

Rural Small-Scale Women Farmers and Preference for Family Size in South-East Nigeria

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Abstract: Among other things, fertility control in Nigeria may not be feasible without recourse to socioeconomic issues such as micro-occupation classification and dominant family cultural traditions facing women and their relationship to fertility behaviour. Rural small-scale women farmers are a relatively closed group with some uniqueness for the understanding of the value of children (VOC) in socioeconomic and cultural contexts and its relationship with fertility behaviour in developing nations. This study, guided by the VOC model, focuses on determining factors for preference for family size (0-4 children) among rural small-scale women farmers in Eha-Amufun in Enugu state. 200 married women (mean age = 33.9; mean age at marriage = 24.5) from 20 agricultural co-operative societies were selected for the study. The study adopted a survey and quantitative research design. Besides the sociodemographic information of the study participants, the study elicited from the respondents information on their choice of family size, the connection of family size with their occupation and the circumstances surrounding son preference and son adoption in the family and rural contexts. The collected data were analysed using the ordinal logistic regression model. The findings show that economic independence, son preference and male child adoption negates limiting family sizes to 0-4 ($p < .05$) however, age, formal education, children as source of labour and economic independence were positively correlated with the desire for a family size of 4 children and above. In view of the limitations of the study and the ability of the VOC model to unveil spurious factors for fertility behaviour among women, there is a need for comparative studies of rural closed groups in developing nations and their fertility behaviour.

Keywords: Closed group · Desired family size · Rural small-scale farmers · Fertility control · VOC · Women's roles

1 Introduction

At present, the world population is over seven billion with the huge amount of the population living in low and middle-income countries of the world (*WHO* 2015; *United Nations* 2012). The majority of these countries are located in Sub-Saharan Africa, such as Nigeria, Niger, Burkina Faso, Mali, etc. (*de Carvalho et al.* 2017; *Doepke/Tertilt* 2018). Although these nations have subscribed in principle to the United Nations global policy objectives on curbing the human population;¹ they appear to be insensitive to the complications attached to uncontrolled human population growth as they are showing laxity in policy implementation or deliberate avoidance of the policy objectives.

Beyond the global policy template on population control and subscription in principle, a number of factors come into play so that their ignorance or deliberate avoidance compromise the policy objectives and hence render the policy itself ineffective in most developing nations (*Okafor* 2017). These factors, which include family's socioeconomic status, women's socioeconomic status, education, women's role etc., directly or indirectly influence the direction of the future population structure of a nation and even regions of the world (*Atake/Ali* 2019; *Apanga/Adams* 2015; *Mbacké* 2017; *Upadhyay/Karasek* 2012; *Miedema et al.* 2018).

While the world population status can be summarised by the crude birth rate and crude death rate (*Keyfitz* 1971), the components of the population structure are scaled down to the indices of population growth and population control from which the relationship between the biological and social aspects of fertility are put into perspective (*Weeks* 1986). As far back as 1956, *Davis and Blake* (1956) pointed out the three intermediate variables that play the major roles in human population growth, and hence their importance in the population control processes. Among these intermediate variables are intercourse, conception and gestation variables, which have been narrowed down to the fluid relationship between socioeconomic status and behavioural disposition towards fertility control.

While in general terms, socioeconomic status of the members of the society plays a role in determining fertility rates and, in the long run, population growth (*DeRose/Ezeh* 2010; *Tsui et al.* 2017; *Ashraf et al.* 2014), specifically, the socioeconomic status of women is more compelling in determining the effectiveness of population control (*Doepke/Kindermann* 2016). Among other things, the socioeconomic status of women in developing nations has been observed as a major factor in decisions on desired family size at the household analysis level (*Bhattacharyya* 2013; *Field et al.* 2016; *Germain* 1975; *Tavousi et al.* 2016). Women's empowerment or the economic independence of women from the family and male-dominated systems in developed and developing nations have consistently predicted the direction of

¹ These policy objectives emanated from the world conferences on population challenges such as World Population Conference (1974); Mexico International Conference on Population and Development (1984) and the Cairo International Conference on Population and Development (1994).

fertility rate and population growth (*Taylor/Pereznieta 2014; Phan 2016; Upadhyay et al. 2014; United Nations 2001*).

In past decades, a number of policy strategies, chiefly to control the fertility rate among women, have been adopted to confront population growth by the United Nations informing the domestic population policies across the nations of the world, especially developing nations such as Nigeria (*Shofoyeke 2014*). However, the fluctuating results of these policy strategies as reflected in Nigerian population status over the years simply indicate that there are some misplacements between population policy initiation processes and their implementation in Nigeria (*Okafor 2017*). From the earliest fertility documentations in Nigeria (1965), there has been a staggering and fluctuating high fertility rate among Nigerian women. Total fertility rates have hovered between 7.2 and 5.2 between the years 1965-1999 (*Federal Office of Statistics 1968; Feyisetan/Pebley 1989; Makinwa-Adebusoye/Feyisetan 1994; National Population Bureau 1984; NDHS 2000*). In 2015 the total fertility rate was recorded as 5.5 and increased in 2016 to 5.8 (*Nigerian Bureau of Statistics 2017*). Evidence from the fluctuating fertility rates in Nigeria in past decades further indicates the existence of unascertained factors in the explanation of fertility control in Nigeria (*Shofoyeke 2014*). In other words, the particular situation of Nigerian women such as their socioeconomic conditions in all their facets and their roles in the family and society are yet to receive painstaking investigation for proper acknowledgement of the fertility control measures being put in place.

Among the particular situations of women in fertility control issues are self-perception, family influence on fertility choice, extent of economic and social empowerment, dominant traditions in the family of marriage and local communities, women's roles and willingness in contributing to the desired family size. Underpinning these factors is the concept of the value of children as described in the Value of Children theory by *Hoffman and Hoffman (1973)*. Beyond the circumstances surrounding women in rural settings, their perceptions of the future and the implications of their choice of family size for this play a role in their decisions on fertility control at least within their fertile period. As such, while economic empowerment may contribute to limited family size among women in developed nations, it can work in the opposite direction in developing nations so that the issue of inheritance and future wealth secured in the investment in more children can lead to the desire for more children (*Nauck 2014*). To understand this and for an empirically informed perspective, the dominant avenues of women's empowerment in some Sub-Saharan African communities, such as small-scale-farming, deserve research attention.

Specifically, like other Sub-Saharan African nations and other developing nations, Nigeria still faces dominant socioeconomic conditions that have characterised the strength of women on the social ladder especially in rural settings. One of these socioeconomic conditions is agriculture as a mainstay in the Sub-Saharan African rural setting. As such, the lives of most women are built and continue to be built around this, which is expressed in layers of empowerment and self-assessments among these women. In line with this, and coupled with the fact that the majority of Sub-Saharan African women who are the major factor in the analysis of fertility rates

are located in rural settings, understanding the layers of empowerment and self-perception among women in this setting and their implications for the fertility rates will contribute to the overall empirical and theoretical unravelling of the spurious factors affecting fertility rates in Nigeria and other developing nations.

Currently, there is a gap in the literature in coordinating the general socioeconomic status and the narrow space of peasant farmers as a secluded group and their behavioural disposition towards fertility control as expressed as desired family sizes. Many scholars have approached the issue of women's empowerment and other socio-economic factors such as race, ethnicity, religion etc., and their relationship with fertility control decision-making among the women. However, the particular situations of some culturally distinct women in parts of the world such as the southeast of Nigeria (Eha-Amufu) have not been given attention in the light of its weight on the fertility control policy of the Nigerian government. In addition, beyond the aforementioned factors on fertility control decisions and women's empowerment in the farming occupations, the factor of a *closed group* as a variable between women's empowerment and fertility behaviour has yet to be empirically substantiated. In the context of the present study, by closed group we refer to the group of women born and married within the area of Eha-Amufu with similar experiences such as traditional family culture, education, traditional marriage culture and heterogeneous age categories but with intergenerational similarity of experience. This, according to this study, is one of the extraneous variables in social fertility control analysis that has yet to be verified among developing nations. In view of the empirical and epistemological importance of the aforementioned issues, the present study is interested in self-perception in the lens of socioeconomic status among the small-scale women farmers and desired family size in Enugu state, southeast Nigeria, with an exclusive focus on the women of agricultural co-operative societies in Eha-Amufu.

The study is guided by the following research question: What are the determining factors for desired family size and preference for limited family size (1-4 children) among rural small-scale women farmers?

2 Theoretical considerations, literature review, background and assumptions

2.1 Theoretical Framework

For a theoretical overview of the study's object of interest, the theory of Value of Children (VOC) by *Hoffman and Hoffman (1973)* was utilised. The central assumption of VOC is that the value of children varies. Changing living conditions of social groups in societies have various far-reaching consequences for generative decisions and parent-child relationships (*Nauck 2014*).

Although the VOC theoretical model was designed as a departure from the *economics-dominated* demographic² analysis of fertility, there is common ground for VOC and economic approaches to fertility such as objective economic and socio-structural factors like economic development, labour market opportunities and level of education. These factors are tied to an implicit decision-making model, while the “value of children” is taken as the central mediator variable at the individual level (Nauck 2014). The value attached to children in itself is subject to variation due to changes in society and culture. As such, the VOC has been observed as an important “missing link” between social and cultural conditions on the one hand and individual decision-making regarding fertility and child-oriented behaviour over the life course on the other. Hence the basic tenets of the VOC model, which include sociodemographic factors [education, urban experience, socio-economic status and wife’s employment], individual dispositions [basic values, control beliefs and information access], value of children [economic, psychological and social advantages/disadvantages] and family planning [fertility control].

In the central assumption of the model, the value of children varies from society to society and has far-reaching consequences for fertility decisions and the prevalence of parent-child relationship types (Nauck/Klaus 2007). Hoffman and Hoffman’s (1973) model took into consideration the possible existence of alternative sources of value for (potential) parents, either individual or institutional. According to Hoffman and Hoffman, in spite of the value of children motivating parents to the decision to have an additional child, there could be barriers to the value of children such as family poverty, inadequate housing or maternal illness. Nevertheless, there are incentives as factors that encourage parents to pursue and obtain the desired value of children such as wealth, good housing, family support, generally positive attitudes towards children in the social context and economic benefits from children (Nauck 2014).

The VOC model refined in the context of social theories on fertility has reflected the contribution of the Theory of Social Production Function (TSPF) on fertility, which is anchored in the basic aspects of children such as comfort, social esteem and affect (Nauck 2014). According to the core hypotheses of the TSPF, “the greater the expected social approval for any particular action alternative, or the higher the expected increase in physical well-being associated with the action alternative, the more likely this alternative will be chosen; secondly, the more persistent the efficiency of a production factor in context is, the higher is the probability of its intergenerational transmission and of its institutionalization as a routine cultural solution” (Nauck 2014: 1801-1802). This is encapsulated in the two dimensions of economic values and affect/behavioural confirmation benefits. In essence, if economic and traditional cultural values dominate the social sphere, one can assume motivation for having many children while the domination of affect and behavioural confirmation of the social sphere will result in the pursuit of a small number of children. These two dimensions of the hypotheses are subject to factors such as

² Era of demographic analysis of social fertility factors with more emphasis on the economic perspective of fertility control (Werding 2014; Leibenstein 1974).

education, labour market, dominant career among the women, wealth creation and possession, dominant value system in relation to children, etc. Where the labour market is accessible via lineage and family ties, the members of the society will be interested in having more children to maintain intergenerational links and domination (Nauck 2014; Huinink 1995, cited in Nauck 2014). This also applies to the concept of inheritance at the communal level where sharing of land properties occurs according to the number of males in the community irrespective of the number of males coming from one family. In addition, dominant careers among the women that require cheap labour from family members will encourage the pursuit of more children among these women.

In view of the subjects of interest in this study (socioeconomic status and fertility control), the VOC model appeared to foster some explanations requisite to the understanding of the rural dwellers and fertility control, at least in Sub-Saharan African nations such as Nigeria. Although Hoffman and Hoffman (1973) and subsequent researchers applying the model did not pay attention to the model's importance for understanding the challenges of fertility control in rural settings among developing nations (see Arnold *et al.* 1975), the design of the model and subsequent dimensions developed from the model were all relevant in the understanding of fertility issues in rural settings among developing nations. The VOC model, addressing three basic aspects of children such as comfort, social esteem and affect, all capture the common socio-psychological and economic conditions among rural dwellers in Nigeria.

In projecting the VOC model as one of the interdisciplinary theories via the elements of social production function, Nauck (2014) maintained that human beings strive for two basic goods such as physical wellbeing and social approval. These two goods as ends in themselves are realised through other instrumental factors, such as the value of children. In essence, having children is important for having these goods (physical wellbeing and social approval) while the desire for children is encapsulated in the factors surrounding the desire for family, such as the comfort that children bring, physical/psychological stimulation derived from children, social approval that children bring and status attainment.

The comfort role of the children as it affects the desire for family size is observable in their active contribution to household production of the family. This is observable among many developing societies where the productive capacity of the society is dependent on informal and unskilled labour among members of the immediate family. In Eha-Amufu, farming among the women is chiefly subsistence farming and requires all available hands in the family for day-to-day farming activities. As such, fertility levels among the women are still being affected by their immediate need for informal and unskilled labour on the farm. Among other things, the physical/psychological stimulation from children is realised at an earlier stage of the marriage when the mother and, in some cases, the father derive some amount of stimulation from constant interaction with the children. However, this stimulation appears to be immediate and can be influenced by the level of education of the couples, which may trigger an exchange in stimulation especially among the developed nations. In the case of developing nations such as Nigeria, the situation seems to be different

considering the demands by the parents-in-law from opposite sides. In certain situations, the number of children produced by the couple are influenced by the parents-in-law who either derive stimulation from their grandchildren or even for “omugwo” issue in which the mothers-in-law receive sumptuous packages during visitation of their daughters and daughters-in-law after delivering a baby. Social approval as one to the factors for fertility decisions in the VOC model can be located in the context of creating new relationships for the parents or intensifying the existing relationship. While this situation may be fading in some developed nations, as *Nauck* (2014) indicated, in developing nations such as Nigeria it is intensifying due to the ethnic ties and the strength derived from larger numbers in the extended family networks. This is also connected to the status attainment of the parents in the family context as well as the societal context.

While the above factors have been pointed out as the means through which the goals of physical wellbeing and social approval can be realised in relation to social production function and fertility intentions, *Nauck* (2014) equally contextualised their efficacies via the basic assumptions of the VOC model. First among the four assumptions is, “if the work utility of children is high, then it is an efficient strategy to be rich in children” (*Nauck* 2014: 1805). In contexts where the work utility of the children is highly in demand, the corresponding action is for the young couple to increase the number of children in their fertility decision. Work utility, although *Nauck* (2014) presented it in the dimension of employment via lineage, is observed in the dimension of family sources of labour in informal employment. This is observed among the small-scale farmers in Eha-Amufu where subsistence and semi-commercial farming appear to be the dominant informal employment for the women and the majority of their families. In the second assumption of the VOC model, “if the insurance utility of children is high, then having many children is also an efficient strategy, as it distributes the burden of supplying the insurance utility for the parents onto more shoulders, and thus reduces each child’s duty” (*Nauck* 2014: 1806). Certainly, among the traditional systems in Nigeria, especially the indigenous Igbo people of southeast Nigeria, children appear to be insurance for the parents especially when they begin to withdraw from active work, either from the formal or informal sector of the economy. During old age, it is the responsibility of the children to take care of their parents, hence the high level of dependency on youth in the dual dimensions of children and the aged. In addition, the more the number of children, the less the load among the children in taking care of their aged parents as well as the less the chances of the parents suffering in their old age since there is no institutionalised means of helping the aged in the country. This is observed among the people of Eha-Amufu located in southeast Nigeria as well as in the history of agrarian society. The third assumption of the VOC model is, “if the utility of children for social approval or the creation of additional social relationships is high, having as many children as possible is not an efficient strategy, because the number of additional social relationships will not increase linearly with the number of children” (*Nauck* 2014: 1806). The assumption here appeared to be more compatible with developed nations than developing nations such as Nigeria and the indigenous people of Igbo whose survival is ensured by the extent of family, tribal and ethnic

networks. In essence, while the social approval flags the relationship benefits and diminishing returns of having more children at the societal context, among the indigenous people of Igbo where Eha-Amufu is located, the more the number of children the larger the network of relationships that will indirectly reinforce and popularise the social approval of the parents. This is observable sometimes during certain activities in the rural settings where the family enjoy more hands in terms of labour and other support via the connections of the family's children. In the fourth assumption of the VOC model, "if the utility of children for dialogical interaction and the emotional utility of having children are high, then it is also inefficient to have many children, as emotional benefits cannot be accumulated in the same way as work or insurance utility" (Nauck 2014: 1806). Perhaps this is the case in most developed and even some developing nations, however in the current traditional cultural setting among the indigenous people of southeast Nigeria, each incoming child is an extension of emotional bonds as each child represents a particular experience, especially to the mother. While this may be triggered by the issue of "omugwo" among the mothers-in-law who benefit from the ceremonial care of the daughters-in-law, in some contexts, the couple consider having what could be considered "late births" to create unforeseen emotional warmth in the family when the older children are transitioning to other stages of life such as higher education, employment and marriage.

While the obligation to "multiply and fill the earth" by the adherents of some religions continues to hold sway in the rural communities, some cultural norms celebrating the most fertile woman by the number of children are still operational in some rural settings. As a way of encouraging fertility among women, some communities, especially among the Igbo ethnic group, offer celebrations for women who are able to give birth to up to nine children; this is called "*igbu-ewu-ukwu*." The term signifies the fertility prowess of a particular woman or women among her people (Okafor/Okoye 2019). In essence, this negates the null hypothesis of the emotional utility of having more children as Nauck (2014) proposed.

The intermediate variables and the basic assumptions of the VOC model as discussed above are connected to the living arrangements and compelling socioeconomic circumstances around the people of Eha-Amufu. For instance, in the area, which is a rural setting compared to an urban setting; investment in children is very low and informs the desire for a greater number of children. Due to the socioeconomic arrangements in this rural setting and the dominant logic of passive decisions over the form of training the children ought to receive, women within this context seem to see no negative implications of poor educational training for their children. Rather, they see more benefits in the dividends of multiple children, which, in this context, is observable in the subsistence and semi-commercial farming among them. While the early dividends of multiple children in the farming context appears to be a factor in encouraging high fertility rates among most of these women, this is extended to the issue of son preference. Although the issue of son preference has been connected to social institutions of kinship and inheritance, the position of daughters among this people seems to be temporary while that of sons is permanent both in wealth creation and labour utility. For instance, according

to *Nauck* (2014), the males' duration in the labour market seems to be longer than that of the females, and the male children grow up to bring in daughters-in-law who eventually come in as another hand for domestic and informal labour in the family. Another factor surfaces as confidence in their economic productivity in facilitating the raising of many children to maintain a future wealthy family network (*Easterlin* 1968). Basically, son preference among the women in this ethnic group is second to none in their marriages because it appears to solidify marriage itself and create a proper platform of inheritance of properties as well as lineage maintenance. While VOC has been applied by other scholars in testing the implication of value of children in some societies, chiefly in developed nations with some defined categories, the fluid nature of the issues raised by the VOC model and the interwoven circumstances surrounding women and fertility control deserve scholarly attention for more micro indices in this context, which is yet to appear in the framework of the VOC model.

2.2 Literature review

Over the years, scholars have put the issue of women's empowerment at various levels and its connectivity with fertility control into perspective, hence the availability of enormous findings from different walks of life. Women's empowerment per se is not independent of other socioeconomic factors found in almost every part of the world such as ethnicity, race, religion, local tradition, access to wealth, etc., which have shaped the chances of women's participation in decisions regarding fertility control.

Religion across the world has affected the extent of women's empowerment in its different dimensions and belief systems. At the macro level, religions such as Christianity, Islam, Hindu, Judaism etc., have all made indelible marks on the extent of women's empowerment and, in the long run, their contribution to decisions about family size, such as viewing fertility status as a natural occurrence, a gift from God and divine occurrence that does not require interruption of any kind (*Al-kandari* 2007; *Kohli/Al-Omair* 1986; *Dharmalingam/Morgan* 2004).

At the micro level, religion further influences women's freedom and liberty at certain levels of decision-making. While the different sects in Islam such as Suni Shiite and Alawites further interpret women's freedom and liberty as it affects their fate in fertility control towards the Islamic interpretation of women's existence, such as absolute obedience to the husband in all ramifications (*Al-kandari* 2007; *Sueyoshi/Ohtsuka* 2003), among the Christians, the Orthodox, Catholics and Protestants have further distinctions in their interpretation of women's empowerment and the issue of family size with special regard for any move to interrupt the initiation of and period of gestation (*Castro Martín* 1995; *Kaufman/Meekers* 1998; *Frejka/Westoff* 2008). As such, the view of these communities towards all available methods of family planning but abstinence goes beyond the understanding of the implication of women's empowerment and the right to personal decisions over reproductive health. Although these studies connecting religion, women's empowerment and fertility control were all-encompassing, the absence of indices of small-scale

specialised occupations among women and fertility decisions in recent times were lacking, creating a gap in the literature.

Evidence from different parts of the world equally reveals the relationship between ethnicity and women's empowerment as well as fertility control (*Trovato* 1981; *Dubuc* 2009; *Amin/Teerawichitchainan* 2009; *Dudley et al.* 2006). Among the Igbo, Yoruba and Ijaw people of Nigeria, there is evidence of correlations between women's empowerment and fertility control while in the same country among other ethnic groups such as Hausa, Kanuri and Fulani there is a limit to women's liberty as well as their active role in fertility control (*Kollehlon* 2003; *Kritz/Makinwa-Adebusoye* 1995, 1999; *Makinwa-Adebusoye* 2001). Among the major ethnic groups in Malawi, evidence shows generally high fertility rates compared to the global classification of high and low fertility rates while internally, the major ethnic groups show further differences with women's empowerment as a third variable in measuring fertility rates (*Zulu* 2001; *Palamuleni* 2014). In parts of Iran, Kuwait, India and South Asia, women's empowerment has been observed to be positively correlated with fertility control in the face of ethnicity as a conjoining variable (*Amin/Teerawichitchainan* 2009; *Siddiqui* 1996; *Narayan* 2006; *Asadi-Aliabadi et al.* 2017; *Moshfegh/Eshgee* 2013; *Froozanfar et al.* 2012). By implication, it does not depend only on the empowerment of women and their liberty per se, however, it equally involves the dominant traditions, which dictate the limits of women's liberty at certain levels of decision-making in the family (*Doepke/Tertilt* 2009). Race has also surfaced in the multilevel analysis of women's empowerment, fertility control and other factors (*Hamilton et al.* 2003; *Alfonso* 2000). While the above studies have paid attention to the issues of ethnicity and race in connection to fertility control, indicators of specialised occupations as a variable between ethnicity, race and fertility control are lacking. By implication, the studies appeared to be blanket summaries of the issues of ethnicity, race and fertility control of which some factors such as specialised occupations and small-scale local enterprises among women may play unknown roles in the results.

Women's empowerment and fertility control has been studied in connection with the type of employment and contexts. In the mainstream labour force, women who felt empowered with regard to family socioeconomic status have been found more likely to contribute to the desired family size (*Upadhyay et al.* 2014; *Carr et al.* 2012; *Lee-Rife* 2010; *Mason/Smith* 2000). Contrary to this, more women had been found inactive in decisions regarding fertility control irrespective of their participation in the mainstream labour force. In comparison to the mainstream labour force, women who are informally employed, usually as self-employed or in a family venture, have been found to be mostly inactive in fertility control decision-making (*Upadhyay/Karasek* 2012; *Hindin* 2000). More importantly, findings of certain studies (*Balk* 1994; *Ali/Sultan* 1999) have shown the passivity of women in informal employment in fertility control decisions in the family. Similarly, the family structure and leadership style in the family such as nuclear and extended family, have equally surfaced as predictors of behavioural disposition towards fertility control among relatively empowered women in informal employment (*El Ghannam* 2005; *Amin et al.* 1995; *Goni/Saito* 2010). Employment as a basis of women's

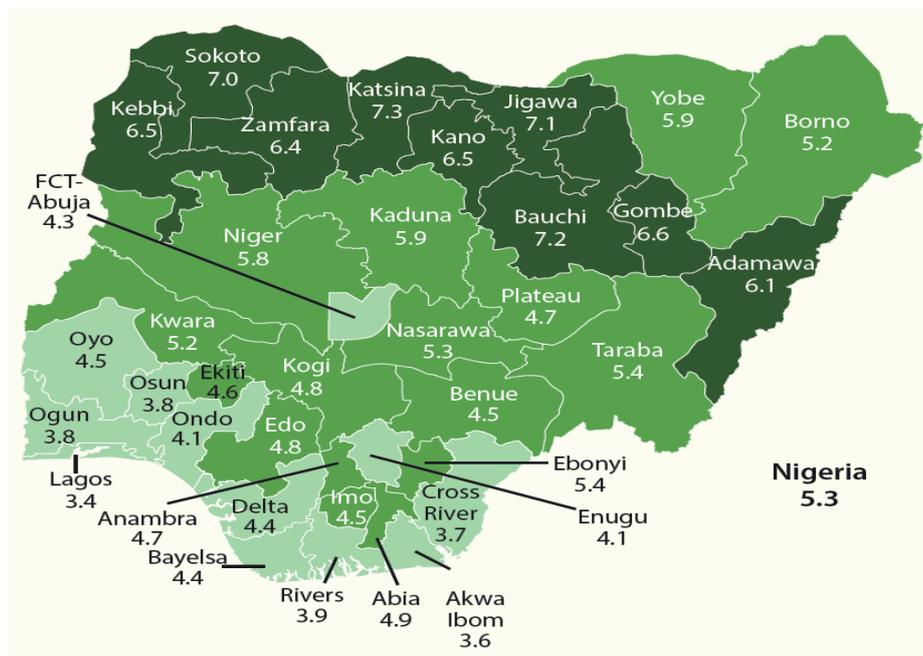
empowerment has been studied in isolation of ethnicity and fertility control. While in most cases studies on employment, empowerment and fertility control have focused on formal employment, little or no attention has been given to the fluid relationship between ethnicity and small-scale traditional employment among women and fertility control, indicating the need for deeper empirical investigation of the relationships of these variables. Meanwhile, the VOC model, which has been adopted in a number of studies in connection with fertility and other socio-cultural factors, has shown some indicators of fertility behaviour in view of values attached to children in a number of societies. In East and West Germany, Turkey, Israel, Indonesia, India, Republic of Korea, Czech Republic, Ghana and China, the VOC model has been applied in the investigation of cross-cultural analysis of values attached to children and fertility behaviour. Specifically, these studies have focused on age cohort and value of children, social disparities and value of children, religion and value of children, emotional comfort and value of children, cultural values and values of children, economic circumstances and value of children, family formation and value of children and economic security and value of children (Trommsdorff/Nauck 2005). However, the application of the VOC model so far has not included the circumstances of small-scale traditional employment and ethnicity in connection with fertility control. This is a gap in the literature that this study aims to fill.

2.3 Background: Fertility rate in Nigeria and the role of women

Fertility rates in Nigeria since her independence from Britain have yet to stabilise and exhibit much upward instability. While the fluctuation has been between 7.2 and 5.2 TFR (*Federal Office of Statistics* 1968; *Feyisetan/Pebley* 1989; *Makinwa-Adebusoye/Feyisetan* 1994; *National Population Bureau* 1984; *NDHS* 2000, 2018), the upward and downward movements have not been specific in the direction of global trends in fertility rate changes (*Okafor* 2017; *Shofoyeke* 2014). For instance, between 1965 and 1982, the Nigerian TFR hovered between 6.5 and 6.43 with an increase to 7.0 and 7.30 between 1971 and 1975. After the 1982 downward trend in TFR (6.43), between 1983 and 1986, this peaked to 7.40 however, between 1990 and 1999, the TFR partially moved steadily downwards (6.20-5.20) (*Federal Office of Statistics/IRD/Macro International* 1992; *Makinwa-Adebusoye/Feyisetan* 1994; *National Population Commission* 2000).

Between 2003 and 2008, the TFR was at 5.7, while in 2013 this moved to 5.5 and 5.3 in 2018 (*NDHS* 2013, 2018). However, the disparity in terms of regions, urban/rural, ethnic groups, religious groups and state groupings indicates the existence of some extraneous variables yet to be identified among the different demographic groups. According to further classifications by the 2018 National Demographic and Health Survey, the TFR in the rural areas was 5.9 while that of the urban areas was 4.5; regionally, North Central Nigeria has 5.0; North East Nigeria has 6.1; North West Nigeria has 6.6; South East Nigeria has 4.7; South-South Nigeria has 4.0; while South West Nigeria has 3.9 total fertility rates. By state classification (Fig. 1), some states such as Katsina (7.3), Bauchi (7.2), Jigawa (7.1) and Sokoto (7.0) are still at the highest rate of TFR. One of the constant factors for higher TFR as far as Nigeria is concerned

Fig. 1: Total fertility rate by state, births per woman for the three-year period before the survey



Source: *National Demographic and Health Survey 2018*

is religion. While Islam in Nigeria negates fertility control, Catholicism is sceptical towards some family planning methods. Nevertheless, Protestantism, which allows some level of family planning in line with church doctrines, only operates chiefly in the urban setting and among the few educated in the rural setting.

Meanwhile, a study by *Ayo Stephen et al.* (2019), which focused on the three major ethnic groups in Nigeria, revealed the unseen, complex nature of fertility rates in Nigeria in connection with other variables. According to their findings, the combination of the current TFR of the Igbo, Yoruba and Hausa/Fulani refined is 6.3. By ethnic group classification, the Hausa/Fulani had the highest TFR (8.4), while Muslim women had the highest TFR (7.8) compared to other religious groups. While the Hausa/Fulani women were recorded as the group with higher TFR, this was followed by Igbo women compared to the Yoruba women (*Ayo Stephen et al.* 2019). Also, among the southeast Nigerian states, Enugu state (the location of Eha-Amufu) is one of the states in the region with higher TFR (*NDHS 2018*); this is not unconnected with the mixed religion in the area and proximity to a high fertility region (North Central) and the state with highest TFR in the region of the southeast (Ebonyi state). With 5.0 as the mean number of children desired by married women, Enugu state is the second to the state (Ebonyi 5.9) with the highest mean number of children desired by married women between 15 and 49 years (*NDHS 2018*).

Among other variables, women's roles in the family and society at large appear to be sacrosanct in the understanding and interpretation of fertility behaviour among women. While the pre-industrial era when women worked solely on the farm is seen as distant history in the developed nations, with the replacement of crude implements by mechanical farming (*Giuliano 2014*), the case is different in developing nations such as Nigeria and other Sub-Saharan African nations, at least in recent decades. In most rural Nigerian settings, women are largely farmers, still operating with crude implements. A larger number of these women sees this as their basic means of income while a significant percentage see it as a complement to their other means of livelihood such as small businesses and other informal employment. According to *Alesina et al. (2013)*, women in most societies are less likely to own means of production, participate in politics or control significant positions in the society even in this 21st century. An earlier study by *Boserup (1970)*, affirmed that women beyond the pre-industrial era gradually were removed from farming because of the plough farming era and thus were unintentionally made automatic dependents on the male-dominated system.

Outside the production niche in societal systems of operation, changes in marriage have redefined gender roles as it involves entering into marriage, staying put and the division of responsibilities in managing the affairs of the family. According to *Oláh et al. (2014)*, the post-golden age of family, which began after 1960 in Europe, has redefined orientation towards family and gender roles in Europe and other parts of the world. This equally affected the fertility rate among the population as the increasing involvement of gender roles in managing the affairs of children forced the couples into negotiation of fertility management. Nigerian couples are no exception as the changing roles in the family setting has brought the implication of fertility rates to the couple involved to the fore. While women's desire to control fertility rates in most societies has been subverted irrespective of the fragile reproductive health of the women, the recent breakthroughs in education, formal employment and wealth acquisition have revealed the capabilities of women to be actively involved in the management of fertility rate in their families (*McCleary-Sills et al. 2013; Malhotra 2012; Kim 2016*).

2.4 Research gap and assumptions

Although there have been done enormous amounts of research on women's empowerment, gender roles and fertility control, to the best knowledge of the present study the link between close-group indices, self-perception of economic empowerment and fertility control among rural small-scale women farmers has yet to be ascertained, especially with regard to a defined ethnic group.

From the foregoing, the issue of women's empowerment and reproductive behaviour as it affects fertility behaviour has been studied by a number of researchers from different parts of the world and in different aspects. These included researchers from mostly developing nations where the issue of fertility control is still a challenging phenomenon such as the Middle East, Asia, Africa and Latin America. However, in the subject matter of the available research documentations

so far, thematic highlights such as women's economic empowerment and attitudes to fertility control use a somewhat blanket approach lacking information on specialisation in the traditional employment settings, religious influence over women and attitude towards fertility control, formal and informal employment and women's attitudes towards fertility control without specific attention to the agrarian communities in Sub-Saharan Africa and their unique challenges. They also do not explore changing family orientations and women's attitudes towards fertility control with a clear focus on the particular situations of the rural and agrarian communities in Sub-Saharan Africa. The Nigerian National Demographic and Health Survey extended the data-gathering instruments and analysis to include socioeconomic status and fertility behaviour such as wealth quartile and fertility rate; however, a gap in the literature still needs to be filled. Specifically, beyond the covert approach to the correlation analysis of women's socioeconomic status and fertility behaviour, there is more on self-assessment and individual attitudes to fertility control among self-employed women in the informal sectors, especially in the agricultural sector where the majority of women find occupations in the rural setting. This is important in view of the fact that cumulative income analysis can be viewed differently by most women compared to their everyday experience in managing their affairs as it has to do with income and socioeconomic environment. At present, no study has focused on this aspect of socioeconomic circumstances and fertility behaviour, which the present study was designed to investigate. Among other things, self-assessment, occupation, family environment, close-group status, educational qualification,³ etc., have unique impacts on the issue of fertility behaviour and the likelihood of controlling it in a clear trajectory of the dominant logic among the population.

The following hypothesis was tested in the study: Among the rural women small-scale farmers in Eha-Amufu, the desire for moderate family size (1-4 children) is negatively affected by the dominant value of children among the population, observable in the work utility, insurance utility, social approval and emotional utility of children. By implication, the work utility value of children on the farm and other domestic and informal employment among women as theorised by *Nauck* (2014), negatively affects the desire for family sizes of 1-4 children. Also, insurance utility, social approval and emotional utility of children in *Nauck's* (2014) theoretical legacy negates the choice of family size between one and four children among the rural women small-scale farmers in Eha-Amufu.

3 Methods and data

The study focuses on the rural small-scale women farmers in Eha-Amufu in the south-east region of Nigeria. Due to the existence of co-operative organisations in

³ This is the stage at which a person ends their formal education. This is measured here in connection with the Nigerian setting as primary education, secondary/high school education, National Certificate in Education (NCE), Diploma education and university degrees.

the area, which are major platforms for recognising the semi-commercial farmers (classified as small-scale farmers in this study), the study used the co-operative societies/organisations in place of local communities within the area but the geographical circle of the study was limited to Eha-Amufu as a local government.

There are about 20 standard co-operative societies with a minimal connectivity of fluid membership among these farmers. Preliminary investigations show there were only few individuals who belonged to more than one standard co-operative organisation. At most, the estimate of individuals belonging to more than one standard co-operative society was three from a community. This was ascertained to minimise the extent of sampling errors in terms of duplication. This effort helped the study to distinguish between general and particular co-operative societies. While the general co-operative societies in this classification appear to be open to all farmers because of the nature and fluid connectivity with all the types of farming activities, particular co-operative societies are mostly open to farmers in line with types of agricultural activities and equally gender-based.

The suitability and relevance of Eha-Amufu for this type of study is connected with the ages-old farming history of the area, which has made women in semi-commercial farming identify themselves as class in themselves. Semi-commercial farming here was used for want of an empirical classification of semi-organised farming in the area at the time of this study.

Eha-Amufu as a people among the Igbo tribe, located in the south-east region of Nigeria, has some particularities, mostly in that their farming practice is different in terms of employment and labour force analysis, at least in the Nigerian context. While farming is an ages-old practice that has created mechanisms for labour market and employment analysis, women in this area have been embedded in the system so that they can now assess their wellbeing and place on the social ladder in connection with the degree of their participation in agricultural activities in the community. Consequently, there is some level of homogeneity in the marriage system of the people of the area so that these women are almost a closed group within the area in terms of age and similarity in life experience. They practice a mostly endogenous marriage system, which involves interconnectivity of people within the locality (communal endogamy). However, the cohort here was classified as closed-group but as a separate variable in the data collection instrument as well as the analysis.

The study was carried out among the 20 standard co-operative societies in the area among which are: Zion umu-amu2 co-operative society, the God is great Eha-Amufu farmers' co-operative society, Chumansonngeleukwa co-operative society, Amechingeleukwa co-operative society, Uchennangeleaguiyi co-operative society, green land co-operative society, chibuzorisiuzor ethics and values co-operative society, Ogechimgbuji farmers' co-operative society, Agro mgbuji youths co-operative society, Cogleelshadai farmers' co-operative society, Shallomisiuzor ethics and values co-operative society, Ifunanyamgbuji women farmers' co-operative society, Oziomaisiuzor ethics and value co-operative society, Chigemezungeleukwa co-operative society, Divine prince and princess Eha-Amufu co-operative society, Ofuobi farmers' co-operative society, Chidiebere farmers' co-operative society,

Chidalungeleukwa co-operative society and Demumisiuzor co-operative society. On average, each of the co-operatives has a population of 20 farmers who are not members of another co-operative society in the same community.

Ten female members each of the 20 co-operative societies were selected using inclusive criteria such as females that married based on the local definition of marriage, female farmers that are self-employed and at least possess a plot of farmland either independently or in connection with her family of marriage and those in possession of their own poultry farm or the capital base for their major area of farming, etc., in the last five years. The age categories in the study were relaxed to involve the women in the circle of childbearing age and women who are in the age of menopause.

The study adopted a cross-sectional survey design. The choice of this design was in line with the theoretical proposition about the dominant factors in the understanding of self-evaluation, economic empowerment and attitudinal disposition towards fertility control. In essence, for the possibility of empirical evaluation of the theoretical proposition, which is on the value of children (VOC) in connection with fertility control among the small-scale women farmers, the logic of social survey in data collection and analysis is indispensable.

The study adopted modified random sampling techniques in selecting the respondents (using the list of members of the chosen co-operative societies). Modified random sampling as used in this study meant choosing the available respondents on the list based on random picks from the sampling frame. All of the relatively standard co-operative societies selected were equally represented in the study by adopting an equal probability sampling technique. In each of the 20 co-operative societies selected, 10 married female farmers were selected using a modified random sampling technique via the registers of active members of these co-operative societies. Here, the sex of the farmers, marital status and period of membership of the society were screened to select the members within the interest of the study. In total, 200 respondents were selected from the co-operative societies (i.e. the relatively standard co-operative societies).

Although there are a few members of these societies who could not be accessed during the time of data collection, a replacement was made in cases of rejected interview requests and where the name that appeared on the list was obsolete. This helped the sampling procedure and data collection among the targeted population and representativeness of all the 20 co-operative societies with their heterogeneous farming activities and community locations.

The instrument for the study was survey a questionnaire developed on nominal and ordinal scales with a specific focus on the indices of fertility control (such as choice of family size, achieved family size, son preference, child adoption, age of marriage, family planning). Choice of family size was operationalised as the number of children that a woman desired before she stops giving birth. This was added to the questionnaire items to create a background of the dominant fertility intention among the women in the area and to help emphasise the antecedents of VOC-related concepts among the populations. In our analysis, we use an ordinal scaled version of the desired number of children distinguishing between less

than four children, four children and more than four children. Son preference was operationalised as the desire to have a son by all means available for the marriage among the women such as continuous birth until a male child is born or reaching out for male child adoption if allowed by the community/culture. However, in view of the VOC concepts captured here (insurance and dialogical utility of children), the variable was measured with the questionnaire item on the desire to have a male child. Age at marriage was operationalised as the age at which the women were married. This was also to create further emphasis on the antecedents to family size decision as well as the aspirations towards the insurance utility of children. Family planning was operationalised as the willingness among the women to use any form of contraceptive method for the purpose of controlling the number of births. This also created further emphasis on the women's willingness to control birth, which invariably is connected to the insurance utility of children. These were presented in the questionnaire items listed below.⁴ Another set of variables in the study is economic independence (source of labour on the farm and self-perception). Source of labour was operationalised considering the situation among the population, such as considering children as the basic family members to be involved in the farming business by their parents. As such, source of labour was operationalised as either the family member or hired labourers helping the women in their farming business. This was designed to survey the work utility of children in the VOC concept, which viewed the labour need of peasant farmers as encouraging giving birth to more children among these women. In addition, economic independence, which was operationalised in the women's self-perceptions of their socioeconomic status in their various communities based on the local rating of economic efficiency among the local population, was meant to emphasise the extent of socioeconomic upgrading perceived by the women among themselves and how this affected their fertility intention. The inclusion of the family and the community was a result of the closeness of the family and communal activities among the population; self-rating at the family level is as good as that of the community level. These were captured in the questionnaire items listed below.⁵ Closed-group as a variable in the study was operationalised as women who were born, brought up and married in the Eha-Amufu area. This emphasised the dominant fertility attitude among the population, which connects with the communal values attached to children. This

⁴ How many children do you have or desire to have in your family? Less than 4, 4 children, between 4 and 6, 6 and above; Did you stop or will you stop at the earlier number of children you have desired for, without a male child? Yes or No; When did you get married? Before 18 years, between 18 and 23 years, between 24 and 29, 30 years+; Do you use any effective family planning for birth control? Yes or No; Do you exercise equal rights with your husband in making decisions on the number of children to have? Yes or No.

⁵ Who helps you in your farming/other businesses you do for a living? Children and family members [] hired labourers []. Do you feel economically and socially empowered in your family and community? Yes or No; Do you see yourself as economically independent in your family and community? Yes or No.

was captured in the questionnaire items listed below.⁶ The study did not use the VOC standard instruments but the dominant concepts, which, by their operational definitions, aligned with the VOC concepts. The questionnaires were distributed to the respondents with some guidance from the researcher when respondents requested assistance.

The data collected were coded and analysed using SPSS version 23 (Statistical Package for the Social Sciences). This was carried out in two stages to comprehensively address the issues raised in the study. While the first stage of the analysis involved the descriptive presentation of the responses in percentages, at the second stage an ordinal logistic regression was run on the dependent variable of interest.

3.1 Limitation of the Study Design

Survey research design no doubt has made a tremendous mark on the demographic research landscape. However, there are some gaps always visible in every study solely carried out using survey design, especially in some contexts. Among other things, a survey design can be leading in the instrument of data collection so that some relevant information may be omitted among the study participants. In the present study, such a gap cannot be denied as the study believed that the study participants could have given more information if the study observed qualitative methodology or rather a mixed method design. Again, the 200 women who participated in the study were not comprehensive enough to cover the entire Eha-Amufu area in terms of information on fertility control in this dimension. This is in view of the fact that the co-operative organisations used to reach the women were not liberal enough to have included all married women as not all the women in the area are farmers. In view of this, the study is not sufficient enough to predict the attitude of these women towards fertility control in general using the Value of Children (VOC) model, which invariably required a large sample size and study population.

4 Empirical results

Table 1 presents the sociodemographic description of the study participants. 10 percent of the participants completed primary education, 32.5 percent completed high school, 22.5 percent were educated up to the National Certificate in Education while most of the respondents (35 percent) were educated up to Diploma and degree certification. Regarding the age distribution, the table shows that the majority of the participants (22.5 percent) are in the age category of 42-47 years, while only 7.5 percent of the participants are below the age of 18 years. The mean age of the study participants is 33.9 years. Only 2.5 percent of the participants indicated to have married before the age of 18 years, 40 percent married between the ages of

⁶ Were you born and married in Isi Uzor local government area? Yes or No.

Tab. 1: Frequency distribution on the sociodemographic characteristics of the respondents

Variables of interest		in %
<i>Completed education</i>		
Primary education	20	10.0
High school	65	32.5
National Certificate in Education	45	22.5
Diploma/Degree	70	35.0
<i>Age distribution</i>		
< 18	15	7.5
18-23	30	15.0
24-29	20	10.0
30-35	35	17.5
36-41	35	17.5
42-47	45	22.5
48-53	10	5.0
54 and above	10	5.0
<i>Age at marriage</i>		
< 18	5	2.5
18-23	80	40.0
24-29	80	40.0
30+ years	35	17.5
<i>Born and married in Eha-Amufu (closed group status)</i>		
Yes	115	57.5
No	85	42.5
<i>Feeling economically independent</i>		
Yes	145	72.5
No	55	27.5
<i>Children as source of labour</i>		
Yes	95	47.5
No	105	52.5
<i>Desired family size</i>		
< 4 children	60	30.0
4 children	65	32.5
4-6 children	50	25.0
> 6 children	25	12.5
<i>Intention to stop family planning at 4 (or less) children regardless of male childbirth (self-birth-control measure)</i>		
Yes	130	65.0
No	70	35
<i>Access to family planning</i>		
Yes	115	57.5
No	85	42.5

Tab. 1: Continuation

Variables of interest	in %	
<i>Equal rights in decision-making on family size (compared to husband)</i>		
Yes	80	40.0
No	120	60.0
<i>Family's acceptance of male child adoption (self-assessment)</i>		
Yes	135	67.5
No	65	32.5
Total	200	100.0

Source: Field survey 2019 (Primary data collected from the small-scale-women farmers in Eha-Amufu by the authors from University of Nigeria, Nsukka)

18-23 years and 24-29 years while 17.5 percent married between the ages of 30 years and above. The mean age at marriage among the study participants is 25.4 years. The majority of the participants (57.5 percent) fall into the closed-group category, i.e. were born and married within Eha-Amufu. More than 70 percent of the participants feel economically independent (self-assessment). About 47 percent of the participants consider their children as source of labour in their farm. Most of the participants (32.5 percent) indicated a number of 4 children as ideal family size, 30 percent desire less than 4 children, 25 percent between 4 and 6 children and 12.5 percent would like to have 6 or more children. More than 60 percent of the participants intend to stop family planning at 4 (or less) children regardless of male childbirth. And 57.5 percent of the respondents state that they have access to reliable family planning. Only 40 percent of the participants feel that they have equal rights in decision-making on family size compared to their husband. The majority of the participants (67.5 percent) believe their family will not accept the adoption of a male child.

Table 2 presents the results of the ordinal logistic regression for desired family size among rural small-scale women farmers in Eha-Amufu. The overall strength of the model in explaining the factors surrounding desired family size according to the pseudo R^2 (Cox and Snell R^2 , Nagelkerke R^2 and McFadden R^2) is between 92.7 percent and 99.6 percent. Among the variables of interest, age of the women, desire for a male child, family members as source of labour and feeling economically independent significantly contributed to the explanation of desired family size among the women. Specifically, according to the model, children as source of labour (Wald 11.84, OR = -.894), education up to National Certificate in Education (Wald 4.232, OR-.734) and preference for a male child (Wald 57.83, OR = -2.29) were all significant in the model and in the positive direction (except for education), indicating the fact that the presence of the aforementioned factors encourages the likelihood of opting for higher family size (4 children and more).

Women aged between 24 years and above consistently show a positive correlation between age and desire for more than 4 children. While the age categories of 23

Tab. 2: Ordinal logistic regression on desired family size among the women

	Estimate	Std. Error	Wald	df	95% Confidence Interval	
					Lower Bound	Upper Bound
<i>Thresholds</i>						
less than 4 children	-2.108***	.655	10.359	1	-3.392	-.824
4 children	-.590	.646	.835	1	-1.855	.675
more than 4 children	1.299*	.643	4.081	1	.039	2.559
<i>Completed Education (ref.: Diploma/Degree)</i>						
Primary	-.210	.634	.110	1	-1.452	1.032
High school	-.409	.405	1.020	1	-1.201	.384
National Certificate in Education	-.734*	.357	4.232	1	-1.434	-.035
<i>Age (ref.: 54+ years)</i>						
< 18 years	1.492*	.701	4.527	1	.118	2.866
18-23 years	.964	.536	3.240	1	-.086	2.014
24-29 years	3.090***	.738	17.546	1	1.644	4.536
30-35 years	1.769**	.657	7.252	1	.482	3.057
36-41 years	1.908***	.594	10.308	1	.743	3.072
42-47 years	2.356***	.554	18.111	1	1.271	3.441
48-53 years	2.456**	.792	9.623	1	.904	4.008
<i>Age of marriage (ref.: 30+ years)</i>						
< 18 years	-9.805	2761.562	.000	1	-5422.367	5402.756
18-23 years	-.740*	.378	3.824	1	-1.481	.002
24-29 years	.430	.338	1.621	1	-.232	1.092
<i>Economic independence (ref.: no)</i>						
Yes	.588*	.291	4.093	1	.018	1.159
<i>Source of Labour (ref.: Non family members)</i>						
Family members	.894***	.260	11.839	1	1.404	.385
<i>Son preference (ref.: no)</i>						
Yes	2.287***	.301	57.831	1	2.876	1.698
<i>Access to Family Planning (ref.: no)</i>						
Yes	-.467	.269	3.006	1	-.995	.061

$\chi^2 = 379.659$ (df 87), * $p < .05$, ** $p < .01$, *** $p < .001$, Pseudo R² = Cox and Snell (92.7), Nagelkerke (99.6), McFadden (97.9)

Source: Source: Field survey 2019 (Primary data collected from the small-scale-women farmers in Eha-Amufu by the authors from University of Nigeria, Nsukka)

years and below appeared without a significant relationship with the desire for family size above four children. When looking at age at marriage only ages between 18-23 years reflected a significant (negative) relationship with the desired family size. This cannot be explained without referring to the dominant condition of the people of Eha-Amufu such as the family and some communal traditions. While

preference for a male child perpetually put women in suspense about sustaining their marriage and the continuity of the family, more than 17 percent of the study participants indicated that they married between the ages of 30 years and above; equally, more than 30 percent of the respondents were concerned that their family tradition is against the adoption of a male child in case they managed a limited family size without giving birth to a male child. While this is observed in the result of age at marriage and partly in the age distribution of the study participants, the relationship between the age distribution of the participants and desire for family size above four children indicates a deeper understanding of the circumstances surrounding fertility control among the population. Although the age categories of 41 years and above are invariably within the framework of the women who are in the final stages of giving birth to children as well as those who have finished giving birth to children, the appearance of this age category as a significant factor for the desire for family size above four children indicates the traditional perception of family size dominant among the population.

Similar studies (for example *Upadhyay et al.* 2014; *Carr et al.* 2012) have found negative correlations between women's economic independence and desire for family size above 4 children, however, in the findings of this study there is a positive relationship between the two. In Table 2, children as a source of labour and preference for a male child contributed to explaining the desire for family size above four children. This can be observed in the positive significance of the source of labour among the women and preference for a male child. Economic independence triggers the need for cheap labour on the farm and one of the ways of achieving that among the women in this rurality is to increase the number of births for more hands and to pursue an objective that enhances the cumulative number of the family members, such as having a son who will bring in more people in the capacity of daughters-in-law. While economic independence among the women, the phenomenon of inheritance and children as source of future wealth and retirement hope (insurance utility of children) (*Werding* 2014; *Nauck* 2014), preference for male child(ren) among the Igbo ethnic group in particular, also contradicts the determination to have a limited family size without a male child. This is more important, especially among the economically independent women who find fulfilment in the dominant family and communal traditions; a concept captured in the VOC model as social approval.

More than 60 percent of the respondents indicated that their families would allow adoption of a male child, which, in this context, indicates a gradual opening to child adoption in the rural settings of Nigeria as well as options for families to satisfy their inward desire for family size and ethnic/tradition-related fertility issues. In normal circumstances among these rural dwellers, when a woman is not able to give birth to a male child, the husband is at liberty to marry another wife to have a male child for continuity of the lineage as well as for insurance and dialogical interests as aptly described by *Nauck* (2014) and *Huinink* (1995, cited in *Nauck* 2014). However, with the gradual transformation in family structure and orientation, a woman with the husband can opt for adoption of a male child in order to maintain her marriage as well as the husband's lineage but this is obtainable mostly among the women living in the urban setting with their husbands.

In the present context, children as source of labour surfaced as a significant variable in the model, supporting the first assumption of the VOC model by *Nauck* (2014) on the work utility of children among the parents. Among the rural women occupied with agricultural activities, the bond of family relationship and labour supply actually affect almost every aspect of their lives including fertility behaviour. Although the role of women in agriculture has changed in most nations due to the advent of mechanised farming (*Boserup* 1970; *Giuliano* 2014), in Nigeria, at least in the near future, farming activities will slowly respond to the global status quo and are even more manual where they involve women. As such, in most rural communities like Eha-Amufu, farming to a large extent requires more hands and where it involves women, they largely depend on family members and nearby relatives. With such options among the women in this area, limited family size may not be an option compared to the option of having more children. In addition, feeling economically independent is substantiated by the traditional value system, which in any case is subject to methods of inheritance and lineage continuity (dialogical utility). In most cases, women who feel fulfilled in the social system (social approval) here connect this with their ability to produce male children who will inherit their wealth and maintain the family lineage.

Since the area is under patrilineal descent, women are compelled to produce at least one son to make them proud in their marriage as well as to inherit the properties and maintain the family lineage. In the face of the unpopularity of male child adoption among the group, maintaining a limited family size without a male child may not be largely supported among the economically independent women here compared to other places in the world where women's economic independence is gradually eroding the idea of large family size. As was pointed out concerning women's economic independence and son preference, no woman in a traditional system where patrilineal descent dominates inheritance and lineage continuity will risk her marriage and pride in the family. As such, women having opportunities to adopt a son will be motivated by factors such as their pride in the marriage and family as well as who will protect them during old age and from kinsmen if their husbands die before them; a situation seen in the VOC model as insurance utility of the children by the parents.

5 Discussion of the findings

Fertility control is one of the issues in the focus of the entire global community with different nations facing the issue in different ways. Although the United Nations Population Fund has put certain measures in place world over via the member nations to slow down the growth of human population, especially in developing nations, the implementation of the measures and the unseen factors for population growth still put in perspective the need for further empirical investigation; hence the present study. Among other things, the micro factors for fertility rate/population growth such as self-assessment of socioeconomic status, age before marriage, communal and family tradition surrounding the fertility behaviour of the women

deserved attention for a better understanding of micro elements in population growth among the inhabitants of Sub-Saharan Africa. Although similar research has been carried out in Sub-Saharan Africa, this study went a step further to isolate some factors with the help of the VOC model for more advanced information. This was done with the aid of the four assumptions of the VOC model according to *Nauck* (2014).

Specifically, this study immersed itself in the understanding of the phenomenon of women's economic independence and fertility control issues among rural small-scale women farmers with a common history of informal employment and communal tradition in Eha-Amufu. The study focused on major issues in relation with fertility behaviour and women's feeling about economic independence. The research question focused on the determinant factors for decisions on family size above four children among these women.

Based on the issue of fertility-related decisions in the family, a number of factors have played roles among these women contrary to assumptions before now. These, as seen in the VOC model, point to the elements surrounding women's decisions on fertility issues especially when it lies in their power to make such decisions. While there are reservations to the dominant traditional perception on fertility control, the women's experience over time in the system plays a rather minute role compared to their goal in life, which is more or less competitive in view of the achievement ladder in the society. This indicates that even though women may appear to be passive in fertility control decisions in rural settings among developing nations, this passivity is for a potential benefit of children as described in the VOC model. In the VOC model, women are seen in the four dimensions of VOC assumptions as inalienable factors in family fertility decisions, especially in Sub-Saharan African rural settings.

From the findings of the study, with about 92 percent and 99 percent explained by the ordinal logistic regression model, the phenomenon of women's economic independence and desire for family size were probed to further understand the phenomenon among the population of women farmers. Specifically, according to the model (see Table 2), family members as source of labour and desire for male child indicated the likelihood of opting for higher family size (4 children and more). This confirmed the first assumption of the VOC model by *Nauck* (2014, *Nauck/Klaus* 2007), which states that, "if the work utility of children is high, then it is an efficient strategy to be rich in children."

Due to the role of women in agriculture and the family in developing nations such as Nigeria, children continue to appear as future wealth and a mark of prosperity for women. Although mechanisation of farming has changed the involvement of women in farming activities and family orientations in most parts of the world (*Oláh et al.* 2014; *Giuliano* 2014), the findings here negate this understanding in this part of the world as more than 47 percent of the women under study indicated that the sources of labour for their farming activities depended on the family members including their children. While the concern for the proper training of the children is not an issue here due to the level of education among the women, the concept of children as future wealth in this context goes beyond the wellbeing of the child. As such, most parents simply believe that whether the child is properly trained or not,

when they grow up they will at least add to human resources in the family line. This will eventually increase the population strength of the family in question for lineage, clan and tribe continuity and expansion. This will of course guarantee the future economic security for the nuclear and extended families. These also confirmed the three assumptions of the VOC model by *Nauck* (2014) on insurance utility of children, social approval utility as well as the dialogical utility assumptions. While the low investment in the training of children in the rural context can encourage higher fertility rates, the early dividends of many children in agrarian societies play a role so that the focus for many women in fertility choice decisions is obscured by the short-term benefits of children on the farm as well as other household chores. In addition, in this part of the world most children stop at high school level and engage in one artisan work or the other or in trading. In this situation, parents simply look to the immediate and short-term dividends from the children without considering the future of these children based on the global trend, especially in the face of the dominant logic among these women, which upholds the recycling of lower rungs of the societal ladder.

The phenomenon of age at marriage and age of the women can be seen from the angle of the mean age and the mean age at marriage among the participants in the study, which is 34 and 25.4 years respectively. This indicated more issues about age in relationships with desire for family size above 4 children. In southeast Nigeria generally, the age of marriage is indirectly connected to the level of development found in each subarea so that in some parts of this region, women marry late as a result of socio-economic conditions of men as well as some ambitions among the unmarried female folks. For instance, Eha-Amufu, though a long-standing agrarian community with fertile land, is the home of one of the federal colleges of education located in different regions of the country. This in a way has an effect on the age of marriage among the women. This can be seen in the description of their educational status in this study, where 57.5 percent of the participants have acquired National Certificates in Education, National Diplomas and other higher qualifications. Late marriage has a way of disregarding family planning of moderate family size either as a result of the desire for male children to secure the marriage or pressure from the extended family members for more children.

The link between education, age, age at marriage and desire for a son are equally connected to the problem of adoption of a male child in their family of marriage. While the age and age at marriage trigger the problem of apprehension over how long the women will remain fertile before menopause, the problem of a desire for son (which is a traditional thing coupled with the fact that child adoption among the communities does not sufficiently accommodate male child adoption), compels the women to overlook the essence of moderate family size (0-4) such as reproductive health, quality family life and efficient upbringing of a few children. These findings have put forward further explanations of the factors surrounding fertility control in this part of the world beyond the findings of some studies in Sub-Saharan Africa and beyond those by *Kritz and Makinwa-Adebusoye* (1995), *Kaufman and Meekers* (1998); *Atake and Ali* (2019). Also, the findings here negate the finding of the study by *Klaus et al.* 2007 (cited in *Trommsdorff/Nauck* 2005), which was guided by the VOC

model. While their study found that highly educated and gainfully employed women show lower instrumental values of children, the finding here indicated otherwise. This may, however, be explained by other extraneous variables such as the quality of education in the two different contexts and age at marriage in connection with communal traditions.

Although the study was specifically seeking the internal logic of choice of family size among the women in this setting, the varying ages of the respondents highlights the need to consider the women already out of childbirth age who were involved in the study. While the study did not include the specific number of live births among the women under study as a variable, the information for this was gathered under the variable "choice of family size" within which the women were asked to indicate their desired family size whether childbirth is in progress or they have stopped giving birth to children. From the descriptive statistics, 27.5 percent of the participants indicated they have stopped or will stop at 4 children, 20 percent (less than 4 children), 30 percent (between 4 and 6 children) and 22.5 percent (6 children and above). With one of the dominant concepts guiding the study (closed-group), the varying age of the respondents appeared insignificant as the family culture and other dominant cultures within the area hold sway on these women in view of fertility control among them. And this surfaced in what they viewed as ideal family size and when they deemed it necessary to stop or will stop giving birth.

The innovative essence of this study at this point is to unveil salient issues of fertility rates that have been unobserved so far. Before now, most research on the issue of fertility rates among women have approached it at the macro level where a blanket summary is given on the women's fertility behaviour and socioeconomic circumstances. For instance, women in the agricultural sector have been lumped together in studies overtime without distillation of their particularities in terms of forms of farming, the extent of development of the farming methods, family/communal traditions and closed-group factors. As a matter of fact, educational improvement among women of this pedigree ought to counter the desire for family size above 4 children but due to these confounders, education appeared as an encouraging factor to desire a family size above 4 children.

Meanwhile, the acceptance of male child adoption is a factor among the developing nations especially in the rural setting countering the effort for controlling fertility behaviour at the family and communal levels. Although science has improved to make selection of the sex of a child before conception and child adoption has helped improve the reproductive health of women in many parts of the world, many rural settings and local traditions have yet to respond to the global advancement. For instance, while it is a taboo among some communities in the developing world to have a child from other blood partake in their patrilineal decent, knowledge and practices of selection of sex of a child before conception still appears complicated to these rural dwellers so that trial and error will compel the woman to continue giving birth until there is a male child in the marriage. In addition, a woman among the Christian dominated southeast Nigeria will hardly be happy to see her husband marry another wife for a male child. It is a slap in most women's faces and loss of their pride as this can relegate them to the background should another woman

come into the marriage and produce a male child. While in some contexts, children may be seen as future wealth as well as fulfilment of religious obligations (*Suckow* 2005) and equally as a sign of motherhood (*Mares/Mozny* 2005), the trend of value of children here is different as it is more focused on inheritance and the patrilineal tradition, conditioning the women to prioritise children especially the males in their marriage. In the social approval and dialogical dimensions of VOC assumptions by *Nauck* (2014), the above conditions of women bring to light the unseen driver of fertility among this population captured as variables in the VOC model.

More than 57 percent of the study participants were born and married in Eha-Amufu; by implication, these women are playing out the dominant family and communal traditions, which are guiding their fertility behaviour. With the typical family tradition among the Eha-Amufu people connected to the typical Igbo tradition, a male child is a valuable asset to every marriage so that any marriage that fails to produce a male child can be viewed as unsuccessful, requiring another union with another woman. This situation seems to have abated among those living in the city who can adopt children to continue in the marriage. However, the regular rural dwellers like these women are under pressure to please their husbands by continually giving birth until there is a male child. The only option besides adoption is to marry another woman for a male child. While this situation indicates the dialogical/emotional assumption of the VOC model by *Nauck* (2014) in the short term, in the long term, this is connected to the insurance assumption of the model as Eha-Amufu has the culture of sharing communal and family lands among the males in the community. As such, for inheritance from the family and the community to be assured, there is a need for male child or children warranting the ambition for males among the families.

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