SOCIO-ECONOMIC IMPACTS OF FERTILITY ON FAMILY INCOME IN ANAMBRA STATE: IMPERATIVE FOR SOCIAL WORK INTERVENTION

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ABSTRACT
Ever since Malthus theory, economists have been focused on how fertility impacts economic growth, standards of living, instruments of governance, such as national allocations, as well as availability of infrastructure. This study examines the various ways fertility impacts on family income which has implications on the social and cultural lives of families in Awka, Anambra State Data was obtained from 120 respondents from five randomly selected communities in Awka-South local Government Area. In executing this study, the survey method was adopted using questionnaire instrument. The chi square statistical method was employed to establish significant relationships among study variables in the postulated hypotheses. A significant negative correlation was found between family income and fertility. Also, it was identified that certain variables affect the relationship and these includes Age at marriage, sex distribution of children, level of education, income, religion. It was thus recommended that the government through her ministries of education, health and social welfare, should one; make education and access to birth control facilities and materials readily available so as to check population growth rate and foster economic growth, two; use social workers to intensify campaign against male preference using various channels, since female gender can as well contribute as much as male to family wellbeing.

INTRODUCTION
Fertility is the ability to reproduce. This means that men who are fertile are able to father children and fertile women are able to get pregnant and carry their baby to full term, that is, with live birth nine months after conception. Fertility, in order words, is the natural capability to produce offspring. As a measure, fertility rate is the number of offspring born per mating pair, individual or population. Fertility differs from fecundity, which is defined as the potential for reproduction.

Ottong in (BBC, 2006), explained that population has been a sensitive and controversial issue, because of its implications for shaping regional, state and ethnic relations and

balance of power. As a result, the past census figures were believed to have been manipulated for political advantage.
Nigeria as the most populous country in Africa, accounts for approximately one sixth of the Africa's population or one fifth of the Sub-Saharan African population. Nigeria's population has been increasing rapidly for at least the last 5 decades due to very high birth rates. Growth was fastest in the 1980s, after child mortality had dropped rapidly, and has slowed slightly since then as the birth rate has declined slightly. According to the 2012 revision of the World Population Prospects, Nigeria's population was 159,708,000 in 2010, compared to only 37,860,000 in 1950 (Wikipedia, 2016).

Based on the latest United Nations estimates, the current population of **Nigeria** is **187,598,970** as of Sunday, August 21, 2016. As at 2020, the Worldometer (2024) estimated Nigeria population to be 208,327,405 and equivalent to **2.66%** of the total world population with 5.31 fertility rate. Nigeria in 2024 ranks 6th in the global population ranking with a population of 223,804,632. Although fertility rate has come down to 4.99%, annual growth rate still hovers at 2.39%

Anambra is a state in southeastern Nigeria. The capital and seat of government is Awka. Onitsha and Nnewi are the biggest commercial and industrial cities respectively. In 2007, it had a GDP of $11.83 billion and per capita of $1,615. The total land mass then was 4,844 km^2 (1,870 sq mi), with a population of 4,055,048 and a population density of 840/km^2 (2,200/sq mi) (Wikipedia, 2016). Thirteen years later, in 2020, the population was approximated at 5,953,500, with annual growth rate of 2.21%, and still remains one of the most densely populated (1.264) states in Nigeria with $2.682 GDP per capital (Anambra Bureau of statistics, 2023).

According to the 2022 NPC population projection figure, Awka-South has a population of 270,300 people. Awka-South has a total land area of 170 km², population density of 1,646 persons/km² and a yearly population growth rate of 2.2%/year between 2006 and 2022. (City Population, 2023). While fertility rate is still quite high, the mortality rate has come down substantially due to improvement in health facilities and thus the rate of growth of population has gone up. With advances in the field of medicine and public health, there will be a further decline in the mortality rate. Hence, to check the rather high growth of population, the only factor which seems important, in the present context, is to control the fertility level.

Fertility control means modification of fertility by adopting deliberate methods to avoid unwanted births and thereby restrict the family size. Fertility is influenced by a large number of factors such as age at marriage, **gender preference**, use of contraceptives and socio-economic factors like income, education, and occupation.

Family income refers to the total compensation received by all family members age 15 or older living in the same household. Compensation may include wages, social security, child support, pension capital gains and dividends. It is generally considered a primary measure of a society's financial prosperity, (Business Dictionary, 2016). There is overwhelming

empirical evidence that fertility is negatively related to family income in most countries at most times. Several theories have been proposed in the literature to explain this somewhat puzzling fact. The most common one is based on the opportunity cost of time being higher for individuals with higher earnings. Alternatively, people might differ in their desire to procreate and accordingly some people invest more in children and less in market-specific human capital and thus have lower earnings. These theories are not as robust as is commonly believed. That is, several special assumptions are needed to generate the negative relationship. Not all assumptions are equally plausible.

These socio-economic factors are termed indirect determinants because they influence infertility indirectly through one or more of the proximate determinants with gender preference, income and education being the most predominant of all the socio-economic factors. The study of these factors contributing to variations in the level of fertility is essential for initiating planned efforts to control fertility (Boongarts, 1978).

Social work is a profession that brings its services to intervene where there is imbalance in human interaction, where human basic needs are difficult to meet, where there are difficulties in accessing resources and above all where sensitization and enlightenment are needed. As a human service profession, social work professionals work with families to understand the prevailing economic realities in relation to individual family income in order to make informed decisions on fertility issues among couples. They bring to bear their knowledge of influences of culture and other social factors on the right choices that couples have the rights to make without the encumbrances of sociocultural limitations in other to live a more satisfying family lives in a very distressed economy where they can meet without distress, their children's basic needs such as feeding, clothing, shelter and education. It is as a result of this imbalance between fertility rate and family income that inspired the present effort to assess the social and cultural factors that may be influencing this imbalance and to propose the services of social workers as palliative in Anambra state.

STATEMENT OF THE PROBLEM

High fertility and birth rate contribute positively to high population growth while further findings revealed that high population growth rate in Nigeria exerts negative consequences on the Nigeria's economy, inform of poverty, inadequate housing, poor sanitation, low standard of living, high unemployment rate and inflation, high pressures on existing infrastructural facilities etc. All these consequences impact heavily on the general family wellbeing. Again the among the Igbos, male children are the preferred gender and many families expend a lot resources and time looking for male children and end up have as many children as they never planned to. This of course has implications to the family's economic wellbeing.

Fertility rate is also highly influenced by gender preference which is a cultural issue that cut across the whole of southeastern states and beyond. leaves no doubt on the extent to which family is depleted. This so because, the huge amount of time and resources spent in looking for a preferred gender

The amount of time also spent in conceiving and nursing the newborn children which is considered an investment on the child reduces the commitment to labor hence an underutilization of labor. The unemployment trend also does give way for social problems such as bribery, prostitution, armed robbery etc. It also does record an increase in government expenses. Issues such as the correlation between family income and fertility rate, necessary conditions for theories supporting its correlation, its impact on the welfare of children, the standard of living of families, economic development as well as commitment to labour have become major policy discourse globally. However, taking Awka-South as a case study, this study was designed to specifically find out if a negative correlation exists between family fertility and family income in Anambra State, whether there are necessary conditions for the fertility-family income relationship to work in Anambra State and to find out the economic, social and religious factors affecting the fertility-family income relationship in Anambra State.

The study hypothesizes as follows:

1. There is a negative relationship between fertility and family income in Anambra State.
2. There are economic, social and religious factors affecting the fertility-family income relationship in Anambra State

LITERATURE REVIEW

Concept of income

First, economics has clarified the appropriate concept of income for analyzing fertility decisions, namely, "full" or "potential" income, and has shown, for example, that for a number of purposes, total family income is a less pertinent measure than husband's income or variant measures of the house-hold's earning potential.

The inverse relationship between income and fertility has been termed a demographic-economic "paradox" by the notion that greater means would enable the production of more offspring as suggested by the influential Thomas Malthus (1978). Roughly speaking, nations or subpopulations with higher GDP per capita are observed to have fewer children, even though a richer population can support more children. Malthus held that in order to prevent widespread suffering, from famine for example, what he called "moral restraint" (which included abstinence) was required. The demographic-economic paradox suggests that reproductive restraint arises naturally as a consequence of economic progress.

Casual observation of data on fertility rates would suggest that having children is an inferior good. Across countries, there is a strong negative correlation between GDP and fertility, and within countries there is a strong negative correlation between family income and fertility. That is, richer countries have lower fertility rates than poor ones, and high-income families in a given country have fewer kids than low-income families do. (Wikipedia, 2016).

But there are two major challenges to interpreting these correlations as evidence that income causes fertility to drop. First, individuals and families with higher incomes often

have other characteristics such as higher education levels, stronger commitment to the labor force, or a preference to live in urban locations that distinguish them from the general population and might affect their fertility decisions. Second, the observed relationship between income and fertility might simply reflect the effect that fertility decisions have on income (rather than the other way around).

Second, economic analysis has reduced the conceptual confusion between cost of children and expenditures per child. As with many economic goods, rising income may promote the acquisition of both greater quantity (more children) and higher quality (greater expenditures per child), and the rise in the later does not necessarily imply substitution against the former. As noted in a very informative paper by Deaton and Muellbauer, efforts to identify the direct costs of individual children encounter a big conceptual problem with respect to the existence of household public (i.e., shared) goods (Deaton and Muellbauer,1986).

Third, economics has clarified causal interrelations; for example, few economists would speak of lower fertility "causing" higher female labor force participation, or vice versa, but would view both magnitudes as simultaneously determined by other factors such as education and age at marriage. Mincer added analysis of opportunity costs (Mincer,1998). In this case, he was referring essentially to the value of the time spent by mothers in child rearing instead of other activities.

Fourth, a contribution that is attributable especially to research stemming from Becker's 1965 article on economic theory, has led to more explicit recognition for both the competition between children and economic goods and of the time of father and mother and of the value of that time to each parent.
If you had more money, would you have more children? Economists refer to goods that you purchase more of when your income increases as “normal” goods and those that you purchase less of as “inferior” goods. For example, a plate of fried rice is likely to be a normal good while a combination of *Lacasera* and *Gala* is likely to be an inferior good within Awka-South.

The negative correlation is particularly puzzling if one thinks about children as a consumption good, unless one believes that children are an inferior good. An early discussion of this fact appears in the seminal article on fertility choice by Becker (1960). The basic idea is that the price of children is largely time, and because of this, children are more expensive for parents with higher wages. Another argument is that higher-wage people have a higher demand for child quality, making quantity more costly, and hence those parents want fewer children.

Hongbin and Junsen, (2012) examined the impact of the birth rate on economic growth by using a data set of 28 provinces in China, they found that the birth rate has a negative impact on economic growth, and this finding is robust even after they controlled for a number of demographic and institutional variables. their finding provides some new evidence that show the negative causal effect of population on economic growth.

The other strand of literature attacks the question from an empirical point of view, arguing that the negative relationship is mainly a statistical fluke due to a missing variables problem. This literature focuses on identifying those crucial missing variables, such as female earnings potential. According to the argument, once those missing variables are controlled for, fertility and income are actually positively related.

FERTILITY

The relationship between fertility and income has been a preoccupation of demography since Malthus published the "Principles of Population" in 1798. Of the various approaches surveyed in this study, the economic analysis of fertility pioneered by Gary Becker based on neoclassical consumption theory argues the most strongly for a positive influence of income on fertility.

Easterlin (1978) attempts to describe and explain the great fertility changes that occur in the process of modernization, including the fertility-income relationship. He includes in his analysis the supply of children, i.e. the number of surviving children a couple would have if they made no attempt to control their fertility, and the costs of fertility regulation. It appears from a review of this literature that the relationship between income and fertility is not universally either positive or negative.

Becker (1989) views children as consumer goods competing with alternative goods as parents attempt to maximize their utility or satisfaction. The indifference curves, budget lines and other analytical apparatus of microeconomic research are central to this approach.

Barro (1991) carried out a study to provide a theoretical framework for incorporating fertility into models of economic growth. He adopted the panel model system which had level of fertility and population growth rate as factors. In his result, fertility had a negative impact on productive output and inadvertently family income.

Paul, (2005) exerts that there is an inverse association between income per adult and fertility among countries and across households. He also found that fertility is lower among better educated women and is often higher among women whose families own more land and assets. These effects of exogenous fertility change on the health and welfare of children are assessed from Kenyan household survey data by analysis of the consequences of twins, and the effect of a void in unanticipated fertility appears to have a larger beneficial effect on the body mass index or health status of children in the family than would be expected due to variation in fertility which is accounted for by parent education and household land.

Harvinderkaur (2004) attempted a study on the impact of fertility on family income. This study adopted the survey method and analysed the fertility behavior of 405 ever married women in the age group, 15-45 years in terms of two socio-economic variable that is

income and education. The study showed a negative relationship between the duo of income and education against fertility in China.

BARRO'S ECONOMIC FERTILITY THEORY

This study is anchored on Barro's Economic Fertility Theory. Barro (1991) provides a theoretical framework for incorporating fertility (or population growth) in models of economic growth. In addition, his neoclassical growth model contains, as basic arguments, human capital investment and technological change. Barro asserts that fertility has a negative impact on productive output and inadvertently family income, reflecting expenditure on child-rearing rather than production of goods (income generation). Barro concludes that an exogenous drop in fertility raises productive output in the long run. This implies that reduction in fertility rates will translate to productivity and income generation among parents as well as increase in overall family income.

METHODOLOGY

The study adopted a cross-sectional survey design to collect data from a sample of 120 respondents using questionnaire as the major instrument which he administered on a face-to-face bases to the respondents. Respondents were randomly selected from six out of nine towns that make up Awka-South Local Government Area, which has a projected population of 268,180 people in 2020 (Wikipedia, 2023). The selected towns include: Awka, Nibo, Nise, Mbaukwu, Okpuno and Isiagu. With the use of simple random sampling, twenty (20) households from each town were selected. A spouse was purposively chosen and sampled in each of the selected household, bring the number to 120 respondents. However, a total of 94 questionnaires out of the 120 distributed were validly filled and returned. Based on this, data were collated, processed and analysed using SPSS relevant electronic tools. The chi square statistical method was specifically employed to establish significant relationships among study variables in the postulated study aims. Results were expressed in percentages using tables and charts.

Table 1: ***Personal Data of Respondents***

S/N	VARIABLES	RESPONSES	FREQ	PERCENT
1	Distribution of the respondents by sex	Male	51	54.2
		Female	43	45.8
		Total	**94**	**100**
2	**D**istribution of the respondents by age	18-24	25	26.6
		25-31	28	29.8
		32-38	25	26.6
		39-44	8	8.5
		45-49	8	8.5
		Total	**94**	**100**
3	Distribution of respondents by marital status	Single	30	31.9
		Married	58	61.7
		Divorced	2	2.1

		Widowed	4	4.2
		Total	**94**	**100**
4	Distribution of respondents by occupation	Farmer	4	4.2
		Civil Servant	28	29.8
		Artisan	20	21.3
		Employed	10	10.6
		Unemployed	16	17.0
		Entrepreneur	16	17.0
		Total	**94**	**100**
5	Distribution of the respondents by being Head of the family	Yes	50	53.2
		No	44	46.8
		Total	**94**	**100**
6	Distribution of the respondents by educational status	FSLC	4	4.2
		JSSCE	10	10.6
		SSCE	32	34.0
		NCE	15	15.9
		Degree	28	29.7
		Masters	10	10.6
		Ph.D	5	5.3
		Total	**94**	**100**
7	Distribution of respondents by monthly income range	Below N10,000	15	15.9
		N10,000-N20,000	22	23.4
		N20,100-N30,000	11	11.7
		N30,100-N40,000	12	12.7
		N40,100-N60,000	12	12.7
		N60,000 and above	22	23.4
		Total	**94**	**100**
8	Distribution of respondents by number of children	0	28	29.8
		1-4	58	61.7
		5 and above	8	8.5
		Total	**94**	**100**

The table shows that 51(54.2%) of the respondents were female while 43(45.8%) were male. A good number (34.0%) had SSCE while 29.7% had a Degree. The implication here is that majority of the respondents had medium level of educational attainment. Majority of the respondents (29.8%) were Civil servants while a good number (21.3%) were also

artisans. This shows that Civil servants constitute the largest participants in the study. Furthermore Table 1 also shows that majority of the respondents (93.7%) are Christians. This is expected because Anambra state and Igbo land in general are predominantly Christians. The table shows that majority (61.7%) had at most four children.

Table 2: *Distribution of the respondents by if they think an increase in income would lead to the birth of more children.*

VARIABLE	FREQUENCY	PERCENT
YES	40	42.5
NO	54	57.5
TOTAL	**94**	**100.0**

Source: Field survey 2016

Table 2 above shows that a majority of the respondents (57.4%) think that an increase in income would not lead to the birth of more children while an appreciable minority (42.5%) think that an increase in income would lead to the birth of more children. This evidence is collaborated with the qualitative data. This implies that an increase in income would not necessarily lead to the birth of more children.

Table 3 *Distribution of the Respondents by the availability of conditions affecting birth of more children*

VARIABLE	FREQUENCY	PERCENT
YES	60	63.8
NO	34	36.2
TOTAL	**94**	**100.0**

Source: Field survey 2016

Table 3 shows that majority of the respondents (63.8%) agree that there are prevailing conditions facilitating the income-fertility relationship. This clearly demonstrates that there are conditions facilitating the income-fertility relationship.

Table 4: *Distribution of the Respondents by variables affecting income-fertility relationship*

VARIABLE	ARE THESE POSSIBLE REASONS FOR AN INCREASE IN FAMILY SIZE?		
	Yes	**No**	**Total**
AGE AT MARRIAGE	45(75.0%)	15(5.0%)	60(100%)
SEX OF DISTRIBUTION OF CHILDREN	52(86.7%)	8(13.3%)	60(100%)
SOCIAL FACTORS	52(86.7%)	8(13.3%)	60(100%)
LEVEL OF EDUCATION	42(70.0%)	18(30.0%)	60(100%)
OCCUPATION	39(65.0%)	21(35.0%)	60(100%)
RELIGION	36(60.0%)	24(40.0)	60(100%)
INCOME			
TOTAL	**306(72.8%)**	**114(27.2%)**	**420(100.0%)**

Source: Field survey 2016

Table 4 shows that Age at marriage, sex distribution of children, social factors, level of education, occupation, religion and income are all factors influencing the birth of more children.

Test of Hypotheses

Hypothesis 1: There is a negative relationship between fertility and family income in Anambra State

Table 5 : *Relationship between fertility and family income*

WHAT IS YOUR INCOME RANGE?	NUMBER OF KIDS			X^2 (5, N=94 P=.000
	0-2	3 and above	Total	
BELOW N10,000	4	11	15(15.9%)	
N10,000-N20,000	6	16	22(23.4%)	
N20,100-N30,000	3	8	11(11.7%)	
N30,100-N40,000	5	6	12(12.7%)	
N40,100-N60,000	9	3	12(12.7%)	
N60,000 AND ABOVE	18	4	22(23.4%)	
TOTAL	**45**	**49**	**94(100%)**	

Source: Field Survey 2016

Hypothesis 1 is thus accepted. This shows that there is a significant negative relationship between income and fertility in Anambra State.

Hypothesis 2: There are economic, social and religious factors affecting the fertility-family income relationship in Anambra State.

Table 6: *What are the conditions necessary for the fertility-income relationship?*

VARIABLE	ARE THESE POSSIBLE REASONS FOR AN INCREASE IN FAMILY SIZE?		
	Yes	No	Total
AGE AT MARRIAGE	45(75.0%)	15(5.0%)	60(100%)
SEX OF DISTRIBUTION	52(86.7%)	8(13.3%)	60(100%)
OF CHILDREN	40(66.7%)	20(33.3%)	60(100%)
SOCIAL FACTORS	52(86.7%)	8(13.3%)	60(100%)
LEVEL OF EDUCATION	42(70.0%)	18(30.0%)	60(100%)
OCCUPATION	39(65.0%)	21(35.0%)	60(100%)
RELIGION	36(60.0%)	24(40.0)	60(100%)
INCOME			
TOTAL	**306(72.8%)**	**114(27.2%)**	**420(100.0%)**

Source: Field survey 2016

The individual percentage in support of the above listed factors was greater than those in opposition thus the alternative hypothesis (H3) is accepted. This shows that age at marriage, sex distribution of children, social factors, level of education, occupation, religion, income are all conditions affecting the negative income-fertility relationship in Anambra State.

DISCUSSION OF FINDINGS

This study examines the various ways fertility impacts on family income which seem to have implications on the economic, social and cultural wellbeing globally and in Awka, Anambra State in particular. The research aims were clear in their mission to find out if a negative correlation exists between family fertility and family income in Anambra State and whether there are necessary conditions for the fertility-family income relationship to work in Anambra State as well as to find out the economic, social and religious factors affecting the fertility-family income relationship in Anambra State.

Findings from the study suggest that an increase in income would not necessarily lead to the birth of more children. This is against the notion that more family income will naturally increase fertility rate since they can afford the funds to maintain large family size. This finding is in tandem with the postulation of the theoretical frame which asserts that fertility has a negative impact on productive output and inadvertently family income, reflecting expenditure on child-rearing rather than production of goods (income generation). This study lays credence to the study of Becker (1960), who asserts that 'children are more expensive for parents with higher wages. Another argument is that higher-wage people have a higher demand for child quality, making quantity more costly, and hence those parents want fewer children'. Hongbin and Junsen, (2012) also corroborate this finding when in their own study they found that birth rate has a negative impact on economic growth. In relation to this finding also, Barro theory concludes that an exogenous drop in fertility raises productive output in the long run. This implies that reduction in fertility rates will translate to productivity and income generation among parents as well as increase in overall family wellbeing.

In the socio-cultural aspects, this study identified age at marriage, sex distribution of children, social factors, level of education, occupation, and religion as factors influencing the birth of more children for both high and low-income earners, but especially among the low-income earners since they are not always able to fund maintain fertility regulatory practices such as family planning. Despite the above observations together with the statistically significant negative relationship between family income and fertility in Anambra State, fertility rate is still on the increase in Awka South LGA. This is not unconnected with the relatively low level of education among the people (as indicated by this study) which also translates to relatively low level of income. The out come becomes uncontrolled fertility and thus increased population.

CONCLUSION

Findings revealed that high population growth rate due to high fertility rates in Nigeria exerts negative consequences on the Nigeria's economy, (Asogwa and Ugwunta, 2013).

These negative consequences can be appreciated by high poverty, inadequate housing, poor sanitation, low standard of living, high unemployment rate and inflation, high pressures on existing infrastructural facilities etc.
The amount of time also spent in conceiving and nursing the newborn children which is considered an investment on the child reduces the commitment to labor hence an under-utilization of labor. The unemployment trend also does give way for social problems such as bribery, prostitution, armed robbery, kidnapping, internet fraud etc. It also does record an increase in government expenses.

The goal of this study was to identify the impact of fertility on family income this is because fertility rate which has a profound impact on population provides a basis for shaping regional, state and ethnic relations and balance of power. The correlation as ascertained by this research provides a basis for assessing the value of policy interventions in determining factors such as minimum wage, population control method using fertility rate, dependency ratio, standard of living, child welfare as well as optimum utilization of labor in Awka-South LGA. Thus, it is important to politicians, law-makers, economists amongst many others. Policy initiatives are therefore very critical to address these challenges so as to enhance economic stability, and to ensure improved quality of life and wellbeing of every family in Nigeria.

Human service professional such social workers should be empowered to provide families with the required enlightenment and relevant education that will empower them to make an informed fertility decisions that will match their family income. Social work professionals are trained in financial planning and can therefore assist families in creating a financial plan that accounts for their reproductive goals and financial constraints. They can help provide families with information on various family planning methods, enabling families to make informed decisions about their reproductive health and also link them to resources like affordable healthcare, childcare assistance, and income support programs. Social work professional training empowers them to offer guidance on reproductive health, relationships, and financial management, addressing emotional and psychological aspects. Organizing community programs and workshops on family planning, financial literacy, and resource management is another area of interest to a social worker. They have the ability to advocate for policies supporting reproductive health, family-friendly workplaces, and social services that benefit families. By adopting a holistic approach, social workers can empower families to make informed decisions about their fertility and financial well-being.

RECOMMENDATIONS

Based on the findings in this study the following recommendations are put forward:

1. The government should make use of social work professionals in her Social welfare agencies so as to intervene in family issues efficiently for the benefit the government and the society as large.
2. Adequate awareness and sensitizations are need to and should be planned and executed by trained professionals using appropriate means and methods.

3. Education should be made free and compulsory for both men and women in Nigeria to eradicate illiteracy and certain obnoxious cultural practices that influence high fertility rates in Nigeria.
4. Government should greatly subsidize and make readily available family planning facilities and equipment to help reduce fertility rates.

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