



SOCIAL AND ECONOMIC FACTORS AFFECTING ETHNIC FERTILITY DIFFERENTIALS IN SRI LANKA

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ABSTRACT

In the Sri Lankan context, society consists of different ethnic groups with distinctive languages, cultures, values and norms, and the behavior of people in many ethnic groups is attached to their ethnicity. Further at present Sri Lankan society has also changed with the influence of various economic and political policies. Especially modern economic and political policies influenced on Family, the bottom of the society pyramid among different ethnic groups. Therefore, the main objective of the study is to identify the impact of ethnic differentials on fertility. This study used secondary data from the Sri Lanka Demographic and Health Survey (SLDHS) conducted in 2006/2007 by the Department of Census and Statistics. 13753 currently married women aged 15-49 years were used to identify their fertility behavior by study. Poisson regression model was used for analysis. The study found that after controlling for demographic and socio economic variables, Tamil and Muslim women are statistically significant and show a positive relationship with number of children. Considering the socio economic and demographic factor variations which affect fertility among ethnic groups, age at marriage, partners' and women's education negatively effect on all ethnic groups. All ethnic groups show a positive relationship between number of children ever born and number of children preferred. Wealth status of household and age difference between spouses show a negative relationship with fertility. "There is a positive relationship between the number of women who have not been frequently exposed to the media and the number of children born

KEYWORDS: *Ethnicity, fertility differential*

1. INTRODUCTION

Even though reproduction is a biological and universal phenomenon, socio cultural norms and physical environmental conditions also influence on fertility. Hirschman and Young (2000) state that “fertility behavior, like all individual behavior, is Influenced by the social, economic, and cultural context as well as by individual circumstances”, by emphasizing “change in fertility behavior is a product of large-scale changes in the organization of societies that are filtered through changes in individual characteristics and the opportunities that the individuals face.” Further Freedman (1995) pointed out that ideological and cultural differences also influence fertility behavior in addition to socio economic development, changes in attitudes about family planning and life styles. On the other hand, Baulch et al., (2004); Van de Walle and Gunawardena, (2001); Swinkels and Turk, (2006) pointed out deprivation and social exclusion among minority communities occurred due to higher fertility. Especially Ethnicity is also associated with access to, and control of economic resources among women. It is a powerful factor in most developing countries, which affects all aspects of life for the individuals. Especially people derive their fundamental identities and values through their ethnicity. Therefore, cultural values and identity determine the behavior of people including reproduction.

There are a number of scholars and policymakers interested in ethnic differences in demographic and reproductive outcomes (Dubuc, 2009; Garenne and Zwang, 2006; Zaidi and Reichenbach, 2009) due to different reasons. The first reason is that ethnicity is

a powerful factor which affects all aspects of life of people in many societies. Especially, it affects school participation, employment opportunities, promotion and political participation. Further, it influences on partner selection, attitudes of number of children and contraception. The second reason is that ethnicity influences on the social structure of a society, which means that the behavior of persons including reproduction is shaped by ethnicity.

Considering the Sri Lankan ethnic group differences, 74.9% of the population represent the Sinhalese and the majority are concentrated in the south-west and central parts of the Island. The Sri Lankan Tamils are the largest minority group living predominantly in the north-east of the island by marking up 11.2% of the population. There are also Indian Tamils who form a distinct ethnic group which comprises 4.2% of the population. The Moors, who moved from Arab traders that settled in Sri Lanka, form the third largest ethnic group at 9.2% of the population. Smaller minorities include the Malays and the Burghers.

The prime objective of the study is to identify the fertility differentials by ethnicity with their different socio economic characteristics.

2. PROBLEM STATEMENT

Reproductive behavior is an important incidence in the life cycle of women. The different socio economic factors influence on the fertility of women. Among these factors, ethnicity plays an important role in many societies regarding decision making on fertility.

Considering the total fertility rate among different ethnic groups, Sri Lankan Moors

recorded the highest total fertility rate (3.3 live births) and the second place goes to Indian Tamils (2.9). Sri Lankan Tamils and Sinhalese recorded 2.3. (UNFPA, 2016). Further, compared to Sri Lankan Moor women, Sinhalese women reported one child less in 2011. In view of minority ethnic groups, the total fertility rate among Malay and Burger Women were recorded as 2.7 and 2.2 live births respectively. Therefore, it is seemed that all major ethnic groups contributed to a decline in the fertility in the past, and it has changed during the past 10-15 years. Further Ethnic differentials in fertility in Sri Lanka has contributed to changing population growth among ethnic groups. The Sri Lankan Moors recorded the highest rate of annual growth (1.9%) during 1981-2012 and the annual growth rate of the Sinhalese population is 1.1%. On the other hand, Sri Lanka Tamils and Indian Tamils recorded a low population growth (UNFPA, 2016). In this scenario, the study attempts to identify the impact of ethnicity on fertility in the Sri Lankan context and the factors that affect the determination of the ethnic fertility difference among ethnic groups. It will help to policy planers to enhance the wellbeing of the population and to rethink about national fertility programs.

3. LITERATURE REVIEW

The previous literature interprets ethnic differences in demographic behavior including fertility, mortality, migration and nuptiality using three hypothesis: the “characteristics hypothesis”, “Norms/cultural hypothesis” and “minority hypothesis” (Goldscheider, 1971; Addai, 1999a; Addai and Trovato, 1999). Those hypotheses have been used by most scholars to explain ethnic differences in fertility, contraceptive

use and marriage patterns (Kollehlon, 1989; Addai and Trovato, 1999; Addai, 1999a; Zulu, 2001)

The characteristics hypothesis attempts to identify the ethnic differences in demographic behavior with different socio economic characteristics of persons of various ethnic groups. According to Addai and Trovato (1999), it is assumed that people of different ethnic backgrounds are incorporated into socio economic structure of the larger society with the improvement of socio-economic status through education, urban residence and modern occupations. The second hypothesis: cultural hypothesis explains that different reproductive related behaviours may occur due to differences in norms, values and attitudes of different ethnic groups.

The minority hypothesis states that the fertility of the minority group will be lower than that of the majority group under several conditions. These conditions are: the minority group must have similar socioeconomic and demographic characteristics as the majority group. Minority group must not have pro-natalist norms, instead of desire to acculturate the values of the majority group, and the minority group must have an aspiration for upward mobility with no feelings of insecurity and marginality. (Goldscheider, 1971). “Insecurities of a minority religious group lead them to limit family size to facilitate social mobility, provided that the group seeks both acculturation and social and economic mobility, and that the religion does not have a strong pro-natalist ideology or one that specifically discourages birth control” (Kondel et al, 1999). However, if the majority community feels a political, economic or social uncertainty, the fertility may be high. (Stinner and Mader, 1975) Martin,

et al. (2011) found that Hispanic whites recorded a higher fertility rate than non-Hispanic whites. Njogu (1991) found that the increased use of contraception and the increase in the average age first marriage are the major factors which decline fertility among certain ethnic groups in Kenya (Kikuyu, Kalenjin, Kisii, Luhya, Embu and Meru). Brunette (1996) examined fertility differences between the major ethnic groups in Nigeria and Senegal and found that cultural settings directly affect fertility.

Oheneba-Sakyi and Heaton, 1993 through studies in Ghana found that ethnicity is the strongest predictor of fertility. According to Abu (1994); Agyei and Migadde (1995), high fertility and high polygyny are dominated by certain ethnic groups in Africa. Shapiro and Tambashe (1997) found fertility differentials by ethnicity in the city of Kinshasa, Zaire and higher educational attainment of women had the effect of reducing the differences across ethnic groups. Kritz et al. (2000) found that ethnic group differences in fertility are strongly changed by empowerment contexts.

The following empirical studies also identified different proxy and non proxy determinants of fertility among women.

Kalwij (2000) shows that female employment status is a major determinant of the presence and number of children in household and that employed women postpone child birth and have fewer children compared to non-employed women holding educational attainment constant. Most of the studies found negative relationship between women's education and number of children (Adhikari, 2010; Dwivedi & Rajaram, 2004). Further, the negative impact of age

at marriage on the number of children was recorded by themselves. Adhikari (2010) also reported negative relationship between wealth and fertility. Considering the Sri Lankan context, place of residence, ethnicity, religion and education are major factors in determining fertility (Abeykoon, 1987; Puvanarajan and De Silva, 2001; Fernando,2014; De Silva, 2015). According to Puvanarajan and De Silva (2001), the increase in the average age at marriage and the increasing use of contraception are the two main factors for the decline of fertility among the ethnic groups in Sri Lanka. However, it was recorded less susceptible among Moors than other groups and high fertility level can be seen among all ethnic groups. The study done by Abeykoon (1987) has identified age at marriage is the most important factor that determines the number of ever born children, and it has a strong negative effect on all ethnic groups. However, it was highly influenced on Sri Lankan Tamils. Fernando (2014) concluded that wealth and the ever use of contraceptives are highly influential factors on fertility among integrated and segregated Muslims in Sri Lanka.

4. METHODOLOGY

This study used secondary data from the Sri Lanka Demographic and Health Survey (SLDHS) conducted in 2006/2007 by the Department of Census and Statistics. The data were collected through personal interviews based on questionnaires. 13753 currently married women aged 15-49 years were used to identify their fertility behaviour in the study. Descriptive statistics including frequencies and cross tabulations and methods of data presentation like graphs and diagrams were used for the preliminary analysis.

Poisson regression was used for final analysis. Winkelmann and Zimmermann (1994) highlighted that Poisson regression model is a very important model for count data. It has a wide application to life cycle events (Trussell and Rodriguez, 1990). Brostrom (1985) and Rodriguez and Cleland (1988) used Poisson regressions to model nuptial fertility. The Poisson regression model is a technique used to describe count data as a function of a set of predictor variables. Especially Poisson regression is appropriate when the conditional value of Y is likely to have a Poisson distribution. The Poisson distribution is discrete, so Y should be discrete.

In Poisson regression Response/outcome variable Y is a count. But we can also have Y/t, the rate (or incidence) as the response variable, where t is an interval representing time, space or some other grouping. When the response variable is in the form of a discrete number, e.g. a count we model the data by linking the logarithm of the outcome variable to a linear function

$$\text{Log}(Y) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n$$

Explanatory variables, $X = (X_1, X_2, \dots, X_k)$, can be continuous or a combination of continuous and categorical variables.

Y is the number of ever born children and explanatory variables, $X = (X_1, X_2, \dots, X_k)$, variable are women labour force participation, age at marriage, women's and husband's education level, current age of women, use of contraceptive devices, experience of waste pregnancy, wealth index, ethnicity and residential sector, media expose, BMI, husband's occupation, preferred number of children that the study used.

5. RESULT AND DISCUSSION

By using sub sample of currently married women in demographic and health survey, determinants of the number of ever born children to currently married women can be identified as follows.

Table 1: Determinants of ethnic fertility differentials (Poisson regression result of Number of Ever Born Children)

Parameter	Total		Tamil		Muslim		Sinhala	
	B	Sig.	B	Sig.	B	Sig.	B	Sig.
(Intercept)	.449	.000	.767	.00	.777	.000	-.105	.243
Ethnicity								
Tamil	.154	.000						
Muslim	.102	.000						
Others	-.043	.603						
Sinhala	0	.						
Wealth status of household								
Poorer	-.055	.029	-.012	.87	-.097	.148	-.057	.058
Poorest	-.041	.083	-.038	.60	-.059	.321	-.033	.231
Middle	-.063	.006	-.029	.70	-.072	.202	-.069	.011
Rich	-.058	.008	-.024	.73	-.126	.020	-.049	.058
Richest	0	.	0	.	0	.	0	.
Women labor force participation								
Unemployed	-.056	.000	-.101	.01	.065	.183	-.066	.000
Employed	0	.	0	.	0	.	0	.
Residential Sector								
Urban	-.030	.093	-.039	.48	.041	.300	-.049	.028
Estate	-.101	.001	-.109	.02	-.300	.305	-.108	.067
Rural	0	.	0	.	0	.	0	.
Partner's occupation								
Elementary	.022	.144	.004	.92	.006	.869	.025	.177
Others	.119	.136	.293	.32	.033	.882	.151	.091
Professional	.053	.051	.055	.57	.048	.475	.058	.070
Skill	0	.	0	.	0	.	0	.
Age difference between spouses								
Same	-.085	.001	-.084	.17	-.145	.030	-.066	.035
1-4	-.062	.003	-.073	.15	-.088	.107	-.047	.065
5-9	-.053	.010	-.072	.16	-.117	.027	-.031	.229

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10+	0	.	0	.	0	.	0	.
Waste Pregnancy								
No	-.013	.410	.044	.31	-.036	.410	-.020	.270
Yes	0	.	0	.	0	.	0	.
Media expose								
No	.064	.001	.033	.45	.110	.008	.049	.061
Yes	0	.	0	.	0	.	0	.
Ever use of contraceptive								
yes	.523	.000	.331	.00	.261	.000	1.016	.000
No	0	.	0	.	0	.	0	.
Age at marriage	-.017	.000	-.021	.00	-.014	.001	-.015	.000
Husband's education (years)	-.016	.000	-.012	.01	-.017	.004	-.017	.000
BMI	.010	.000	.004	.26	.008	.011	.013	.000
Women's education (years)	-.031	.000	-.026	.00	-.038	.000	-.032	.000
Preferred number of children	.167	.000	.207	.00	.155	.000	.164	.000
Goodness of fit – Overall model	Likelihood Ratio Chi-Square-1742.385	Df-23						
		Sig						
		.						
		0						
		0						
		0						

Source: Author's calculation

The ethnicity or religion background adjusts the behaviour of people. The relationship between fertility and ethnicity is considered after controlling for demographic and Socioeconomic variables. Considering the Poisson regression result, Tamil and Muslim women are statistically significant and show positive relationship with number of children. Especially considering the Tamil and Muslim society, their cultural and religious backgrounds have highly influenced the maintenance of a high fertility rate.

Difference in the logs of expected counts is expected to be 0.056 lower for women who are not engaged with labour market activities than women employees, given the other variables are held constant in the model. The parameter estimates for unemployed are negative and highly significant. Women who are in labour market have high financial security. Therefore, the ability of maintaining high fertility rate is possible. Butt and Jamal (1997) found that nonworking women desired to have less number of children. However, considering the ethnic difference, women labour force participation is not significant for Muslim women.

According to classical economists, fertility raises with increase in income. However in the long run, its effect becomes negative. Further, the theory of opportunity cost shows that needs of time and finance of a couple cause declines in fertility. Quality and quantity theory also concluded negative relationship. According to Becker (1960) and Becker & Lewis (1973), wealthy parents prefer to have few children with high quality. Wealth index may have positive or negative effect (Becker, 1981).

When children are considered as durable items, positive effect can occur on fertility, which is called income effect. When the opportunity cost of child rearing is high, it has a negative effect called price effect. Therefore, economic status of households is a very important variable to determine their fertility behavior. According to the study, wealth index of the household is statistically significant. All the wealth categories show a negative relationship with the number of ever born children. Especially middle and rich categories recorded the highest value. Adhikari (2010) also reported negative relationship wealth and fertility. Considering the ethnic difference, the Muslim women who are in the rich category have recorded a negative value and the others are insignificant. It may be because the Muslim women who are in rich families have more freedom to use contraceptives and to make decisions regarding fertility. Further, the Sinhala women in the middle category also recorded a negative value. The difference in the logs of expected counts is expected to be 0.101 lower than for women who are in the estate sector compared to women in the rural sector respectively, while holding the other variables constant in the model. Family planning programmes are successfully operated and media exposure of women is high in Sri Lanka. Therefore, women's knowledge about family planning activities and exposures to outside world may reduce their intention. The Sinhala women who live in the urban sector recorded a negative relationship.

This is the Poisson regression estimate for a one year increase in age at marriage, given the other variables are held constant in the model. If currently married women

were to increase their age at marriage by one year, the difference in the logs of expected counts would be expected to decrease by 0.015, while holding the other variables in the model constant. Therefore, there is a negative relationship between the number of ever born children and age at marriage by indicating reduction of fertility due to delayed marriages. Similar result can be seen in the previous literature (Adhikari, 2010; Dwivedi & Rajaram, 2004). Age at marriage is negatively related to fertility for all ethnic groups in Sri Lanka.

When partner's education increases by one year, the difference in the logs of expected counts would be expected to decrease by 0.016, while holding the other variables in the model constant. Therefore, there is a negative relationship between the number of ever born children and partners' education.

If a currently married women's education increases by one year, the difference in the logs of expected counts would be expected to decrease by 0.031, while holding the other variables in the model constant. Therefore, there is a negative relationship between the number of ever born children and women's education. Higher education opportunities delay the age at marriage and provide more labour market opportunities for women. Further, it increases the awareness of family planning methods and women can bargain regarding quality versus quantity of children. Most of the fertility studies have concluded similar results. (Adhikari, 2010; Dwivedi & Rajaram, 2004). All ethnic groups indicate that women's education and partners' education are negatively related to fertility.

The BMI represents the health status of

currently married women. The parameter estimate of BMI is positive and significant. It means that the body mass index of currently married women increase by one units of kg/m^2 , the difference in the logs of expected counts would be expected to increase by 0.012, while holding the other variables in the model constant.

Haven't a media expose and number of ever born children shows positive relationship. The difference in the logs of expected counts is expected to be 0.064 higher than for women who haven't media expose frequently compared to women who have media expose while holding the other variables constant in the model. When the media expose is increase, the knowledge of family planning and health also increase. Media expose is insignificant factor to determine the number of ever born children among Muslim women. It may be due to their cultural and religious norms.

Number of ever born children and age difference between spouse shows a negative relationship. The difference in the logs of expected counts is expected to be 0.05 lower than for women with lower/same age difference compared to women with more than ten years' age differences between spouses, while holding the other variables constant in the model. It is the highest coefficient value indicating that the women with lower/same age difference have considerable bargaining power of decision making of fertility than other women.

The preferred number of children measures the fertility desire of the family. It can change from time to time. However, according to the above result, there is a positive relationship between preferred number of children and the number of ever

born children. Adhikari (2010) found similar results in Nepal and Bangladesh. All ethnic groups show a positive relationship.

6. CONCLUSION

The aim of this study was to identify the ethnic difference of fertility in Sri Lanka using DHS data. Poisson regression was employed. The study found that after controlling for demographic and Socio economic variables, Tamil and Muslim women are statistically significant and show a positive relationship with the number of children. Considering the Socioeconomic and demographic factor variations which affect fertility among ethnic groups, age at marriage, partner's and women's education negatively effect on all ethnic groups. All ethnic groups show a positive relationship between number of ever born children and preferred number of children. Wealth status of household and age difference between spouse show a negative relationship with fertility. The women who have not been exposed media frequently show a positive relationship between numbers of ever born children.

Increasing educational level of women, employment opportunities and media exposure is important in every ethnic group to improve their fertility behaviour. Especially the awareness of contraceptives and media access should be increased among Muslim women.

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