

**BRIEF COMMUNICATIONS**

**A Note on Selection Intensity Among the Muslims  
of a Calcutta Slum**

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**KEY WORDS** Selection Intensity. Muslim. Calcutta Slum.

**ABSTRACT** In this study the value of the index of opportunity for selection with its mortality and fertility components are reported; and have been compared with the published data on their rural counterparts. The data have been collected from Muslims of a Calcutta slum. The result shows that the Muslims of Calcutta have lower fertility and mortality but higher selection pressure ( $I$ ).

**INTRODUCTION**

Selection intensity is a measure of maximum potential rate of fitness of a population. The underlying assumption is that fitness is completely heritable; and its potential rate can be measured by an 'Index of opportunity for selection' (Crow, 1958). It has two components, one due to fertility ( $I_f$ ) and other due to pre-reproductive mortality ( $I_m$ ).

The demographic events including differential fertility and mortality vary with some related factors *i.e.*, physical environmental, socio-cultural, religious and ethnic factors. Barrai and Fraccaro (1964) observed greater opportunity for selection in nomads compared to settled Lapps and those in town. Gupta (1980) observed that the index vary between two altitudinal subgroups of Sherpas. Mukhopadhyay (1982) showed variation between the two religious groups. A few studies also suggest the influence of socio-economic condition (Bharati, 1981; Rao and Murthy, 1984; Padmanabham, 1985; Rajanikumari and Rao, 1986) and structural measures (Barua, 1976; Reddy and Lakshmanudu, 1979; Reddy, 1983; Reddy et al., 1987).

It is assumed that the selection pressure will be greater among urban people than the rural and also prereproductive mortality rate is low in urban than the rural. The aim of the present study is to measure the selection intensity and the fertility and prereproductive mortality rate of an urban Muslim population and to compare them with the rural counterparts.

**MATERIAL AND METHODS**

For the present study data were collected from 400 households of Muslim living in a Calcutta slum. The households were surveyed through structured questionnaires/ schedules. The information were collected carefully with subsequent cross-checking. The ages were estimated generally by reference to some local important events and cross-checked from a number of elderly individuals and also from some written records.

**RESULTS AND DISCUSSION**

The data are presented in table 1. Selection intensity has been computed for Muslims of Calcutta slum by using Crow's formula (1958) and a comparison has been made here with

Table 1: Selection intensity among the Muslims

Location	Population	No. of household	$\bar{X}$	$V_f$	$P_d$	$I_m$	$I_f$	$I$	Source
Balaramchak (Midnapore district)	Muslim	98	6.84 (19) <sup>1</sup>	8.82	0.225 (662) <sup>2</sup>	0.290	0.189	0.534	Roy et al. (1982)
Slum (Calcutta)	Muslim	400	5.5 (77) <sup>1</sup>	13.61	0.141 (2508) <sup>2</sup>	0.164	0.450	0.686	Present study

$\bar{X}$ , Mean no. of live births per woman of age 45+ years;  $P_d$ , proportion of premature deaths;  $V_f$ , Variance of the no. of births;  $I_f$ , fertility component;  $I_m$ , mortality component,  $I$ , Index of opportunity for selection.

1. No. of women aged 45+ years: 2. No. of live births on which  $P_d$  has been calculated.

the rural Muslim of Balaramchak of Midnapore district (Roy and Bharati, 1982).

It appears that the average number of live births for married women aged 45+ years ( $\bar{X}$ ) is higher among the Muslims of Balaramchak and lower among the slum dwelling Muslims of Calcutta. The variance of fertility ( $V_f$ ) on the other hand is higher among the Muslims of Calcutta slum than the Balaramchak. The proportion of premature death ( $P_d$ ) is higher in Muslims of Balaramchak. The index of total selection intensity ( $I$ ) is higher among the Muslims of Calcutta slum than the Balaramchak, whereas mortality component ( $I_m$ ) is higher among the Muslims of Balaramchak while fertility component ( $I_f$ ) is lower among them.

Such lower fertility and mortality among the slum dwelling Muslims of Calcutta city may be due to their better public health care facilities and other modern amenities readily available in urban areas whereas Balaramchak is located in a remote rural areas where modern health care facilities are lacking. The higher selection pressure ( $I$ ) among the slum dwelling Muslims may be due to urban stressful life especially due to over crowding which is the cardinal sign of slum life.

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