



## Demographic Dynamics and Population Patterns in Aizawl District (1971-2011)

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### ABSTRACT

This research explores the demographic transformations in Aizawl district, Mizoram, from 1971 to 2011, a period characterized by profound social, political, and economic shifts. Key population indicators such as growth rates, literacy levels, sex ratio, birth and death rates, and urbanization patterns are analysed to understand these changes. The population surged rapidly during the 1970s and 1980s, followed by a moderate slowdown influenced partly by the administrative district boundary adjustments in 1998. Female literacy saw significant gains, greatly narrowing the gender education gap. The sex ratio experienced variations linked to political instability but improved post-conflict, achieving a favourable ratio by 2011. Birth and death trends correspond to demographic transition typical of developing regions, influenced by increased urbanization and healthcare access. The results offer valuable guidance for regional



## 1. Introduction

Understanding the demographic profile of a region is essential for analysing the broader aspects of its social and economic transformation. Factors such as literacy, sex ratio, birth rate, death rate, and population growth play an important role in guiding developmental policies and government planning (Census of India, 2011). In the context of Mizoram, and particularly Aizawl district, population studies between 1971 and 2011 are highly relevant because these decades witnessed immense political, social, and economic changes that shaped the state's demographic structure.

Aizawl serves not only as the administrative headquarters of Mizoram but also as the most significant center of demographic change. Over the four decades under review, Mizoram's population grew from 3.32 lakh in 1971 to over 10.9 lakh in 2011, with the highest decadal growth (48.55%) recorded between 1971–1981, after which there was a gradual decline, reaching 22.78% in 2011 (Census of India, 2011). Aizawl followed similar demographic trajectories, recording a steep growth until 1991, followed by a marked reduction in 2001. However, this observed decline was not due to an actual decrease in population but primarily the result of district reorganization in 1998, which significantly reduced the geographical area of Aizawl (Directorate of Census Operations, 2011).

One of the most significant shifts in the district has been in the field of literacy, especially female literacy. While the literacy rate in 1971 stood at 58.3%, it rose to above 97% by 2011. Female literacy showed the sharpest upward trend, increasing by almost 88% during the four decades, which substantially narrowed the gender gap in education. Such rapid progress can be attributed to government initiatives like the National Education Policy, community-led schooling efforts, church contributions, and the implementation of the Right to Education Act (Kumar & Chauhan, 2024; Statistical Handbook of Mizoram, 2020).

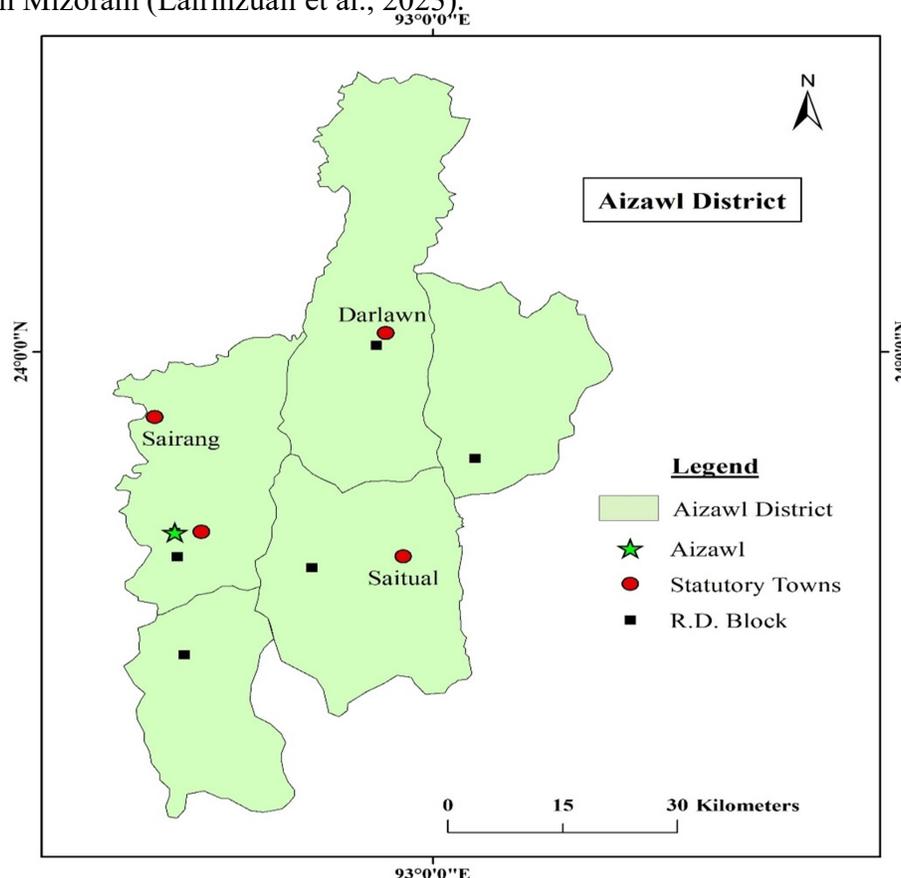
The sex ratio of Aizawl district has also shown distinctive variations over the years. While Mizoram overall has recorded favourable trends, Aizawl experienced fluctuations — most notably, a decline in the 1981 and 1991 census years, a period marked by insurgency and political unrest. This was later reversed as the situation stabilized, resulting in a notable improvement with the district recording 1009 females per 1000 males in 2011 (Nunchunga & Ngaihawma, 2015; Grech, 2015). These population characteristics reflect not only natural demographic processes but also the influence of education, governance, migration, and socio-political developments in the region.

## 1.1 Study area

Aizawl district is situated in the north-central part of Mizoram and serves as the political, administrative, and cultural core of the state. The district headquarters, Aizawl city, is not only the capital of Mizoram but also the largest urban settlement in the state, functioning as its main hub for trade, education, and governance (Census of India, 2011).

Geographically, Aizawl lies between 23°30'N to 24°00'N latitudes and 92°30'E to 93°00'E longitudes. The district is predominantly hilly, with rugged terrain characterized by steep slopes and deep river valleys. The Durtlang hill ranges surround Aizawl city. The average elevation of Aizawl city is about 1,132 meters above sea level, which contributes to its moderate climate compared to the warmer low-lying areas of Mizoram (Rintluanga, 2009).

Demographically, Aizawl district exhibits contrasting patterns of urban and rural settlement. While rural areas are largely dispersed along hill slopes with agriculture-based livelihoods, Aizawl city has rapidly urbanized. Expansion of educational infrastructure, employment in government services, and improved healthcare facilities have driven rural-to-urban migration, resulting in the district being the most urbanized in Mizoram (Lalrinzuali et al., 2023).



**Fig 1.1 : Study Area Map**



## 2. Methodology

This study utilizes a descriptive and analytical framework to investigate the population changes in Aizawl district spanning four decades, from 1971 to 2011. The research predominantly depends on secondary data accessed from authoritative government publications, census records, and official statistical compilations.

Primary data were drawn from the ‘Census of India’ reports of 1971, 1981, 1991, 2001, and 2011, which offer detailed insights into population size, growth rates, sex ratio, literacy statistics, birth and death occurrences, as well as the distribution of urban versus rural populations. To supplement the census findings, information on births and deaths was gathered from registration records maintained by the Mizoram Directorate of Economics and Statistics for the years 1985 through 2011, enabling analysis of natural population growth trends. Further demographic data were sourced from official government reports, statistical yearbooks, and pertinent academic literature.

The primary statistical method utilized for data analysis is narrative analysis, which involves examining information collected from multiple sources including survey observations and respondent interviews.

Mathematical techniques such as percentage, average and change in percentage were incorporated to calculate and analyze the raw data obtained. For instance, to calculate Decadal Growth Rate of a population the following formula is applied:

$$\text{Decadal Percentage Change} = \frac{V_n - V_o}{V_o} \times 100$$

Where,

$V_n$ = New value (new population)

$V_o$ = Original value (Original population)

Through this technique, change in percentage such as Decadal Growth Rate, Sex-ratio change, Literacy rate change and any other change through time are obtained.

## 3. Results and discussion

### 3.1 Analysis of Aizawl District Population Characteristics



### 3.1.1 General View Of Mizoram Population From 1971 To 2011

As observed from table 3.1.1, according to ‘Census of India’, the population of Mizoram in 1971 was 3,32,390 with 1,70,824 male and 1,61,566 female. It rose to 1 lakh mark in 2011. In 2011, with over three times its 1971 population, Mizoram reached its 1 lakh mark at 1,091,014 state population. 5,52,339 male and 5,38,675 female inhabitants. Through the four decades, males population has always been a little more than its female counterpart at an average of 20,297.6. The lowest and highest difference between male and female population was observed in 1971 and 2001 at 9258 and 29,645 respectively.

Table 3.1.1- Mizoram population (1971-2011)

YEAR	POPULATION	MALE	FEMALE	MALE-FEMALE	NET CHANGE(DECADAL)	GROWTH RATE (%)
1971	332,390	170,824	161,566	9258	66,327	24.93
1981	493,757	257,239	236,518	20,721	161,367	48.55
1991	689,756	358,978	330,778	28,200	195,999	39.70
2001	888,573	459,109	429,464	29,645	198,817	28.82
2011	1,091,014	552,339	538,675	13,664	202,441	22.78

(Source: Census of India)

The decadal net change has also risen constantly, with a minimum of 66,327 person in 1971 and maximum of 2,02,441 in 2011. An average net change of 1,64,990 through the four decade.

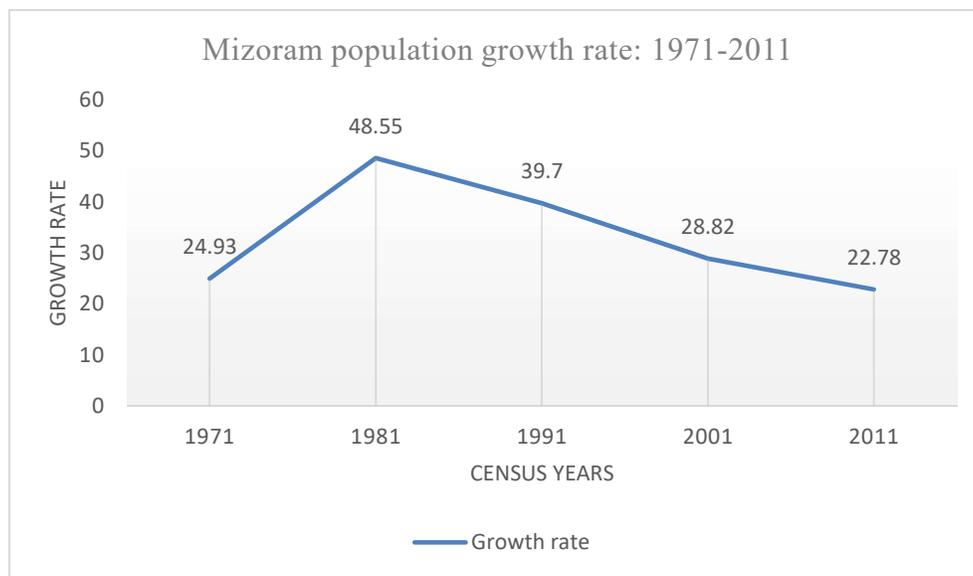


Figure 3.1.1- Mizoram population growth rate: 1971-2011



The population of Mizoram grow at an average growth rate of 32.97 % per decade from 1971 to 2011. 24.93 % in 1971 and reached its peak growth rate in 1981 at 48.55 %. Since then it started declining constantly and reached its lowest growth rate in 2011 at 22.78 %.

### 3.2 Aizawl District Population: 1971-2011

The change in administrative boundary of Aizawl district with the creation of 8 districts in Mizoram in 1998 has drastically reduced the geographical area of Aizawl district from 12500 Sq. Km. to only 3576 Sq. Km. with the constant rise in population combining with the reduced geographical area, the population density of Aizawl district marked a sharp increase in 2001 from 38 in 1991 to 95 in 2001, almost threefold change.

With 48 % Decadal Growth Rate (DGR), the population growth rate was maximum from 1971 to 1981 and still fairly growing between 1981 to 1991 at 39 %. From table 3.2.1, we can observe the sudden decline of Aizawl district population from 4,75,465 to 3,39,812 in 1991 census and 2001 census respectively. This is the result of the change in the administrative boundaries of districts, not due to sudden decline of Aizawl population per se. As seen from “Directorate of Census Operation, Mizoram”, Substantial number of the population were officially registered to another districts such as Kolasib district and Champhai district, which were newly curved out from Aizawl district. Hence, District area changed explain the sudden drop of Aizawl population in 2001.

The general observation obtained in the population change is that there was an explosion of Aizawl population from 1971 till up to 1991, it started declining from 2001 onwards. Change in administrative boundary is the main factor for the decline of the district population.

Table 3.2.1- Aizawl district population: 1971-2011

Year	Area in Sq.Kms.	RURAL		Total rural pop.	URBAN		Total urban pop.	POPULATION			Density (person/sq. km)
		Male	Female		Male	Female		Male	Female	Total	
1971	12,428	100,156	97,216	<b>197,372</b>	16,245	15,495	<b>31,740</b>	116,401	112,711	<b>229,112</b>	18
2001	3,576	100,156	97,216	<b>197,372</b>	16,245	15,495	<b>31,740</b>	116,401	112,711	<b>229,112</b>	95



198	12,588	1,25,072	1,18,163	<b>2,43,235</b>	51,170	46,421	<b>97,591</b>	1,76,242	1,64,584	<b>3,40,826</b>	27
199	12,588	114,630	104,114	<b>218,744</b>	133,713	126,008	<b>259,721</b>	248,343	230,122	<b>475,465</b>	38
200	3,576	47,073	43,887	<b>90,960</b>	1,26,857	1,21,995	<b>2,48,852</b>	1,73,930	1,65,882	<b>3,39,812</b>	95
201	3,576	43,780	41,775	<b>85,555</b>	1,55,490	1,59,264	<b>3,14,754</b>	1,99,270	2,01,039	<b>4,00,309</b>	112

(Source: Source: District Census Hand book, Aizawl District, 1971- 2011, Directorate of Census Operation, Mizoram.)

### 3.3 Aizawl District Birth Rate (BR), Death Rate (DR) and Natural Growth Rate (NGR)

The registration of birth and death in Mizoram is carried out by the Directorate of Economics and Statistics. Though the study is from 1971, the Registration of birth and death act 1976 was carried out in Mizoram in only from 1985 in two sub-division of Mizoram viz:- Aijal Sub-division and Lungleh Sub-division ( Registration of Birth and Death, 1985). From 1986, Chhimtuipui district was added and only from the year 2000, after the reorganization of districts in 1998, registration was conducted for eight separate districts. Hence, this indicate that there are fluctuations in data due to change in district boundaries.

Lack of mid-year population from 1994 to 1999 and absence of number of number of birth and death in 1992 and 1993 in the “Registration of Birth and Death” resulted to the absence of Birth Rate and Death Rate and ultimately Natural Growth Rate for these years.

Table 3.3.1- Aizawl district Birth Rate (BR), Death Rate (DR) and Natural Growth Rate (NGR): 1985-2011

Indices	YEARS																		
	1985	1986	1987	1988	1989	1990	1991	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
BR	9.08	20.73	22.56	24.76	19.04	21.23	23.65	24.94	23.85	23.42	23.16	22.02	20.43	21.15	20.48	19.38	20.51	19.00	20.96
DR	2.38	4.31	3.95	4.51	3.82	3.72	4.20	4.88	5.25	5.18	5.71	5.71	4.72	4.60	4.81	5.16	5.24	5.00	5.56
NGR	6.7	16.42	18.61	20.25	15.22	17.51	19.45	20.06	18.6	18.24	17.45	16.31	15.71	16.55	15.67	14.22	15.27	14.00	15.4

(Source: Registration of birth and death, 1971-2011, Directorate of Economics and Statistics, Mizoram.)



From Figure 3.3.1, the BR of Aizawl district in 1985 was quite low, comparing to the following years. It was when the first registration of birth and death was conducted (Registration of Birth and Death, 1985) only in two the two sub-division of Mizoram i.e. Aijal sub-division and Lungleh sub-division (Census of India). Lack of infrastructure, agents and initial stage likely affect insufficient data reporting.

From 1985 to 2011, the BR of Aizawl district was 21.07. Lowest in 1985 with 9.08 BR and highest in 2000 with 24.94 BR. After a sharp rise in BR from 1985 to 1988 and a sudden dip again in 1989, the BR started climbing to reach its peak in 2000. Since then it started declining constantly but at a steady rate till up to 2010. BR started picking up from 2010 to 2011 from 19 to 20.96 respectively.

At an average of 4.68, the DR of Aizawl district is relatively low comparing to the BR and NGR during the same period. Lowest in 1985 at 2.38 DR and highest in 2003 and 2004 at 5.71 DR. Unlike the BR, Aizawl district DR shows a gentle yet steady grow throughout the period of the study. Though it gently decline from 2005 to 2010, it rise again in 2011. This trend indicate an aging population characteristic where mortality rate is increasing. Another factor as suggested by Nunchunga et al. (2015), especially during the 80’s is the political instability during the MNF insurgency in Mizoram. It is also due to improvement in medical records of births and deaths.

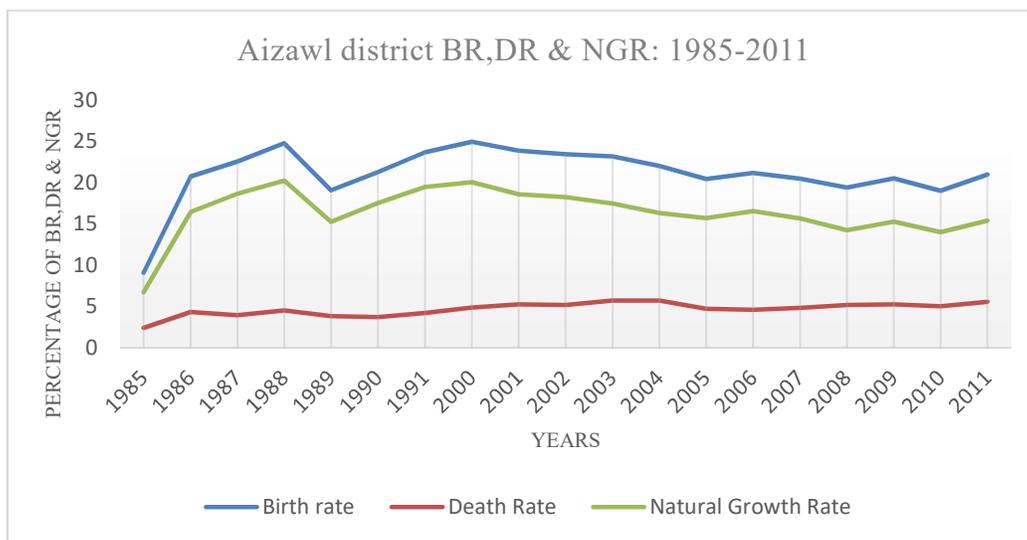


Figure 3.3.1- Aizawl district birth rate, death rate and natural growth rate

As seen from Figure 3.3.2, the NGR of Aizawl district in 1985 is substantially low, mainly due to low BR. However it started increasing sharply in the following years, reaching its zenith in 1988 at 20.25 NGR. With an average NGR of 16.40 from 1985 to 2011, the NGR has followed more or less similar

trend as that of the BR during the same period, however at a rate lower than the BR. The constant decline in NGR, especially during the 2000s is mainly due to decrease in BR and constant DR, which was the result of decreasing rate of fertility, change in lifestyle from rural to urban as indicated from the data extracted from the “Statistical abstract of Mizoram”.

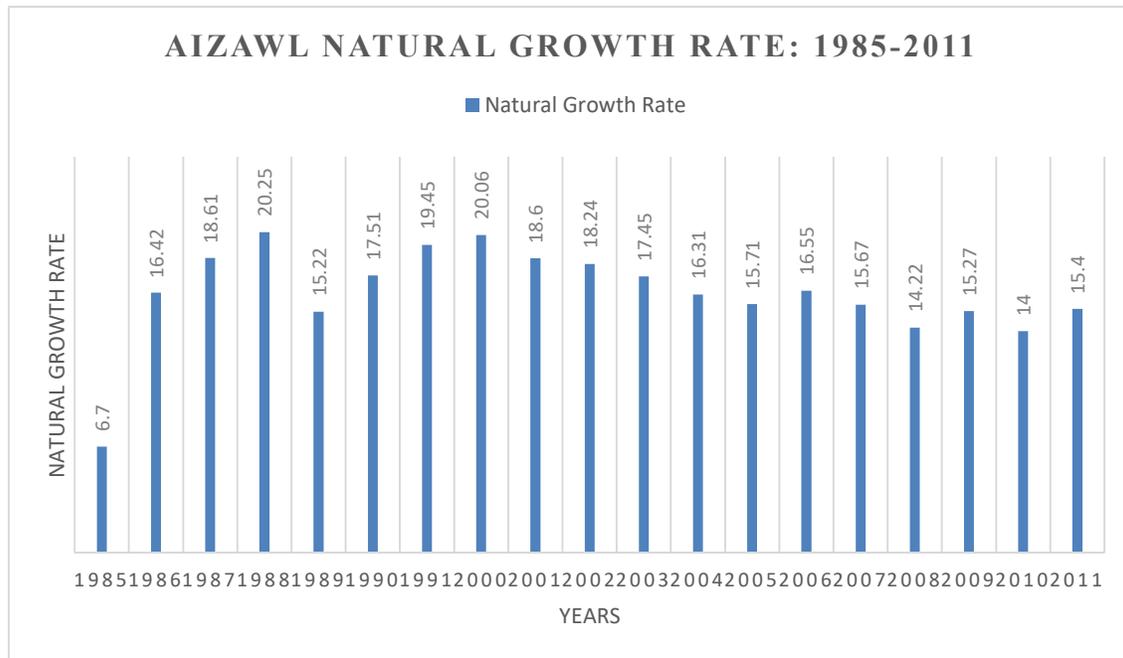


Figure 3.3.2- Aizawl district Natural Growth Rate: 1985-2011

### 3.4 Literacy Rate and Schools

A comparative study of literacy rate and number of school has been carried out between 1971 and 2011 census. As suggested by Kumar and Chauhan (2024), the introduction of National policy on Education has played a crucial role in the development of Literacy rate in India, which is substantially carried out through school education.

Table 3.4.1- Literacy Rate and Schools: 1971 And 2011

Years	Literacy rate (%)			No. of Schools		
	Male	Female	Total	Primary	Middle	HSLC & HSSLC
1971	64.40	52.01	58.30	82	38	19
2011	98.11	97.67	97.89	475	415	310

(Source: Statistical handbook, Mizoram 2020, Census Handbook, Mizoram 1971)

For better representation of the change observed from the Table 3.4.1, it is further represented in Figure 3.4.1 and Figure 3.4.2 for Literacy rate and number of schools respectively.

The overall literacy rate of Aizawl district in 1971 was only 58.30 % and sharply increased to 97.11 %, an increase of 67.91%. The most interesting change observed through this period was the steep rise in female literacy. While male literacy increased by 52.34%, which is quite impressive enough, female literacy rate increased by a whopping 87.79% from 52.01 % in 1971 to 97.67 % in 2011.

The impressive rise in female literacy rate has contributed a lot in achieving universal education and reducing gender gap in the population. Government policies such as Right to Education, Adult literacy programme and Church and Philanthropic organization's contributions were also responsible for this human development.

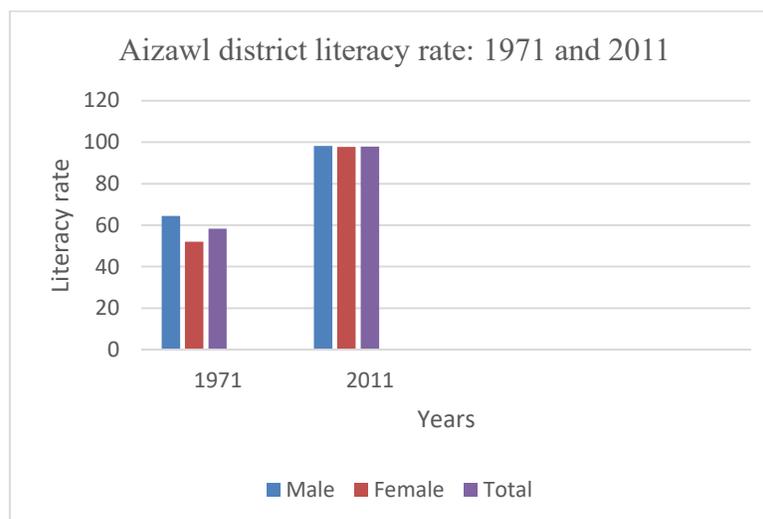


Figure 3.4.1- Aizawl district Literacy rate: 1971 and 2011

The most striking change observed in Aizawl district related to education from 1971 to 2011 is the change in the number of school education. Figure 3.4.2 shows how much monumental change was achieved during this four decade. Number of primary school with the lowest change increased from 82 in 1971 to 475 in 2011, a 479.27 % increased. Middle and secondary school shows even higher percentage increase, 992.12 % and 1531.58 % respectively. So, the total number of schools increased by 763.31 % from 139 schools in 1971 to 1200 schools in 2011.

Higher number of percentage increased in secondary education implicitly reflect that focus is not given for just basic literacy, but for developing human resource. Several factors are responsible for the abrupt development of education in Mizoram, such as political and social stability after 1986 peace

accord, adoption of the education act by Mizoram, Mission/Church contributions and many more. Another important factor is the support from parents among school going children, which encourages for the development of school education, which is also supported by Lalrinzuali et al (2023) in their study “A study of parental support among high school students in Aizawl district”.

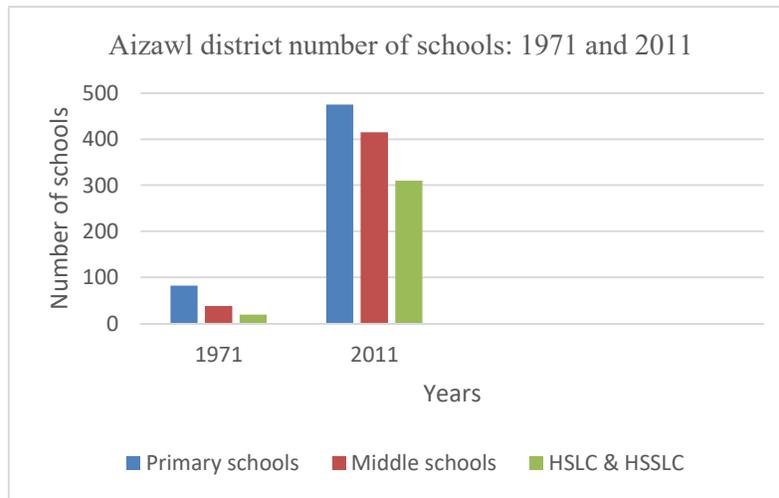


Figure 3.4.2- Aizawl district number of schools: 1971 and 2011

### 3.5 Sex-Ratio

Since 1901 the Sex-ratio of Mizoram has always been positive, always above the 1000 mark, this started changing only in 1961 (JV and Ngaihawma, 2015), this trend is also largely followed by Aizawl district.

Table 3.5.1- Aizawl district, Mizoram and India sex ratio: 1971-2011

Indices	Years				
	1971	1981	1991	2001	2011
<b>Aizawl</b>	968	934	929	952	1009
<b>Miozram</b>	946	919	924	935	976
<b>India</b>	930	934	927	933	940

Source: Census of India, 1991 & 2011

Figure 3.5.1 shows that Aizawl Sex-ratio has a “U” shaped trend between 1971 and 2011. From the left crest in 1971 at 968 to reaching its trough in 1981 and 1991 at 934 and 924 respectively. The sex-ratio started picking up sharply from 1991 and reaching the highest sex-ratio of 1009 in 2011.

The sex-ratio of Aizawl district from 1971 to 2011 was constantly above the state and national level, except in 1981 when it was equal to the national level at 934.

The decline in sex-ratio in 1981 and 1991 was the result of varying factors. For instance, MNF movement in Mizoram has impacted the sex-composition to a great extent, which is also supported by Nunchunga and Ngaihawma (2015). The sudden improvement in sex-ratio from 2001 to 2011 was also the result of factors like stability in the state brought by the peace accord and other factor like out-migration of male population for occupation as also suggested by Grech (2015), Male migration often resulted to improve sex-ratio to the losing end and declining sex-ratio to the receiving end.

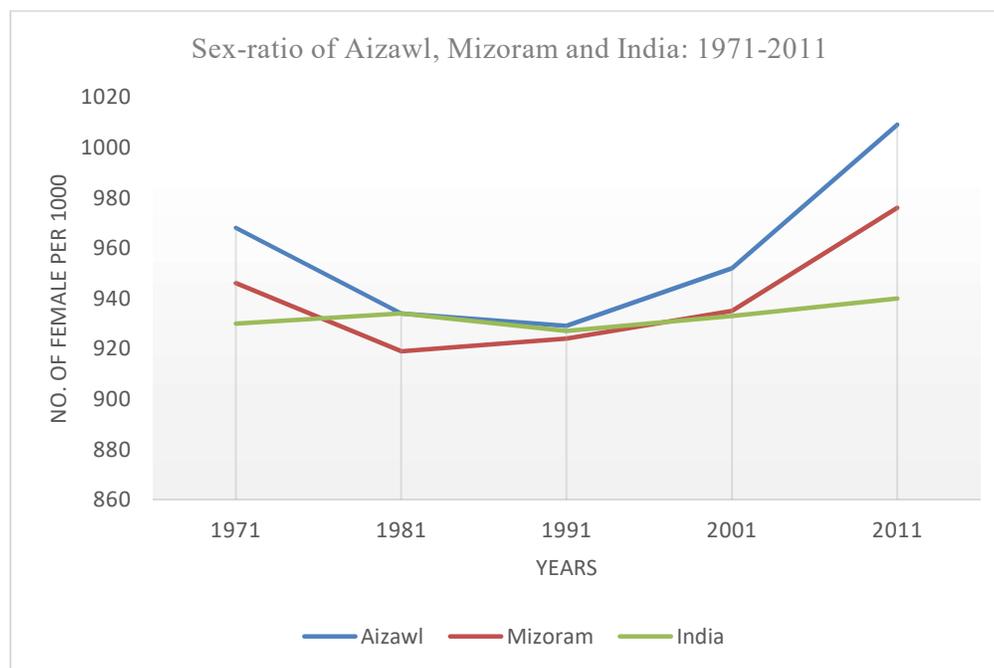


Figure 3.5.1- Sex-ratio of Aizawl, Mizoram and India: 1971-2011

#### 4. Conclusion

This study reveals important demographic transitions in Aizawl district over the forty-year period from 1971 to 2011. The data show that Mizoram experienced rapid population expansion, particularly during the 1970s and 1980s, with the highest increase observed between 1971 and 1981 at nearly 49%. Growth rates slowed in subsequent decades, partly due to the administrative reorganization in 1998, which reduced the district's size and altered population figures (Census of India, 2011; Directorate of Census Operations, 2011). Despite territorial reductions, population density continued to rise, positioning Aizawl as the most densely populated district in the state by 2011.



One of the most remarkable social developments during this timeframe was the substantial rise in literacy, especially among females, whose literacy rate soared from just over 52% to almost 98%. This dramatic improvement reflects the success of various education policies, community involvement, and reforms such as the National Education Policy and Right to Education Act (Kumar & Chauhan, 2024; Statistical Handbook of Mizoram, 2020). The narrowing educational gender gap has had positive effects on the district's overall human development.

The district's sex ratio fluctuated in response to socio-political events, notably declining during times of insurgency in the 1980s but improving significantly in later decades, reaching a favorable ratio of 1009 females per 1000 males by 2011 (Nunchunga & Ngaihawma, 2015; Grech, 2015). This improvement was influenced by stabilization after unrest and migration patterns, especially male out-migration.

The birth and death rates show trends typical of a population in demographic transition, characterized by declining fertility and a moderately low but gradually increasing mortality, indicative of an aging population. These patterns were shaped by urbanization, lifestyle changes, and expanded healthcare access (Registration of Birth and Death, 1985–2011).

Overall, Aizawl district's demographic transformations are the product of a complex mix of natural population growth, migration dynamics, educational progress, political history, and administrative restructuring. These findings provide valuable insights to policymakers for addressing challenges related to urbanization, resource management, educational equity, and healthcare planning. Future development frameworks in Aizawl should integrate these demographic insights to foster sustainable social and economic outcomes.

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