distanced themselves from poverty of their family and in old age. It rests with man to seek knowledge with which to get his sustenance. That was why the first revelation to Prophet Muhammad (Q 96:1-5) was on education because it is the key with which man will open many gates of bounties of God including economic welfare. *"Read in the name of your Lord who created, Created man from a clinging substance. Read, and your Lord is the most Generous- Who taught by the pen- Taught man that which he knew not"* (Q 96:1-5).

The above-mentioned five verses revealed to Prophet Muhammad in the cave of Hira in Makkah as the first revelation from God through angel Jibril indicate the importance of education in the economic empowerment of man. The truth is that with the help of his intellect (education), it is possible for man to provide for himself and members of his family their material needs. He could innovate products or invent machines that could earn him income that he and his family will not be able to spend one billionth of it because of its abundance. Many of these innovators and inventors are millionaires or multi-billionaires in local and foreign currencies. This shows that through education a place of honour will accrue to the knowledgeable people thereby leading them to posterity and taking them out of austerity and poverty. The fear of poverty and indigence can be erased through education. Man is even asked to pray for knowledge (education) Q20:114 when it says: ... and say, *"My Lord, increase me in knowledge*". This is because it is one of the means to raise people's standards of living and improve their economic welfare.

Prophet Muhammad said man will have more than enough resources through acquisition of knowledge. He said "For him who adopts a path seeking knowledge, Allah eases the way to Paradise and angels spread their wings for a seeker of knowledge, being pleased with his occupation, and all that are in the heavens and the earth including the fish in the water ask for forgiveness for a learned one. A learned one is superior to a worshipper as the moon is superior to all the planets. The Divine are heirs of the prophets and the prophets do not leave an inheritance of Dirham and Dinars (money) but only of knowledge. He who acquires knowledge, acquires **a vast portion** (Yahya, 1985: 638).

Therefore, this study seeks to carry out an empirical investigation to determine whether family size affects household welfare in particular if the members of the family are educated. In the process, it specifically examines the relationship between religious beliefs and household welfare; assess the relationship between the number of children educated[4] and household welfare; establish a relationship between the number of children working and household welfare; and econometrically determine the impact of family size on household welfare.

This study is justified in terms of both theoretical and empirical contribution. Unlike the approaches used in existing literature, which only considered the influence of family size linearly on household welfare (e.g. Arthur, 2005; Tran, 2005), we employ a different approach which considers the nature of household composition with respect to number of educated children and number of working children on household welfare in Nigeria. This approach combines the idea that having large family size could only be detrimental to family welfare if the children are not educated (given knowledge) and if the children do not pay back when they start working and start earning income (i.e. when they become good/dutiful to their parents). The paper employs the National Living Standards Survey (NLSS) 2004 and the Harmonised National Living Standards Survey (HNLSS) 2010 data sets which we explore to describe the trend of family size and welfare in Nigeria. The sets also provide the data for our ordinary least square (OLS) regression analysis which allows us to discern the impact of family size on family welfare using the household as a measure of family. The rest of the paper is organised as follows: section 2 explores data to provide a tentative correlation of measures of household welfare and household size as well as the tendency for religious beliefs to influence the household size as the overview of the paper. In section 3, we present the review of literature regarding the relationship between household size and welfare as well as the theoretical framework of the paper. The results of the research are presented and discussed in section 4 while summary and conclusion are provided in section 5.

Overview of the Study

Household Size and Family Welfare Pattern in Nigeria

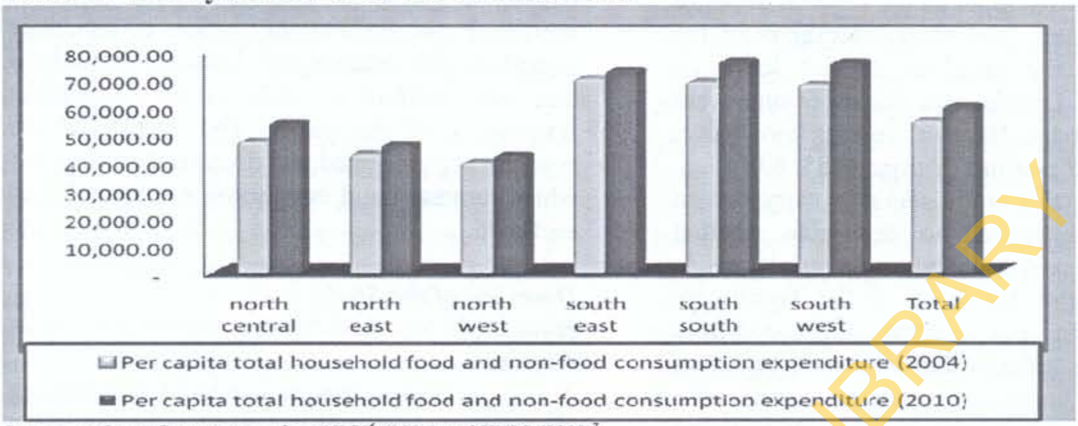
The household welfare or expenditure pattern in Nigerian six geo-political zone indicates some interesting trend. The household welfare pattern, measured by household per capita food and non-food consumption expenditure, shows that the South-east geopolitical zone recorded the highest welfare expenditure in 2004[5] followed closely by South-south, South west, North central and North east, while North west accounts for the least welfare expenditure in the zones. In 2010, South-south recorded the highest welfare pattern followed closely by South west and South east, while North-west still accounts for the least welfare expenditure in 2010.

Generally, the total household welfare expenditure rose by 12% from the level in 2004 to N60,202.95 in 2010, signifying an improvement in household welfare (Fig. 1). Comparing household welfare expenditure growth between 2004 and 2010 by geopolitical zone, North-central zone had the highest of 16.8% in per capita total household food and non-food consumption expenditure, South-west (14.2%) and South-south (13.2%). In addition, household welfare expenditure in North east rose by 10.3% while in North-west it was 8.8%. South-east accounts for the lowest percentage increase in household welfare expenditure.

[4] Western education

[5] Values were corrected for inflation

Table 1: Family Size Based on Geo-Political Zone



***Source**: Author's Computations from NLSS[6] (2004) and HNLS (2010)[7]*

Figure 1: A Chart Showing Per Capita Household Food and Non-food Consumption Expenditure (2004 and 2010)[8]

6 Nigeria Living Standard Survey
7 Harmonized Nigeria Living Standard Survey
8 The decimal points are retained to differentiate between geopolitical zones

Nigeria's average family size in 2004 was about 4.83 per household which decreased to 4.65 in 2010 (Table 1). North-west has an average family size of 5.89, North east (5.41), North central (4.87), South east (4.53) and South-south (4.31), while South west accounts for the least family size of 3.58. On the other hand, in 2010, the total household size in North west was 5.30, North east was 5.18, North central was 4.65, South east was 4.13 and South-south was 4.03 while South west recorded the least family size value of 3.63. Family size fell from 4.87 in 2004 to 4.65 in 2010 in North central. North east recorded a slight fall from 5.41 to 5.18; North West recorded a fall from 5.89 to 5.30, South east from 4.53 to 4.13, South-south from 4.31 to 4.03. Contrary to other geopolitical zones, South west recorded a marginal increase in family size from 3.58 in 2004 to 3.63 in 2010, representing 1.4% increase.

Table 1: Family Size Based on Geo-Political Zone

Geo-Political Zone	Household size (2004) Number of persons	House hold size (2010) Number of persons	% change
North central	4.87	4.65	-4.52
North east	5.41	5.18	-4.25
North west	5.89	5.30	-10.02
South east	4.53	4.13	-8.83
South south	4.31	4.03	-6.50
South west	3.58	3.63	1.40
Total	4.83	4.65	-3.73

***Source:** Author's Computations from NLSS (2004) and HNLSS (2010)*

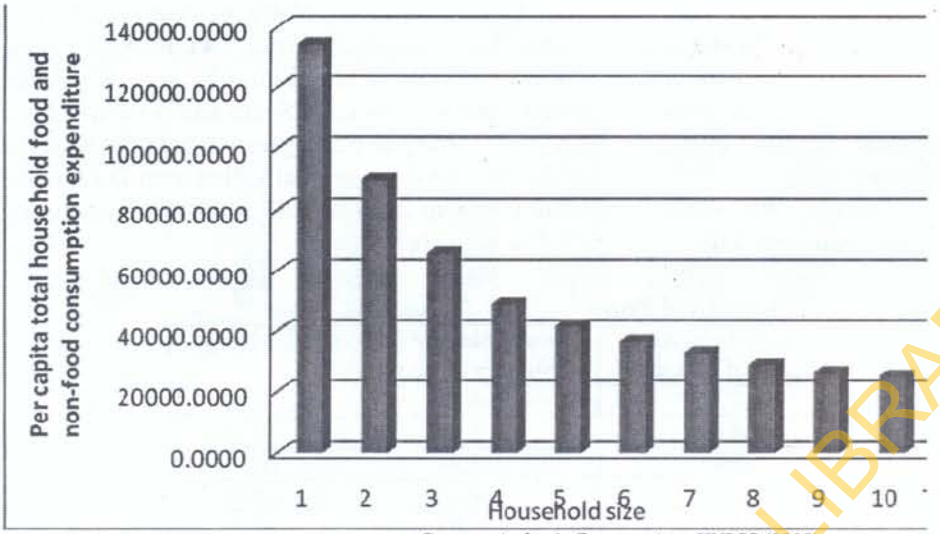
There is no state religion in Nigeria but about 50% of Nigerians are Muslims and 40% are Christians, while 10 percent are of indigenous beliefs. Also, Nigerians are often strict about their religious practice and beliefs but the range of commitment, belief and practice vary in each religion. However, faith affects the composition of households as indicated in Table 2. In the table, Muslim households have a larger family size compared to Christian and traditional belief practitioners. Specifically, Muslim households have a family size of about 6 or slightly more, Christian households have about 5 or slightly more, while a traditional household would have a family size of about 5 persons.

Table 2: Family Size and Household Characteristics

Household Characteristics	House hold size (2010)
Religion	
Christian	5.59
Muslim	6.30
Traditional	5.31
Other	5.39
Either	6.47

***Source:** Author's Computations HNLSS (2010)*

From figure 2, household welfare as measured by per-capita food and non-food expenditure expectedly exhibits an inverse relationship as the number of household size increases. Households with just a person had an average household welfare expenditure of N134,511.89; household size of 2 had an average household welfare expenditure of N89,813.61, household size of 3 accounts for an average expenditure of N65,974.89 and so on. In addition, household size 10 is associated with an average welfare expenditure of N25,324.88. In other words, the higher the number of persons in a family the smaller the welfare represented by per capita food consumption expenditure.



***Source:** Author's Computations HNLSS (2010)*

Figure 2: Per capita total household food and non-food consumption expenditure

Literature Review and Theoretical Framework

Review of Previous Studies

There are basically two views on the relationship between family size and household welfare. The first view posits a negative relationship between family size and household welfare. Specifically, economists who belong to this school opine that larger households in terms of size are likely to experience less welfare compared to smaller households (Atreyi, 1972; Wray, 1971 and Rutter *et al.*, 1976). The second view argue that there is a positive relationship between family size and household welfare asserting that households that are large in size are likely to experience an increased welfare due to economics of size. Specifically, a family burdened with a large size would not be able to efficiently perform the functions of providing nurture and education and this may affect deleteriously not only the family's welfare but the welfare of the nation as a whole (Atreyi, 1972). Also, a higher proportion of total expenditure goes to food as family size increases and on the average, per capita expenditure for food falls significantly given an increment in family size (Wray, 1971). In particular, the author shows that families of six or more persons spend about 40 percent per person less than what three-person families at every income level up to $15,000 spend. Also, larger family sizes tend to be poorer than smaller families. Most observed outcomes found in children in large families may be related to factors associated with economic duress, living in high-crime neighbourhoods and crowded/ inadequate housing, malnutrition, unemployment and parental stress (Rutter *et al.*, 1976).

Recent studies have also maintained that an increase in the number of children increases family size and it appears to reduce the family's standard of living and welfare, especially in young families with small children (Espenshade *et al.*, 1983). This is due to larger families' need to devote more of their income to necessities, such as food and clothing, and less to luxuries, like recreation. In a study on welfare of female headed households, Deborah (1993) showed that female headship is far more common than usually believed in rural Ecuador; and household size is negatively related to family welfare. Large family size is seen as a constraint to child education as children from larger families are less likely to receive schooling than those from smaller families (Ray, 2000). More recent studies still posit the negative relationship between household size and welfare (e.g. Jagannadha, 2010; Olawuyi and Oladele, 2012). Jagannadha (2010) empirically showed that there exist a negative impact of household size on welfare measured by per capia consumption expenditure, while the squared of household size is positively related to welfare. However, the household size squared term is positive and increases across quintiles, indicating that households of larger size become worse off along the quintiles, but at decreasing rates. Thus, a convex relationship exists between household size and welfare, with households in the middle of the distribution showing the greatest negative effect of size on per-capita consumption. While Olawuyi and Oladele (op.cit) estimated the average household size in Oyo State to be 5.26 members, their study concluded that household size is negatively related to household welfare in the state.

In contrast to the widespread negative relationship found between these two variables, a few studies have established a positive relationship between household size and household welfare. Prais and Houthakker (1955) showed that of two households with same per capita expenditure, larger household is better off, thus they tend to buy higher quality items that cost more per unit and have increased welfare. Similar findings were also drawn by Deaton (1997). Moussie *et al.* (1983) noted that there are economies of size with respect to food expenditure. They associated household size with food expenditure variations in their sample, specifically, they established a positive relationship that runs from household size to household welfare and a one percent increase in mean household size could result in a 0.529 percent increase in monthly food expenditures. The coefficient suggests economies of size in food expenditures at mean family size.

The positive relationship between household size and household welfare has been attributed to weights attached to child and adult welfare (Nelson, 1993; Lanjouw and Ravallion, 1995) in line with accounting for differences in intra-household resource allocation between children and adults. Thus, Kim *et al.* (2005) established that the effect of a newly born child on household welfare per person is positive and statistically significant. This is because, using food share of household expenditure as a measure of household welfare, a newly born child does not lower the household welfare, thus a positive relationship exist between family size and household welfare. Based on their results, they concluded that there is no decisive evidence for the negative effect of fertility on household welfare in the short run.

Analytical Framework

This paper considered the Barten (1964) theory of household welfare which incorporates household size (number of persons in the household) and household composition (number of workers, number of educated persons among others) in the determination of welfare. Welfare was modeled using the extended equivalent scale measure in which the effect of household composition was incorporated in the household welfare function. The model posited that composition (such as the addition of a child) may lead to changes in per capita household consumption or expenditure. To examine the impact of household size on household welfare, the modified Barten (1964) model was followed. Drawing from the theoretical framework, we employ a parametric estimation of the household regression model specified in equation 1:

$$w_f = \alpha + \gamma \ln n + \sum_{k=1}^{K-1} \eta_k \frac{n_k}{n} + \zeta . V + \mu \text{ ---1}$$

From the equation 1, w_f is household welfare, n is the household size (number of people in the household), $\frac{n_k}{n}$ is the ratio to household size of household members who fall in one of *K* groups defined by number of educated children or number of children working. This specification is designed to separate the effects of household size, *n*, from household composition (number of educated children or number of working children) as represented by the ratio. The parameter γ corresponds to the conceptual experiment of making a household larger by replication of both people and resource. The vector v includes a variety of variables (control variables such as household socio-economic characteristics).

We endogenized birth spacing (number of years between child 2 and child 1 and number of years between child 3 and child 2). Households that engage in birth spacing are likely to experience a higher welfare, thus we expect a positive relationship between birth spacing and household welfare. Household specific socio-economic characteristics are also included in the regression as these may affect household welfare. The regression specification of the household welfare is specified in equation 2:

$$\ln(W_i) = \alpha + \beta_1 hsize + \gamma_1 edu\_1\_child_i + \gamma_2 edu\_2\_child_i + \gamma_3 edu\_3\_child_i + \delta_1 working1\_child_i + \delta_2 working2\_child_i + \delta_3 working3\_child_i + \eta_1 MS\_IF_i + \eta_2 MS\_DV_i + \eta_3 MS\_SP_i + \eta_4 MS\_W_i + \theta_1 birth\_spacing1_i + \theta_2 birth\_spacing2_i + \lambda_i \ln\_age_i + \pi_i sex\_male_i + \rho_i Location_i + \omega_1 RG\_C_i + \omega_2 RG\_T_i + \omega_3 RG\_O_i + \mu_i \quad \text{--------2}$$

where,

W= household welfare measured by household total expenditure

hsize = household size

education_1_child = a dummy variable which assumes the value of 1 if the first child is educated and 0 otherwise

education_2_child = a dummy variable which assumes the value of 1 if the second child is educated and 0 otherwise

education_3_child = a dummy variable which assumes the value of 1 if the third child is educated and 0 otherwise

working1_child = a dummy variable which assumes the value of 1 if the first child is working and zero otherwise

working2_child = a dummy variable which assumes the value of 1 if the second child is working and zero otherwise

working3_child = a dummy variable which assumes the value of 1 if the third child is working and zero otherwise

D_edu * D_work = interaction dummy between an educated child and a working child working. This tells if a child is both educated and working

hsize * child_edu = interaction between household size and education of children

MS_IF = marital status (informal union)

MS_DV = marital status (Divorced)

MS_SP = marital status (Separated)

MS_W = marital status (Widow)

birth_sep1= birth spacing (number of years) between the first child and the second

birth_sep2 = birth spacing (number of years) between the second child and the third

age =age of household head

sex_male = sex of household head

location = If household resides in urban or rural area

RG_C = Household head religion (Christian)

RG_T = Household head religion (Traditional)

RG_O = Household head religion (Others)

To further investigate the impact of household size on household welfare, we interact household size with education dummy (which assumes the value of 1 if at least a child is educated and 0 if all children are not educated). We also interacted children working (the value of 1 is assumed if a child is working and 0 otherwise) and child's education (if a child is educated or not). The regression specification with interacted dummy is shown in equation 3:

$$\ln(W_i) = \beta_1 hsize_i + \gamma_i D\_edu1_i * D\_work_i + \rho_i hsize_i * edu\_child_i + \eta_1 MS\_IF_i + \eta_2 MS\_DV_i + \eta_3 MS\_SP_i + \eta_4 MS\_W_i + \theta_1 birth\_spacing1_i + \theta_2 birth\_spacing2_i + \lambda_i \ln\_age_i + \pi_i sex\_male_i + \varepsilon_i \quad \text{-----3}$$

Drawing from the theory of household welfare, we expect household size to be negatively related to household welfare, while the interaction between household size and education of the child to be positively related to household welfare. This is true in most developing society, because children act as a buffer to current and future household consumption and welfare. Education of the first child, second and third is expected to be positively related to household welfare. In the same vein, households with working child (first, second or third) are expected to have a higher welfare. Birth spacing is also expected to increase household welfare. The study employed the Harmonized Nigeria Living Standard Survey (HNLSS) of 2009/2010. The choice of this data set is based on the fact that it accommodates all the needed variables to estimate the model.

Estimation Technique

To determine the effect of family size on household welfare, we employed both bivariate and multivariate analysis. The bivariate analysis tests for the association between household welfare, family size and other independent variables were considered in the model. As earlier stated the two measures of household welfare (per capita expenditure) were tested if an association exits with the independent variables. The bivariate analysis enables one to see how each of the factors relates with a particular issue of interest without considering other factors. However, the main disadvantage is that the impact of other factors are not controlled for; hence, bivariate analysis are prone to errors. To correct for this problem, a multivariate analysis that simultaneously tests for the impact of independent variables on household welfare was also employed. To determine the relationship between the dependent variable which is continuous and the right hand side variables, the ordinary least square technique (OLS) is employed.

Result Presentation and Discussion

Household Size, Educated Children and Welfare

Table 3 presents the relationship between household size, number of educated children and household welfare in Nigeria. The analysis considers households with at most three children education. From the table, household size of 5 with no child educated has expenditure per capita of N41659.53 (21.10%). Household of same size but with just a child educated account for N48389.18 (24.51%) expenditure per capita, with 2 children educated is N53168.99 (26.93%) per capita expenditure and with three educated children is N54191.46 (27.45%) expenditure per capita.

Households of size 6 with no child educated have an expenditure per capita of N36701.25 (21.10%) and households with only a child educated will have expenditure per capita of N41285.56 (23.74%). In like manner, households of same size with 2 and 3 children educated have expenditure per capita of N44883.312 (25.81%) and N51028.94 (29.34%), respectively. This goes on to size 8 with same result. But after that, this relationship became incosistent. Hence, for household size 9 and 10, the result changed. Households of size 9 have a total income per capita of N138767.99. From this, households with no child educated have an income per capita of N34323.618 (24.73%), with only a child educated have an income per capita of N33690.15 (24.27%). In the same manner, household with 2 and 3 educated children have an income per capita of N33044.28 (23.81%) and N37709.94 (27.17%) respectively.

Considering households of size 10 with no child educated on the average, their per capita income amount to N38645.19 and those with just a child educated account for income per capita of N34877.22. In the same manner, households of size 10 with 2 and 3 children educated have an income per capita of 35989.77 and 38495.83 respectively.

Table 3: The Relationship between Household size, Number of Educated Children and Welfare

		Number of Educated Child/Children				
		0 (none)	1	2	3	Total
Household Size	5	41659.5383 (21.1031)	48389.1852 (24.5121)	53168.9982 (26.9334)	54191.4696 (27.4513)	197409.1913
	6	36701.251 (21.1049)	41285.5691 (23.7411)	44883.3124 (25.81)	51028.9489 (29.344)	173899.0814
	7	32787.4058 (20.1546)	40423.5977 (24.8486)	41309.3753 (25.3931)	48159.1786 (29.6037)	162679.5574
	8	32862.9153 (21.592)	36333.5101 (23.8723)	39753.5226 (26.1193)	43249.6822 (28.4164)	152199.6302
	9	34323.6181 (24.7345)	33690.1519 (24.278)	33044.2804 (23.8126)	37709.9457 (27.1748)	138767.9961
	10	38645.1994 (26.1102)	34877.2226 (23.5644)	35989.7775 (24.3161)	38495.8354 (26.0093)	148008.0349
	Total	37500.8494 (21.6282)	42915.9125 (24.7513)	45351.1487 (26.1558)	47620.4263 (27.4646)	173388.3369

***Note**: Values in parenthesis represent percentages*[9].
***Source**: Author's Computation; with underlying data from HNLSS 2009/2010 survey*

[9] Note percentages (row percentage) represent the percentage of income/welfare (per capita expenditure) by each household size

Regression Analysis

Drawing from previous sections, we examine the impact of household size on household welfare in Nigeria. In Table 4, a total of 7919 households are considered. Specifically, the result shows that households with first, second or third child educated will have increase welfare compared to households with no child educated. The relationship between the education of first, second and third child and household welfare is positive and statistically significant. This implies that welfare will increase by 0.045 if the first child is educated. Households with second and third child educated will experience an increase of 0.04 and 0.038 in household welfare. On the contrary, the relationship between third child education and household welfare is not statistically significant, therefore welfare is not affected by the education of the third child.

The result shows that a positive relationship exists between household welfare and first child working. Going by this we conclude that households with first child working will experience a higher welfare compare to households with no child working. The welfare of households with first child working will increase by 0.03 compared to households with first child not working. The result is in tandem with our apriori expectation of a positive relationship between first child working and welfare of households. In most sub-Saharan countries household members tend to rely on first child compared to second and third, therefore a working first child may increase household welfare. The result for second and third child working is not significantly related to household welfare, thus we conclude that household welfare does not change significantly in households with second or third child working.

Suffice to say, birth spacing between the first and second child is not a significant factor affecting household welfare, however there exist a significant and negative relationship between birth spacing (between the second and third child) and household welfare. The impacts of specific household characteristics are also examined on household welfare. It is evident that marital status of households is not significantly related to household welfare. In the same way, the sex of household head is also not significantly related to household welfare. In contrast the age of household head, location and religion are significantly related to household welfare, thus they are significant determinants of household welfare. Specifically, older households may experience a lower welfare. Households in urban areas will experience a higher welfare compared to households in rural areas. This is consistent with various studies on household welfare (Anyawu, 2013).

To examine further the impact of household size on welfare, we interacted education and child working and household size with educated children. From the result, interactions between children education and children working are statistically significant for first and second child, while the effect of third child is not statistically significant. Specifically, a positive and statistically significant relationship exist between household welfare and first child educated and working compared to families with first child not educated and not working. The result shows that household welfare will increase by 0.071 for households that have first child educated and are working. Similarly, there is also a positive and significant relationship between second child's educational attainment and household welfare. Household welfare tends to rise by 0.03 for households with second child educated and working compared to households with second child not working and not educated. In summary the result shows that households with more educated children will experience increase in household welfare compared to households with no child educated.

We examine further the impact of a large and educated household size on household welfare. To do this, household size and the educational qualification of household's child/children are interacted. The interaction term between household size and educational qualification of children is statistically significant at 10 percent level. The significant relationship is in tandem with our apriori expectation. The relationship implies that larger households that have at least a child educated will have a higher welfare compared to households with a larger size but no child educated.

Conclusions

From the findings, household size without considering educated or working children has a negative effect on household welfare. However, household size when the number of educated or working children is taken into account is positively related to household welfare. This suggests that a large sized household with more educated children will attain a higher welfare compared to a small household with no child educated. This implies that Allah does not want humans to procreate without seeking knowledge. Prophet Mohammed (PBUH) admonishes his followers to seek knowledge by telling them that knowledge is obligatory for every Muslim.[10] Allah in the Quran also instructs Prophet Muhammad and by extension Muslims in particular and other people in general not only to seek knowledge but also pray for its increase (Q20:114). Also, households with first and second child working will attain a higher welfare compared to another household with no child working.

Based on these findings, we recommend that government should concentrate on policies to improve the education sector rather than waste resources on population control. This focus should lead to a critical mass of educated people among the populace who are needed to produce scientific knowledge, inventions and innovations which will add to the economic wealth of the country, increase the welfare of families and generate overall development in the country. Therefore, this piece of research has used economic analysis to explain the Qur'an verses that taught humans how to deal with population and how to educate such population, and has shown that Allah does not favour the type of population control that the world is embarking on, rather He wants humans to procreate and at the same time seek knowledge in education to master their environment. There is need for government to focus on policies, programmes and strategies to increase access to education including functional ones as well as create enviroment for employment generation so that individual family and aggregate economic welfare can be guaranteed.

[10] Al-Tirmidhi, Hadith 74

Table 4: Regression Result

	Panel 1- Without interaction	Panel 2- With interaction
Hsize	-0.062*** (0.004)	-
edu_1_child	0.045*** (0.017)	-
edu_2_child	0.04** (0.018)	-
edu_3_child	0.038** (0.015)	-
working1_child	0.028** (0.012)	-
working2_child	-0.00039 (0.013)	-
working3_child	-0.008 (0.012)	-
D_edu_1 * D_work_1	-	0.071*** (0.014)
D_edu_2 * D_work_2	-	0.030** (0.015)
D_edu_3 * D_work_3	-	0.022 (0.016)
Numb_hh * child_edu	-	0.004* (0.002)
D_edu_1 * D_work_1	-	
MS_IF	0.134 (0.093)	0.164* (0.099)
MS_DV	0.177 (0.131)	0.28** (0.138)
MS_SP	0.033 (0.081)	0.13 (0.086)
MS_W	0.02 (0.044)	0.088* (0.047)
birth_spacing1	-0.002 (0.002)	-0.002 (0.002)
birth_spacing2	-0.003** (0.001)	-0.005*** (0.001)
Lnage	0.034 (0.025)	-
Sex_male	0.029 (0.041)	-
Location	0.201*** (0.013)	-
RG_Christian	0.156*** (0.013)	-
RG_Tradition	0.092* (0.049)	-
RG_Other	0.048 (0.085)	-
Constant	10.62*** (0.098)	-
No. of respondent	7919	7919
R-square	0.1209	0.0167
Adjusted R-square	0.1188	0.0152
F-statistics	57.16 (0.000)	11.19 (0.000)

*Note: *, ** and *** represent significance at 10%, 5% and 1% respectively. Values in parenthesis are for standard errors*
Source: Author's Computation; with underlying data from HNLSS 2009/2010 survey

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