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Population geography may be considered as one of the major aspects of human geography. It deals with the number, density and characteristic of human population in the regional perspective. The study of population is, therefore very essential for the present and future relationship between man and land for their adjustment and equilibrium. As a dynamic factor, its increase or decrease in any area is the result of the combination of two forces that is difference between fertility and mortality and the balance of migration, of these, fertility is the major dynamic element. In most instances, it is the prime determinant of age structure, family composition and population growth rates. Rarely do developments in the other two variables- mortality and migration possess a demographic significance comparable to that attaching to fertility. To understand fertility is, therefore, to understand not only a major portion of all demographic behaviour, but a fundamental element of social structure and the human conditions. Generally, fertility means birth rate or the reproductive performance of human being; it is measured by actual number of births of an individual, a couple or a group of people. Today, fertility is one of the most essential components of population geography. The study of human fertility occupies a central position in the study of population geography because it is responsible for biological replacement and for the maintenance of human society. The growth of world population entirely depends on human fertility. Any society replenishes itself through the process of human fertility. It is having great subjective importance in field of sociology, demography and economics. Now a day, fertility and population problems are being studied by policy makers both in government and outside. The fertility of woman has always been a
matter of vital concern for the people. There is no aspect of human life which is not influenced by fertility. The level of fertility in a society is directly influenced by a set variables called intermediate variables or proximate determinants. The primary characteristic of an intermediate variable is its direct influence on fertility. Human fertility of any area is the product of the socio-economic conditions, according to which we may assume the fertility status of that area and vice versa. The fertility level has already declined substantially in most parts of the developing countries including India since 1970s. This may be caused by several factors, among them socio-economic factors are most potent in shaping the fertility rate because some of the other factors are directly associated with the society and economy of any developing region and social and economic factors are directly linked with fertility differentials in spatio-temporal perspective. The lower level of mortality accompanied by declining fertility trend characterized the stage of demographic transition in India. Although fertility has declined in India, the decline has not been uniform. There are states like Kerala, Goa and Tamil Nadu where fertility rate has reached the replacement level, on the other hand in states of Bihar, Uttar Pradesh, Madhya Pradesh and Rajasthan fertility continues to remain high and the demographic transition is extremely slow. In these states, population growth was largely contributed by fertility. Consequently, population analysis requires research methods that permit calculation of accurate rates of fertility, mortality and migration. These three facts of life are commonly called demographic variables. Changes in fertility depend on numerous factors. Besides the biological factors (race, health, heredity, fecund ability, adolescent sterility, age at menopause etc.), fertility rate also depends on a number of social and economic factors. The most important factors through which
socio-economic and cultural changes directly and indirectly affect fertility of an area are as follows: race has been found to be the basic factor generating fertility differences. For example, in New Zealand, Maori fertility is much higher than that of whites, similarly the fertility of the indigenous population of Rhodesia and Zambia is almost twice that of Europeans. These differences in their fertility are related to their racial differences because not all the racial groups living in the similar environment. Bad health conditions can lead to partial or complete fertility; normally one would expect that those enjoying good physical and mental health would be more empirical. Various observations show contrary results as the most under-nourished in the world are the most fertile (Chandna and Sidhu, 1980). Generally health conditions have also an indirect impact upon fertility patterns of the area. Poor health conditions resulting in high incidence of mortality compel the people to go in for large families so that each couple can have at least 2/3 survivors. However, when the mortality rate goes down, the people start adopting small families.

Age at marriage appears that fertility goes down when marriage takes place at a late stage. In Europe many people marry at a very late stage and in many more cases the people even do not marry at all. It is well known fact that fertility rate is higher in countries where marriages take place at comparatively early ages, as compared with the people who marry at a late stage. Fertility differences by religion and caste are widespread. Both religion and ethnicity are associated with differences in norms relating to contraception and abortion, or they are associated with a population’s composition with respect to some attribute – residence or income. In under-developed countries people are usually orthodox and religious minded. They believe that family planning is anti-religious. In
country like India it is believed that every family must have a male child and for this they try, no matter what might be the size of the family, in this way fertility increases. Davis (1951) observed that in India, although the Muslims and Hindus live in similar environments yet the birth rates of the Muslims are found significantly higher than those of Hindus. The average number of children born to Muslim women is 5.71 as compared to 5.16 to Hindu women. An analysis of data obtained from census of India publications for about a century indicates that the Muslims have invariably higher growth rates for each decade. In pre-partition India, the fertility of Muslims was about 15 per cent higher than that of the Hindus, this is because the remarriage of widows is allowed in Islam while in Hindu religion it is not (Vararia, 1974). Caste is also an important factor of fertility differentials. In the city of Lucknow it has been observed that upper caste Hindus had, on an average, 3.8 live births, while the lower caste Hindus had, on an average, 4.1 live births (Saxena, 1973). But nowadays, the influence of religion is decreasing in urban areas whereas in rural areas it plays a vital role. It is believed that those who try to limit the size of the family or plan their families are standing in the way of wishes of God. The children are the blessings of God and they should not be denied. But in urban areas a hold of religion and grip of orthodoxy are very much losing its self. Accordingly family planning devices are adopted without much hesitation and therefore, it lowers fertility in urban areas.

Fertility differentials are evident by education in any area. The importance of literacy and educational level on fertility decline is evident in the case of Kerala in India. Education is capable of changing people’s perceptions and aspirations while education, in general, helps in bringing down the birth rate. Cognitive changes induced by education
can have a significant effect on the incidence of child bearing. Mother’s education is more strongly correlated with the couple’s fertility than the education of father. Usually it is observed that fertility among educated women is lower as compared with illiterate women. In developed countries, percentage of educated women is always higher, as compared with less developed countries. Since women and men both are quite enlightened, they do not allow fertility rate to go up, as long as that is considered absolutely necessary by the couple. Usually educated women get married at late stage and also believe in the concept of small planned family. Davis (1951) observed that there is a curve linear relationship between the number of children and percentage of females who are literates. A study conducted in Mysore reveals that the average number of children born to an illiterate female is 5.5, while those who were educated up to high school or more give birth to only 3.4 children. Part of the differences may be due to the higher marriage age of those who are educated up to high school or more. But when the averages are standardized by duration and age at marriage, the difference between the two persisted, although it was found to be similar. The education of children also influences the parent’s decision with regard to family size. The higher education of children becomes imperative with changing socio-economic scenario and increases in the cost of upbringing the children. The education of children has a two-way economic impact: one, by increasing cost of upbringing, and two, by making them non-available for participation in economically gainful activities (Caldwell, 1980). Education makes the people socially and economically more awakened and helps in bringing a change in the mental attitudes towards family responsibilities. Thus, a negative correlation between education and family size has been emphasized and brought out by several scholars.
General studies in the past have also highlighted the inverse relationship between the economic status of the family and fertility. Economic conditions are directly linked with fertility. Usually in agricultural Zamindar's family fertility is very high because they follow joint family system and husband and wife always live together. Moreover, agriculturists have high fertility rate as well as they are also economically sound. It is one of the reasons that in villages fertility is very high, particularly among the Zamindars. On the other hand in cities people are mostly salaried and they have their own limitations. They have shortage of accommodation and with their limited income; they find it difficult to bear expenses of bringing up the children. It is primary reason among salaried people to keep human fertility low. Manual workers were also found to have, on an average, more children than non-manual workers. In the non-manual class the differences between the higher and the lower grades either did not exist or were negligible. It has been observed in Italy that birth rate came down to 50 percent, major reason was that country became industrialized from an agricultural country. The people in urban areas then thought in terms of giving higher education to their children, providing them high living standard and more facilities and amenities of life and as such they do not like to have more children (Quoted in Raj, H. 1984). In some of the countries however, reverse is the case. Poor sections of society, no matter whether they belong to agriculture or industry, have high fertility. This is primarily because husband and wife always live together and have no other source of entertainment except that of sexual exposure. Moreover, it is believed that every child who is born will after some time start earning something even at a very young age by doing menial job; they feel that whereas cost of their bringing up is very low, that of their giving returns is very high.
In India, some studies have tried to investigate the relationship between the occupation of the husband and wife and the fertility. Agrawal (1970) found that cultivators and labourers had, on an average, 7.4 children, and those who reported their occupation as "service" and those who were professionals had, on an average, 6.6 children. Driver's (1963) findings indicated that the wives of unskilled workers, agriculturists and artisans had higher fertility than the wives of clerks. Rao and Muthurathan (1985) found that income and education had a negative association with human fertility.

Standard of life is also an important factor which affects fertility. In countries like India and Pakistan average income is only US $ 70, in the U.S.A it is U.S. $ 3,847 and in Canada it is US $ 2,686. We know that where there is a high living standard, fertility rate is bound to come down. It is because the people with high living standard use proteins in good quality which reduces fertility rate (Sadler, Doubleday and Spencer). Dumont in his theory of social capillarity suggests that those people who once attain a high living standard do not wish to bring this down and as such they keep their fertility rate very low (Quoted in Hans Raj, 1984). Then another reason which has been advanced is that fertility rate is always high among the people where death rate is high. But death rate among those who enjoy a high standard is always low. Leibenstein Theory suggests that fertility rate is always kept low by the people with a high living standard because the cost of their bringing up education etc. is always high (Quoted in Hans Raj, 1984). Besides these factors, fertility rate is also affected by age at marriage, practice of breast feeding and abstinence, extent of the use of family planning devices such as contraceptives etc., polygamy, separation, divorce, widowhood, post-partum, abstinence, menstruation, frequency of coitus, food supply,
urbanization, family system, political factors, attitude towards children, death rate, intellectual freedom, role of science, desire to maintain status, oral pills, un-natural measures, postpartum infecundity and induced abortions etc. (Bongaarts and Potter, 1983).

In modern society, it is *the* most essential that fertility rate should be appropriate, assessed and checked so that the government and planners become conscious of the magnitude of the problems. The fertility rate of a nation has been *most* important measure and a matter of great interest for the population geographers all over the world. It is growing emphasis on regional planning and regional approach to the population policy. Here the interpretation of observed factor is heavily conditioned by the recent demographic experience of the society. In societies where fertility within marriage is still beyond conscious control, socio-economic factors reveal little about the future trends. Rather they reflect traditional customs which happen, perhaps incidentally to bear on reproductive behaviour; on the other hand, divergence can reveal much about the nature of change indicating, in turn, the focus which lies behind the fertility transitions.

During the last two decades a lot of works have been done on human fertility problems on global, continental and country levels by geographers. However, micro-level regional studies are relatively few and it is now being realized that such studies should be given more importance as they are deserve. In fact, for the better understanding of the nature and magnitude of human fertility problems facing the present day world, micro-regional studies are needed at household level in different areas of varying physical and socio-economic conditions. In this way, it is realized that such kind of studies may minimize the existing problems of human fertility behaviour consequent upon socio-economic
landscape and their regional disparities with time, that is why these aspects are selected to analyse intensively and extensively in Aligarh district because it is observed that this area receives remarkable progress in socio-economic conditions. It is also confirmed in the study area that the process of socio-economic development and fertility behaviour are easier to fathom in rural areas. Along with this, the district is physiographically gentle sloping plain without any impediment for transportation and communication. There are many roads which radiate from Aligarh in all directions of the district. Besides these, it is also selected as a case study because I am well acquainted with the area and I am familiar with the city and countryside because it is my native district. All these considerations have led me to select Aligarh district as a case study.

The present doctoral research on “Socio-economic development and human fertility behaviour in Aligarh district” is itself the aim of my study. The main objectives of the study are: To analyse human fertility by different measures, the variables of socio-economic development and the association between the sets of variables of socio-economic development and human fertility status.

There are some hypotheses which are framed to be tested. They are as follows:

1. Religion and castes are the cause of fertility differentials.
2. Higher the educational status lesser is the fertility rate.
3. Fertility declines with increasing level of income.
4. Permanent occupations are associated with fertility decline.
5. Increase in socio-economic conditions initiate decline in human fertility rate.

6. Increasing rate of awareness of family planning programmes among people aid in decline in fertility rate.

The present doctoral thesis is studied under five chapters excluding introduction and conclusion. First two chapters are totally theoretical, while the last three are based on empirical studies. The first chapter presents the literature survey in which views of various scholars are noted briefly and methodology in which sources of data collection, methods and techniques are discussed. The second chapter gives a brief account of the study area with reference to physical features, demographic features, economic features and social features. The third chapter investigates socio-economic development and human fertility status by blocks. This chapter is sub-divided into three parts: first part describes the distribution of the variables of socio-economic development, second part deals with the human fertility status while the third part presents the relationship between the levels of socio-economic development vis-a-vis human fertility status by blocks. The fourth chapter, which explains socio-economic development and human fertility status by village, is trifocal. First part describes the distribution of the variables of socio-economic development, second part deals with the human fertility status while the third part presents the relationship between the levels of social and economic development vis-a-vis human fertility status by villages. The last chapter, which is fifth, is discussed under two major parts. First part is devoted to unit wise association between social and economic development and the human fertility status, second part is devoted to
examine and test the association between the variables of socio-economic development and human fertility status.
References


