IMPACT OF HUMAN CAPITAL ON EMPLOYMENT AND INCOME:

A COMPARATIVE STUDY OF
WOKHA AND ZUNHEBOTO DISTRICTS OF NAGALAND

By

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DEDICATED TO,

MY FATHER, LATE NZUNIMO HUMTSOE

FOR YOUR LOVE AND SACRIFICES,

AND FOR APPRECIATING THE VALUE OF EDUCATION.

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<u>DECLARATION</u>

   I, <u>Mr. N Janbemo Humtsoe</u>, hereby, declares that the subject matter of this thesis *"Impact of Human Capital on Employment and Income: A comparative study of Wokha and Zunheboto districts of Nagaland"* is the record of work done by me, and that the contents of the thesis did not form basis of the award of any previous degree to me, or to the best of my knowledge to anybody else, and that the thesis has not been submitted by me for any research degree in any University/Institute.

   This is being submitted to Nagaland University for Degree of Doctor of Philosophy in Economics.

                            SD/-

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MAP OF NAGALAND

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ACRONYMS

ANM   : Auxiliary Nursing Midwifery
AISHE   : All India Survey of Higher Education
BA   : Bachelor of Arts
BCA   : Bachelor of Computer Application
B.Com   : Bachelor of Commerce
B.Ed   : Bachelor of Education
B.Sc.   : Bachelor of Science
B.Tech   : Bachelor of Technology
CDS   : Current Daily Status
CP   : Contraceptive Prevalence
CWS   : Current Weekly Status
DLHS   : District Level Household Survey
DTC   : District Tuberculosis Center
FIC   : Full Immunization Coverage
GDP   : Gross Domestic Product
GER   : Gross Enrolment Ratio
GNI   : Gross National Income
GNM   : General Nursing Midwifery
GSDP   : Gross State Domestic Product
HDI   : Human Development Index
HDR   : Human Development Report
HSLC   : High School Leaving Certificate (Examinations)
HSSLE   : Higher Secondary School Leaving Examinations
ID   : Institutional Deliveries
IMR   : Infant Mortality Rate
IHDS   : India Human Development Survey
ISCED   : International Standard Classification of Education
LFPR   : Labor Force Participation Rate
LL.B   : Bachelor of Law
M.A.   : Master of Arts
MBA   : Master of Business Administration
M.Com   : Master of Commerce
M.Ed   : Master of Education
MMR   : Maternal Mortality Rate
M.Sc   : Master of Science
MT   : Metric Tons
MYS   : Mean Years of Schooling

NEHU	:	North-Eastern Hill University
NER	:	Net Enrolment Rate/Ratio
NSS	:	National Sample Survey
NSSO	:	National Sample Survey Office/Organisation
NUEPA	:	National University for Educational Planning and Administration
OBC	:	Other Backward Classes
OECD	:	Organisation for Economic Cooperation and Development
OLS	:	Ordinary Least Squares
OXFAM	:	Oxford Committee for Famine Relief
PCI	:	Per Capita Income
PG	:	Post Graduate
Ph.D	:	Doctor of Philosophy
PTR	:	Pupil Teacher Ratio
PU	:	Proportion of Unemployed
RMSA	:	Rashtriya Madhyamik Shiksha Abhiyan
RTE	:	The Right of Children to Free and Compulsory Education
SC	:	Scheduled Caste
SCERT	:	State Council of Educational Research and Training
SHDR	:	State Human Development Report
ST	:	Scheduled Tribe
STD	:	Sexual Transmitted Disease
TFR	:	Total Fertility Rate
UDISE	:	Unified District Information System for Education
UIS	:	UNESCO Institute of Statistics
UNDP	:	United Nations Development Programme
UNESCO	:	United Nations Educational Scientific and Cultural Organisation
UPS	:	Usual Principal Activity Status
US (PS)	:	Usual Principal Status
WPR	:	Worker Population Ratio
WPR	:	Work Participation Rate
WIID	:	World Income Inequality Database

CHAPTER 1

INTRODUCTION

CHAPTER 1

1.3.   INTRODUCTION

The relationships between education, earnings and employment is well established and documented in economics literature. The general idea of human capital goes back to Smith (1776), who famously compared the investment in education and skills in workers to the investment in machines. A century later, Marshall (1912), discusses education as economic investment and states that "the most valuable of all capital is that invested in human beings". Commons (1919), also observed that workers change from an unskilled commodity to a valuable 'human resource' as a consequence of education and training. However, it was especially since the development of the growth theory by Solow in the 1950s that the inclusion of human capital as an important factor influencing economic growth has become an important part of the research. The positive relation between education and earnings was further stimulated by the theoretical underpinnings of Becker (1964), Denison (1962), Schultz (1960, 1961, 1962), Johnson (1970), Mincer (1958, 1974), Psacharopoulos (1986, 1992, 1994) and a host of other labour economists.

Human capital is normally understood to refer to the skills and knowledge intensity of the labour force in an economy, which are essentially acquired through schooling and training. The relevance of human capital accumulation to the process of economic development stems from its potential beneficial impact on macroeconomic productivity and on the long run distribution of income (Callaghan, 2002). Many individuals invest in education in the belief that in doing so will yield greater benefits such as better employment opportunities, higher earnings and more interesting and varied careers. The essence of human capital theory is that investments are made in human resources in order to improve productivity and therefore employment prospects and earnings. Individuals acquire skills through formal schoolings or work experience, and these skills increase the individual's value to the employer and therefore their future earnings (Riddell, 2006).

Human capital, in its broad sense, is therefore, consists of all forms of knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic wellbeing (OECD, 2001). The concept of human capital is so vast that it often creates certain computational problems, measurement issues and parameter inconsistencies. As a result, economists used several proxies for human capital like adult

literacy rates and school enrolment ratios [Azariadis & Drazen (1990), Romer (1990)], educational attainment and average years of schooling etc. [Barro & Sala-i-Martin (1995), Barro 1997, 2001), Benhabib & Spiegel (1994), Islam (1995), Krueger & Lindahl (2001), Temple (1999), Nehru et. al. (1995), Kyriacou (1991), Psacharopoulos & Arrianada (1986)]. Therefore, this study adopted education as a proxy for human capital.

Human capital theory views schooling and training as an investment in skills and competencies (Schultz, 1960, 1961), (Becker, 1964). This perspective sees expenditure on education as an investment rather than consumption. It is argued that, based on rational expectations of returns on investment, individuals make decisions on the education and training they receive as a way of augmenting their productivity. A similar strand of studies focuses on the interaction between the educational and skill levels of the workforce and measurements of technological activity (Nelson and Phelps, 1966). According to this theory, a more educated or skilled workforce makes it easier for a firm to adopt and implement new technologies, thus reinforcing returns on education and training.

Similarly, Becker (1964) states that, the greater the investment in human capital, the greater is the productivity. One variant of the human capital theory focused on the socialization role of education (Stiglitz, 2000). According to this view, education teaches people how to perform well in the workplace, by teaching how to obey orders, follow directions and work in teams. When successful, this socialization teaches punctuality and reliability. In this perspective, those who attain schooling for longer period of time learn more of these social skills, or, in any case, have demonstrated a greater ability or willingness to cope with the demands of the school system (Weiss, 1995).

The micro economic theory of demand is based on the analysis of the price, consumers' income and preference. The last two factors are taken as the parameters of the demand function. The intellectual ability of the students, their vocational objectives and the motivations, income, occupation, educational and cultural levels of parents are some of the factors that affect the demand for education and are considered to constitute what economists called consumers' preferences (Correa, 1963). Studies show that the socio-economic status of the parents of the students is an important factor that affects the demand for education. In fact, both in the U.S and the U.K, the social class origins determine who receives higher education (Blaug, 1968). Studies also found that persons at different occupational level value education differently; and

it is found that higher the occupational level, greater is the importance attached to education (Correa, 1963).

Though numerous factors such as race, inheritance, family reputation and connections, socio-economic status, ability, knowledge and skills has been identified as a possible cause for income disparities, (Becker & Tomes 1979, Brunello & Checchi 2003, Coleman 1966), differences in educational attainment have been seen as one of the most prominent factor that cause income inequality (Becker and Tomes 1979, Galor and Zeira 1993, Fernandez and Rogerson 1996, Viaene and Zilcha 2003, Galor and Moav 2004). Further, Becker and Chiswick (1966) finds that income inequality is positively correlated with inequality in schooling and negatively correlated with average level of schooling.

Significant amount of literatures also substantiates the view that parental education has a direct and positive effect on the educational attainments of their off springs, hence their income stream. Higher parental education is associated with more substantial family investments in children, and these investments have a far greater effect than the societal educational investments made when the child enters schools. Children of more educated parents generally perform better in school and the labour market and have better health (Riddell, 2006). Education of parents and of mothers in particular, lead to better health and nutrition for their children and this in turn influences the children's educational achievement and attainment – thereby enhancing the next generation's earning prospects on the labour market (Michaelowa, 2000).

1.4.   REVIEW OF LITERATURE

1.2.1. Human Capital

The concept of 'human capital' is a mixture of both human and capital. In economic sense, capital refers to the factors of production used to create goods (Boldizzoni, 2008). Along with the meaning of capital, the human is the subject to take charge of all economic activities such as production, consumption, and transaction. On the establishment of these concepts, it can be recognized that human capital means one of production elements which can generate added values (Kwon, 2009). Just as physical capital is created by making changes in materials so as to form tools that facilitate production, human capital is created by changing persons so as to give them skills and capabilities that make them able to act in new ways (Coleman, 1988).

Individuals invest in human capital in different forms. According to Becker (2008), schooling, a computer training course, expenditures on medical care, and lectures on the virtues of punctuality and honesty are also capital. That is because they raise earnings, improve health, or add to a person's good habits over much of his lifetime. Economists regard expenditures made on building human competencies as investments in human capital. They are called human capital, added Becker, because people cannot be separated from their knowledge, skills, health, or values in the way they can be separated from their financial and physical assets.

The skills and knowledge intensities of a person are also influenced by varieties of other factors such as, family's background, parental education and socio-economic status (Brunello and Checchi, 2003; Coleman, 1966; Currie and Goodman, 2010). Study also shows that education of parents, mothers in particular, lead to better health and nutrition of their children which in turn influences the children's educational achievement and attainment, thereby enhancing the next generation's earning prospects on the labour market (Michaelowa, 2000). Human capital is also influenced by the type and quality of educational institutions (Natalia, 2010), quality of the faculty, the ability and aptitude of peers (Aizer, 2008). It is also, to some extent, determined by knowledge of computers (Afzal, 2011), access to technology, and exposure to social media platforms (Manuti, *et al.*, 2016).

Human capital, as defined by Frank and Bernanke (2007), is an amalgam of factors such as education, experience, training, intelligence, energy, work habits, trustworthiness, and initiative that affect the value of a worker's marginal product. Therefore, just as numerous factors are responsible for building up the skills and knowledge intensities embodied in a person, the productivity or returns to human capital is also determined by several factors such as years of schooling, nature and types of degrees and vocations, gender, location, experience, infrastructure, business environment, economic sector, government policies etc.

Education is an economic good because it is not easily obtainable and thus needs to be apportioned (Almendarez, 2013). Good and Kappa, (1973) defined education as "the aggregate of all the processes by which a person develops abilities, attitudes and other forms of behaviour of practical values in the society in which he or she lives so that they may obtain social competence and optimum individual development." Economists regard education as both consumer and capital good because it offers utility to a consumer and also serves as an input into the production of other goods and services (Olaniyan and Okemakinde, 2008). As a capital

good, education can be used to develop the human resources necessary for economic and social transformation. The focus on education as a capital good relates to the concept of human capital, which emphasizes that the development of skills is an important factor in production activities.

Schultz (1960) identified five categories of activities that improved human capital and capabilities, such as, health, on the job training, formal education, adult education and migration. Of these, he considered education as the most important variable that contributes towards human capital formation. Schultz also argues that education, in addition to being a form of consumption, is also an individually and socially productive investment. From this perspective, he claims that labours can be considered a capitalist, because their investment in the acquisition of knowledge and skills has given them ownership of economically valuable capacities. To him, low earnings especially those of members of minority groups, reflects inadequate investment in their health and education.

Psacharopoulos and Woodhall (1997), asserts that human resources constitute the ultimate basis of wealth of nations. Capital and natural resources are passive factors of production, human beings are the active agencies who accumulate capital, exploit natural resources, build social, economic and political organization, and carry forward national development. Denison (1964) also argues that investment in education brings higher returns than investment in physical capital and that an increase in educational expenditures is accordingly a highly effective means of increasing the gross national product.

Expenditure on education and training, improvement of health, and research contributes to productivity by raising the quality of the population. Investing in education is also good for state budgets in the long run, since workers with higher incomes contribute more through taxes over the course of their lifetimes. States can increase the strength of their economies and their ability to grow and attract high-wage employers by investing in education and increasing the number of well-educated workers (Berger, and Fisher, 2013). Denison (1962), in a study on the sources of economic growth in the US, estimated that, investment in education contributed 23 percent of the growth in real income and 20 percent to advances in knowledge. Thus, he argued that investment in education goes a long was in promoting economic growth.

The slow growth in knowledge is a severe restraint to future progress (Meier and Rauch, 2000). They further assert that, the economic quality of the population remains low when there

is little knowledge of the natural resources that are available, the alternative production techniques that are possible, the necessary skills, the existing market conditions and opportunities, and the institutions that might be created to favour economizing effort and economic rationality. Therefore, an improvement in the quality of the "human factor" is as essential as investment in physical capital and an advance in knowledge and the diffusion of new ideas and objectives are necessary to remove economic backwardness and instill the human abilities and motivations that are favorable to economic achievement.

1.2.2. Returns to Education

Returns to investment in education have been estimated since the late 1950s. And throughout these periods, the economic value of investment in education has been mostly measured by its rate of return because the rate of return analysis provides a fundamental analytical tool to evaluate the educational investment that is the biggest and most important component of the human capital (Poteliene and Tamasauskiene, 2013). Becker (1993) was also of the opinion that the rates of return provide the most convenient and complete summary of the economic effects of education.

The positive effect that education had on earnings and employment is being supported by scores of empirical evidences. McMohan (1999), in a study of both static and dynamic impact of education on economic growth found the private returns to education for US and UK to be 11 and 13 percent. Oreopoulos and Salvanes (2009), also found that the monetary returns to annual adult income from spending one year in high school or college are about 7 to 12 percent. The study also found that returns are generally higher among individuals from more disadvantaged backgrounds. Sweetman (1999), in a related study also found that the estimated rates of returns for additional years of schooling are 14.6 percent for females and 10.8 percent for males. Denison (1963) also find that education raised the average quality of labor by about 30 percent, during the period 1929-1957, in the United States.

Bhandari and Bordoloi (2006), in a study in India, find the returns to primary, middle, high school, higher secondary, graduation, professional degree, and post-graduate degree to be 6.2, 4.8, 12.8, 9.4, 15.5, 27.3 and 26.9 percent respectively suggesting that those who have completed the higher levels of education realize the greatest returns for every extra year of schooling while lower levels have the lowest returns. It also shows that returns to education are highest for professional and post graduate degrees. Similarly, Harberger and

Guillermo (2012), in a study on private returns to education in Mexico, found a sharp increase in rates of return and net present values as one moves up the educational ladder. The study found that the median rate of return for males increases from 2.13 percent to 5.86 percent as one moves up from middle school to high school. 11.26 percent to 14.27 percent as one moves up from college and to post graduation. The corresponding figures for women are 5.49 percent, 7.26 percent, 10.36 percent and 14.39 percent.

Oreopoulos (2006), also made similar conclusion for Canada where the causal impact of additional schooling at the secondary school level are found to be large, with associated rates of return in the range of 12 to 15 percent. Returns to education are also found to be higher for females, though men earn more than women in absolute terms. Psacharopoulos and Patrinos (2004), in global comparisons find a higher rate of return for women at 9.8 percent comparing to men at 8.7 percent. Trostel, *et al.,* (2002), in a study of 28 countries also found the rate of return to schooling to be 4.8 percent for males and 5.7 percent for females. The higher rate of return for women has been attributed to the lower opportunity cost of women's education (Psacharopoulos, 2006).

The positive relation between education and increased earnings has also been corroborated by Nada, *et al.*, (2006), who find that highly educated employees in Croatia in 1996 earned 55 percent more than the average of all employed; 61 percent more than the employees with high school education and 128 percent more than the employees with lower expertise. The difference in net salaries in 2002 increased further so that the highly educated employees earned 62 percent more than the average of all employed; 76 percent more than the employees with high school education and 158 percent more than the unqualified workers. Studies conducted in other European countries have also shown significant increase of educational premium. According to the World Bank (2000), the difference in salaries between a college educated worker and worker with basic education in some countries is more than doubled between 1989 and 1993. A good example is Poland, where in 1989, a college educated worker earned approximately 35 percent more than a worker with basic education. This difference increased to 75 percent in 1993.

Walsh (1935) also demonstrated that earnings increased with the level of education and that the discounted value of the earnings increased with the level of education. Griliches (1970) estimated that one third of Solow (1957) residual, (i.e., the portion of the output growth

in the US economy that could not be attributed to growth in labour hours or capital stocks) could be accounted for by the increase in the labour force's educational attainments. In the same vein, Denison (1979) reported the effect upon per capita income in the US, while others, including Baumol, *et al*., (1989), Barro (1991) and Mankiw, *et al*., (1992), have confirmed these positive relationships through a cross-section of countries covering all levels of development.

Basing on 41,554 households in 1503 villages and 971 urban neighborhoods across India, Agrawal (2012) found the returns to an additional year of schooling for India to be 8.5 percent. Further, using OLS regression, he found the private rates of return for primary, middle, secondary, higher secondary and graduate levels to be 5.7, 6.2, 11.4, 12. and 15.4 percent respectively. Moreover, a substantial wage differential between males and females was found, where females earn 38 percent lesser than males. and an additional year of work experience increases wage by 5 percent. The study also shows that returns to education significantly differ in rural and urban India.

Mendiratta and Gupt (2015), found the average return to education for an additional year of schooling to be 10.7 percent for India during the period 2009-10. The study also found the returns to primary education at 4.75 percent, middle education at 6.89 percent, secondary education at 13.5 percent and 12.9 percent for senior secondary levels, respectively. The returns to college education is found to 22.6 percent, university education at 16.81 percent and 25.69 percent for diploma courses. Vero (2016), based on household survey in 2009-10 in Nagaland, find the returns to education at 17.1 percent for Tuensang district, 14.4 for Phek district, 9.49 percent for Mokokchung district and 12.8 percent for Nagaland as a whole, showing that returns are higher in less developed areas. The higher returns in less developed areas has been attributed to the relative low availability of highly educated and skilled workers, which enhanced the educational premiums in such areas.

Singhari and Madheswaran (2016), using NSSO data for 2011-12, found the returns to education in India for regular workers to be 9.3 percent for primary education, 5.2 for middle, 10.2 for secondary, 8.7 for higher secondary, 15.9 for diploma holders and 11.5 percent for graduate and above. Further, the returns to education are found to be higher for females for all levels of education as compared to male. They however, found the returns to education for casual employment to be lower at 6.4 percent for primary, -1.3 percent for secondary and 1.4 percent for graduate and above, with diploma holders having the highest returns at 13.8 percent.

they argued that to ensure inclusive growth, measures to improve quality of educational opportunity deserves special attention in India.

Vatta and Sato (2012), in a study on the trends in returns to education in light of the long term economic growth in India for the period 1983-2010, using NSSO data, found that the casual wage markets for male provide incentive for higher education in the form of higher wage earnings over other education levels and illiterates. However, for female it was not so. The returns to all education levels were converging at low levels with the returns for secondary and graduate levels for urban casual male workers and rural male regular workers declining over time, but no change for urban male regular workers. There was significant increase for graduate level of female workers due to increased employment opportunities with economic growth. They put forward a policy suggestion that India needs to reorient rural education by focusing on skill development at middle and secondary levels of education.

Using a large cross-section sample of India Human Development Survey, Rani (2014) found the average rates of return to an additional year of schooling and work experience to be 14 percent and 4.7 percent respectively. Further, she found the private returns to elementary education to be 2.44 percent for rural area, 3.46 percent for urban area and 1.27 percent for all India levels. The private returns to secondary education are found to be 2.75, 5.25 and 3.72 percent for rural, urban and all India. The returns to education are found to be higher for higher education at 4.9 percent for rural area, 24 percent for urban area and 15.4 percent for all India levels. Further, the study found that returns to education increases with the level of education across location, caste, religion and English language ability. The study suggests that rate of returns to lower levels of education are low across different groups, indicating the low quality of basic schooling in the country.

Unni and Sarkar (2013) made an attempt to estimate the returns to education separately for formal and informal workers in India, particularly for labour market of Delhi and Ranchi, for the period 2009-10. They find the returns to education for all workers at 8.4 percent, with the returns lower in the informal sector at 6 percent, as compared to 10.3 per cent in the formal sector. Further, they found that the returns to an additional year of work experience are higher in the informal sector at 3.6 percent as compared to 2.5 percent in the formal sector. This could mean that while the workers in the informal sector have lower years of education and lower returns on it, they can make up their wages to some extent through experience.

It has been recognized that workers who attended school longer may possess other characteristics that would lead them to earn higher wage irrespective of their levels of education. Krueger and Lindhall (2001), have estimated that each additional year of education results in increase of earnings by approximately ten percent in the USA. Similarly, Duraisamy (2000), found that private rate of returns per year of education increases as the level of education increases. The private returns per year of schooling in India in 1993-94 for the primary, middle, secondary, higher secondary and college levels of education based on OLS wage estimates are found to be 7.9, 7.4, 17.3, 9.3 and 11.7 percent respectively. The returns to primary education in India are found to be rather low, while in general, returns per year at the secondary level are the highest. The reason may be because a part of the higher returns to these higher levels can be considered to be the benefits that are receivable only upon completion of primary schooling (Schultz and Mwabu, 1998).

However, Psacharopoulos (1972), in a cross-country analysis found the private rate of return for education to be 24.1 percent for primary education, 17 percent for secondary education and 17.5 percent for higher education. In another study of 15 African countries, Psacharopoulos (1994), found the average private returns to education by levels of attainment for primary, secondary and tertiary education as 41.3, 26.6 and 27.8 percent respectively. These findings are in contrast to the popular opinion that the higher education yields the highest return. The higher rate of return for primary education, according to Psacharopoulos, is because foregone earnings for primary pupils are nil or much lower than the older pupils. He also attributed the declining rate of return as one climb up the ladder of education to the 'law of diminishing returns, adding that, successive increments of one factor yield even lower returns at the margin.

A more recent study by Psacharopoulos (2006), found that the returns to education are higher in the low-income countries, which he claims to be due to the relative scarcity of human capital in poor countries. However, results are not uniform and some studies have shown low rate of return in developing countries, such as, 7.1 percent for Bangladesh (Asadullah, 2005), 5.1 percent for Pakistan (Afzal, 2011), etc. However, as Mincer (1975) observed, it is important to note that schooling is not the only type of investment in human capital, as such, the gross relation between schooling and earnings does not adequately represent the human capital earnings function, and this is one reason for the weak empirical correlations.

1.2.3. Education and Employment

The relationship between education and employment is also well documented in the economics literature. It is acknowledged that illiteracy is directly related to unemployment and low income, hence poverty. The World Bank (2000), emphasizes the influences of educational premiums that are results of investments in individuals, which is proven by fact that people living under the poverty line are mostly unemployed and poorly educated.

The dual labour market hypothesis of Doeringer and Piore (1971), suggests that occupations in the blue-collar sector are more likely to have unstable employment conditions, fewer opportunities for advancement, and offer little, if any, financial rewards to additional training. The implication of this line of research is that the returns to labour market experience may be skewed towards higher- paying professional occupants. Thus, there is a possibility that the link between earnings and work experience in occupations with lower levels of education, such as traditional blue-collar occupations, may be weaker than that of the white-collar occupations.

Empirical evidence suggests that worker with low qualification or less work experience wait longer for employment which causes a category of long term unemployment (Nada, *et al*., 2006). A study on the relationship between the level of education and employment for Croatia found that 70 percent of the unemployed represents those with lower qualifications, 24 percent of the unemployed have secondary education and 6 percent are those who are highly educated (Croatian Bureau of Employment, 2003).

In a study conducted by Tremblay (2003), for 19 countries finds that, for countries like Argentina and Uruguay, individuals with no schooling recorded the highest unemployment level at 14 percent and 5.5 percent respectively: whereas, unemployment level for individual having tertiary education was found to be 4 percent for Argentina and 0.5 percent for Uruguay. However, the study reveals a contrasting figure for Indonesia and Peru. The study finds that unemployment is highest for individuals having tertiary education with 11 percent and 3.4 percent respectively: whereas, unemployment rates for individuals with no schooling was found to be insignificant at 0.4 percent for Indonesia and 0.3 for Peru suggesting a possible mismatch between the output of educational system at higher levels and the needs of the labour markets. Another possible explanation that has been offered is that the higher incentive structures induce individuals with higher education to wait in unemployment until they find a decent job, while

individuals with no schooling engaged in the informal sector and are thus excluded from the unemployment statistics.

A further important motive behind acquiring more education is to gain a stronger foothold in the labour market and thus lower the risk of unemployment (Blöndal *et al*, 2002). Educated workers are more likely to participate in the labour market, and their active working life is generally longer than that for those with lower educational attainment. Education appears to provide not only an initial earnings advantage but also a wage premium that increases with time spent in the labour market. An important motivation for individuals to invest in education is because the acquired knowledge and skills tend to raise the prospects of employment, productivity and hence earnings potential. In a study using probit estimation, Gjipali and Kristo (2011), found that educational attainment increases the likelihood of being in employment. Yamasaki (2012), also found that schooling improves the likelihood of employment in the public and formal private sectors.

According to the human capital theory, competition among firms and individuals supposedly distributes workers so that the more skilled find better employment and earn higher wages. The marginal productivity theory also postulates that workers are paid according to their productivity, that is, those who are more productive shall be paid higher. It then follows that the poor must be unskilled, unhealthy or lack the proper work attitudes and that the only way to improve their standard of living is to change them (Bluestone, 1972). Bluestone further asserts that, what economists overlook is the glaring fact that the economy does not create enough jobs and that consequently many people with adequate skills are denied adequate employment. The basic structure of the economy is such that it creates good jobs and bad ones and then parcels them out on the basis of sex, race and luck. Though, many of those who suffer from low wages and unemployment have a considerable amount of human capital, they fail to find jobs that pay a living wage because of racism, sexism, economic depression and uneven economic development of industries and regions.

In another study carried out by Bluestone *et.al.* (1973), finds that workers who obtain employment in an industry that is highly profitable, unionized, capital intensive, and supported by government purchases receives higher wages even if their training, education, health and discipline are average or below average. And workers who are trapped in unorganized, less profitable industries operating with little capital per worker and gaining little support from the

government or foreign purchases are paid lower even if they are well educated and have an adequate supply of human capital.

Foster (1965) also argued that expansion of education can be useful only to the extent that there is an expansion of opportunities in the exchange sector of the economy. In African countries, creation of jobs has lagged behind the production of graduates leading to mass unemployment among school leavers. This, according to Foster, is because of the fact that it is easier to increase the output of the school but far more difficult to expand employment opportunities in these (African) countries. Another reason is because unemployment has its source in the reluctance of literate individuals and school graduates to enter manual occupations and their unrealistic search for white collar jobs. However, Foster clarify that, vocational and technical education by itself cannot induce youth to take up vocational and technical jobs until an institutional complex exist which makes the utilization of new technique profitable and meaningful. He thus suggests that, the crucial variable lie, in the structure of incentive within the economic system and in the degree to which the institutional milieu is supportive of entrepreneurial activity.

However, Horvat (1958) claims that, in many newly developed countries, the absorptive capacity for physical capital has proved to be low because the extension of human capabilities has failed to keep pace with the accumulation of physical capital. Lewis (1962) also contends that absorption capacity is limited by the high cost of education in developing countries. To him, the main limitations on the absorption of the educated in poor countries is their high price. In consequence, all production, which depends on using educated people, is much more expensive, in relation to national income, in poor countries than in rich countries. The poor countries may need the educated more than the rich, but they can even less afford to pay them or absorb large numbers. In long run, the situation, however, adjusts itself because the premium for education diminishes as the number of educated increase. On the other hand, the cost of producing education may be high at early stages of development, relative to that of producing other capital goods.

Singh (2010) using the India Human Development Survey 2005 data, found that individuals with higher education and better ability are more likely to be employed in permanent job or government sector. Singhari and Madheswaran (2016) using multinomial logit regression found that education increases the likelihood of being in regular employment but it reduces the

likelihood of being in casual employment in India. Aggarwal *et.al* (2010) using NSS data, found that workers from scheduled tribe and scheduled castes are more likely to be employed, and less likely to be self-employed, than other workers. The study also find that schooling raises the probability with which an individual enters non-manual work, and reduces the probability with which an individual enters manual work.

Sharma (2016), using the NSSO data for 68th Round, examined the relationship between education and employment for self-employment, regular job and casual job in India using multinomial probit model. The study finds that, an educated worker is more likely to be self-employed than an illiterate worker, and that the probability of being self-employed also increases with an increase in education and age. Further, workers with graduate or above qualifications are less likely to be self-employed than workers with senior secondary education, showing that lesser educated workers are more likely to be engaged in self-employment. Socially disadvantaged groups, such as, SC, ST and OBCs, as well as the male and urban workers are also less likely to be self-employed, as compared to the general categories, female and rural workers.

The study shows that the probability of being employed in a regular job increases with each incremental educational qualification, with urban and male workers are more likely to have a regular job than their rural and female counterparts, respectively. The reason has been attributed to the lack of access to regular jobs in the rural areas, as well as the lack of representation of the female workers in the organized labour market. Moreover, socially disadvantaged groups are less likely to secure regular job. For worker with graduate or above qualifications, the probability of having a regular job is 25.6 percent higher than that of an illiterate worker. Similarly, the probability of securing a regular job is 18.51 percentage points higher for urban worker than that of a rural worker. Therefore, the study suggests a policy focus on improving access to regular employment opportunities in the rural areas.

On the other hand, the probability of being employed as a casual worker declines with an increase in educational qualification, indicating that lesser educated workers are more likely to be engaged in casual work. Additionally, it is found that lesser educated workers are more likely to be involved in low-paying and labour intensive industries, such as agriculture and mining. Socially disadvantaged groups are also more likely to be employed as casual workers than workers from general category. The study further found that, the probability of being

employed in regular job is 6.3 for illiterates, 11.9 percent for primary workers, 19.9 percent for secondary workers and 40 percent for graduates and above. However, the relationship is reversed is the case of causal work, where the probability of being employed is higher for illiterates at 48.1 percent, 39.9 percent for primary workers, 16.1 percent for secondary workers and 7.3 percent for graduate and above. These results indicate that education plays a pivotal role in securing regular jobs rather than temporary or contractual jobs.

The problem of youth unemployment, particularly that of educated youth, is gradually becoming a major concern (India Labor and Employment Report, 2014). About 30 per cent of the total unemployed in the year 2011-12 were graduates and above, up from 21 per cent in 2004-05. The rate of unemployment among graduates, including technically trained and diploma holders was around 18 per cent. The Report, therefore, suggests that appropriate policies and measures to address the issue of education and skills acquisition, and of skills mismatches need to be urgently put in place. The challenge pertains not only to the achievement of a major quantitative expansion of the facilities for education and skill-training, but also to the equally important task of raising their quality. It further suggests that, if India have to compete globally, she must invest heavily in its National Skill Development Mission.

When looking at recent data, it is hard to escape the conclusion that although India has enjoyed high economic growth, this has largely been jobless growth (Jha, 2015). He therefore, suggest a kind of big push in the areas of education and employment in India. He asserts that, mass education of youth and their gainful employment in productive jobs is central for capitalizing on India's demographic dividend. But India's performance with regard to both education and employment has been disappointing. India's development philosophy must therefore, realize that neither high and medium-term growth, nor sustained poverty reduction, are possible without a paradigm change in India's approach to the education and employment of youth. He further cautioned that the consequences of failure could be grave.

1.2.4. Education and Inequalities

The produce of the earth - all that is derived from its surface by the united application of labour, machinery, and capital, is divided among three classes of the community; namely, the proprietor of the land, the owner of the stock or capital, and the labourers by whose industry it is cultivated (Ricardo, 1821). But in different stages of society, the proportions of the whole

produce of the earth which will be allotted to each of these classes, under the names of rent, profit, and wages, will be essentially different; depending mainly on the actual fertility of the soil, on the accumulation of capital and population, and on the skill, ingenuity, and instruments employed in agriculture. Therefore, according to Ricardo, to determine the laws which regulate this distribution, is the principal problem in Political Economy

Though numerous factors such as race, inheritance, family reputation and connections, socio-economic status, ability, knowledge and skills has been identified as a possible cause for income disparities, (Becker & Tomes, 1979; Brunello & Checchi, 2003; Coleman, 1966), differences in educational attainment have been seen as one of the most prominent factor that cause income inequality (Becker & Tomes, 1979; Galor & Zeira, 1993; Fernandez & Rogerson, 1996; Viaene & Zilcha, 2003; Galor & Moav, 2004). Further, Becker and Chiswick (1966) finds that income inequality is positively correlated with inequality in schooling and negatively correlated with average level of schooling.

A wealth of literature attests to the economic benefits of education and that higher annual incomes and lifetime earnings are associated with advanced educational attainment (Goodman, 1979). Chiswick (1971), using cross sectional data from nine countries, suggests that earnings inequality increases with educational inequality and that the inequality in rates of return is positively related to the inequality in the distribution of wealth. López-Acevedo (2006), also states that education is by far the variable that accounts for the largest share of earnings inequality in Mexico, both in terms of its gross and marginal contribution and that changes in the relative earnings among educational groups are always the leading force behind changes in inequality. Thomas, *et al*., (2001), also found that educational inequality is negatively associated with average years of schooling, implying that countries with higher educational attainments are more likely to achieve equality in education that those with lower attainments.

Studies that look directly at the relationships between educational inequalities and income inequalities find a positive correlation both at individual levels and among nations. For example, a study of the relation between schooling, income inequalities and poverty in 18 countries of Latin America in the 1980s found that one quarter of the variation in workers income was accounted for by variations in schooling attainment: it then concludes that clearly education is the variable with the strongest impact on income inequality (Psacharopoulos,1992).

In another empirical work, Marcotte (2000) has found a statistical link between the growths of labour market inequality and differences in the acquisition of and returns to on-the –job training. Marcotte's study finds workers with more education also tend to receive greater levels of employer-sponsored trainings. Thus, earnings differentials between highly educated, highly paid workers, and those with lesser education and earnings increase overtime due to the disparity in the acquisition of and returns to training. Mincer (1958), in his analysis on the relationship between investment in human capital and personal income distribution finds that the greater the average amount of training in the group, the greater the inequality in its income distribution, whether the group is defined by industry, race, gender, marital status or city size, implying that earning inequalities arises due to the inequalities in education or trainings one receives.

An analytical study on the differences in education technology and their effects on growth and income distribution by Viaene, *et al*., (2006), find that more provision of public schooling reduces inequality in the distribution of human capital. Moreover, if the investment in public education is too low, the stock of human capital may decline overtime. They argue that when the provision of public education becomes more efficient, intra-generational income inequality declines. However, if the private provision of education becomes more efficient instead, income inequalities increase. Nestic (2002), also finds that education represents the strongest determinant of income inequality because the differences in education of household carrier contribute to 16 to 17 percent in explanation of total income inequality in the republic of Croatia. Kijima (2006) finds that between 1983 and 1993 the changing distribution of educational attainment was the dominant force increasing wage inequality among male urban workers in India, while between 1993 and 1999, the rising returns to higher education increased wage inequality most.

Studies also show that increase in the number and level of education reduces income inequality. When more and more educated people enter the labour market, the speed of technological innovation increases, followed by the creation of more skilled jobs. More people earn higher wages, and as a consequence income inequality starts declining. The rise in the productivity of these workers is reflected in their remuneration, thus inducing a trend reversal in income inequality (Checchi, 2001). Thus, the current income inequality affects future educational inequality, which according to human capital theory will shape future income inequality.

Viaene and Zilcha (2001), also finds that a country that starts with higher levels of human capital has a better chance to maintain less income inequality in the future. Hence communities which create a culture of literacy and life learning are more likely to experience lower income inequality. Also, it is found that if improvements occur mainly in home-based education, growth increase while inequality in the income distribution increases. In contrast, if a technological improvement affects public education then higher growth and less inequality are obtained. Kuznets (1955), also suggest that inequality increases as average income rises from a low level but then, at a critical point, begins to decrease as average income rises further

In cross country analysis for the period 1960-1999, Gregorio and Lee (2002), found that higher educational attainments and more equal distribution of education plays a significant role in equalizing income distribution. Ahluwalia (1974), also suggested that expanding the right type of education, such as vocational education, to the lower income groups increases their productivity and thus wages, thereby improving income distribution. Kravis (1962), and Milner (1970), also contend that mass education increases both the skill level of the labor force and its bargaining power for wages, a consequence of which leads to reduction in income inequalities. Ram (1990), also observed that reducing educational inequality along with increasing mean schooling, may lead to a decline in income inequality.

OECD (2014) observed that, by hindering human capital accumulation, income inequality undermines educational opportunities for disadvantaged individuals, lowering social mobility and hampering skills development. Further it is found that rising inequality by 3 Gini points would drag down economic growth by 0.35 percentage point per year. Ali (2007), also pointed out that rising income inequalities pose a danger to social and political stability and the sustainability of the growth process itself. Gottschalk and Justino (2006), also posits that high inequality may deteriorate stocks of human capital when associated with high illiteracy and poor health. Widening inequality also affects growth and macroeconomic stability as it could lead to concentration of political and decision-making power in the hands of few elite which could lead to a suboptimal use of human resources, cause political and economic instability, and raise crisis risk (Dabla-Norris, *et al.*, 2015).

Rising inequality harms the development process as it slows down poverty reduction at given growth rates, and may even reduce growth itself (Bjornskov, (2008). Human capital being an asset, differences in educational attainment prevents poor people from

becoming part of the high-productivity growth process and therefore, democratizing education, particularly tertiary education, would benefit people from poorer backgrounds (HDR, 2016). Increased investment in education also brings about positive social rate of return. These social benefits include greater flexibility of the labor force, an informed electorate, the greater enjoyment of life and culture, as well as greater productivity of educated workers (Morgan and David, 1963).

However, Steven and Kenneth (1978) observed that increasing the levels of educational attainment of a society's population, and lessening inequalities in the distribution of education, do not appear to reduce inequalities in the distribution of income. Bennett (2011) in a study on the relationship between educational inequality and income inequality for the United States found that educational inequality has decreased over the 50-year period while income inequality has increased steadily. Jencks, *et al.,* (1972) also asserts that "neither family background, schooling, nor cognitive skills explains much of the variation in [individual's] income". According to Jencks, luck has far more influence on income than other factors. However, Jencks contentions has been criticized by several social scientists including Miller (1973), Taylor (1973), and Joseph (1977), mainly on ground of data inconsistencies and statistical biasness.

Duraisamy and Duraisamy (2005) in a study to estimate inequalities in return to education across quintiles of wage distribution in India between 1983 and 1993-94, found that wage returns to primary, middle and secondary levels increase at the higher quantiles, except for the top quantile, where it declines which indicates that ability increases returns to education. The returns to higher secondary and technical diploma decline at the higher quantiles implying that the omitted ability factor and education are complements at the primary, middle and secondary levels while technical diploma and omitted ability factor act as substitutes. Further, the private wage returns to primary and middle education for men and women are lower than those for secondary and higher levels, while secondary level commands the highest returns.

Agrawal (2010), using NSSO data, examined the educational attainment and educational inequality for the Indian population aged 15 and above, for the period 1993 to 2004. The study finds that educational attainment in India is low, while the extent of inequality is high. During the study period of 11 years, average years of schooling in India increased by approximately one year while educational inequality fell by eight percentage points. The study also finds that

the gap in educational attainment between rural and urban areas is quite large. Thomas *et. al.* (2000) find that, in 1960, educational inequality in India was one of the highest in the world with an educational Gini coefficient of 0.79 and a mean year of schooling at 1.09 years. In 1990, the MYS improved to 2.95 years, while educational inequality fell to 0.69, showing that increasing the MYS could result to a fall in educational inequalities. Pal (2013), find that economic background represented by the wealth index, is one of the major contributing factors to inequality in educational performance.

Sharma and Narayan (2017), in their study on "educational outcome and earning differentials in India: dynamics of caste" using nationally representative data from the India Human Development Survey 2004-05 and 2011-12, analyzed caste based discrimination in earnings and job opportunities and the effect of education and the returns for different occupations. The study reports the existing evidences of significant positive coefficients for education and marginal wage effects, which are increasing with the levels of education for every social groups. But the returns to education for SC and OBC is very low compared to forward caste at every level of education. They also find evidences of gender and location bias in earnings. Therefore, they suggested that affirmative policies should be continued as it have contributed in improving the level of education, job opportunities and political representations to the marginalized social groups.

Pal and Ghosh (2007) finds that, increased inequality in education in India has been due to the rapid growth of private schools. Over the years, the shares of private un-aided schools have gone up significantly at primary, mid-primary and secondary school levels. The growth of private un-aided schools has been much higher at the secondary and higher secondary levels. These private un-aided schools are mostly located in urban areas, and charge much higher fees than the government schools. Since these private schools mainly cater to the richer sections of the population, their rapid growth is indicative of increasing education inequality in India.

Basing on sample household survey in Odisha, Das and Mohapatra (2013) found that, the differences in returns to education between female and male, between lower caste and upper caste and between rural and urban areas decline at higher levels of education. Therefore, they suggest that inequality in earnings across gender, caste and region can be reduced substantially with the increase in the levels of education. Hence, education is considered one of the strong instruments for reducing the inequality in earning in Odisha.

Using the World Income Inequality Database (WIID), Park (2017) found that higher level of schooling of the population has reduced income inequality in Asia, while a greater dispersion of schooling among the population has increased income inequality. The chief finding of the study is that education plays a significant role in reducing income inequality. Therefore, Park suggests that, if governments plan to improve the distribution of income, it suggests that government should focus on education policies that promote educational expansion while affording individuals equal and greater access to educational opportunities.

1.2.5. Influence of Parental Education and Income on Children's Education

The importance of parental human capital in the process of generating human capital of the offspring is well established in economics literature. Many studies have shown that students whose families have low educational levels and low socioeconomic status experience higher rates of early school leaving, low academic expectations, and exclusion from higher educational tracks than those from more advantaged social groups (Flecha, 2012).

Haveman and Wolfe (1995), conclude that the education of parents is probably the most important factor in explaining the child's success in school. Chevalier (2004), also find a positive effect of parental education on their children's schooling achievements. Omori (2010), found that household income and parental education are the main factors influencing expenditures on children's education, entertainment, and books and other reading materials. Similarly, Drahea and O'Sullivan (2014), finds a significant relationship between parents' income and literacy levels and the quality of support to their children's education.

More educated parents have, on average, better educated children. Therefore, increasing education today would lead to an increase in the schooling of the next generation and, in this way, to an improvement of later life outcomes such as health, productivity and wealth (Ermisch and Pronzato, 2010). The study further found that father's education has a larger effect on children's education than that of mothers. Holmlund, *et.al.*,. (2011), contends that, if parental schooling is largely responsible for creating an environment where children can learn and prosper, increasing the schooling of one generation would lead to an improvement in the educational achievement of future generations, thereby reducing the future inequality in educational opportunity.

Research conducted in developed countries indicates that family characteristics such as income and education of the parents have significant influence on the educational success of their offspring (Barro and Lee, 1997). Glaeser (1994), finds that children from families with educated parents obtain better education. Burnhill, *et al*., (1990), finds that parental education influences entry into higher education over and above parental social status. Barro and Lee (2001), and Brunello and Checchi (2003), finds that family characteristics such as income and education of parents enhance students' performances because parental education elicits more parental involvement, including related private investment, at home. Pronzanto (2012), asserts that better educated parents have, for example, higher ability, which partially transmits to their children.

Similarly, using US data, Oreopoulos *et.al.* (2003), find that increase in the education of either parent reduces the probability that a child repeats a grade and significantly lowers the likelihood of dropping out of school. Alexander, *et al*., (1994), asserts that parents with more education have higher expectations for their children's education, which, in turn, predict greater educational attainment for their children. Further, parents with higher education encourage their children to participate in other co-curricular activities which have strong bearing on their educational outcomes. Highly educated parents also enroll their children in music lessons, science, computer programs and educational relevant summer camps. They are also more likely to enroll their children in the best private schools and avail tutoring help (Eccles and Davis-Kean, 2005).

More educated parents make greater investments in children's human capital by providing higher levels of goods and services that complement learning and by devoting more time to their children (Strauss and Thomas, 1995). Vu-Quang (2012), using Tobit model, also found that the level of expenditure for children's education is higher for those parents with higher level of education or with professional jobs. In contrast, less educated parents work for longer hours and earns lesser, as a result they are more likely to face liquidity constraint preventing their children from fulfilling their schooling potential (Becker and Tomes, 1986). Further, lesser educated parents tend to have bigger family size, which reduce the amount or resources invested per child (Lee, 2004).

Benzil and Hansen (2003), have using a structural dynamic model found that family background, especially educational quality of parents, contributes 68 percent to the educational

range of the children. Behrman *et. al.* (1997), find that rural Pakistani children whose fathers completed junior secondary school score 31 percent higher on reading tests and 29 percent higher on mathematics tests than children whose fathers did not. Similarly, Case and Deaton (1999), show that the head of household's education influences literacy and numeracy scores for black South African high school students. These relationships have generally been found to be robust to the inclusion of various household, school, and community-level characteristics, suggesting that parental education has a real effect on children's human capital acquisition (Strauss and Thomas 1995).

Behrman, *et al.*, (1999) analyze how mother's education affects parental time allocation using household data from India. Controlling for workforce participation, they find that literate mothers spend more time than illiterate mothers on total time allocated to home care. Sathar and Lloyd (1994), while investigating the impact of parental education on educational expenditures using survey data from Pakistan, find that household spending on children's education is up to 75 percent higher if mothers ever attended school relative to households wherein mothers did not. Therefore, these results suggest that more educated parents make greater investments in children's education and welfare in terms of time, efforts and money.

Pal (2013), basing on the data from the India Human Development Survey, used regression-based decomposition analysis to quantify the relative contributions to inequality in educational performance. The findings point out the importance of parents' education in determining the children's educational performance. In particular, inequality in mother's education is found to be the major contributors to inequality in children's educational performance. The study also find that economic status of family significantly affects educational performance of the child, in a sense that, children from affluent background performs better in education. Other factors that contributes to inequality in educational performance are inequalities in father's education, child health, social background of family, and some school characteristics.

Prakash (1978), studied the influence on demand for higher education exerted by intellectual ability of the students, occupational and income levels of the parents in Madhya Pradesh, India. The study finds that 84 percent of the enrolled students in higher education belonged to low income groups, whereas, the students belonging to middle and high-income

groups were about 10 and 6 percent respectively. Even though, the students from low income and occupation groups constitute the majority, their number is much lesser that what is warranted by their total population. The result implies that, higher education and technical education, being more expensive, are therefore, subject to the influence of parental occupation and income.

Borkotoky *et.al.* (2015), in a study on intergenerational transmission of education in India, basing on District Level Household Survey (DLHS-3), conducted during 2007-08, found that, when both parents are illiterate, the probability that their children will attain education beyond high school is very low. On the other hand, when both parents are graduate, the likelihood of their children becoming graduates increases by 76 percent, indicating that parental education significantly affects children's educational attainment. The study also finds that, more than one-fourth of the children born to illiterate women had a primary education. On the other hand, 59 percent of children born to women with higher secondary education and 74 percent of the children born to a graduate mother studied up to graduate level, showing that mother's education contributes positively towards children's educational success and attainment.

Dabvis-Kean (2005) in a study found that family processes such as, parental education, income and background positively affects child achievements, through the parents' educational expectations, reading, play, and affective behaviors. Moreover, it also found that, the amount of schooling that parents receive influences how they structure their home environment that are conducive in promoting children's academic achievement. Considine and Zappala (2002) also found that, even within a group with considerable financial disadvantage, socio-economic status as reflected by the level of parental education, was a key predictor of student academic achievement. McEwen and Stewart (2014) in a study found that, income's effect on child outcomes is nonlinear, in a sense that, an additional dollar of income has a larger effect on children from poor financial background. Therefore, if the goal is to improve child outcomes, families with lower income should be given significantly more benefits than those with more income. Further, income's effect on child outcomes displays diminishing marginal returns, as each additional dollar of income has a smaller impact on child outcomes than the previous dollar. The evidence suggests that income transfers will have no significant effect on child outcomes beyond a certain threshold.

Chevalier (2004) finds that, for both parents, OLS estimates of the effect of one year of parental education on the probability of post-compulsory education of the child is about 4 percent with the effects slightly larger for sons than daughters. Further, Chevalier *et.al.* (2005) using least squares method, found a stronger effect of maternal education than paternal education on children educational attainment. The study also found stronger effects on sons than daughters. Further, the study observed that, parental education effects remained significant even when household income was included in the analysis. However, when parental education was included the effect of permanent income became insignificant.

Blanden and Gregg (2004), found that, there exist some important relationships between family income and educational attainment in the UK and that these relationships have been strengthening through time. In addition, the study also found evidence on the causal impact of income on educational outcomes. They also observed that financial problems increase family conflict and parental stress reducing the ability of the parents to engage in effective parenting that improves educational outcomes. Glick and Sahn (2000) employing a probit model, analyzed the effect of parental education and income on schooling of boys and girls in Guinea. They observe that increase in household income has a greater correlation on investment in girl child education than in boys. They also observe that the level of father's education raises the educational outcome of both boys and girls while that of the mother, when improved, impact significantly on the girl child. The findings also illustrate that gender, parental education and household income and composition affects schooling decision depending on the gender of the child. Blanden *et. al.* (2002) document that the intergenerational transmission of income has increased for children born in 1970 compared with those born in 1958. The study found that the increased persistence is in part a consequence of an increased relationship between family income and educational attainment. Carneiro and Heckman (2003) suggests that current parental income does not explain child educational choices but that family fixed effects such as parental education levels, that contributes to permanent income, have a much more positive role.

Therefore, while extensive research on the relationship between human capital and income and employment, has been carried out across the globe and in India, specific study on this area is not available for Nagaland. This dissertation, therefore attempts to offer empirical study which would be useful for policy formulators, educators and researchers and at the same time enrich the literature in this line of research.

1.3.   STATEMENT OF THE PROBLEM

Though the effect of education and trainings on individuals earning and employment opportunities is well researched in economics literature, reliable estimate of returns to education is not available for the State of Nagaland. Nagaland, which has a literacy rate higher than the national average, especially due to the rapid expansion of educational institutions, is devoid of any reliable literature that measures the impact of education on income and employment. Therefore, the study aims to overcome those lacunae and to offer valid empirical findings that can act as a baseline for policy formation and direct future course of research and study on the related subject.

1.4.   AREA AND PERIOD OF STUDY

Nagaland is the 16th state of India and lies at the North-East with Assam in the north and west, Myanmar and Arunachal Pradesh in the east and Manipur in the south. It has an area of 16,579 sq. km. and a population of 19, 78,502 out of which 71.14 percent of the population resides in the rural areas (Census 2011). The working force constitutes 49.2 percent of the total population and the state has a literacy rate of 79.55. Nagaland is divided into eleven districts, such as, Dimapur, Kiphire, Kohima, Longleng, Mokokchung, Mon, Peren, Phek, Tuensang, Wokha and Zunheboto. Out of the districts, Wokha and Zunheboto are selected for this study.

Wokha district has a geographical area of 1628 sq.km. with a population of 166343 and a density of population of 102 persons per sq.km. The district has a sex ratio of 968 females per 1000 males, and a literacy rate of 87.7 percent. On the other hand, Zunheboto has a geographical area of 1255 sq.km and a population of 140757 and a density of population of 112 persons per sq.km. The district has a sex ratio of 976 and a literacy rate of 85.3 percent. However, the districts differ in terms of Human Capital Index. Wokha district is ranked second in Nagaland in terms of HDI at 0.66, while Zunheboto is ranked 10 out of 11 districts with HDI of 0.51. The districts are therefore, qualified to be chosen as a representative sample for the State of Nagaland. Hence, the study analyzed the earnings and employment effects of education in Nagaland for the year 2013-14.

1.5.   OBJECTIVE

The main objectives of this study are;

1) To study the trends of educational indicators and public expenditure on education in Nagaland.

2) To estimate the effects of education on earnings and employment and to derive the educational rate of returns.

3) To examine the extent of educational and earning inequalities.

4) To analyze the private investment on education exerted by parental income and educational level; and to study the relationship between parental education and its effect on their children's educational attainment

1.6.   HYPOTHESES

1) The higher the level of education, the higher is the level of earnings and employment.

2) Higher parental education is associated with higher educational attainment of their offspring.

1.7.   METHODOLOGY

To undergo a rigorous and in-depth analysis of data, the following methodology are adopted:

1.7.1.   Sources of Data

The study is based on both primary and secondary data. The primary data is collected through sample survey using direct personal interviews and questionnaire methods. Secondary data has been drawn from both published as well as unpublished sources wherever necessary.

1.7.2. Sample Design

The primary data has been collected through sample survey using stratified random sampling method. The districts under study has been stratified according to well defined rural development blocks in case of rural areas and municipal blocks/colony in case of urban areas. Three rural development blocks in each district were selected wherein one village from each selected rural development blocks (totaling six villages) has been selected and ten percent (10%)

of the household from each sample village constituted the sample units for the rural areas. For urban areas, twenty (20) household from five municipal blocks/colony from each district (totaling ten municipal blocks and two hundred households) has been selected which fairly represent the diverse socio-economic characteristics of the study area.

i)   Wokha

For Wokha district, three villages namely, Longsa village from Wokha block, Pyangsa village from Sanis block and Pangtong village from Bhandari Block were selected with a total of 79 household and 496 persons. For the urban sector, five colonies from Wokha town, such as, Zuvotong, Government High School, Vungoju, Saron and Niropen were selected with a total of 100 household and 597 individuals. Altogether, 179 household and 1093 individuals were enumerated from Wokha district.

ii)   Zunheboto

For Zunheboto district, three villages namely, Asukhomi under Zunheboto block, Lumami under Akuluto block and Shevishe under Tokiye block were selected with a total of 65 household and 363 individuals. For urban area, five colonies from Zunheboto town such as Alahuto, Khuwaboto, New Colony, North Point and Old Town were selected with a total of 100 household and 536 individuals. Altogether, 165 household and 899 individuals were enumerated for Zunheboto district.

1.7.3. Analysis of Data

The data obtained has been analyzed at the individual, household and relevant group (age, gender, education) levels by using appropriate statistical tools such as statistical average, regression analysis, binary logistic regression, Lorenz curve and Gini coefficient etc.

i)   Mincerian Human Capital Earnings Function

$$In\ Y = a + bS + cX + \varepsilon$$

To calculate the educational rate of returns, the study used the Mincerian equation which involves the fitting of the natural logarithm of earnings as the dependent variable, and years of schooling (S), potential work experience (X) as independent variables.

ii) Regression Analysis

$$Y = \alpha + bX_0 + cX_1 + \varepsilon$$

Simple and multiple regression analysis were used to study the relationships between different variables in the study, where 'a' is the intercept, 'b' and 'c' are the coefficients and X_0 and X_1 represents different independent variables and ε is the error term.

iii) Binary Logistic Regression

The relationship between education and employment is analyzed using binary logistic regression. Let Y be a binary response variable where $Y_i = 1$ if a person is Unemployed. $Y_i = 0$ if a person is Employed.

$X_i = (x_1, x_2, x_3, \ldots x_k)$ is a set of the explanatory variable, education, classified by the years of schooling. Such that,

$$\hat{P} = \frac{\exp\ (B_0 + B_1 x_i)}{1 + \exp\ (B_0 +, B_1 x_i)}$$

iv) Mean Years of Schooling

This study used the UIS (2013) method to derive the Mean Years of Schooling (MYS). Educational levels were categorized into eight groups similar to the International Standard Classification of Education (ISCED) classifications, such as, a) illiterate, b) below primary, c) primary, d) upper primary, e) secondary, f) higher secondary, g) graduation, h) post-graduation etc. The years of schooling for each educational group are counted from preprimary levels and are thus taken as 0, 5, 7, 10, 12, 14, 17, 19 respectively.

$$\mu = \sum_{i=1}^{8} P_i\, E_i$$

The Mean Years of Schooling is derived using the above formula where μ is the mean years of schooling, *Pi* is the proportion of population aged 20 and older with education level *i*, *Ei* represents the years of schooling for an individual with education level *i*, where *i* = 0, 5, 7,…19.

v)   Lorenz Curve and Gini Coefficient

To measure inequality for both education and income, Gini coefficient is used. The Gini coefficient is defined as a ratio of the areas on the Lorenz curve diagram with values between 0 and 1, where 0 corresponds perfect equality and 1 corresponds perfect inequality. If the area between the line of perfect equality and the Lorenz curve is A, and the area under the Lorenz curve is B, then the Gini coefficient = $\frac{A}{(A+B)}$. If A = 0, the Gini coefficient becomes 0, which means perfect equality, when B = 0, the Gini coefficient becomes 1, meaning complete inequality (Haughton and Khandker, 2009). The Gini coefficient multiplied by 100 gives the Gini index.

The Gini coefficient is measured using the following formula as given by Rao (1969);

$$Gini = \sum_{i=0}^{n-1} (F_i Q_{i+1} - F_{i+1} Q_i)$$

Where F_i represents the cumulative percentage of population or frequency and Q_i denotes the cumulative percentage of income. While measuring educational inequality, the cumulative mean years of schooling replaces income on the Y axis.

vi)   Unemployment

The unemployment rate is calculated by dividing the number of unemployed individuals by the total number of individuals in the labor force multiplied by 100.

$$\text{Unemployment Rate} = \frac{\text{No. of Unemployed}}{\text{Labour Force}} \text{ X } 100$$

1.8. CHAPTERISATION

The chapters are organized as follows;

1. **Introduction**

   This chapter deals with the theoretical frameworks, literature review, statement of the problem, area of the study, research objectives, hypothesis, methodology and chapterization.

2. **Socio Economic Profile of Nagaland**

   An overview of the socio-economic profile of the State, with special emphasis on the educational developmental indicators including literacy rates, enrolment ratios, teacher-pupil ratios and public expenditure on education etc. are discussed here.

3. **Impact of Education on Income and Employment**

   This chapter discuss the impact of education on employment and income classified by levels of education, gender and region. The rate of returns to education is also analyzed here.

4. **Education and Earning Inequalities**

   The extent of education and earning inequalities between different educational levels, gender and region are presented here.

5. **Impact of Parental Education and Income on Children Education**

   This section examines the relationship between parental education and their children's educational attainments. The relationship between the levels of private investment on education exerted by the parental education and income levels are also analyzed here

6. **Conclusion**

   The major findings, recommendations and policy implications are summarized here.

CHAPTER 2

SOCIO ECONOMIC PROFILE
OF NAGALAND

CHAPTER 2

SOCIO ECONOMIC PROFILE OF NAGALAND

This chapter gives an overview of the socio-economic profile of Nagaland with special emphasis on educational development. The chapter is comprised of four sections. Firstly, it highlights the profile of the study area such as physical and demographical features, economy and health etc. Secondly, it presents the important educational indicators such as, literacy rate growth of education, enrolments, dropout rates, pupil-teacher's ratio and review of examination results. Thirdly, it discusses the trends of public expenditure on education sector. And lastly, the profile of the sample households is presented here.

2.1. PROFILE OF NAGALAND

Nagaland became the 16th State of India in 1st December 1963. The State is inhabited by 16 major tribes namely, Angami, Ao, Chakhesang, Chang, Kachari, Khiamniungam, Konyak, Kuki, Lotha, Phom, Pochury, Rengma, Sangtam, Sema, Yimchungrü and Zeliang. Each tribe speaks their own distinct language, shares similar but unique cultures and traditions. English is the official language, but Nagamese, a creole language, is also widely spoken to communicate between the tribes. The state has a high Christian population at 87.9 percent followed by Hindus at 8.7 percent and Muslims at 2.5 percent[1]. Out of the total population, 86.5 percent belong to the schedule tribe category.

2.1.1. Physical and Geographical Features

Nagaland has a geographical area of 16,579 square kilometers. The State is bordered by Assam in the west, Arunachal Pradesh and part of Assam in the north, Manipur in the south and Myanmar and Arunachal Pradesh in the east. It lies between 25˚6' and 27˚4' northern latitudes and between 93˚20' and 95˚15' eastern longitudes[2]. The state is divided into eleven districts namely, Dimapur, Kiphire, Kohima, Longleng, Mokokchung, Mon, Peren, Phek, Tuensang, Wokha and Zunheboto. Nagaland has 114 sub-districts, 26 towns of which 19 are statutory and 7 are census towns, and 1428 villages[3]. Kohima is the State capital which lies at an altitude of 1444 meter above sea level. Dimapur is the largest city with an elevation of 260 meters while

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[1] Census of India (2011). Nagaland Religion Census.
[2] Nagaland State Human Development Report (2004)
[3] Census of India (2011). Provisional Population Totals, Nagaland

Pfutsero, at an elevation of 2133 meter is the highest inhabited town in the State. Mount Saramati at an altitude of 3,841 meter is the highest peak in the State.

Box 2.1. Nagaland at a Glance

NAGALAND AT A GLANCE	
Total Area	16,579 Sq. kms.
State Capital	Kohima (1444 Meters above sea level)
Population	19,78,502 (Census 2011)
Density of Population	119 per square kilometers
Sex Ratio	931 females per 1000 males
Literacy Rate Male Female	79.55 percent (Census 2011) 82.75 percent 76.11 percent
Official Language	English
Average Rainfall	2500 mm
Highest Peak	Mount Saramati- 3840 meters.
Major Rivers	Dhansiri, Doyang, Dhiku, Tizu.
Railway Head & Airport	Dimapur
District Headquarters	Kohima. 2. Dimapur. 3. Mokokchung. 4. Wokha. 5. Zunheboto. 6. Phek. 7. Mon. 8. Tuensang. 9. Longleng. 10. Peren. 11. Kiphire.
Number of Villages	1428 (2011 Census)
State Boundaries	East- Myanmar and Arunachal Pradesh. West – Assam. North - Assam & Arunachal Pradesh. South – Manipur.
Tribes	Angami, Ao, Chakhesang, Chang, Khiamniungan, Kuki, Konyak, Kachari, Lotha, Phom, Pochury, Rengma, Sumi, Sangtam, Yimchunger, Zeliang.
Schedule Tribe Population	86.5 Percent

Source: Government of Nagaland, 2017. [4]

Nagaland is blessed with pleasant climate throughout the year with the plains areas slightly warmer than the hills. The average temperature during summer ranges from 16˚C to 31˚C[5]. However, temperatures drop down to a low of 4˚C in certain regions during winter. The State receives an average annual rainfall of around 1800 - 2500 mm, concentrated in the months of May to September. About one-sixth of its geographical area is covered by tropical and sub-

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[4] Government of Nagaland (2017). State Profile. Retrieved from
    https://www.nagaland.gov.in/portal/portal/StatePortal/AboutNagaland/StateProfile
[5] Wikipedia (2017). Nagaland. https://en.wikipedia.org/wiki/Nagaland

tropical evergreen forests[6]. As per the India State of Forest Report 2015[7], the total forest cover in Nagaland is around 12966 sq.km. which account for 78.20 percent of its total geographical area.

Nagaland is also favorably endowed with huge reserves of minerals, most of which are yet to be economically exploited. Some of the minerals found in Nagaland includes coal, limestone, nickel, cobalt, chromium, magnetite, copper, zinc, platinum, petroleum and natural gas etc. Nagaland has a prognosticated reserve of 600 million tons of petroleum and natural gas, 1000 million tons of limestone and marble, 5 million tons of magnetite with nickel, cobalt and chromium, 150 million tons of coal and deposits of varieties of decorative and dimensional stones[8].

2.1.2. Demographic Features

The total population of Nagaland as per 2011 Census is 19,78,502, of which 10,24,649 are males and 9,53,853 are females, with a sex ratio of 931 females per thousand males. As shown in table 2.1, Dimapur district has the highest population with 3,78,811, followed by Kohima and Mon districts, while Longleng has the least population of 50,484 persons.

Table 2.1. District-wise Population, Density and Sex Ratio

District	Population	Male	Female	Rural	Urban	Density of	Sex
				Percentage share		Population	Ratio
Mon	250260	131753	118507	86.24	13.76	140	899
Mokokchung	194622	101092	93530	71.37	28.63	121	925
Zunheboto	140757	71217	69540	80.39	19.61	112	976
Wokha	166343	84505	81838	78.96	21.04	102	968
Dimapur	378811	197394	181417	47.77	52.23	409	919
Phek	163418	83743	79675	84.96	15.04	81	951
Tuensang	196596	101933	94663	81.29	18.71	78	929
Longleng	50484	26502	23982	84.92	15.08	90	905
Kiphire	74004	37830	36174	77.72	22.28	65	956
Kohima	267988	138966	129022	54.82	45.18	183	928
Peren	95219	49714	45505	85.52	14.48	58	915
Nagaland	1978502	1024649	953853	71.14	28.86	119	931

Source: Census of India, 2011.

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[6] Wikipedia (2017). Nagaland. https://en.wikipedia.org/wiki/Nagaland.
[7] Forest Survey of India (2015). India State of Forest Report. Ministry of Environment, Forest and Climate Change. Govt. of India.
[8] Nagaland State Mineral Development Corporation Ltd, Nagaland. Annual administrative Report 2008-09.

Likewise, Dimapur has the highest density of population with 409 persons per sq.km. followed by Kohima at 183 and Mon at 140 persons per sq.km. Peren district at 58 persons per sq. km. has the lowest density of population in the State. As for the sex ratio, Zunheboto district leads with a sex ratio of 976 followed by Wokha at 968. Mon district with 899 is the lowest followed by Longleng at 905.

The State has a predominant rural population with 71.14 percent living in the villages and 28.86 percent residing in the urban areas. Among the districts, Mon has the highest rural population with 86.24 percent followed by Peren with 85.5 percent and Phek and Longleng with 84.9 percent each, respectively. Dimapur is the most urbanized district with an urban population of 52.23 percent followed by Kohima with 45.18 percent and Mokokchung with 28.63 percent.

2.1.3. Economy

Nagaland is predominantly an agrarian economy with more than 60 per cent of the population dependent on agriculture for their livelihood[9]. Terrace and Jhum (shifting) cultivation are the two methods by which crops are grown in the State. Rice is the staple food of the State and thus covers about 70 percent of the net cultivated area with a production of 4,54,190 MT in 2014-15[10]. Even after five and a half decades of Statehood, cultivators still use conventional methods of farming with little application of modern technologies, machineries, pesticides or manures. As such, the state is yet to achieve self-sufficiency in foodgrain production[11].

The industrial activity and progress is also slow in the State, especially due to poor infrastructural development including roads and transportation, energy and market. Law and order problem, political conflict and tumultuous business environment are also responsible for the weak industrial development. Industrial activity in the State is dominated by micro, small and medium enterprises. Majority of the industrial units are agriculture and forest-based, such as, food processing, bamboo and cane, traditional handloom, handicrafts and cottage industries. The contribution of manufacturing sector to the Gross State Domestic Product (GSDP) is only 1.34 percent in 2015-16[12].

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[9] Economic Survey of Nagaland (2016-17).
[10] Economic Survey of Nagaland (2015-16)
[11] Ibid.
[12] Ibid.

Table. 2.2. Sectoral Contribution to GSDP at Constant Price (in %)

Sector	2011-12	2012-13	2013-14	2014-15 (P)	2015-16 (Q.E)	2016-17 (A.E)
Primary	31.41	31.35	32.46	32.17	29.74	28.42
Secondary	12.41	12.07	8.98	9.88	10.16	10.27
Tertiary	56.17	56.58	58.56	57.94	59.02	60.29

(P: provisional. Q.E.: Quick Estimates. A.E.: Advance Estimates)

Source: Economic Survey of Nagaland, 2016-17

The sectoral contributions to the GSDP is presented in table 2.2. The share of primary sector to GSDP was 31.41 percent in 2011-12 which increased to 32.46 in 2013-14 but decreased to 28.42 in 2016-17. Secondary sector contributes least to the GSDP. In 2011-12, it was 12.41 percent which decreased to 8.98 in 2013-14 but increased to 10.27 percent in 2016-17. More than half of the GSDP is generated from tertiary sector. In 2011-12, this sector contributed 56.17 percent, which increased to 60.29 percent in 2016-17. During the last six years, the significance of primary and secondary sectors in GSDP have declined, while the same for tertiary sector has increased, which continues to be the most prominent sector of the State's economy.

Table 2.3. Sectoral and GSDP Growth at Constant Price, Nagaland (in %)

Sector	2012-13	2013-14	2014-15 (P)	2015-16 (Q.E)	2016-17 (A.E)
Primary	5.60	10.50	2.80	-6.21	-0.60
Secondary	2.83	-20.56	14.14	4.33	5.12
Tertiary	6.57	10.48	2.61	3.33	6.27
GSDP	5.68	7.19	3.20	0.72	4.04
GDP (India)	5.5	6.4	7.2	7.9	7.1

Source: Economic Survey of Nagaland, 2016-17. Govt. of India (2017)[13]

As shown in table 2.3, the growth of primary sector was 5.6 percent in 2012-13 and 10.50 percent in 2013-14. However, it has registered a negative growth rate for two consecutive years with -6.12 and -0.60 percent respectively for 2015-16 and 2016-17. On the other hand, the secondary and tertiary sectors are projected to grow at 5.12 and 6.27 percent respectively for the financial year 2016-17. The GSDP, measured at constant price, shows erratic growth

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[13] Government of India (2017) Press Information Bureau. Provisional Estimates of Annual National Income, 2016-17. Retrieved from http://pib.nic.in/newsite/PrintRelease.aspx?relid=163287

rates with the year 2013-14 registering a high growth of 7.19 percent, which fell to 3.20 percent in 2014-15 and further to a record low of 0.72 percent in 2015-16. The average growth rate of GSDP of Nagaland between 2012-13 and 2016-17 stood at 4.16 percent, which is lower than India's average growth of 6.82 percent for the same period.

Figure 2.1. GSDP Growth Rate for Nagaland (Constant Price)
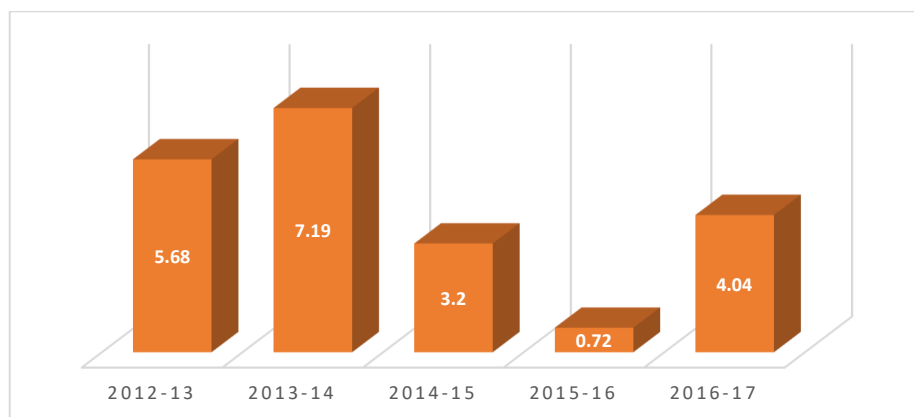
Source: Economic Survey of Nagaland, 2016-17.

Table 2.4. Percapita Income (in ₹) and Growth Rate at Constant Price

Year	Percapita Nagaland	Growth Rate (%)	Percapita India	Growth Rate (%)
2012-13	63956	-	65664	-
2013-14	67810	6.02	68867	4.87
2014-15	69267	2.14	72889	5.84
2015-16	69028	-0.34	77803	6.74
2016-17	71035	2.90	82239	5.70
Average		2.68		5.78

Source: i) Economic Survey of Nagaland, 2016-17. ii) Govt. of India, 2016[14], 2017[15].

The percapita income for Nagaland calculated at constant price increased from ₹63956 in 2012-13 to ₹69,028 in 2015-16 and to ₹71,065 in 2016-17. In percentage terms, it was increased by 6 percent in 2013-14 but registered a negative growth of -0.34 percent in 2015-16. However, it increased by 2.90 percent in 2016-17. It is observed that the PCI in the State remains below the country's PCI. Further, the annual average growth rate for the State during the period 2013-14 to 2016-17 was 2.68 percent which is slower than the country's average of 5.78 percent.

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[14] Government of India (2016) Press Information Bureau. Per Capital Income in the Country. 26th February. Retrieved from http://pib.nic.in/newsite/PrintRelease.aspx?relid=136938
[15] Government of India (2017) Press Information Bureau. Provisional Estimates of Annual National Income, 2016-17. Retrieved from http://pib.nic.in/newsite/PrintRelease.aspx?relid=163287

2.1.4. Employment

According to 2011 Census, there were a total of 9,74,122 workers in Nagaland, out of which 56 percent were male and 44 percent were females. The total workers in the rural area was 7,60,360 while that of the urban area stood at 2,13,762 persons. The total main workers were 7,41,179, of which 74.6 percent are from rural area and 25.4 percent are from urban area. Similarly, male main workers constitute 59.6 percent while female main workers constituted 40.3 percent respectively. The total marginal workers were 2,32,943, with 82.7 percent from rural area and 17.3 percent from urban area. Male and female marginal workers constituted 45.14 percent and 54.8 percent respectively.

i)   **Work Participation Rate**

Table 2.5. District-wise Work Participation Rate

District/State	2001			2011		
	Persons	Male	Female	Persons	Male	Female
Kohima	42.6	47.4	37.3	42.8	49.0	36.2
Dimapur	33.4	46.5	18.0	40.0	50.5	28.5
Phek	48.2	48.4	47.9	49.1	49.6	48.6
Mokokchung	47.1	50.5	43.4	51.4	56.5	46.0
Wokha	34.9	37.6	31.9	47.1	49.8	44.4
Zunheboto	36.9	39.4	34.3	56.5	57.8	55.1
Tuensang	41.3	44.0	38.2	49.9	51.9	47.8
Mon	50.2	52.9	47.2	59.0	60.3	57.6
Peren	45.8	46.3	45.3	64.5	64.9	64.0
Kiphire	41.2	41.5	40.8	43.2	44.4	42.0
Longleng	52.6	53.1	52.0	60.5	61.4	59.6
Nagaland	42.6	46.7	38.1	49.2	53.4	44.7
All India	39.1	51.7	25.6	39.8	53.3	25.5

Source: Census of India, 2001 and 2011.

The total Work Participation Rate (WPR) in Nagaland was 49.2 percent in 2011, with male WPR higher at 53.4 percent as compared to female WPR at 44.7 percent. The WPR for the rural areas is 54 percent while that of the urban areas is 49.2 percent. The WPR in Nagaland increased from 42.6 percent in 2001 to 49.2 percent in 2011, which is higher than all India average of 39.1 in 2001 and 39.8 in 2011. Male WPR increased from 46.7 percent in 2001 to 53.4 percent in 2011, while female WPR increased from 38.1 to 44.7 percent respectively. Among the districts in 2011, the WPR was highest for Peren at 64.5 percent, followed by Longleng at 60.5 and Mon at 59 percent. The WPR is lowest for Dimapur and Kohima at 40 and 42.8 percent respectively.

Table 2.6. Educational Specific WPR for 15 years and above, 2011-12. *(In percentage)*

Education	Nagaland		India	
	Urban	Rural	Urban	Rural
Illiterate	26.6	63.4	42.9	58
Primary	39.6	71.4	53.9	64.8
Middle	35.8	59.8	48.8	56.8
Secondary	27.5	48.2	41	50.1
Hr. Secondary	39.3	35.9	36.3	45.3
Diploma/Certificate	53.3	43.9	59.2	65.9
Graduate	52	35.5	55.4	60.9
Post Graduate and above	38.3	35.8	66	69.7
Secondary and above	39.2	41.2	46.7	51.2
Total	38.3	54.3	47.6	57.8

Source: Based on NSS 68th Round, 2014

The WPR by education level by usual status is presented for Nagaland and India in table 2.6. The WPR is found to be 38.3 percent for urban area and 54.3 percent in urban area in Nagaland. The same for India is 47.6 and 57.8 percent respectively, showing that the WPR is higher in India in both rural and urban region.

The WPR in urban area in Nagaland is highest among diploma or certificate course holders at 53.3 percent followed by graduates at 52 percent, while it is found to be lowest for the illiterates at 26.6 percent. However, in rural Nagaland, the WPR is found to be highest among persons with primary education at 71.4 percent, followed by illiterates at 63.4 percent, while it is found to be lowest for the graduates at 35.5 percent, followed by post graduates and above at 35.8 percent.

For urban area in India, the WPR is found to be highest among postgraduates at 66 percent, while it is lowest for persons with higher secondary education at 36.3 percent. In rural India, the same is higher for post graduates and above at 69.7 percent, while it is lowest for higher secondary at 45.3 percent. Overall, the WPR is 38.3 and 54.3 percent for urban and rural areas in Nagaland, while it is 47.6 and 57.9 percent for urban and rural area in India.

ii)   **Employment Distribution by Job Category**

The percentage of usually employed by Usual Status (adjusted) method, according to their employment category is given in table 2.7. Of the total employed workers in rural area in Nagaland, the largest proportion was engaged in self-employment, including agriculture, at 85.6 percent, followed by regular employees at 12.9 percent and casual workers at 2.2 percent.

Table 2.7. Percentage of Usually Employed by Employment Category, 2011-12 *(in percentage)*

Employment Category by (US-Adjusted)	Nagaland						India					
	Rural			Urban			Rural			Urban		
	M	F	T	M	F	T	M	F	T	M	F	T
Self Employed	80.2	94.9	85.6	36.2	64.6	42.9	54.5	59.3	55.9	41.7	42.8	42
Regular Wage/Salaried	18.8	2.9	12.9	60	35.4	54	10	5.6	8.8	43.4	42.8	43.4
Casual Labour	1	2.2	1.5	3.8	0	2.8	35.4	35.1	35.3	14.9	14.3	14.6

(M-male, F- female, T-total). Source: Based on NSS 68th Round, 2014

However, by gender classification, more females are engaged in self-employment, while higher percentage of male were engaged in regular employment. In urban Nagaland, 54 percent of the workers are engaged in regular employment, with 60 percent for males and 35.4 percent for females. The proportion of workers engaged in self-employment are higher for females at 64.6 percent as compared to males at 36.2 percent, with a total of 42.9 percent. Further, it is found that only 2.8 percent of the total workers are engaged in casual workers in Urban Nagaland.

In rural India, 55.9 percent of the workers are engaged in self-employment followed by casual employment at 35.3 percent, and 8.8 percent for regular employment. By gender, higher percentages of males are engaged in regular employment, while for self-employment, it is higher for females. In Urban India, 43.4 percent of the total workers are engaged in regular employment, followed by self-employment at 42 percent and casual employment at 14.6 percent, respectively.

iii)   **Employment in Government Sector**

In 2011, there were 91308 government employees in the State (Economic Survey of Nagaland, 2015-16). This shows that significant proportion of the State workforce is absorbed in the government sector, which constituted 4.61 percent of the total populations and 9.37 percent of the total workforce. The distribution of government employees by educational qualifications corresponding to their job status are given in table 2.8 for the year 2014.

Table 2.8. State Government Employees Distribution by Educational Qualification, 2014

Status	Educational Qualification					Total
	Post Graduate	Graduate	10+2	Matriculate	Under Matric	
Class 1	1438	1603	804	115	28	3988
Class 2	422	1023	800	402	93	2740
Class 3	1361	9146	9240	15027	29245	64019
Class 4	14	151	460	2609	21922	25156
Total	3235	11923	11304	18153	51288	95903

Source: Economic Survey of Nagaland, 2015-16

It is evident from the data that the educational qualification is positively determining the work status of the employees in the government sector. The employees of class 1 status were comprised of 36 percent of post graduates and 40 percent of graduates, adding up to 76 percent. Among the employees of class 2 status, post graduates and graduates constituted 52.73 percent. On the other hand, matriculate and below constitute 69.15 and 97.5 percent for class 3 and 4 employees respectively.

iv)   **Unemployment**

The total number of job seekers as registered in the employment exchanges in Nagaland is given in table 2.9 and figure 2.2. The data may not provide an accurate information on the issue, as not all unemployed persons get themselves registered in the employment exchange. However, the data indicates the educational composition of unemployed persons in the State.

Table 2.9. Number of Unemployed Applicants Registered at Employment Exchanges

Education	2008			2014		
	Total	Male	Female	Total	Male	Female
Post Graduate	1067	556	511	3622	1538	2084
Graduate	7012	4217	2795	18392	9400	8992
10+2	6541	3967	2574	13759	7619	6140
Matriculate	12452	8413	4039	10721	7737	2984
Under Matric	22476	19279	3197	16184	13876	2308
Degree (Technical)	295	198	97	822	567	255
Diploma	211	113	98	621	383	238
Total	50054	36743	13311	64121	41120	23001

Source: Statistical Handbook of Nagaland, 2012, 2015.

In 2008 was 50,054 which increased to 64,121 in 2014, registering a growth of 28 percent over a period of six years. Male accounts for 73.40 percent, while female accounts for 26.6 percent of the total unemployed registered in 2008. In 2014, male accounts for 64.12

percent while female accounts for 35.87 percent. Between 2008 to 2014, male job seekers increased by 12 percent while female job seekers increased by 72.8 percent showing substantial increase in female workers seeking for jobs.

Among the total registered job seekers in 2014, graduates comprised of 29 percent followed by under matric with 25 percent, 10+2 with 21 percent, matriculates with 17 percent, postgraduates with 6 percent and technical degree and diploma holders at 1 percent each, respectively.

Figure 2.2. Distribution of Job Seekers by Educational Qualification (2014)
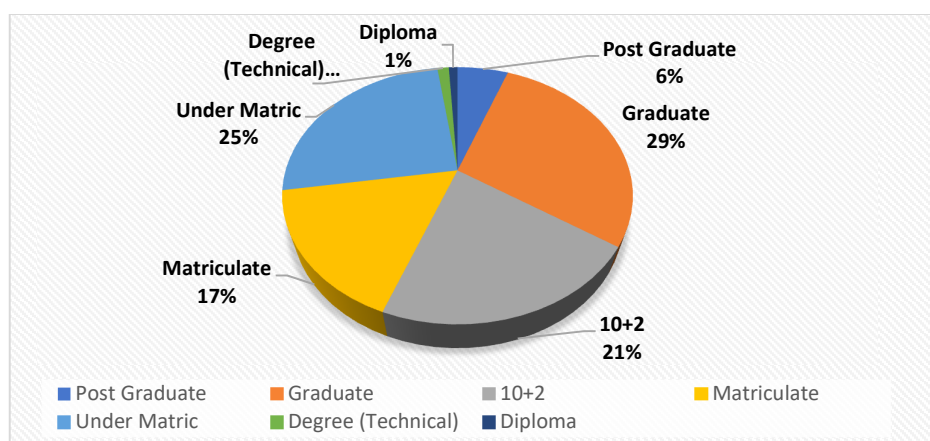
Source: Table 2.9

The Unemployment rate for Nagaland is given in table 2.10. The unemployment rate as per the National Sample Survey (NSS) 68th round, conducted during July 2011 to June 2012 is provided for Usual Status (Principal Activity Ststus), Usual Status (Adjusted), Current Weekly Status (CWS) and Current Daily Status (CDS). In all the four methods, unemployment rate in Nagaland is found to be highest in India. Unemployment rate for the youths between 15-29 years, according to the Usual Status (Adjusted) is also shown in the table.

Table 2.10. Unemployed Percentage Distribution in Nagaland.

Activity Status	Rural			Urban			Total		
	M	F	T	M	F	T	M	F	T
Usual Status (PS)	20.7	34.2	24.7	21.9	46.3	27.5	21.1	37.1	25.6
Usual Status (Adjusted)	14.6 (1.7)	15.9 (1.7)	15.1 (1.7)	19.1 (3.0)	36.0 (5.2)	23.8 (3.4)	16.0 (2.2)	20.6 (2.2)	17.8 (2.3)
Current Weekly Status	18.4	21.8	19.6	19.8	39.2	24.9	18.9	26.2	21.3
Current Daily Status	19.9	30.2	23.1	20.5	45.1	26.9	20.1	34.1	24.1

M- male, F- female, T- total. *Figure in the parenthesis refers to the unemployment rate for All India.*

Source: Based on NSS 68th Round. pp. 195-210.

The unemployment rate for Nagaland as per Usual Status (PS) was 25.6 percent, with female having a higher unemployment rate at 37.1 percent as compared to males at 21.1 percent. The unemployment rate for rural area is 24.7 percent, while it is 27.5 percent for urban area. In both the regions, unemployment is higher for females at 34.2 percent for rural area and 46.3 percent for urban area as compared to 20.7 and 21.9 percent for males.

According to the Usual Status (Adjusted) method, unemployment rate for Nagaland is 17.8 percent with 16 percent for male and 20.6 percent for females. Urban area has higher unemployment rate at 23.8 percent as compared to rural area at 15.1 percent. Gender wise, females has higher unemployment rates at 15.9 percent for rural and 36 percent for urban area as compared to 14.6 and 19.1 percent for males.

As per the CWS and CDS, unemployment rate for Nagaland is 21.3 and 24.1 percent respectively. The same for rural area is 19.6 and 23.1 percent, while it is 24.9 and 26.9 percent for urban areas. According to the Usual Status (Adjusted), the unemployment rate for India is only 2.3 percent with 1.7 percent in rural areas and 3.4 percent in the urban areas.

v)   **Educated Unemployment**

Educated unemployment for individuals with 15 years and above according to Usual Status (PS) and Usual Status (Adjusted) method is given in table 2.11, for Nagaland and India. The level of educated unemployment for Nagaland is very high at 51.3 and 35.2 percent for rural area and urban area, according to Usual Status (PS) method; while it is 33.4 and 31.8 percent for rural and urban area according to Usual Status (Adjusted) method. In both the methods, unemployment rate is significantly higher for females in both rural and urban area.

Table. 2.11. Educated Unemployment for 15 years and above, 2011-12.

	Usual Status (PS)		Usual Status (Adjusted)	
	Rural	Urban	Rural	Urban
Nagaland				
Male	41.8	27.5	29.1	24.4
Female	78	59.5	43.5	50.8
Total	51.3	35.2	33.4	31.8
India				
Male	4.5	4.4	3.6	4
Female	14.4	11.9	9.7	10.3
Total	6	5.6	4.7	5.1

Source: Based on NSS 68th Round, 2014

For all India level, the unemployment rate for educated persons above 15 years is 6 and 5.6 percent for rural and urban area as per the Usual Status (PS) method and 4.7 and 5.1 percent for rural and urban area as per Usual Status (Adjusted method). Unemployment rate for all India is also found to be higher for females in both the methods for both rural and urban regions.

vi)   **Youth Unemployment Rate**

Unemployment rate for youth between the age of 15-29 years according to Usual Status (adjusted) method is given in table 2.12 for both Nagaland and India.

Table 2.12. Youth Unemployment by Usual Status (adjusted) for 15-29 years

Age Group	Rural			Urban		
	Male	Female	Total	Male	Female	Total
	Nagaland					
15 - 19	4.5	41	29.7	48.6	29.9	37.3
20 - 24	45.1	33.7	40.0	74.1	86.7	79.9
25 - 29	43.9	40.4	42.7	55.7	85.3	64.7
15 - 29	42.2	37.2	40.3	63.3	80.6	70.3
	India					
15 - 19	9	4.9	7.8	12.9	12.4	12.7
20 - 24	5.8	6.4	5.9	10.5	18.8	12.3
25 - 29	2.2	3.3	2.4	4.7	8.7	5.6
15 - 29	5	4.8	4.9	8.1	13.1	9.2

Source: based on NSS 68th Round, 2014

Unemployment rate is also found to be very high among youths between 15-29 years of age with 40.3 percent for rural areas and 70.3 percent for urban areas in Nagaland. In rural areas, youth unemployment is higher for males at 42.2 percent as compared to 37.2 percent for females. However, in urban area, it is higher for females at 80.6 percent as compared to 63.3 percent for males. Among the age classification, in rural Nagaland, unemployment rate is found to be higher for the age group of 25-29 years at 42.7 percent; while it is lower for youths between 15-19 years at 29.7 percent, however, female unemployment is found to be significantly higher at 41 percent, as compared to males at 4.5 percent. In urban area, unemployment is found to be higher for the age group of 20-24 at 79.9 percent, while it is lower for the age group of 15-19 years at 37.3 percent. Females has higher employment rate in urban area, except for the age group of 15-29 years.

For all India level, youth unemployment rate is found to be 4.9 percent in rural area and 9.2 percent in urban area. In rural area, unemployment is found to be highest for the age group of 15-19 years at 7.8 percent, while it is lowest for the age group of 25-29 years at 2.4 percent.

In urban area, it is higher for the younger age group at 12.7 percent, followed by the age group of 20-14 at 12.3 percent and 5.6 percent for the age group pf 25-29 years. This shows that unemployment rate in Nagaland is very high, with youth and educated unemployment at alarming levels and thus require urgent attention.

2.1.5. Health

Health is an important form of human capital, because it enhances workers' productivity by increasing their physical capacities, such as strength and endurance, as well as their mental capacities, such as cognitive functioning and reasoning ability[16].

Table 2.13. Health Care Units and Medical Practitioners

Particulars	2008-09	2011-12	2014-15
District Hospital	11	11	11
Community Health Center	21	21	21
Primary Health Center	86	126	126
Subsidiary Health Center	27	1	1
Dispensaries	15	3	3
T.B Hospital	2	2	2
Mental Hospital	1	1	1
Sub Center	397	396	409
S.T.D Clinic	8	11	11
D.T.C	5	11	11
Postmortem Center	3	3	3
Total Health Care Units	576	586	599
Paramedical Training Institute	1	1	1
School of Nursing (GNM)	2	2	3
School of Nursing (ANM)	1	1	1
State Health Food Laboratory	1	1	1
Total No. of Hospital Beds	2541	2705	2733
Doctors	460	390	338
Pharmacists	449	452	432
Nurses	1739	1751	1135

Source: Statistical Handbook of Nagaland, 2012, 2015.

In 1980, Nagaland had 204 health centers, including hospitals, primary health centers and sub-centers with a total of 1367 beds and 156 doctors[17]. In 2011-12, there were 586 health care units spread across the state with a total of 2705 hospital beds, 390 doctors, 452 pharmacists

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[16] Bloom, E. D. and Canning, D (2005) "Health and Economic Growth: Reconciling the Micro and Macro
      Evidence". CDDRL, Stanford Institute on International Studies. Working Paper No. 42/2005.
[17] Nagaland State Human Development Report (2004).

and 1751 nurses. This implies that, for the census year 2011, there are 1 health care units for every 3376 populations, one hospital beds for every 731 population, one doctor for every 5073 population, one pharmacists for every 4377 population and one nurse for every 1129 population in the state. The total health center and hospital beds increased to 599 and 2733 in 2014-15, however, there has been a decline in the number of doctors, pharmacists and nurses to 338,432 and 1135 respectively.

Figure 2.3. Health Indicators in Nagaland
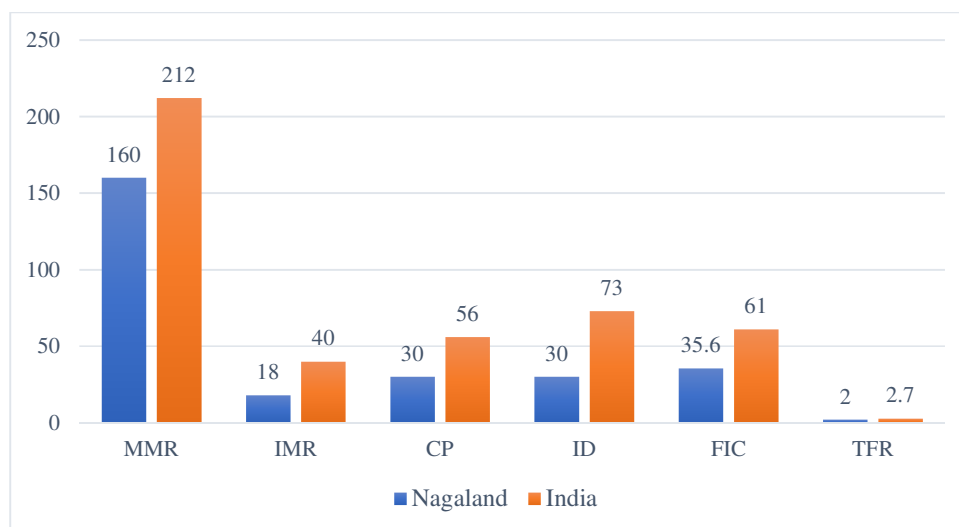
[MMR- Maternal Mortality Rate (2012), IMR- Infant Mortality Rate (2013), CP- Contraceptive Prevalence (2006), ID- Institutional Deliveries (Nagaland for 2013, India for 2010), FIC- Full Immunization Coverage (Nagaland for 2013, India for 2010), TFR- Total Fertility Rate (2007)]
Source: Nagaland SHDR 2016

According to the Nagaland State Human Development Report, 2016[18], the Maternal Mortality Rate for Nagaland is lower at 160, as compared to 212 for India, per 1 lakh live births. The Infant Mortality Rate for Nagaland is also lower at 18 per 1000 live births comparing to India at 40. However, the contraceptive prevalence, which is defined as the percentage of women who are currently using at least one method of contraception[19], is only 30 percent as compared to 56 percent for all India, indicating low awareness and family planning in the State. The institutional delivery, or delivery of child in medical institutions, is also lower for Nagaland at 30 percent comparing to 73 percent for India. Similarly, full immunization coverage in

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[18] Government of Nagaland (2016). Nagaland State Human Development Report. Department of Planning and Coordination.
[19] WHO (2017) Contraceptive Prevalence. Retrieved from http://who.int/reproductivehealth/topics/family_planning/contraceptive_prevalence/en/

Nagaland is lower at 35.6 percent as compared to 61 percent for India. The total fertility rate, which is the number of children born per 1,000 women, for Nagaland is 2 as compared to 2.7 for India.

In 2015-16, the budgetary allocation on health sector was ₹51228.42 lakhs which was 4.07 percent of the total budget and 2.50 percent of the GSDP at market price[20]. The calculated percapita health expenditure for Nagaland was ₹1707 as per the National Health Profile 2016[21]. However, the health service facilities in the state still suffers from poor infrastructural set up, lack of modern equipment's and machineries, and manpower shortage especially in the rural areas. In order to strengthen the delivery of health care service, especially in the rural areas, the state government initiated the Communitisation of health services in 2002 to delegate powers for management of the health centers to the local community which has improved delivery of health services in the rural areas. Nevertheless, the private sector health industry also plays a major role in providing health services across the state. Some big private hospitals with modern state of art technologies are been established, especially, in Dimapur and Kohima districts, which caters to the needs of people of the state.

2.1.6. Human Development Index

The Human Development Index (HDI) is used to assess the wellbeing of a country or region basing on social and economic dimensions such as health, educational attainment and standard of living. The HDI was created to emphasize that people and their capabilities, not just economic growth alone, should be the ultimate criteria for assessing the development of a country or region[22]. According to the Human Development Report 2016[23], a score of less than 0.550 is considered as low human development, a score between 0.550 - 0.699 is considered as medium human development and a score of 0.700 - 0.799 as high human development and a score above 0.800 as very high human development.

In 2001, the HDI for Nagaland was 0.59, which increased to 0.63 in 2011, as compared to 0.47 and 0.54 for India during the corresponding period, which further increased to 0.624 in 2016. Among the districts, Dimapur continues to rank 1st in 2011 with a HDI of 0.81, an

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[20] Economic Survey of Nagaland (2015-16)
[21] Govt. of India (2016). National Health Profile. Central Bureau of Health Intelligence. New Delhi.
[22] UNDP (2017) Human Development Index. Retrieved from:
     http://hdr.undp.org/en/content/human-development-index-hdi
[23] UNDP (2016). Human Development Report. New York.

improvement from 0.69 in 2001. Kohima also retains the 2nd rank in 2011 with a HDI value of 0.66, an improvement from 0.64 in 2001. Wokha has made significant strides in the HDI, increasing from 0.58 in 2001 to 0.66 in 2011, overtaking Phek and Mokokchung to be placed second along with Kohima.

Table 2.14. Human Development Index for Nagaland

District/State	HDI (2001)	Rank	HDI 2011	Rank
Dimapur	0.69	1	0.81	1
Kohima	0.64	2	0.66	2
Wokha	0.58	5	0.66	2
Mokokchung	0.64	2	0.61	3
Peren	-	-	0.60	5
Phek	0.61	4	0.59	6
Kiphire	-	-	0.59	6
Longleng	-	-	0.54	8
Tuensang	0.46	7	0.53	9
Zunheboto	0.52	6	0.51	10
Mon	0.42	8	0.50	11
Nagaland	0.59	-	0.63	-
India	0.472	-	0.547	-

Source: Nagaland State Human Development Report, 2016. Planning Commission 2002, Human Development Report 2016.

On the other hand, the HDI for Mokokchung, Phek and Zunheboto districts has decreased during 2001 and 2011. The HDI for Mokokchung fell from 0.64 in 2001 to 0.61 in 2011. Likewise, Phek fell from 0.61 to 0.59, and Zunheboto from 0.52 to 0.51 during the same period. At the bottom, Mon improved from 0.42 in 2001 to 0.50 in 2011, but still remained at the bottom. Among the districts in 2011, Mon, Zunheboto, Tuensang and Longleng are placed at low human development category; Phek, Kiphire, Peren, Mokokchung, Wokha and Kohima are placed in the medium human development category and Dimapur under very high human development category. Apart from Dimapur, Kohima and Wokha, the HDI for the eight districts were below the State's average of 0.63, while Mon, Zunheboto and Tuensang districts were below the country's average of 0.547.

2.2. TRENDS OF EDUCATIONAL DEVELOPMENT INDICATORS

Education has continued to evolve, diversify and extend its reach and coverage since the dawn of human history. Every country develops its system of education to express and promote its unique socio-cultural identity and also to meet the challenges of the times[24]. The school environment of a child consists of many elements ranging from the desk she sits at, to the child who sits next to her, including the teacher who stands at the front of the classroom. As such, a statistical survey can give only fragmentary evidence of this environment[25]. However, educational indicators such as literacy rates, enrolment ratios, pupil-teacher ratios, the supply of trained teachers and pass percentages etc. reveals the state of educational development and progress in any region. This section shall therefore, discuss in brief the status of education in the State of Nagaland through the available set of data and statistics.

2.2.1. The Onset of Education in Nagaland

The Nagas had their own traditional system of education imparted mainly from the Morungs (traditional learning institution) before it was replaced by modern education in the late 19th century. The Morungs served as educational institution for the Naga traditional society for centuries where history, arts and culture, social values, farming techniques, hunting skills and essential customary practices were imparted to the youths by village elders. The gradual expansion of the British empire in the nineteen century to parts of Naga inhabited areas enabled the American Christian missionaries to enter Naga territory to spread Christianity and later establish schools in few pockets of the Naga areas.

The first primary english medium school was established by Mary Mead Clark in Molungyimsen of Mokokchung district, in 1878 [26]. Few years later, the first printing press called Molung Printing Press was set up in Molunyimsen village in 1884[27]. After Indian independence, many primary schools were established across the Naga areas. An institute of higher education, the Fazl Ali College was also established in Mokokchung in 1959. The Nagaland Campus of the North-Eastern Hill University (NEHU) was later established in 1978. But it was only in

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[24] Government of India (1086). National Policy of Education. As modified in 1992.

[25] Coleman, J., Hopkins J., Campbell, E., (1966). "Equality of Educational Opportunity". US department of Health, Education, and Welfare. National Center for Educational Statistics.

[26] Nagaland State Human Development Report (2004)

[27] Chasie, C. (2015). "The History of Nagaland reflected in its literature". Eastern Mirror, Nagaland. 4th January. Retrieved from http://www.easternmirrornagaland.com/the-history-of-nagaland-reflected-in-its-literature/

1994 that a full-fledged Central University called Nagaland University was established to cater the needs of higher education in Nagaland.

2.2. 2. Literacy

Literacy rates and educational development are considered to be key variables affecting demographic indicators like fertility, mortality rate and migration. Literacy and skills are also fundamental to informed decision-making, personal empowerment, active and passive participation in local and global social community[28]. The literacy rate of Nagaland increased from 10.52 percent in 1951 to 50.28 percent in 1981, 66.6 percent in 2001 and to 79.55 percent in 2011. The literacy rate in Nagaland has been higher than the National rate since 1981. Male literacy rate for Nagaland was 82.75 in 2011, while female literacy stood at 76.11. Urban literacy rate was higher at 89.62 percent comparing to rural literacy rate of 75.35 percent.

The growth in literacy was highest during the decade 1951-61, registering a growth of 108 percent for Nagaland, 92 percent for male and 143 percent for female. The growth for India's literacy during that decade was 54 percent. The growth in literacy has been higher for females for all census years, with an average decadal growth rate of 59.1 percent, while that of males was 35.4 and 43.5 for Nagaland as a whole. The average decadal growth rate of literacy for India was 26.7 percent during the past six decades.

Table 2.15. Literacy Rate for Nagaland and India

Census Year	Literacy Rate	Growth Rate	Male Literacy	Growth Rate	Female Literacy	Growth Rate	India	Growth Rate
1951	10.52	-	15.18	-	5.75	-	18.33	-
1961	21.95	108.6	29.22	92.5	14.02	143.8	28.3	54.4
1971	33.78	53.9	42.57	45.7	23.38	66.8	34.45	21.7
1981	50.28	48.9	58.58	37.6	40.39	72.7	43.6	26.5
1991	61.65	22.6	67.62	15.4	54.75	35.5	52.21	19.7
2001	66.6	8.02	71.16	5.2	61.46	12.2	64.84	24.2
2011	79.55	19.4	82.75	16.2	76.11	23.8	74.04	14.2
Average		43.5		35.4		59.1		26.7

Source: Census of India, 2011, Economic Survey of Nagaland, 2016-17.

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[28] Stromquist, N. (2005). "The Political Benefits of Adult Literacy". Background paper for Education for All. Global Monitoring Report 2006.

Table 2.16. District-wise Literacy Rate in Nagaland

District	Literacy Rate			
	1981	1991	2001	2011
Mokokchung	61.78	77.85	83.9	91.6
Wokha	45.60	73.92	80.5	87.7
Zunheboto	45.59	64.36	69.3	85.3
Kohima	48.94	69.58	78.0	85.2
Dimapur	-	68.65	76.9	84.8
Phek	37.99	62.59	70.6	78.1
Peren	-	-	65.9	77.9
Tuensang	30.49	48.39	54.9	73.1
Longleng	-	-	44.8	72.2
Kiphire	-	-	50.2	69.5
Mon	19.89	36.02	41.8	57.0
Nagaland	50.28	61.65	66.6	79.55
India	43.60	52.21	64.84	74.4

Source: Compiled from Census of India, 1981, 1991, 2001 and 2011.

Among the districts in Nagaland, Mokokchung continues to lead in literacy. The literacy rate of Mokokchung in 1981 was 61.78 percent while that of Mon district was 19.89 percent, showing huge gaps in education and literacy. The inter-districts gaps in literacy has been narrowing down due to the concerted efforts of the government and private educators. However, in 2011, the literacy rate of Mon still remained at the lowest and below the Mokokchung literacy rate of 1981, showing imbalance in the spread of literacy in the State. In 2011, Mokokchung district leads with a literacy rate of 91.6 percent, followed by Wokha and Zunheboto at 87.7 and 85.3 percent respectively. At the bottom, Mon and Kiphire districts trails with a literacy rate of 57 percent and 69.5 percent respectively.

2.2.3. Growth of Educational Institutions

The growth in the number of educational institutions have been robust. In 1963, the year Nagaland attained statehood, there were only 650 primary schools, 89 middle schools, 22 secondary schools and 5 institutes of higher education with a total of 766 educational institutions in the entire state of Nagaland. In 2015-16, it had increased to 1269 primary schools, 822 upper primary schools, 476 secondary schools, 132 higher secondary schools, 103 colleges and 4 universities with a total of 2806 educational institutions in the state indicating remarkable growth in educational institutions. However, it may be noted that the number of schools from

primary to higher secondary levels have been decreasing in 2014-15 and 2015-16. Several reasons such as closures of smaller schools, upgradation and merger of schools etc. have been attributed for the decrease in the number of schools. However, educational administrators are of the view that variations in statistics could be due to data collection errors in the past[29].

Table 2.17. Growth of Educational Institutions in Nagaland

Year	Primary	Middle	Secondary	10+2	College	University	Total
1963-64	650	89	22	-	5	-	766
1973-74	978	232	78	-	9	-	1297
1983-84	1235	334	104	-	22	1	1696
1993-94	1394	418	232	4	42	1	2091
2003-04	1508	477	331	35	56	1	2408
2013-14	1806	902	564	143	89	4	3508
2014-15	1428	862	543	169	95	4	3101
2015-16	1269	822	476	132	103	4	2806

Source: Statistical Abstract 2008-09, Statistical Handbook of Nagaland 2015, Economic Survey of Nagaland 2016-17.

During the period 1964-1993, the number of primary schools increased by an average annual growth of 2.49 percent, while middle schools and secondary schools increased by 5.25 and 8.11 percent respectively[30]. Between 1994-2008, the number of primary schools increased by an average annual growth of 1.39 percent, while middle, secondary and higher secondary schools increased by 0.81, 2.7 and 28.65 percent, respectively[31].

The number of colleges increased from 5 in 1963-64 to 9 in 1973-73, 22 in 1983-84, 42 in 1993-94, 56 in 2003-2004 and to 103 in 2015-16. Over the period of 1963-2005, the number of higher educational institutions increased by an average annual growth of 7.76 percent[32]. The number of university increased from 1 in 1978 to 4 in 2015-16.

Table 2.18 shows the number of schools by management. In 2006-07, 87 percent of primary schools were under government management while 13 percent were under private management. In 2015-16, primary schools under government management increased to 90.6 percent, while primary schools under private management decreased to 9.3 percent. The

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[29] Government of Nagaland (2015) Educational Administration in Nagaland. Third All India Survey of Educational Administration for Nagaland. NUEPA and Directorate of School Education, Nagaland.

[30] Refer Appendices Table A.1.

[31] Refer Appendices Table A.2.

[32] Refer Appendices Table A.3.

percentage share of government managed middle schools was 62 percent in 2006-07, while that of private schools was 38 percent. In 2015-16, middle schools managed by the government sector increased to 76 percent while that of the private sector decreased to 24 percent.

Table 2.18. Number of Schools by Management in Nagaland

Levels of Education	2006-07			2013 - 14			2015 - 16		
	Govt.	Pvt.	Total	Govt	Pvt.	Total	Govt	Pvt.	Total
Primary	1442	218	1660	1661	145	1806	1150	119	1269
Percentage	*86.86*	*13.13*	*100*	*91.97*	*8.02*	*100*	*90.62*	*9.3*	*100*
Middle	287	176	463	704	198	902	626	196	822
Percentage	*61.9*	*38.01*	*100*	*78.04*	*21.95*	*100*	*76.15*	*23.8*	*100*
Secondary	124	214	338	274	290	564	253	223	476
Percentage	*36.68*	*63.31*	*100*	*48.58*	*51.41*	*100*	*53.15*	*46.84*	*100*
Hr. Sec	12	43	55	38	105	143	41	91	132
Percentage	*21.81*	*78.18*	*100*	*26.57*	*73.42*	*100*	*31.06*	*68.93*	*100*
Total	1865	651	2516	2677	738	3415	2070	629	2699
Percentage	*74.12*	*25.87*	*100*	*78.39*	*21.6*	*100*	*76.69*	*23.30*	*100*

Source: Statistical handbook 2013, 2015. Economic Survey of Nagaland 2016-17.

Table 2.19. Number of Higher Educational Institutions in Nagaland

Type of Institution		2007 - 08	2008 - 09	2010 - 11	2012 - 13	2013 - 14	2014 - 15	2015-16
University		1	1	4	4	4	4	4
General Education	Government	12	13	13	15	15	15	15
	Private	31	33	32	35	35	40	48
Other Professional Education	Teachers Education	3	3	3	5	8	8	8
	Agriculture	1	1	1	1	1	1	1
	Theology	19	22	24	24	25	26	26
Law		3	3	3	3	3	3	3
Management		-	-	1	1	1	1	1
Information Tech.		-	-	-	1	1	1	1
Total		70	76	81	89	93	99	107
Growth Rate		-	*8.57*	*6.57*	*9.87*	*4.49*	*6.45*	*8.08*

Source: Statistical Handbook of Nagaland 2013 & 2015, Economic Survey 2016-17.

As for secondary and higher secondary schools, government schools accounted for 36.7 and 21.9 percent in 2006-07, while private schools account for 63 and 78 percent respectively. In 2015-16, secondary and higher secondary schools under government management increased to 53 and 31 percent respectively, while private schools accounts for 46.9 and 69 percent respectively. Overall, government schools accounts for 74.12 percent in 2006-07, which increased to 76.7 in 2015-16. Total schools under private management in 2006-07 was 25.87 which decreased to 23.30 in 2015-16. The percentage distribution shows that government is the main provider of primary education, while private sectors plays dominant role in the provision of higher secondary education. In 2015-16, more than two-thirds of the schools in Nagaland comes under government management.

As shown in table 2.19, in 2007-08, there were 1 university and 69 institutes of higher education in the state, which increased to 4 university and 103 institutes of higher education in 2015-16, with an average annual growth rate of 7.33 percent. In 2015-16, there were 63 college of general education, of which 23.80 percent were government colleges and 76.19 percent were private colleges, showing that private sector plays a major role in the provision of higher education in the state.

2.2.4. Growth of Teachers

There were 1578 primary teachers, 641 middle school teachers, 299 secondary school teachers and 36 college teachers with a total of 2554 teachers in 1963-64 as presented in table 2.20. The number of primary teachers increased from 1578 in 1963-64 to 6443 in 1992-93, with an average annual growth of 5.32 percent[33]. Similarly, the number of middle school teachers increased from 641 in 1963-64 to 3651 in 1992-93 with an average annual growth of 6.61 percent. In the same period, secondary teachers increased from 299 to 3809 with an average annual growth of 10.21 percent. The average annual growth of primary, middle and secondary teachers during 1993-94 to 2007-08 was 2.06, 4.0, 3.86 and 38.6 percent respectively[34]. The average annual growth rate of college and university teachers between 1963-64 to 2004-05 was 10.71 and 23.67 percent respectively[35].

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[33] Appendices Table A.4.
[34] Appendices Table A.5.
[35] Appendices Table A.3.

Table 2.20. Growth of Teachers in Nagaland

Year	Primary	Middle	Secondary	10+2	College	University	Total
1963-64	1578	641	299	-	36	-	2554
1973-74	3984	2225	672	-	122	-	7003
1983-84	5848	3202	1873	-	277	17	11217
1993-94	8577	5429	4314	53	653	27	19053
2003-04	7474	5365	6283	1519	963	62	21666
2007-08	7956	5804	6628	2394	1355	73*	24137
2015-16	16059	8856	3881	1446	2026**		32268

(*Figure pertains to 2008-09, **combine figure for higher education)
Source: Statistical Abstract 2008-09, Statistical Handbook of Nagaland 2013,
    Economic Survey of Nagaland 2016-17, AISHE 2015-16.

Table 2.21. Post-wise Number of Teachers in Higher Education in Nagaland

Year	Professor & Equivalent			Associate Professor			Assistant Professor			Grand Total
	Male	Female	Total	Male	Female	Total	Male	Female	Total	
2011-12	85	20	105	130	93	223	608	693	1301	1629
2012-13	80	20	100	181	118	299	627	708	1335	1734
2013-14	97	22	119	134	103	237	680	731	1411	1767
2014-15	87	29	116	102	117	219	737	837	1574	1909
2015-16	98	31	129	92	106	198	791	908	1699	2026

Source: AISHE 2015-16

In 2015-16, there were 16059 primary teachers, 8856 middle school teachers, 3881 secondary school teachers, 1446 higher secondary school teachers, 2026 college and university teachers with a total of 32,268 teachers in the state. Among the teachers of higher education, 129 teachers were professor grade or equivalent, 198 were associate professors and 1699 assistant professors with a total of 2026 teachers in 2015-16.

2.2.5. Enrolment

In 2015-16, a total of 4,70,923 students were enrolled in various education levels, comprising of 2,38,734 boys and 2,32,189 girls, with a gender ratio of 97 girls per 100 boys. Students in primary section constitute more than half of the total enrolments at 50.55 percent, followed by middle school students at 23.70 percent and secondary students at 12.57 percent. The percentage of post graduate and Ph.D. students to total enrolments were very low at 0.38 and 0.034 percent respectively. The gender ratio is also lowest for the Ph.D. levels at 85 girls per 100 males, while it is highest for PG diploma courses at 480 girls per 100 males. The

gender ratio for under graduate and post-graduate degree are 103 and 174 girls per 100 males, respectively, indicating that more female students pursue graduation and post-graduation degrees than males.

Table 2.22. Enrolment of Students at Various Educational Levels (2015-16)

Education	Boys	Girls	Gender Ratio	Total
Primary	121819	116261	0.95	238080
Middle	56417	55199	0.98	111616
Secondary	29648	29567	0.99	59215
Hr. Secondary	15914	15288	0.96	31202
Under Graduate	13485	13979	1.03	27464
Post Graduate	662	1157	1.74	1819
Ph.D.	87	74	0.85	161
Diploma	692	616	0.89	1308
PG Diploma	10	48	4.8	58
Total	238734	232189	0.97	470923

Source: UDISE 2015-16, AISHE 2015-16.

Figure 2.4. Percentage to Total Enrolments (2015-16)
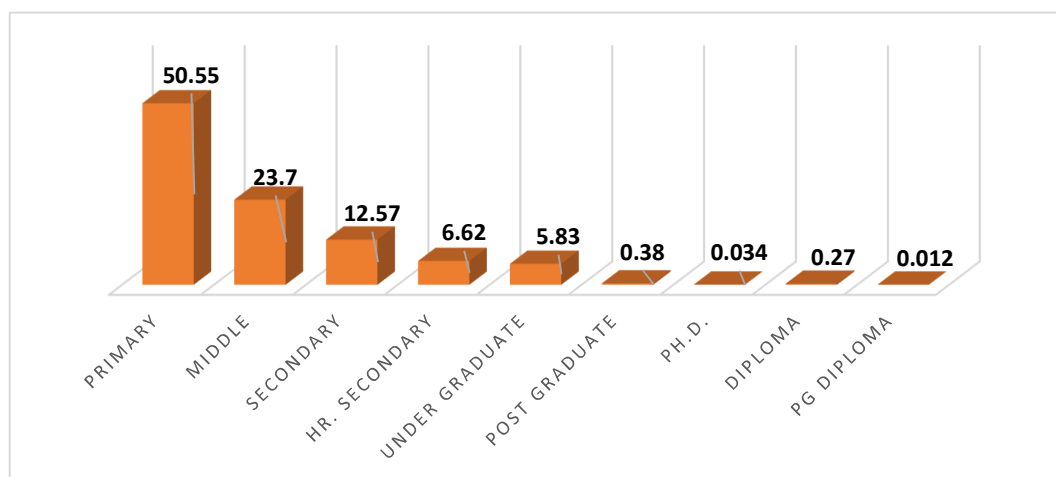
Source: Table 2.22

2.2.6. Enrolment by Stream of Studies

The enrolment of students by stream of studies such as Arts, Science and Commerce is given in table 2.23 for higher secondary levels and table 2.24 for college and university education.

Table 2.23. Enrolment by stream of studies for 10+2 levels, 2017

Percentage to Total Enrolments in 2017				
Class 12	Arts	Commerce	Science	Total
Enrolled	13105	1230	2791	17126
Percentage	*76.52*	*7.18*	*16.29*	*100*

Source: Table 2.31.

Figure 2.5. Percentages to Total Enrolments at 10+2 levels
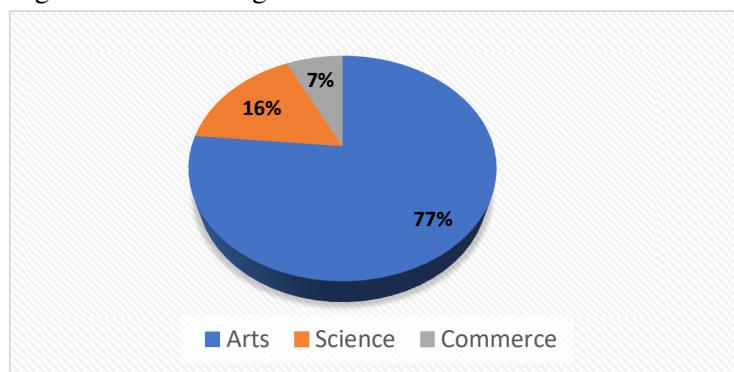
Source: Table 2.23.

Out of 17126 students enrolled in class 12 in 2017, 13105 students or 76.5 percent were enrolled in arts stream, 1230 students or 7.18 percent were enrolled in commerce stream and 2791 or 16.3 percent were enrolled in science stream, showing that vast majority of the students are enrolled in arts education.

Table. 2.24. Distribution of Streams as a Percentage to Total Students, 2015

Stream/Course	Bachelor Degree		Master Degree		Combined	
	Appeared	Percentage	Appeared	Percentage	Appeared	Percentage
Arts	3729	*53.61*	376	*49.27*	4105	*53.18*
Science	472	*6.78*	277	*36.30*	749	*9.70*
Commerce	688	*9.89*	30	*3.93*	718	*9.30*
Education	936	*13.45*	27	*3.53*	963	*12.47*
Management	14	*0.20*	53	*6.94*	67	*0.86*
Law	1024	*14.72*	-	-	1024	*13.26*
Computer (BCA)	11	*0.15*	-	-	11	*0.14*
B.Tech	81	*1.16*	-	-	81	*1.04*
Total	6955	*100*	763	*100*	7718	*100*

Source: Table 2.35

Among the total number of 6955 students enrolled in bachelor degree, 53.6 percent are from Arts stream, 6.7 from Science stream and 9.9 from Commerce stream, 13.45 under

education, 14.7 pursuing Law and around 2 percent pursuing technology, computer and management etc., indicating that more than half of the total students pursue Arts education.

Figure 2.6. Percentage Distribution of Stream of Studies in Higher Education
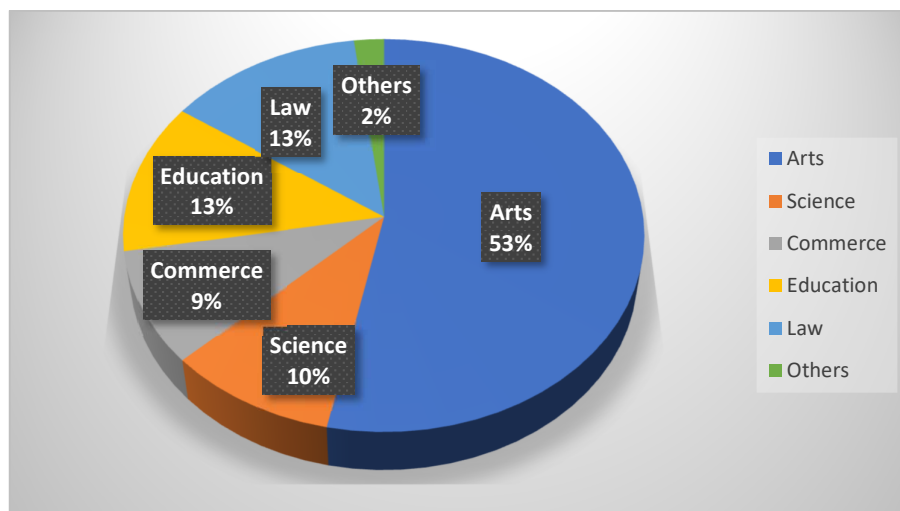
Source: Table 2.24.

At the master's degree level, 49 percent are from Arts stream, 36.3 percent are from Science stream including Agri. Science, and 3.93 percent from Commerce stream. Overall, Arts students constituted 53 percent of all students enrolled under higher education in 2015, Science and Commerce stream constitute 9.7 and 9.3 percent, Education and Law constitute 12.4 and 13.2 percent, while Management and B.Tech constitute 0.86 and 1.04 percent respectively.

2.2.7. Gross and Net Enrolment Ratios

According to the UNESCO (2009)[36], Gross Enrolment Ratio (GER) is defined as the total enrolment in a specific level of education, regardless of age, expressed as a percentage of the eligible official school-age population corresponding to the same level of education in a given school year. The purpose is to show the general level of participation in a given level of education. A high GER generally indicates a high degree of participation, whether the pupils belong to the official age group or not. A GER value approaching or exceeding 100 percent indicates that a country is, in principle, able to accommodate all of its school-age population. GER could exceed 100 percent due to the inclusion of over-aged and under-aged pupils because of early or late entrants, and grade repetition.

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[36] UNESCO (2009). Educational Indicators Technical Guidelines. UNESCO Institute of Statistics.

Net Enrolment Ratio (NER) is defined as the enrolment of the official age group for a given level of education expressed as a percentage of the corresponding population. A high NER denotes a high degree of coverage for the official school-age population and the theoretical maximum value is 100 percent. When the NER is compared with the GER, the difference between the two highlights the incidence of under-aged and over-aged enrolment. If the NER is below 100 percent, then the complement, i.e. the difference with 100 percent, provides a measure of the proportion of children not enrolled at the specified level of education. However, since some of these children could be enrolled at other levels of education, this difference need not be considered as indicating the percentage of students not enrolled (UNESCO, 2009).

i)   Gross Enrolment Ratio

As per the Unified District Information System for Education (UDISE) report released by NUEPA (2016)[37], the GER for Nagaland are, 99.50 for primary level, 102.28 for upper primary, 71.62 for secondary and 36.43 for higher secondary levels. The GER decreased for primary levels between 2014-15 and 2015-16, while it increased for upper primary, secondary and higher secondary levels.

Table 2.25. Gross Enrolment Ratio for Nagaland (2015-16)

Year		Primary	Upper Primary	Secondary	Higher Secondary
2014-15		100.57	97.67	64.53	33.61
2015-16	Boys	98.14	98.55	68.9	36.42
	Girls	100.96	106.40	74.57	36.44
	Total	99.50	102.28	71.62	36.43
India (2015-16)		99.21	92.81	80.01	56.16

Source: UDISE 2015-16

The GER for Nagaland is higher than that of India for primary and upper primary levels, while it is lower than all India average for secondary and higher secondary levels. The GER for higher secondary levels for Nagaland in 2015-16 is 36.43, while it is 56.16 for all India, a difference of 20 percentage points, which is a cause for concern. Girls have higher GER comparing to boys in all the education levels, indicating higher girls' participation in school.

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[37] NUEPA (2016). U-DISE 2015-16. School Education in India. Flash Statistics. National University for Educational Planning and Administration. New Delhi.

Table 2.26. Gross Enrolment Ratio in Higher Education in Nagaland

Year	Gross Enrolment Ratio			GER
	Male	Female	Total	India
2011 – 12	18.2	13.4	15.8	20.8
2012 – 13	16.6	12.8	14.7	21.5
2013 – 14	16.9	13.9	15.4	23.0
2014 – 15	15.2	16.1	15.6	24.3
2015 - 16	14.2	15.6	14.9	24.5

Source: AISHE (2015-16)[38] pp: T-169.

The GER for higher education in Nagaland for 2011-12 was 15.8 percent, with male and female GER at 18.2 and 13.4 percent respectively. In 2015-16, the GER for Nagaland decreased to 14.9 percent. However, female GER has increased by over 2 percentage points to 15.6 percent, while male GER has decreased to 14.2 percent. On the other hand, the GER for India increased from 20.8 percent in 2011-12 to 24.5 percent during 2015-16, widening the gap between India and Nagaland by about 10 percentage points.

Table 2.27. Net Enrolment Ratio for Nagaland (2015-16)

Year		Primary	Upper Primary	Secondary	Higher Secondary
2014-15		85.59	86.25	40.28	17.65
2015 - 2016	Boys	82.22	77.92	44.46	22.24
	Girls	84.25	84.16	48.59	23.08
	Total	83.20	80.89	46.44	22.65
India (2015-16)		87.30	74.74	51.26	32.30

Source: UDISE 2015-16

ii)   **Net Enrolment Ratio**

The Net Enrolment Ratio for primary and upper primary schools were 85.59 and 86.25 percent respectively in 2014-15 which decreased to 83.20 and 80.89 percent respectively in 2015-16. On the other hand, the NER for secondary and higher secondary levels has shown some improvement, from 40.28 and 17.65 percent in 2014-15 to 46.44 and 22.65 percent respectively in 2015-16. Girls have higher NER comparing to boys, indicating that more girls within the specific age-group are enrolled in all levels of education. The NER for India was 87.30 percent for primary levels, 74.74 percent for upper primary, 51.26 percent for secondary and 32.30 percent for higher secondary levels, indicating that except for secondary levels, all India average of NER is higher than that of Nagaland.

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[38] Govt. of India (2016). "All India Survey on Higher Education- 2015-16". Ministry of Human Resource Development, Department of Higher Education, New Delhi.

2.2.8. Drop- Out Rates

Dropout rates is defined as the proportion of pupils from a cohort enrolled in a given grade at a given school year who are no longer enrolled in the following school year[39]. The dropout rates help to measure the phenomenon of pupils from a cohort leaving school without completion and its effect on the internal efficiency of educational systems. The dropout rates for Nagaland in 2013-14 was 19.41 percent at Primary level, 17.96 percent at upper primary level, 35.11 percent at secondary and 14.19 percent at higher secondary levels.

Table 2.28. Dropout Rates in Nagaland (2014-15)

Year		Primary	Upper Primary	Secondary	Higher Secondary
2013-14		19.41	17.86	35.11	14.19
2014-15	Boys	6.18	7.87	17.98	10.36
	Girls	5.02	7.97	18.47	3.19
	Total	5.61	7.92	18.23	6.97
India (2014-15)		4.13	4.03	17.06	-

Source: UDISE 2015-16

However, there has been significant decline in the dropout ratios in 2014-15. The dropout rates for primary, upper primary, elementary, secondary and higher secondary has fallen to are 5.61, 7.92, 6.35, 18.23 and 6.97 percent, respectively in 2014-15, which is a positive development. Nevertheless, the dropout rates for Nagaland still remain higher than that of India in 2014-15 which were 4.13 for primary levels, 1.03 for upper primary levels and 17.06 for secondary levels.

2.2.9. Teachers' Training

No education system in the world has excelled without making a significant investment in building a cadre of quality teachers[40]. OECD (2005)[41] shows that "teacher quality" is the single most important school variable that influence student achievement. The report says that, improving the efficiency of schooling depends on ensuring that competent people want to work as teachers, and that their teaching is of high quality, and that all students have access to high quality teaching. As such, sustaining teacher quality and ensuring all teachers to continue

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[39] UNESCO (2009). Educational Indicators Technical Guidelines. UNESCO Institute of Statistics.

[40] Shireen Vakil (2016). Teaching Teachers, the Great Challenge for India's Education System. Editorial. Hindustan Times. September 5th Issue.

[41] OECD (2005). Teachers Matter: Attracting, Developing and Retaining Effective Teachers.

engaging in effective on-going professional learning, remains one of the main challenges facing the demands of a knowledge society. Teacher training refers to both pre-service and in-service programmes which adopt both formal and non-formal approaches. It is a continuing process which focus on teacher career development[42].

Table 2.29. Number of Trained and Untrained Teachers (Government & Private)

Levels of Education	2006-07			2007-08		
	Total	Untrained *(in %)*	Trained *(in %)*	Total	Untrained *(In %)*	Trained *(In %)*
Primary	7961	*65.87*	*34.12*	7956	*65.8*	*34.15*
U-Primary	6210	*83.08*	*17.7*	5804	*81.01*	*18.9*
Secondary	6464	*78.57*	*21.42*	6628	*78.48*	*21.5*
Hr. Sec.	2088	*75*	*25.00*	2394	*75.31*	*24.5*
Total	22777	*74.85*	*25.14*	22782	*74.38*	*25.6*

U-Primary: Upper Primary, Hr. Sec: Higher Secondary.
Source: Statistical Handbook of Nagaland, 2013.

Table 2.30. Percentage of Trained Teachers in Nagaland (2015-16)

Education Levels	No of Teachers	Trained Teachers *in %*	All India
Primary Only	7392	34.42	75.49
Primary with Upper Primary	8861	29.80	79.15
Primary with U-Primary, Sec. and Hr. Sec.	3375	28.12	86.82
Upper Primary only	299	40.47	78.18
U- Primary with Sec and Hr. Sec	1438	53.34	87.85
Primary with U-Primary and Sec.	6529	27.91	78.73
U-Primary with Sec	2426	39.69	91.44
Secondary only	39	64.10	78.52
Secondary with Hr. Sec	59	71.19	86.55
Hr. Sec. only	354	14.12	64.45
Total Teachers (2015-16)	30772	32.25	80.31

Source: UDISE, 2015-16.

In 2006-07, out of the total teachers of 22,777, only 25.14 percent or 5,728 teachers in Nagaland were trained professionally. The percentage of trained teachers increased to 32.25 percent in 2015-16 showing a steady growth in the numbers of trained teachers. However, with

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[42] UNESCO (1990) Innovations and Initiatives in Teacher Education in Asia And the Pacific Region. Vol 1. APIED Bangkok

only 32 percent of the teachers being trained, Nagaland is placed second lowest among 29 States and 7 Union Territories in India, higher only above Meghalaya at 29.14, according to the UDISE 2015-16 report. The proportions of trained teachers in Nagaland is abysmally low, as compared to all India levels, and is therefore, a major cause for concern.

The percentage of trained teachers for primary, upper primary, secondary and higher secondary levels for India is 75.49, 78.18, 78.52 and 64.45 percent as against 34.42, 40.47, 64.10 and 14.12 percent for Nagaland. Therefore, an immediate task at hand, for the state is to provide training to those 67 percent of the teachers who are yet to receive proper trainings and orientation programmes.

2.2.10. Pupil-Teacher Ratios

Pupil Teacher Ratio (PTR) is the average number of pupils (students) per teacher at a specific level of education in a given school year. The Right of Children to Free and Compulsory Education (RTE) Act, 2009 stipulated that the PTR for primary level should be 30:1 and at the upper primary level it should be 35:1. The Rashtriya Madhyamik Shiksha Abhiyan (RMSA) framework also stipulates that the PTR at secondary level should be 30:1.

Table 2.31. District wise Pupil-Teacher Ratio in Nagaland (2015)

Type of School	Primary	Upper Primary	Secondary	Hr. Sec	Total
Dimapur	17	14	19	28	17
Kiphire	18	13	19	24	17
Kohima	13	12	12	17	13
Longleng	10	8	15	9	10
Mokokchung	8	9	10	11	9
Mon	19	19	21	26	19
Peren	14	11	15	16	13
Phek	16	14	15	86	16
Tuensang	15	11	14	16	14
Wokha	17	13	13	18	16
Zunheboto	13	10	12	20	12
Nagaland	15	12	15	21	14

Source: Economic Survey of Nagaland 2016-17.

Among the districts, as shown in table 2.31, Mokokchung has the lowest PTR of 9, while Mon has the highest PTR at 19 with the average for Nagaland at 14 pupils per teacher. At the primary level, Mokokchung has the lowest PTR of 8, while Mon has the highest PTR of 19.

The PTR for upper primary levels is lowest for Longleng at 8, while it is highest for Mon at 19. At secondary levels, Mokokchung with a PTR of 10 is the lowest while Mon with a PTR of 21 is the highest. Overall, higher secondary levels show a higher PTR of 21, with Phek recording a very a PTR of 86. The possible cause for the high PTR at higher secondary levels could be due to the policy of the state government to de-link class 11 and 12 from the colleges in Nagaland.

Table 2.32. Pupil-Teacher Ratio in Nagaland (2015-16)

Education Levels	Primary	Upper Primary	Secondary	Hr. Sec
Nagaland	10	6	15	21
India	23	17	27	37

Source: UDISE 2015-16

The PTR for Primary, Upper Primary, Secondary and Higher Secondary levels in 2015-16 for the State of Nagaland are 10, 06, 15 and 21 respectively, which are lower that the PTR for India at 23, 17, 27 and 37 respectively.

2.2.11. Overview of Examination Results

As shown in table 2.33, in 2017, a total of 22446 students appeared for HSLC exam, where 15754 students qualified with a pass percentage of 70.19, showing an improvement over the past pass percentage of 65.19 in 2014. However, there is a huge gap in the pass percentages between the government schools and the private schools in the examination results. The HSLC pass percentage of the private schools in 2017 was 86.76 while that of the government schools was 42.6, showing wide difference between the two sectors. This calls for serious review on the structures, systems and processes upon which public schools are managed, and yet consistently produce poor results.

Table 2.33. HSLC Result in Nagaland

Year	Enrolled	Appeared	Qualified	Pass % (Total)	Pass % (Govt.)	Pass % (Private)
2014	25416	21678	14131	65.19	41.69	83.27
2015	26662	23639	14905	63.05	34.55	82.64
2016	24055	22970	15027	65.42	32.81	79.46
2017	25801	22446	15754	70.19	42.6	86.74

Source: NBSE Result Gazette, 2014, 2015, 2016, 2017.

The abstracts of result for Higher Secondary School Leaving Examinations (HSSLE) is shown in table 2.34. In 2017, a total of 11653 students appeared in HSSLE (Arts), where 9005 students qualified with a total pass percentage of 77.28, showing an improvement of 5.4 percentage points from 2014. Out of the total qualified students, 26 percent qualified in first division, 48 percent in second division and 25 percent from third division. The total number of students enrolled in HSSLE Commerce stream was 1208 and 1230 in 2014 and 2017, respectively. However, there has been a decrease in the pass percentages from 80.70 percent in 2014 to 70.92 percent in 2017. Among the total number of students qualified in 2017, 47 percent passed in first and second division each, while 6 percent passed in third division.

Table 2.34. Higher Secondary Results in Nagaland

Year	Enrolled	Appeared	1st div	2nd div	3rd div	Total	Pass %
10+2 Arts							
2014	11042	9870	1266	3185	2645	7096	*71.89*
2015	11032	9950	1191	2719	3046	6956	*69.91*
2016	13583	10386	1398	3260	2830	7488	*72.10*
2017	13105	11653	2389 (26.56)	4351 (48.31)	2265 (25.15)	9005 (100)	77.28
10+2 Commerce							
2014	1208	1150	338	468	122	928	*80.70*
2015	1295	1231	389	361	73	823	*66.86*
2016	1728	1397	504	429	98	1031	*73.80*
2017	1230	1169	389 (46.92)	390 (47.04)	50 (6.03)	829 (100)	70.92
10+2 Science							
2014	2657	2550	1060	987	50	2097	*82.24*
2015	2598	2476	939	969	64	1972	*79.64*
2016	3244	2725	1140	1065	42	2247	*82.46*
2017	2791	2650	1188 (51.56)	1079 (46.83)	37 (1.60)	2304 (100)	86.94

(The figures in the parenthesis refers to the percentage to total number of qualified students.)
Source: NBSE Result Gazette, 2014, 2015, 2016 and 2017

The number of students enrolled in HSSLE Science stream was 2657 in 2014, which marginally increased to 2791 in 2017. The pass percentages also improved from 82.24 to 86.94 percent during the period, with 51.5 percent passing in first division, 47 percent in second division and 1.6 percent in third division in 2017. The above result suggest that Arts stream of study is the most preferred choice, followed by Science and Commerce, respectively. However, the performance in terms of examination result is better for Science stream.

Table 2.35. Examination Results for Higher Education in Nagaland

Course	2014			2015		
	Appeared	Passed	Pass %	Appeared	Passed	Pass %
BA (Hons)	2102	1920	*91.34*	1738	1428	*82.16*
BA (Gen)	4925	4255	*86.39*	1991	1402	*70.71*
B.Sc. (Hons)	370	339	*91.62*	352	234	*66.47*
B.Sc. (Gen)	134	116	*86.57*	43	28	*65.11*
B.Com. (Hons)	431	370	*85.85*	381	333	*87.40*
B.Com. (Gen)	459	357	*77.78*	307	198	*64.49*
BBA	31	30	*96.78*	14	12	*85.71*
B.C.A.	9	7	*77.78*	11	8	*72.72*
B.Sc. (Agri)	60	58	*96.67*	51	50	*98.36*
B.Tech.	82	81	*98.78*	81	77	*95.06*
B.Sc. (Nursing)	41	41	*100*	26	16	*61.54*
B.Ed.	516	330	*63.95*	936	417	*44.55*
LL.B.	170	120	*70.58*	1024	48	*4.69*
Bachelor Degree (B)	9330	8024	*86.00*	6955	4251	*61.2*
M.A.	292	254	*86.98*	376	311	*82.71*
M.Sc.	96	83	*86.45*	103	91	*83.35*
M.Com	49	47	*95.91*	30	29	*96.67*
M.Sc. (Agri)	NA	60	-	174	79	*45.40*
M.B.A.	20	19	*95*	53	24	*45.28*
M.Ed.	-	-	-	27	18	*66.67*
Master's Degree (M)	457	403	*88.18*	763	552	*72.34*
Total B+M	9787	8487	*86.71*	7718	4803	*62.23*

Source: Nagaland University, Annual Report 2014-15, 2015-16.

Figure 2.7. Pass Percentages in Higher Education in Nagaland
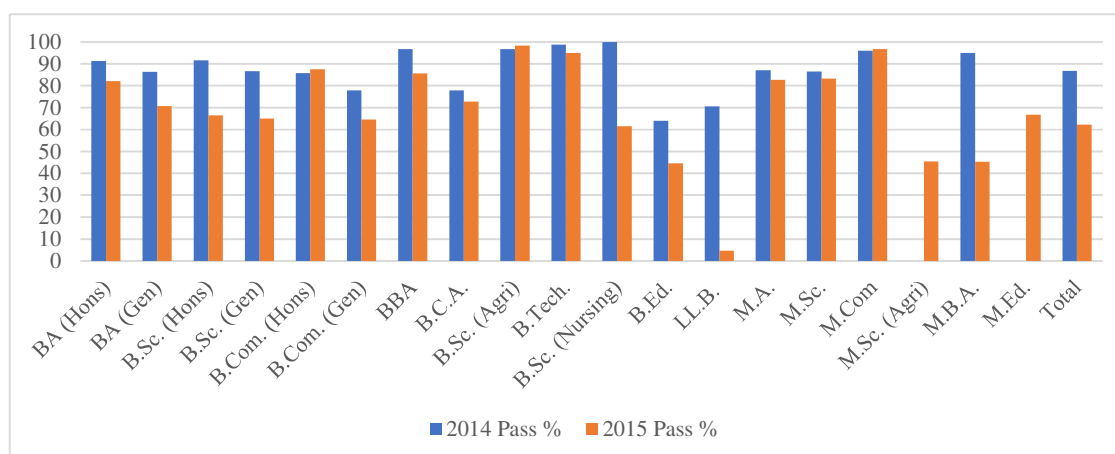
Source: Table 2.35.

The examination results for various bachelor and master's degree is given in table 2.35 and figure 2.7. In 2014, a total of 9330 students appeared for various bachelor degree examinations where 8042 candidates qualified with an overall pass percentage of 86 percent. In 2015, the pass percentage fell to 61.2 percent, showing a decrease in the pass percentage by over 24 percentage points from 2014. For Master's degree, a total of 457 candidates appeared in 2014 where 403 candidates qualified with a total pass percentage of 88.18 percent, which fell to 72.34 percent in 2015.

Overall, a total of 9787 students appeared for various bachelor and post-graduate exams in 2014, out of which 86.71 percent qualified. In 2015, a total of 7718 students appeared where only 62.23 percent qualified, showing a decrease of 24.48 percentage points from 2014. The drastic dip in the pass percentage in 2015 is mainly due to the poor pass percentage of 4.69 percent for the LL.B examinations. .

2.3. PUBLIC EXPENDITURE IN EDUCATION

Public spending on education includes direct expenditure on educational institutions as well as educational-related public subsidies given to households and administered by educational institutions. This indicator is normally shown as a percentage of GDP and of total government spending[43]. The level of the public expenditure in education provides a measure of the government's commitment to education. With over 2800 educational institutions, 32,000 teachers and around 4.70 lakhs students enrolled across the state, education sector is certainly one of the largest department under the government of Nagaland, and thus, major portions of the budget expenditure are devoted towards this sector.

Table 2.36. Public Expenditure on Education Nagaland *(In ₹ Lakhs)*

Year	School Education	Higher Education	SCERT	Technical Education	Total (2+3+4+5)	Total Budget
1	2	3	4	5	6	7
2005-06	21450.7	4042.82	961.37	2389.62	28844.51	331085.02
2006-07	25256.52	4025.5	1476.59	1733.02	32491.63	349552.72
2007-08	29625.63	3577.25	1256.14	1536.5	35995.52	400166.57
2008-09	32232.84	4237.79	1275.17	1575.47	39321.27	425786.58
2009-10	35382.49	5407.87	1916.03	1346.79	44053.18	532287.78
2010-11	65164	7473.72	2012.15	1009.58	75659.45	649103.8
2011-12	57023.36	8562.41	3042.01	1207.17	69834.95	690799.79
2012-13	67868.45	10030.69	2412.12	1412.02	81723.28	791185.3
2013-14	92013.03	12635.81	2812.37	6398.59	113859.8	1005794.3
2014-15	125709.69	15325.7	3817.97	5018.65	149872.01	1247345.96
2015-16	139292.71	20791.6	3032.83	3358.87	166476.01	1259269.47

Source: Govt. of Nagaland, Finance Department, 2016.

As shown in table 2.36, the amount allocated to the education sector in 2005-06 was ₹28844 lakhs which increased to ₹75659 lakhs in 2010-11, ₹149872 lakhs in 2014-15 and ₹166476 lakhs in 2015-16, with an average growth rate of 18 percent. Among the departments under education sector, school education received the largest allocation of ₹1339292 lakhs, followed by higher education at ₹20791 lakhs, technical education at ₹3358 lakhs and SCERT at ₹3032 lakhs for the financial year 2015-16.

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[43] OECD (2017). "Public spending on education (indicator)". doi: 10.1787/f99b45d0-en
Retrieved from: https://data.oecd.org/eduresource/public-spending-on-education.htm

Table 2.37. Growth Rate of Budgetary Allocation *(In %)*

Year	School Education	Higher Education	SCERT	Technical Education	Gross Education Budget	Total State Budget
2005-06	-	-	-	-	-	-
2006-07	17.74	-0.42	53.59	-27.47	12.64	5.57
2007-08	17.29	-11.13	-14.92	-11.33	10.78	14.47
2008-09	8.8	18.46	1.51	2.53	9.23	6.4
2009-10	9.77	27.61	50.25	-14.51	12.03	25.01
2010-11	84.17	38.2	5.01	-25.03	71.74	21.94
2011-12	-12.49	14.56	51.18	19.57	-7.69	6.42
2012-13	19.01	17.14	-20.7	16.96	17.02	14.53
2013-14	35.57	25.97	16.59	353.15	39.32	27.12
2014-15	36.62	21.28	35.75	-21.56	31.62	24.01
2015-16	10.8	35.66	-20.56	-33.07	11.07	0.95
Average	20.66	17.03	14.33	23.56	18.89	13.31

Source: Calculated from Table No. 2.36.

Table 2.38. Percentage Share in Total Educational Budget

Year	School Education	Higher Education	SCERT	Technical Education	Gross Education Budget
2005-06	74.30	14.01	3.33	8.28	100
2006-07	77.73	12.38	4.54	5.33	100
2007-08	82.30	09.93	3.48	4.26	100
2008-09	81.97	10.77	3.24	4.00	100
2009-10	80.31	12.27	4.34	3.05	100
2010-11	86.12	09.87	2.65	1.33	100
2011-12	81.65	12.26	4.35	1.72	100
2012-13	83.04	12.27	2.95	1.72	100
2013-14	80.81	11.09	2.47	5.61	100
2014-15	83.87	10.22	2.54	3.34	100
2015-16	83.60	12.48	1.82	2.01	100

Source: Calculated from Table 2.36.

The total budget allocation for School Education in 2005-06 was ₹21450 lakhs which increased to ₹139292 lakhs in 2015-16 registering an average annual growth rate of 20.66 percent (see table 2.37). During the same period, the budget allocation for Higher Education sector increased from ₹4042 lakhs to ₹20791 lakhs, with an annual growth of 17.03 percent. Likewise, the budgetary allocation for SCERT increased from ₹961 lakhs to ₹3032 lakhs, with an average growth of 14.3 percent. The same for Technical Education increased from ₹2389 lakhs to ₹3358 lakhs registering the highest average annual growth of 23.56 percent. Overall, the budget for education sector increased with an average annual growth of 18.19 percent which was higher than the average annual growth of 13.31 percent for the total State budget.

In terms of percentage share to the total education budget, the share of School Education has increased from 74.30 in 2005-06 to 83.6 percent in 2015-16. However, the share of Higher Education fell from 14.01 percent to 12.8 percent, SCERT from 3.33 percent to 1.82 percent and Technical Education from 8.28 percent to 2.01 percent respectively, during the same period. In 2015-16, the largest share of educational budget has been allocated to School education, followed by higher education, technical education and SCERT respectively. During the observed period, the share of school education alone has witnessed an increase, while the same for all higher levels of education has declined.

Figure 2.8. Break up of Expenditure in Education Sector (2015-16)
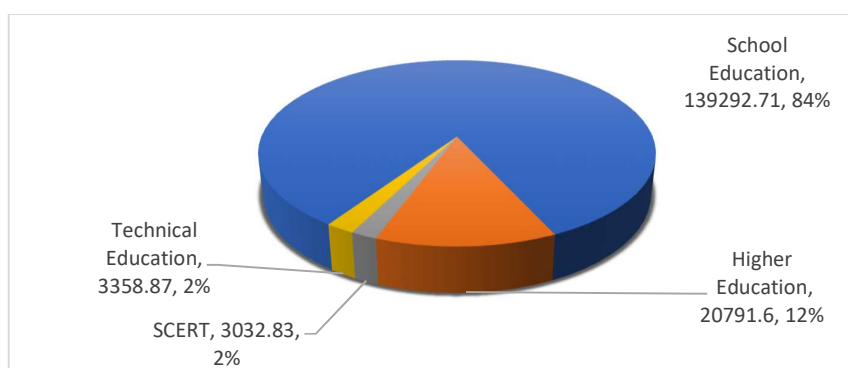
Source: Table No. 2.36.

Table 2.39. Expenditure on Education as a Percent of Budget and GSDP

Year	Expenditure on Education as a % of Budget			Expenditure on Education as a % of GDP		
	Nagaland	India	World	Nagaland	India	World
2005-06	8.71	11.53	13.86	4.48	3.13	4.68
2006-07	9.29	11.78	14.03	4.68	3.09	4.57
2007-08	8.99	-	13.77	4.83	-	4.48
2008-09	9.23	-	14.26	4.96	-	4.58
2009-10	8.27	10.82	14.17	5.20	3.31	4.75
2010-11	11.6	11.74	14.32	8.17	3.42	4.5
2011-12	10.1	13.68	13.68	5.89	3.83	4.48
2012-13	10.32	14.06	14.45	6.56	3.87	4.56
2013-14	11.32	14.09	14.13	8.25	3.84	4.70
2014-15	12.01	-	-	10.5	-	-
2015-16	13.22	-	-	11.6	-	-
Average	10.28	12.52	14.07	6.82	3.5	4.58

Source: Appendices Table A.6. World Bank (2017)[44]

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[44] World Bank (2017). Expenditure on Education. Retrieved from
http://data.worldbank.org/indicator/SE.XPD.TOTL.GB.ZS

Figure 2.9. Expenditure on Education as a Percentage of Budget and GSDP for Nagaland
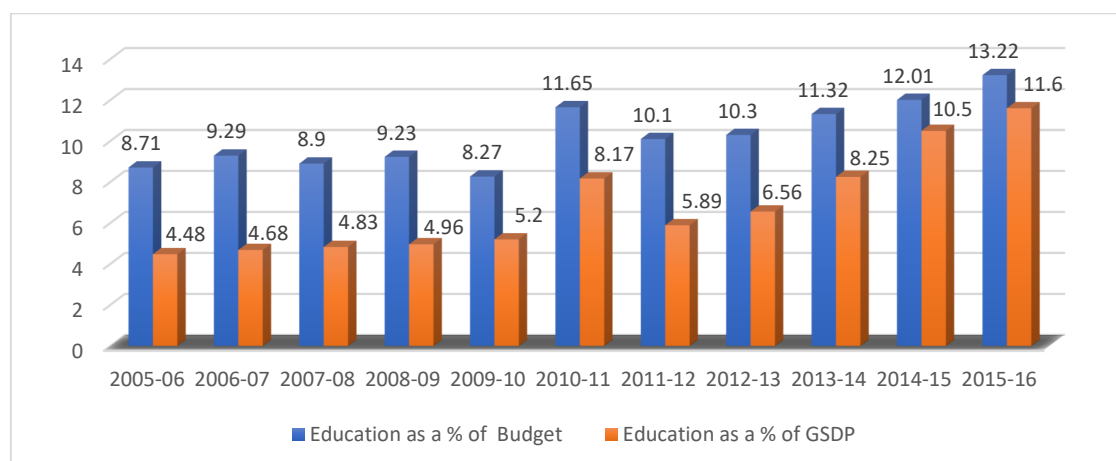
Source: Table No 39.

The expenditure on education sector as a percentage of Nagaland State budget, as shown in table 2.39, was 8.7 percent in 2005-06, which increased to 11.6 percent in 2010-11, 12.01 percent in 2014-15 and to 13.22 percent in 2015-16. On average, around 10 percent of the total budgetary expenditure is allocated to the education sector between 2005-06 and 2015-16. The expenditure on education as a percent of total government expenditure for India and World in 2005-06 was 11.53 and 13.86 percent, which increased to 14.09 and 14.13 percent in 2013-14, with an average of 12.52 and 14.07 percent respectively, showing that global average expenditure on education as a percent of total governmental spending is significantly higher than Nagaland and India.

However, the share of expenditure on education as a percentage of GDP seems to be higher for Nagaland as compared to India and the World. The expenditure on education as a percentage of gross State domestic product for Nagaland increased from 4.48 percent in 2005-06, 8.17 percent in 2010-11, 10.5 percent in 2014-15 and to 11.6 percent in 2015-16, with an average of 6.8 percent, which is higher than India's average of 3.4 and global average of 4.4 percent respectively.

In 2015-16, there were a total of 470923 students enrolled across the state at varying levels of education; with 440113 students or 93.5 percent under School Education and 30,810 students or 6.5 percent under Higher and Technical Education. The budget allocation for education sector in the same year was ₹166476 lakhs. Therefore, the percapita expenditure on education for Nagaland comes to ₹35350 per student per year for the year 2015-16.

2.4. PROFILE OF THE SAMPLE AREA

2.4.1. WOKHA DISTRICT

Wokha district is located at the latitude of 26° 8' North and Longitude of 94° 18' East. Wokha literally means 'head count' or 'census' in Lotha dialect. The district is inhabited by the Lotha-Naga tribe having a population of 1,66,343 where 79 percent of its populace lives in the rural areas and 21 percent resides in the urban areas. Wokha has a geographical area of 1628 square kilometers constituting 9.82 percent of the state's geographical area. Her share in the state's population is 8.40 percent. Wokha has a sex ratio of 968 and a density of population of 102 per square kilometer with a literacy rate of 87.7 percent[45].

The district shares borders with Assam state in the West and North, Kohima and Dimapur in the South, Zunheboto in the East and Mokokchung in the North East. The district has 133 census villages and is divided into 12 administrative units, 5 rural development blocks and one town[46]. The district has a Human Development Index (HDI) of 0.66 in 2011, which is higher than the State's average of 0.63[47] and ranked second out of eleven districts in the State. The total workers in the district stood at 78,412 accounting for 47.1 percent of the total population out of which 66,122 or 84.32 percent are from rural areas and 12,290 or 15.68 percent are from urban areas. Among the total workers, 63,512 are classified as main workers, of which 35,692 are males and 27820 are females and 14,900 are marginal workers.

i.   Longsa Village

Longsa village is located at the upper range of Wokha district with a distance of 5 kilometers from Wokha town. It is one of the oldest village in Wokha district and therefore, has a rich legacy of history and culture. According to 2011 census, Longsa has a total of 395 household with a population of 1452 persons, of which 628 are males and 824 are females. It has a literacy rate of 70.24 percent with a total of 883 literates. The village has 699 total workers of which 41.6 percent are males and 58.3 percent are females. Among the total workers, 585 were categorized as main workers and 114 are listed as marginal workers. As of 2017, the village has one government high school and one middle schools and one private high school. The village has also one primary health center.

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[45] Census of India, 2011.
[46] District Census Handbook, Wokha. Census of India 2011.
[47] Table 2.14.

ii.   Pyangsa Village

Pyangsa village is a located under Lotsu circle in the middle range. The distance from Lotsu sub-headquarter is around 2 kilometers and the distance from the district headquarter is approximately 70 kilometers. The village has a total of 120 household and a population of 628 with 310 males and 318 females as per 2011 census. Its literacy rate is 88.51 percent with 470 literates, of which 226 are males and 244 are females. The number of total workers in the village stood at 227, of which 49.3 percent are males and 50.6 percent are females. The village has one primary school, but no health center is available in the village[48].

iii.   Pangtong Village

Pangtong village is located in the lower range of Wokha district under Bhandari block. It is situated around 15 kilometers away from sub-district headquarter Bhandari and 72 kilometers away from district headquarter Wokha. The village has 90 households with a population of 381 persons, of which 167 are males and 214 are females. Pangtong has a high literacy rate 98.48 percent with 326 literates, of which 142 are males and 184 are females. The village has 296 total workers, of which 43.9 percent are males and 56 percent are females. The village has one primary school.

2.4.2. ZUNHEBOTO DISTRICT

Zunheboto is located at 94.52° East Longitude and 25.97° North Latitude. It is bounded by Mokokchung on the North, Tuensang district on the East, Phek district on the South and Wokha on the West. Zunheboto town is located around 155 kilometers away from the State capital Kohima and stands at an altitude of 1874.22 meters above sea level [49]. The district came into existence in 1973, and has an area of 1255 sq.km. representing 7.57 percent of the total geographical area of the state. Zunheboto has a total of 191 census villages, 13 administrative circles and 6 rural development blocks[50].

In 2011, Zunheboto district has a population of 1,40,757 persons with 71217 males and 69540 females where 80.4 percent of the populations resides in the village and 19.6 percent resides in the urban area. It has a sex ratio of 976 and a density of population of 112 per sq.km.

[48] Government of Nagaland (2014) Village Level Development Indicators; As on 31st march 2014 Directorate of Economics and Statistics, Kohima
[49] Morung Express (2017). "Know Your District: Zunheboto" May 30th issue. Retrieved from: http://morungexpress.com/know-district-zunheboto/
[50] District Census Handbook, Zunheboto. Census of India, 2011.

The literacy rate for Zunheboto district is 85.3 percent with male literacy of 87.8 and female literacy of 82.6 percent, respectively. The Human Development Index for Zunheboto[51] is 0.51 which is ranked 10th out of 11 districts in the State. The total workers in the district constitute 56.46 percent of the total population, with a total of 79466 workers, of which 51.8 percent are males and 48.18 percent are females. Among the total workers, 49382 are classified as main workers and 30084 as marginal workers.

i.   **Asukhomi Village**

Asukhomi is located under Zunheboto Sadar with a distance of 12 kilometers from the district headquarter. The village has a total of 290 households and population of 1406, of which, 711 are males and 695 are females. Asukhomi village has a high literacy rate of 95.09 percent with 1182 literates of which 591 are males and 591 are females. The village has a total worker of 1013 persons of which 50.14 percent are males and 49.8 percent are females, 531 as main workers and 482 as marginal workers as per the Census of India, 2011. The village has one primary school and middle schools and one primary health center[52].

ii.   **Shevishe Village**

Shevishe village is located under Aghunato area of Tokiye block in Zunheboto district of Nagaland. It is situated at around 3 kilometers from Aghunato and around 38 kilometers from the district headquarter Zunheboto. According to the Census of India 2011, the village has a total of 174 households with population of 1017 persons of which 492 are males and 525 are females. The village has a total of 702 literates with 336 males and 366 females and a literacy rate of 86.02 percent. There are 360 total workers of which 233 are classified as main workers and 127 are classified as marginal workers. The Village has one primary and one middle school. There is no health center in the village[53].

iii.   **Lumami Village**

Lumami village is located under Akuluto division of Zunheboto district in Nagaland. It is situated around 8 kilometers from Akuluto and 40 kilometers from district headquarter Zunheboto. The village has 187 households with population of 820 persons of which 440 are males and 380 are females. The village literacy rate is 88.11 percent with a literate population

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[51] District Census Handbook, Wokha. Census of India 2011.
[52] Government of Nagaland (2014) Village Level Development Indicators; As on 31st march 2014 Directorate of Economics and Statistics, Kohima
[53] Ibid.

of 630 of which 350 are males and 280 are females. The village has 457 total workers which constitute 55.73 percent of the population. Among the total workers, 373 are classified as main workers and 84 are classified as marginal workers as per Census of India 2011. The village has one primary school, one middle school and one primary health center as per Nagaland Village Level Development Indicator 2014.

Table 2.40. Descriptive Statistics of Sample Population

	Wokha			Zunheboto			Nagaland		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Sample Household	79	100	179	65	100	165	144	200	344
Persons Enumerated	**496**	**597**	**1093**	**363**	**536**	**899**	**859**	**1133**	**1992**
Male	246	311	557	190	267	457	436	578	1014
Female	250	286	536	173	269	442	423	555	978
Mean family Size	6.27	5.97	6.1	5.58	5.36	5.44	5.96	5.66	5.79
Population 0-6 years	11	28	39	40	70	110	51	98	149
	Education								
Illiterate	38	37	75	8	42	50	46	79	125
Below Primary	42	47	89	34	60	94	76	107	183
Primary	64	70	134	61	68	129	125	138	263
Upper Primary	123	93	216	58	84	142	181	177	358
Secondary	94	93	187	60	113	173	154	206	360
Hr. Secondary	60	75	135	51	101	152	111	176	287
Graduate	65	156	221	56	59	115	121	215	336
Post Graduate	9	26	35	11	9	20	20	35	55
Others	1	0	1	24	0	24	25	0	25
Total	**496**	**597**	**1093**	**363**	**536**	**899**	**859**	**1133**	**1992**
Currently Attending Students	86	117	203	124	200	324	210	317	527
	Type of Institution (last attended)								
Government	170	169	339	128	185	313	298	354	652
Private	288	391	679	227	309	536	515	700	1215
	Education Availed								
Locally	311	381	692	244	400	644	555	781	1336
Locally (Boarding)	11	0	11	18	0	18	29	0	29
Outside (Within State)	109	133	242	84	79	163	193	212	405
Outside Nagaland	27	46	73	9	15	24	36	61	97
	Employment								
Employed	289	272	561	143	158	301	432	430	862
Government	106	126	232	46	62	108	152	188	340
Private	183	146	329	95	98	193	278	244	522
Salaried	124	151	275	56	87	143	180	238	418
Non-Salaried	165	121	286	87	71	158	252	192	444
Unemployed	58	88	146	42	50	92	100	138	238

Source: Field Survey 2014.

2.4.3. Population and Household Size

The sample survey covered a total of 344 household, of which 179 are from Wokha and 165 are from Zunheboto. Altogether, 1992 persons were enumerated with 1093 persons from Wokha and 899 persons from Zunheboto district. There were 1014 males and 978 females in the sample population with a sex ratio of 964 females per 1000 males, which is higher than the State's sex ratio of 931. The sex ratio for total sample in rural area is 970, while it is 960 for the urban area. The sex ratio for Wokha is 962, with 1016 for rural area and 919 for the urban area. The sex ratio for Zunheboto is 967, with 910 for rural area and 1007 for urban area. The mean family size for total sample population is 5.79, while that of Wokha is 6.1 and Zunheboto is 5.96. The total child population in the age group 0-6 years was 39 in Wokha and 110 inr Zunheboto with a total of 149, which constitute 7.47 percent of the total sample population.

2.4.4. Educational Profile

Among the sample population, there were 125 illiterates constituting 6.27 percent of the total population. The literacy rate for the sample population is 93.22, which is marginally higher for the rural area at 94.31 percent as compared to 92.37 percent in the urban area. The literacy rate for Wokha is 92.8 percent, with 92.16 for rural area and 93.5 percent in the urban area. The literacy rate for Zunheboto is 93.6 percent with 97.5 percent in the rural area and 90.9 percent in the urban area.

Figure 2.10. Sample Distribution by Educational Groups
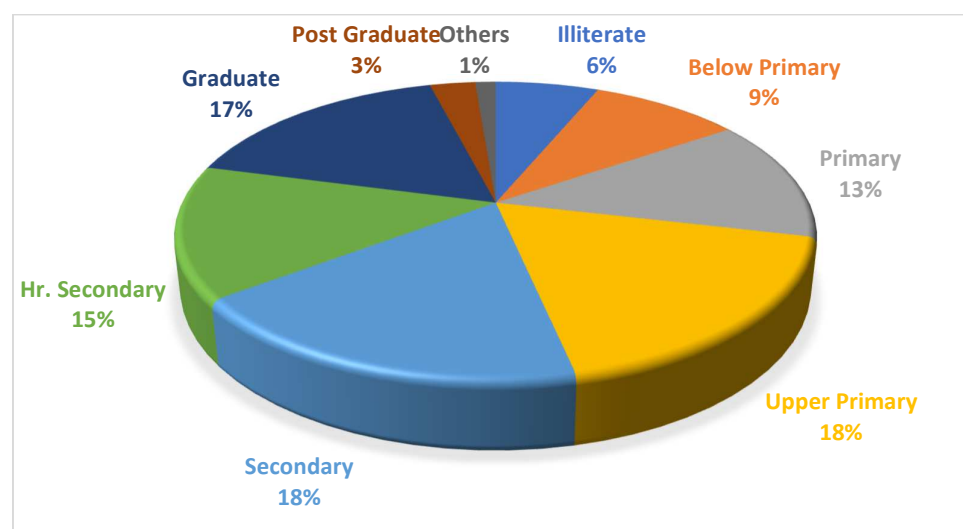
Source: Table 2.40.

Among those who have attended education, there were 183 persons below primary level constituting 9.18 percent, 263 persons with primary education constituting 13.20 percent, 358 persons with upper primary education constituting 17.97 percent, 360 at secondary level constituting 18.07 percent, 287 at higher secondary level constituting 14.4 percent, 336 graduates constituting 16.86 percent and 55 post graduates constituting 2.7 percent of the total sample population. There were also 203 students from Wokha and 324 students from Zunheboto with a total of 527 students who were currently enrolled in various educational levels constituting 26.45 percent of the total sample population

Out of the sample population who have attended education, a total of 652 persons or 34.9 percent have attended government schools while 1215 persons or 65 percent attended private schools. In Wokha, 33.3 percent attended government schools, while, 66.6 percent attended private school. The same for Zunheboto is 36.6 and 63.3 percent. However, it is to be noted that the survey was based on the school last attended, and there were some individuals who attended public schools at the initial years of schooling but joined private schools at a later stage and vice versa. A total of 1336 individuals or 71.55 percent attended schools locally from home, 29 students or 1.55 percent availed education by staying at hostel, 405 individuals or 21.69 percent availed education from outside one's district, but from within Nagaland, while a total of 97 individuals or 5.19 percent availed education from outside Nagaland state.

2.4.5. Income Profile

There were 562 income earning individuals from Wokha and 311 individuals from Zunheboto with a total of 873 income earning individuals. Mean monthly income is derived by dividing the total monthly income by total income earning individuals. Per Capita Income is derived by multiplying the total monthly income by the total number of population.

Table 2.41. Mean Income and Percapita Income for Nagaland (in ₹)

District/ State	Gross Monthly Income	Income Earning Persons	Mean Monthly Income	Total Sample Population	Monthly Per Capita Income
Wokha	10153000	562	18065	1093	9289
Zunheboto	5427700	311	17452	899	6037
Nagaland	15580700	873	17847	1992	7821

Source: Field Survey, 2014.

The gross monthly income for Wokha district was ₹1,01,53,000, while it is ₹54,27,700 for Zunheboto district with a total of ₹1,55,80,700 for Nagaland. Therefore, the estimated mean monthly income for Wokha is ₹18,065 per worker which is slightly higher than ₹17,452 for Zunheboto district and ₹17,847 per worker for Nagaland state. The monthly percapita income is found to be higher for Wokha district at ₹9289 per person, while that of Zunheboto district is found to be ₹6037 and ₹7821 for Nagaland as a whole.

2.4.6. Employment Profile

Out of the sample population of 1992, 862 individuals or 43.27 percent were employed with 561 persons or 51.32 percent from Wokha and 301 persons or 33.48 percent from Zunheboto. There were 238 unemployed individuals in the sample population accounting for 11.94 percent of the total population, with 146 and 92 unemployed persons from Wokha and Zunheboto districts respectively. In Wokha, 289 persons were employed while 58 were unemployed in rural area, and in urban area, 272 persons were employed while 88 were unemployed. For rural area in Zunheboto district, 143 were employed while 42 were unemployed. The same for urban area is 158 and 50 respectively. For the total sample, 432 were employed while 100 were unemployed in rural area. In urban area, 430 were employed and 138 were unemployed. The employment profile of sample population in percentage is shown in figure 2.11.

Figure 2.11. Employment Profile of Sample Population in Percentage
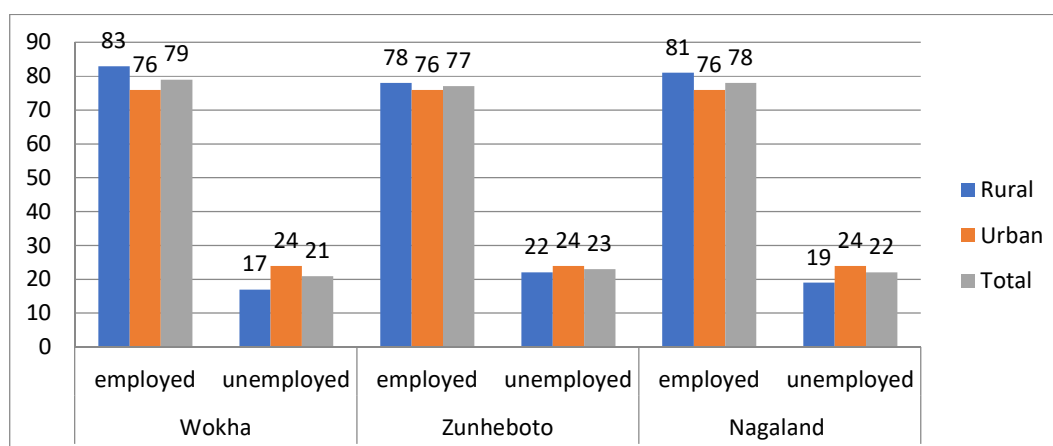
Source: Table 2.40.

Figure 2.12. Employment by Sector, Salaried and Non- Salaried.
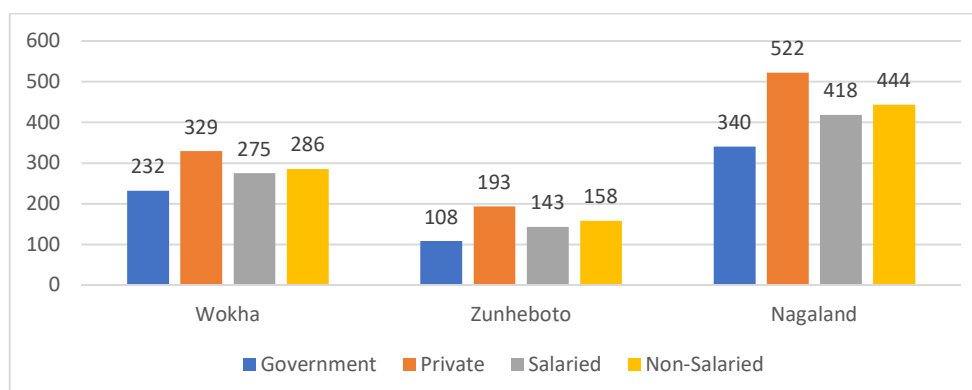
Source: Table 2.40

Among those who are employed in Nagaland, 340 persons or 39.4 percent are employed in the government sector while 522 persons or 60.55 percent are employed in the private sector. Similarly, 418 individuals or 48.5 percent received salary while 444 persons or 51.5 percent were non-salaried. In Wokha district, 232 persons or 41.3 percent were employed under government sector while 329 persons or 58.6 percent were employed in the private sector. Likewise, out of the total workers, 275 were salaried while 286 workers were non-salaried. For Zunheboto district, 108 persons or 35.8 percent were employed in government sector while 193 or 64.1 percent were employed in private sector. Among those employed, 143 workers received salary while 158 workers were non- salaried.

2.5.   Conclusion

In Nagaland, more than 70 percent of the population lives in the villages and around 60 percent of the population depends on agriculture. However, the contributions of primary sector to the GSDP is only 28 percent in 2016-17, while secondary sector contributed 10 percent and tertiary sector contributes over 60 percent to the GSDP. The average growth of GSDP between 2012-13 and 2016-7 is 4.16, which is lower than the average growth for India at 6.8 percent over the same period. During the same period, the growth of per capita income in Nagaland is only 2.68 percent as compared to 5.78 percent for India, showing that the economy is moving at a slower pace, hence requires some policy push to put the economy in the right growth trajectory.

The growth and progress of education in the State is however, impressive. The first school was established only in 1878, while the first college was set up only in 1959. However, today, there are over 2800 educational institutions, more than 4.7 lakhs students and over 32 thousand teachers in the State. The literacy rate has also increased from 10.5 percent in 1951 to 79.5 percent in 2011, showing significant improvement. Gross enrolment has reached 100 percent for primary and upper primary levels, even though, GER in secondary, higher secondary and higher education needs improvements. Pupil teacher ratio in Nagaland are also better than the national average. However, teachers training is a cause for concern as only 32 percent of the teachers are trained, while the same for India is 80 percent. Moreover, the performance of government schools as reflected from the pass percentages is very bleak and therefore, requires urgent remedial measures.

The budgetary allocation to education sector has also increased from 8.7 percent of the total State budget in 2005-06 to over 13 percent in 2015-16, showing significant improvements, even though it falls short of the 14 percent budgetary allocation to education sector in India. While, the total State budget has increased by an average growth of 13.3 percent during 2005-06 to 2015-16, budgetary allocation on education sector has grown by an average of 18.9 percent over the same period, registering a higher growth than the total State budget, indicating that greater attention is being accorded to the education sector. Therefore, the challenge is to capitalize on the huge amount of resources and infrastructure that has been put in place, and reap the benefits of quality education.

Appendices

Table A.1. Growth of Schools in Nagaland

Year	Primary Schools		Middle Schools		Secondary	
	No. of School	Growth Rate	No. of School	Growth Rate	No. of School	Growth Rate
1963-64	650	-	89	-	22	-
1964-65	721	10.92	115	29.21	30	36.36
1965-66	800	10.95	131	13.9	31	3.33
1966-67	880	10	156	19.08	40	29.031
1967-68	927	5.34	157	0.64	45	12.5
1968-69	947	2.15	163	3.82	46	2.22
1969-70	947	0	163	0	46	0
1970-71	947	0	177	8.58	49	6.52
1971-72	920	-2.85	200	12.9	61	24.48
1972-73	981	6.63	202	1	64	4.9
1973-74	978	-0.30	232	14.8	78	21.87
1974-75	980	0.20	272	17.24	84	7.69
1975-76	1052	7.34	284	4.41	85	1.19
1976-77	1055	0.28	259	-8.8	86	1.17
1977-78	1056	0.09	268	3.47	98	13.9
1978-79	1082	2.46	283	5.59	99	1.02
1979-80	1103	1.94	287	1.41	111	12.12
1980-81	1144	3.71	303	5.57	111	0
1981-82	1184	3.49	310	2.31	102	-8.10
1982-83	1216	2.7	324	4.51	103	0.98
1983-84	1235	1.56	334	3.08	104	0.97
1984-85	1278	3.48	354	5.98	109	4.8
1985-86	1270	-0.62	343	-3.10	111	1.83
1986-87	1270	0	343	0	111	0
1987-88	1270	0	343	0	113	1.8
1988-89	1286	1.25	293	-14.57	120	6.19
1989-90	1286	0	341	16.38	133	10.83
1990-91	1287	0.07	341	0	149	12.03
1991-92	1299	0.93	358	4.98	179	20.13
1992-93	1305	0.46	357	-0.27	189	5.58
Average (1964-93)		2.49		5.25		8.11

Source: Statistical Abstract 2008-09, Directorate of Economics & Statistics, Nagaland 2011.

Table A.2. Growth of Schools in Nagaland

Year	Primary School		Middle School		Secondary		Hr. Secondary	
	No. of Schools	Growth Rate	No. of Schools	Growth Rate	No. of Schools	Growth Rate	No. of Schools	Growth Rate
1993-94	1394	-	418	-	232	-	4	
1994-95	1394	*0*	418	*0*	236	*1.72*	4	*0*
1995-96	1422	*2.0*	421	*0.71*	241	*2.11*	4	*0*
1996-97	1416	*-0.42*	425	*0.95*	253	*4.97*	10	*150*
1997-98	1469	*3.74*	470	*10.58*	282	*11.46*	10	*0*
1998-99	1469	*0*	470	*0*	281	*-0.35*	11	*10*
1999-00	1468	*-0.06*	473	*0.63*	309	*9.96*	16	*45.45*
2000-01	1491	*1.56*	469	*-0.84*	315	*1.9*	20	*25*
2001-02	1499	*0.53*	479	*2.13*	321	*1.9*	23	*15*
2002-03	1501	*0.13*	482	*0.62*	321	*0*	32	*39.13*
2003-04	1508	*0.46*	477	*-1.03*	331	*3.11*	35	*9.375*
2004-05	1520	*0.79*	480	*0.62*	344	*3.9*	46	*31.42*
2005-06	1518	*-0.13*	488	*1.66*	350	*1.74*	64	*39.13*
2006-07	1660	*9.35*	463	*-5.12*	338	*-3.42*	55	*-14.06*
2007-08	1662	*0.12*	465	*0.43*	337	*-0.29*	69	*25.45*
Average (1994-2008)		*1.39*		*0.81*		*2.7*		*26.85*

Source: Statistical Abstract 2008-09, Directorate of Economics & Statistics, Nagaland 2011.

Table A.3. Growth of Higher Educational Institutions and Teachers in Nagaland

Year	No of Colleges	*Growth Rate*	No of College Teachers	*Growth Rate*	No of University	No of University Teachers	*Growth Rate*
1963-64	5	-	36	-	-	-	-
1964-65	5	0	43	19.44	-	-	-
1965-66	5	0	50	16.27	-	-	-
1966-67	6	20	58	16	-	-	-
1967-68	8	33.33	85	46.55	-	-	-
1970-71	8	0	102	20	-	-	-
1971-72	8	0	111	8.82	-	-	-
1972-73	8	0	117	5.4	-	-	-
1973-74	9	12.5	122	4.27	-	-	-
1976-77	12	33.33	171	40.16	-	-	-
1978-79	14	16.66	205	19.88	1	3	-
1979-80	14	0	224	9.26	1	6	100
1980-81	15	7.14	239	6.69	1	5	-16.67
1981-82	16	6.7	263	10.04	1	8	60
1982-83	20	25	284	7.98	1	13	62.5
1983-84	22	10	277	-2.46	1	17	30.76
1985-86	24	9.09	338	22.02	1	16	-5.88
1986-87	26	8.33	344	1.77	1	18	12.5
1987-88	27	3.84	403	17.15	1	18	0
1988-89	32	18.51	454	12.65	1	18	0
1989-90	33	3.12	481	5.94	1	21	16.67
1990-91	33	0	512	6.44	1	21	0
1991-92	37	12.12	560	9.37	1	23	9.5
1992-93	39	5.4	620	10.71	1	26	13.04
1993-94	42	7.69	653	5.32	1	27	3.84
1994-95	46	9.52	644	-1.37	1	27	0
1995-96	47	2.17	642	-0.31	1	28	3.7
1996-97	56	19.14	676	5.29	1	29	3.57
1998-99	54	-3.57	932	37.86	1	115	296.5
1999-00	55	1.85	968	3.86	1	116	0.86
2000-01	58	5.45	1009	4.23	1	110	-5.17
2001-02	57	-1.72	994	-1.48	1	110	0
2002-03	57	0	1041	4.72	1	82	-25.45
2003-04	56	-1.75	963	-7.49	1	62	-24.39
2004-05	56	0	955	-0.83	1	82	32.25
Average Growth		*7.76*		*10.71*	-	-	*23.67*

Source: Statistical Abstract 2008-09, Directorate of Economics & Statistics, Nagaland 2011

Table A.4. Growth of Teachers in Nagaland

Year	Primary Schools		Middle Schools		Secondary Schools	
	No. of Teachers	Growth Rate	No. of Teachers	Growth Rate	No of Teachers	Growth Rate
1963-64	1578	-	641	-	299	-
1964-65	1714	8.61	896	39.78	310	3.67
1965-66	1766	3.03	1203	34.26	337	8.70
1966-67	2033	15.11	1320	9.72	418	24.03
1967-68	2133	4.91	1414	7.12	430	2.87
1968-69	2293	7.5	1504	6.36	452	5.11
1969-70	2360	2.92	1645	9.37	480	6.19
1970-71	2365	0.21	1673	1.70	495	3.12
1971-72	2538	7.31	1780	6.39	520	5.05
1972-73	2687	5.87	1814	1.91	578	11.15
1973-74	3984	48.26	2225	22.65	672	16.26
1974-75	3984	0	2282	2.56	673	0.14
1975-76	3998	0.35	2282	0	670	-0.44
1976-77	4753	18.88	2246	-1.57	1319	96.86
1977-78	4927	3.66	2382	6.05	1432	8.56
1978-79	5018	1.84	2473	3.82	1490	4.05
1979-80	5195	3.52	2387	-3.47	1579	5.97
1980-81	5473	5.35	2832	18.64	1696	7.40
1981-82	5633	2.92	3037	7.23	1734	2.24
1982-83	5772	2.46	3226	6.22	1938	11.76
1983-84	5848	1.31	3202	-0.74	1873	-3.35
1984-85	6351	8.6	3202	0	1887	0.74
1985-86	6369	0.28	3231	0.90	2380	26.12
1986-87	6497	2.0	3245	0.43	2429	2.05
1987-88	6499	0.03	3267	0.67	2437	0.32
1988-89	6533	0.52	3279	0.36	2507	2.87
1989-90	6572	0.59	3248	-0.94	2928	16.79
1990-91	6232	-5.17	3598	10.77	3122	6.62
1991-92	6425	3.09	3651	1.47	3666	17.42
1992-93	6443	0.28	3651	0	3809	3.9
Average (1964-1993)		5.32		6.61		10.21

Source: Statistical Abstract 2008-09, Directorate of Economics & Statistics, Nagaland 2011

Table A.5. Growth of Teachers in Nagaland

Year	Primary		Middle		Secondary		Hr. Secondary	
	No. of Teachers	Growth Rate	No. of Teachers	Growth Rate	No. of Teachers	Growth Rate	No. of Teachers	Growth Rate
1993-94	8577	33.12	5429	48.69	4314	13.25	53	
1994-95	6600	-23.05	4281	-21.14	4342	0.64	153	188.67
1995-96	6749	2.25	4468	4.36	4451	2.5	156	1.96
1996-97	6775	0.38	4752	6.35	4414	-0.83	352	125.6
1997-98	6807	0.47	4841	1.87	4887	10.71	352	0
1998-99	6847	0.58	4881	0.82	4950	1.28	358	1.70
1999-00	6847	0	4919	0.77	5740	15.95	602	68.15
2000-01	6858	0.16	4930	0.22	5828	1.53	822	36.54
2001-02	6952	1.37	5029	2.0	5994	2.84	982	19.46
2002-03	8189	17.79	5239	4.17	6228	3.9	1307	33.09
2003-04	7474	-8.73	5365	2.40	6283	0.88	1519	16.22
2004-05	8127	8.73	6296	17.35	6427	2.29	1757	15.66
2005-06	7948	-2.20	6232	-1.01	6461	0.52	2053	16.84
2006-07	7961	0.16	6264	0.51	6464	0.04	2089	1.75
2007-08	7956	-0.06	5804	-7.34	6628	2.53	2394	14.6
Average (1994-2008)		2.06		4.0		3.86		38.59

Source: Statistical Abstract 2008-09, Directorate of Economics & Statistics, Nagaland 2011.

Table A.6. Expenditure on Education as a Percent of Budget and GSDP, Nagaland

Year	Total Expd. on Education Sector	Total Budget	Expd. on Edu. as a % of budget	Gross State Domestic Product (Constant price)	Expd. on Edu. as a % of GSDP
2005-06	28844.51	331085.02	8.71	643571	4.48
2006-07	32491.63	349552.72	9.29	693785	4.68
2007-08	35995.52	400166.57	8.99	744537	4.83
2008-09	39321.27	425786.58	9.23	791687	4.96
2009-10	44053.18	532287.78	8.27	846258	5.20
2010-11	75659.45	649103.8	11.6	925399	8.17
2011-12	69834.95	690799.79	10.1	1183912	5.89
2012-13	81723.28	791185.3	10.32	1244165	6.56
2013-14	113859.8	1005794.3	11.32	1379300	8.25
2014-15	149872.01	1247345.96	12.01	1423400*	10.5
2015-16	166476.01	1259269.47	13.22	1433700**	11.6
Average			10.28		6.8

(*Provisional Estimates. **Quick Estimates)
Source: Govt. of Nagaland, Finance Department, 2016. Statistical handbook 2013, 2015. Economic Survey 2016-17.

CHAPTER 3

IMPACT OF EDUCATION

ON

INCOME AND EMPLOYMENT

CHAPTER 3

IMPACT OF EDUCATION ON INCOME AND EMPLOYMENT

The human capital theory posits that individuals invests in education as it enhances one's skills and competencies which lead to better employment opportunities, higher earnings and more interesting and varied careers. It is an established fact that the distribution of personal incomes in society is strongly related to the amount of education that people had, as more schooling translates into higher lifetime incomes[54]. The more education individuals acquire, the better they are able to absorb new information, acquire new skills and familiarize themselves with new technologies. By increasing their human capital, workers enhance the productivity of their labour and the other capital they use at work[55].

Higher educated individuals are more likely to participate in the job market and be paid more, and less likely to remain unemployed. Further, the benefits of education also go beyond the economic returns, including improved health and lower rates of mortality, and lower rates of crime[56]. For the economy as a whole, education can increase the human capital in the labor force, which increases labor productivity and thus leads to a higher equilibrium level of output. It can also increase the innovative capacity of the economy such as, knowledge of new technologies, products, and processes that promotes growth. Further, it can facilitate the diffusion and transmission of knowledge needed to understand and process new information and to implement new technologies that accelerate growth[57].

Education is a much broader concept and includes learning acquired within the family, from one's cohorts, and from participating in a broader society as well as from one's work experience. All these elements work alongside formal schooling to develop the individual's capacities. But formal schooling is the point where society enters most directly and consciously in the preparation of each new generation of young people. It is therefore a matter of interest, to know how additional years in schooling affect future earning power and productivity[58].

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3.1. IMPACT OF EDUCATION ON INCOME

This section discusses the relationships between education and income by analyzing the education-age earning profiles, the mean incomes and the returns to education through regression analysis.

3.1.1. EDUCATION-AGE EARNING PROFILE

The education-age-earning profile is constructed to analyze how income is distributed between different educational and age groups. Workers are classified into different age groups with an age interval of 5, from 20 years till 69 years. Workers of all age groups are further classified as illiterate, primary, middle or upper primary, secondary, higher secondary, graduate and post graduate. Workers are first classified by their age category and then placed at their respective educational groups, after which, mean income per month for all age-educational groups are obtained for further analysis. The education -age earning profiles are presented in table 3.1, 3.2 and 3.3. The empty cells in the table indicate absence of sample individuals in that educational-age group.

Although the official working age is between 15-64 years, this study considers the working age from 20 years as there were no workers below the age of 20 in the sample population.

i) **Wokha**

Table 3.1. Age-Earning Monthly Mean Income by levels of education, Wokha

Age	Illiterate	Primary	Middle	Secondary	Hr. Sec	Graduate	PG	Total
20-24	-	4000	14141	24000	20000	33500	-	*18266*
25 - 29	5000	7000	15062	14411	19692	16233	25111	*16750*
30 - 34	2000	15000	20950	19687	19666	21709	27750	*21141*
35 - 39	3000	9833	10818	16157	23307	23235	34666	*18735*
40 - 44	3000	8363	8250	28600	23000	25615	28000	*17511*
45 - 49	3000	6666	11909	23000	10000	21666	-	*13107*
50 - 54	9000	10758	20636	25250	19000	47000	12000	*18571*
55 - 59	2375	15952	15428	33428	37857	36000	-	*19865*
60 - 64	4200	14400	27555	26250	20000	-	30000	*16288*
65 - 69	3800	20857	15500	22000	-	-	-	*14647*
Total	*3435*	*13720*	*15931*	*20635*	*22839*	*22000*	*27925*	*18065*

Source: Own Calculations, based on field survey, 2014.

Figure 3.1. Age-Earning Monthly Mean Income by levels of education, Wokha.
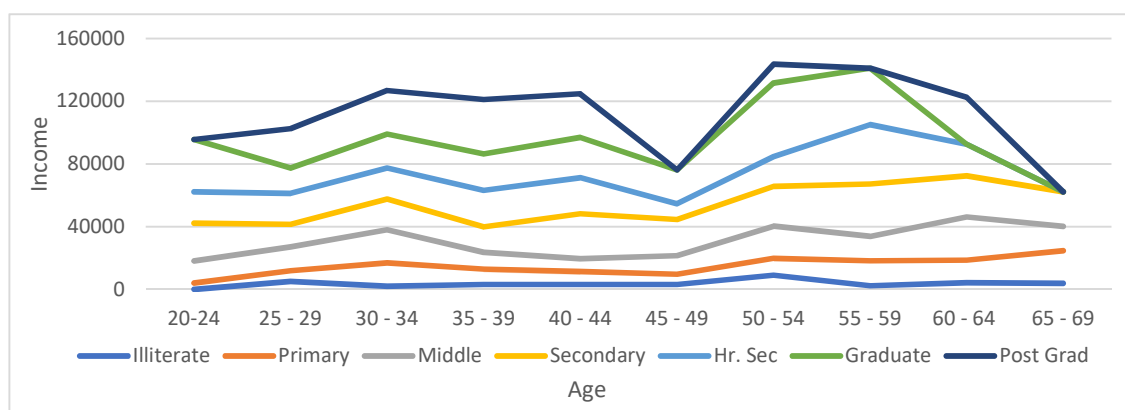
Source: Table 3.1.

Table no 3.1 shows that the monthly mean income per worker in Wokha district is ₹18065. By educational levels, it is lowest for illiterate worker at ₹3435, while it is highest for post graduate workers at ₹27925. Except for higher secondary levels where the mean income is marginally higher than that of the graduates, it is found that income increased with increase in educational levels.

By age group, the monthly mean income is found to be highest for age 30-34 years at ₹21141, followed by 55-59 year at ₹19865, and 35-39 years at ₹18735. The lowest is with age group of 45-49 years at ₹13107, followed by 65-69 years at ₹14647 and 60-64 years at ₹16288. Thus, the mean income by age group does not show any uniform pattern of distribution.

The education-age earning profile for Wokha district is also depicted in figure 3.1, where age is represented on the horizontal axis and income on the vertical axis. The figure shows that average income increases with an increase in educational levels and that workers with higher educational levels normally have a higher average income. By age category, income is found to be higher for age intervals of 30-34, 40-44 and at 50-54, while there is an income dip at the age intervals of 35-39 and 45-49. Income tends to fall after reaching 60- 64 years for most educational groups, which could be due to retirement from active work.

ii)   **Zunheboto**

The education-age earning profile for Zunheboto is shown in table 3.2 and figure 3.2. Income tends to rise steeply for the age group of 25-29 and 50-54 for almost all educational groups, while income falls after reaching the age group of 60-64, similar with Wokha. The mean

income for Zunheboto is found to be ₹17452 per month which is lower than that of Wokha. Among the age groups, monthly mean income is found to be highest for the age group of 60-64 at ₹25400, followed by the age group of 55-59 with a mean income of ₹23810. The mean income is found to be lowest for the age group of 20-24 at ₹5954 per month. For the educational levels, income tends to increase with an increase in educational levels, with the mean income for the postgraduate workers at the highest at ₹32000 followed by graduates at ₹24276 per month. As is the case with Wokha, illiterate workers have the lowest average income at ₹3166 per month respectively.

Table 3.2. Age-Earning Monthly Mean Income by Levels of Education, Zunheboto

AGE	Illiterate	Primary	Middle	Secondary	Hr. Sec	Graduate	PG	Total
20-24	-	-	-	4312	-	10333	-	*5954*
25 - 29	-	5000	1500	21000	11125	20307	28500	*19103*
30 - 34	-	-	8666	12250	23000	22717	27666	*19672*
35 - 39	-	9750	10937	11800	18666	23323	33500	*17000*
40 - 44	-	5142	11000	11357	16666	24300	-	*13677*
45 - 49	2000	7000	12318	14675	16666	26000	10000	*13181*
50 - 54	6500	12833	13666	22300	37000	25000	50000	*18172*
55 - 59	1000	16250	15071	24600	38666	45000	-	*23810*
60 - 64	1000	23500	23000	26000	30000	31000	50000	*25400*
65 - 69	-	9000	32500	22000	-	50000	-	*22000*
Total	*3166*	*10787*	*13636*	*16533*	*18446*	*24276*	*32000*	*17452*

Source: Field survey, 2014.

Figure 3.2. Age-Earning Monthly Mean Income by Levels of Education, Zunheboto
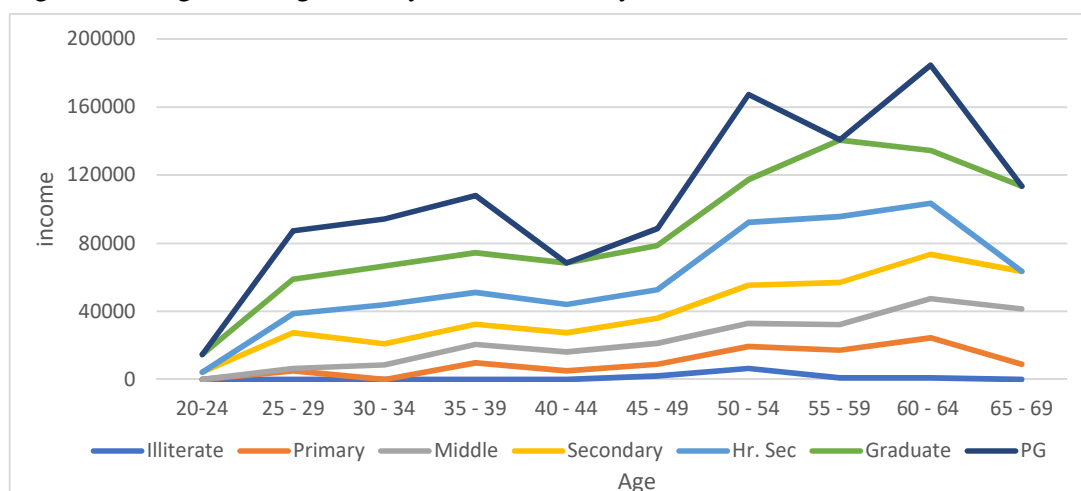
Source: Table 3.2.

iii) Nagaland

For Nagaland as a whole which is represented by the sample total, mean income is estimated at ₹17847 per month. The mean income is found to be highest for the age group of 55-59 at ₹21277 per month followed by age group of 30-34 at ₹20786 with the age group of 20-24 at the bottom with an income of ₹13057 per month. In terms of educational classification, income is highest for post graduates at ₹29029, followed by graduates at ₹22790 and higher secondary at ₹20834, with the illiterates at the bottom at ₹3400 per month. Similar with the case of Wokha and Zunheboto, income tends to fall after reaching 60-64 years, possible due to retirement.

Table 3.3. Age-Earning Profile by Mean Income for Nagaland

AGE	Illiterate	Primary	Middle	Secondary	Hr. Sec	Graduate	PG	Total
20-24	-	4000	14141	23725	20000	19600	-	*13057*
25 - 29	5000	6000	14264	15400	17781	17170	27287	*17333*
30 - 34	2000	15000	19347	17208	20857	21945	26846	*20789*
35 - 39	3000	7312	10111	16550	20750	26047	21250	*18127*
40 - 44	2500	6818	12113	16340	15000	23400	28000	*15532*
45 - 49	2500	6818	12113	16340	15000	23400	10000	*13152*
50 - 54	7750	11400	18176	23611	25000	39666	31000	*19070*
55 - 59	2222	16000	15250	27375	38222	32800	-	*21277*
60 - 64	3909	15916	26153	26166	25000	31000	40000	*18566*
65 - 69	3800	16545	21714	22000	-	50000	-	*17370*
Total	*3400*	*12762*	*15197*	*18712*	*20834*	*22790*	*29027*	*17847*

Source: Field survey, 2014.

Figure 3.3. Age-Earning Profile by Mean Income for Nagaland
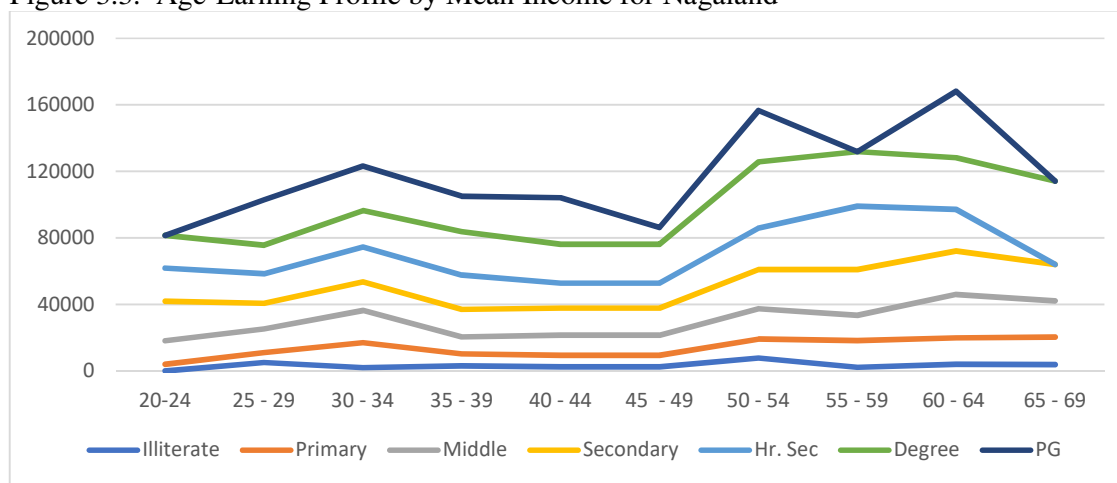
Source: Appendices Table A.9.

Mean income by age classification shows that there is no significant relationship between the age of the workers and their income, in a sense that, increase in the age of the workers does not necessarily lead to a higher income. The results have been consistent for Wokha, Zunheboto and Nagaland as a whole. On the contrary, the mean income has been found to have increased with an increase in educational levels for both the sample district and Nagaland, showing positive relationship between years of schooling and income.

3.1.2. **MEAN INCOME BY GENDER AND REGION**

The mean income was calculated from 873 income earning individuals with 562 from Wokha and 311 from Zunheboto district. The monthly mean income for Wokha district is ₹18065, with males earning ₹20982 per month and females earning ₹13428 per month. The mean income for urban workers is ₹21408 while that of the rural areas is ₹14931 per month. The gender income gap for Wokha shows that male workers earns 56 percent higher than females. Likewise, urban workers earn 43 percent higher than the rural workers.

The average monthly income for Zunheboto district is ₹17452 per month, with males earning ₹19992 per month while females earns ₹12468 per month. The gender income gap for Zunheboto indicates that males earn 60 percent higher than females, similar with Wokha. Urban workers earn ₹19845 per month while rural workers earn ₹14850 per month, with an income gap of 33 percent.

Table 3.4. Mean Income by Gender and Area

District/ State	Male	Female	Gender Gap (in %)	Urban	Rural	Rural-Urban Income Gap (in %)	Total
Wokha	20982 (345)	13428 (217)	56	21408 (272)	14931 (290)	43	18065 (562)
Zunheboto	19992 (206)	12468 (105)	60	19845 (162)	14850 (149)	33	17452 (311)
Nagaland	20612 (551)	13115 (322)	57	20824 (434)	14903 (439)	39	17847 (873)

The figure in the parenthesis refers to the no. of observations.
Source: Own calculations based on field survey 2014

Overall, for Nagaland, the monthly average income is ₹17847, with males earning ₹20612 per month which is 57 percent higher than female income at ₹13115. Urban workers also earn ₹20824 per month which is 39 percent higher than the income of the rural workers at

₹14903 per month. Mean income is higher for Wokha as compared to Zunheboto, for both males and females, and for both urban and rural areas. The gender gap in income is slightly lower for Wokha at 36 percent as compared to Zunheboto at 37.6 percent. However, the rural-urban income gap is higher for Wokha at 30.25 percent comparing to Zunheboto at 25.17 percent. The data reveals that in both the districts, female average income is lower than males and urban workers earn higher income than the rural workers.

3.1.3. MEAN INCOME BY EDUCATIONAL GROUPS

The mean income by educational levels is presented in the appendices table A.7. Workers were classified according to their education levels, gender and region and mean income for each education levels were obtained for both Wokha and Zunheboto districts separately and for Nagaland as a whole. For both gender and region, mean income is found to have increased with increase in educational attainment, supporting the hypothesis assumed in this study that higher level of education is positively related with higher income.

i)   **Wokha**

The monthly mean income for Wokha district by region and gender is presented in figure 3.4 and 3.5, where educational levels is represented on the horizontal axis and income on the vertical axis. For rural and urban regions, mean income is higher in the urban areas for all educational levels, except for the illiterates and workers below primary education whose mean income is lower in urban area, as depicted in figure 3.4.

Figure 3.4. Mean Income by Region, Wokha
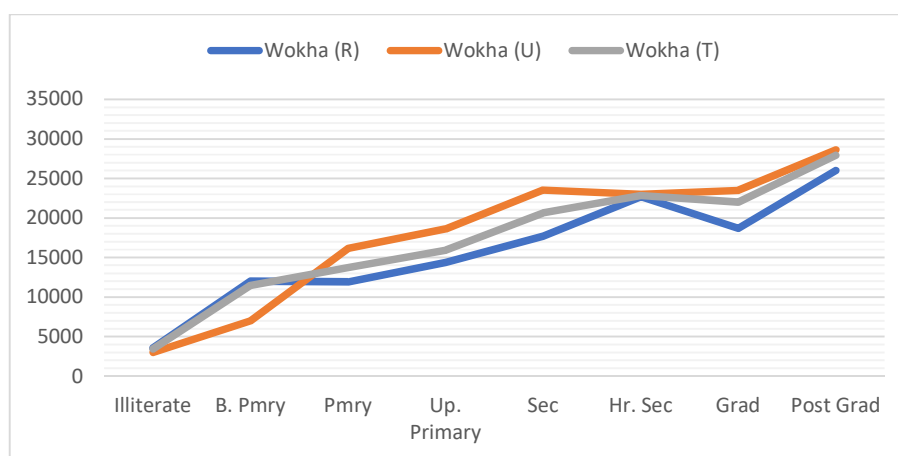
(B-Pmry: Below Primary, Pmry: Primary, Up.Pmry: Upper Primary. Hr. Sec: Higher Secondary, Grad: Graduate, Post Grad: Post Graduate) M- male, F- female, T-total.
Source: Appendices Table A.7 .

It is found that illiterate and below primary educated workers in urban area earned 16 and 42 percent less than workers from rural area. On the contrary, urban workers with primary, upper primary, secondary, higher secondary, graduates and post-graduate education earn 35, 29, 1, 33, 26, and 10 percent, higher than workers with corresponding education from rural areas.

Figure 3.5. Mean Income by Gender, Wokha.
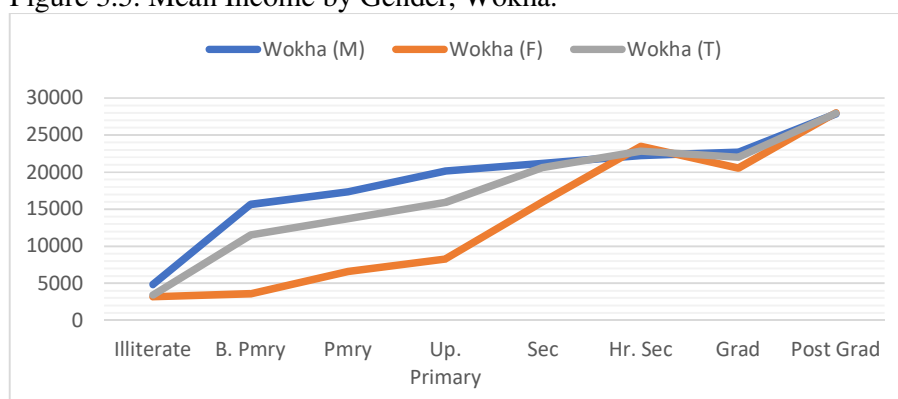
Source: Appendices Table A.7.

Likewise, for the gender classification, income is higher among male workers than that of females for all education levels except for the higher secondary and post-graduate levels as shown in figure 3.5. For higher secondary and post-graduate levels, males earned 5 and 1 percent less than females. However, for the illiterate, below primary, primary, upper primary, secondary and graduate workers, males earned 52, 334, 164, 143, 32 and 10 percent higher than females. An important observation however, is that, the gender income gap narrows or goes in favour of females after reaching higher secondary levels, which is an indication of the wage equalizing role played by education.

The mean income for Wokha as a whole was lowest for illiterates at ₹3435 per month, ₹11482 for below primary, ₹13720 for primary levels, ₹15931 for upper primary levels, ₹20635 for secondary, ₹22839 for higher secondary, ₹22000 for graduates and post-graduate workers with the highest mean income at ₹27925 per month.

ii)   Zunheboto

The mean income in Zunheboto for both region and gender is presented in figure 3.6 and 3.7 respectively. By region, income is higher in urban areas for all education levels, except for post-graduate levels where urban workers earned 38 percent lesser than rural workers. Urban workers earned higher than rural workers by 100 percent for the illiterates, 23 percent for below

primary education, 66 percent for upper primary levels, 10 percent for secondary levels, 129 percent for higher secondary levels, and 12 percent for graduates.

Figure 3.6. Mean Income by Region, for Zunheboto
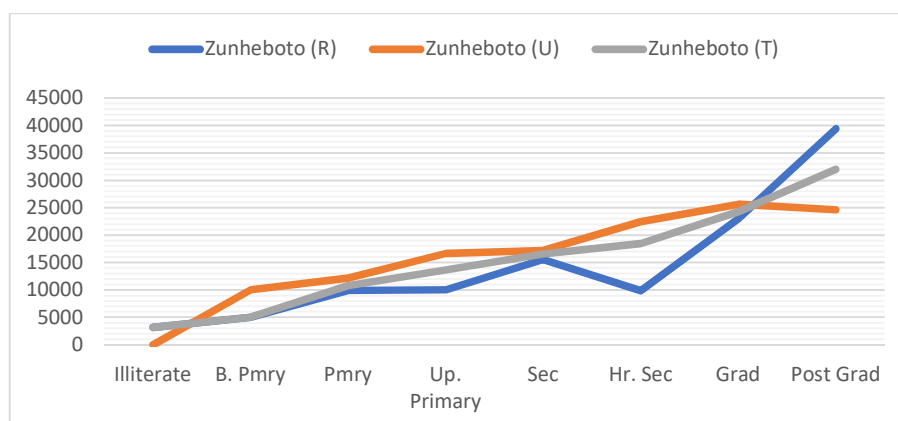
Source: Appendices Table A.7.

Figure 3.7. Mean Income by Gender, for Zunheboto
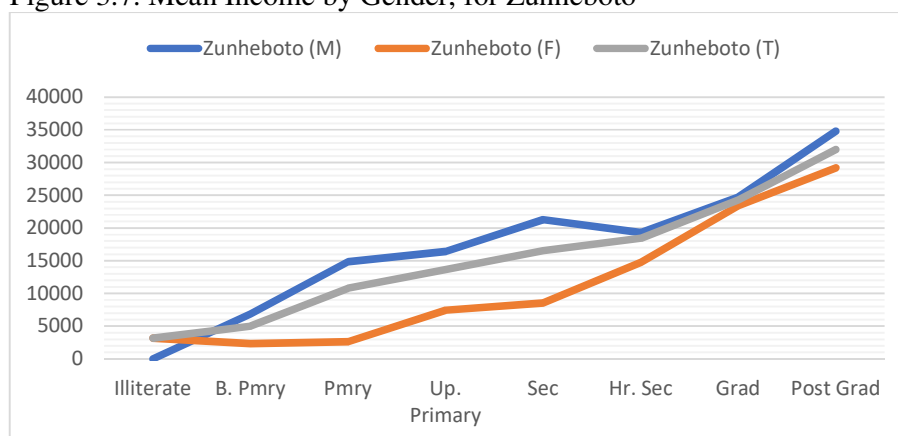
Source: Appendices Table A.7.

As shown in figure 3.7, males in Zunheboto earns higher than females for all educational groups, except for the illiterates where there are no male workers. However, the income gap narrowed after reaching higher secondary levels. The income gap for below primary, primary, upper primary and secondary levels were 194, 464, 119 and 148 percent higher. Though, males continue to earn higher than females by 31, 6 and 19 percent for higher secondary, graduate and post-graduate levels, the margin of income gap has decreased after reaching higher secondary levels. This reveals the positive role of higher education in mitigating the income gap among gender.

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For Zunheboto district as a whole, mean income is lowest for illiterate workers at ₹3166 per month, ₹5000 for below primary workers, ₹10787 for primary, ₹13636 for upper primary, ₹16533 for secondary, ₹18446 for higher secondary, ₹24276 for graduates and post-graduate workers earning the highest income at ₹32000 per month.

iii)   Nagaland

The mean income for region and gender for Nagaland as a whole is depicted in figure 3.8 and 3.9 respectively. Among the region, average income is higher for urban workers by 33 percent for primary levels, 34 percent for upper primary levels, 21 percent for secondary levels, 25 percent for higher secondary levels and by 17 percent for the graduates. On the contrary, for illiterates, below primary and post-graduate levels, urban workers earned lesser than rural workers by 14, 24 and 12 percent respectively.

Figure 3.8. Mean Income by Region, Nagaland
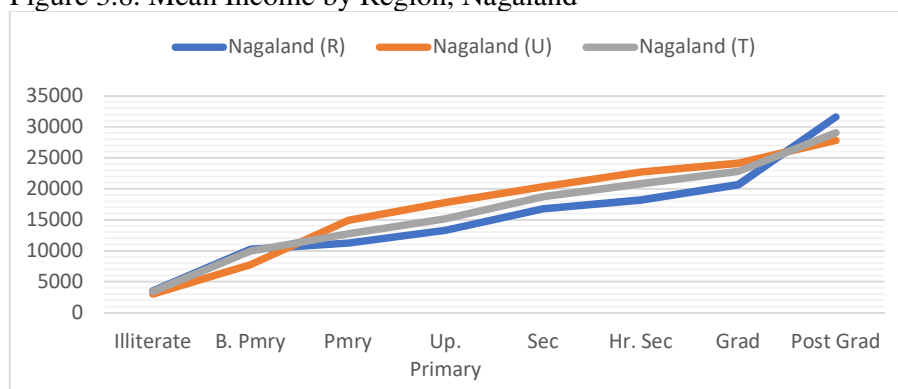
Source: Appendices Table A.7.

Figure 3.9 Mean Income Gender, Nagaland
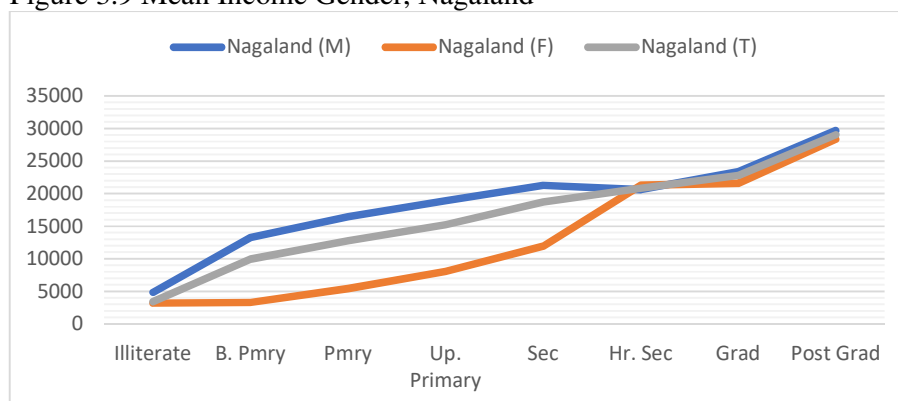
Source: Appendices Table A.7.

For Nagaland as a whole, male worker earned higher than females by 52 percent for illiterates, 301 percent for below primary, 203 percent for primary, 135 percent for upper primary, 78 percent for secondary, 8 percent for graduates and 5 percent for post graduates. For higher secondary levels, males earned lesser than females by 3 percent. It is evidently clear as shown in figure 3.9 that, income for both males and females almost equalized after reaching higher secondary levels, establishing that higher educational attainment improves gender income parity. The mean income for Nagaland also increased with increase in educational attainments with illiterates receiving the lowest mean income of ₹3400 per month and the post graduates receiving the highest mean income of ₹29027 per month.

Figure 3.10. Mean Income by Educational Groups
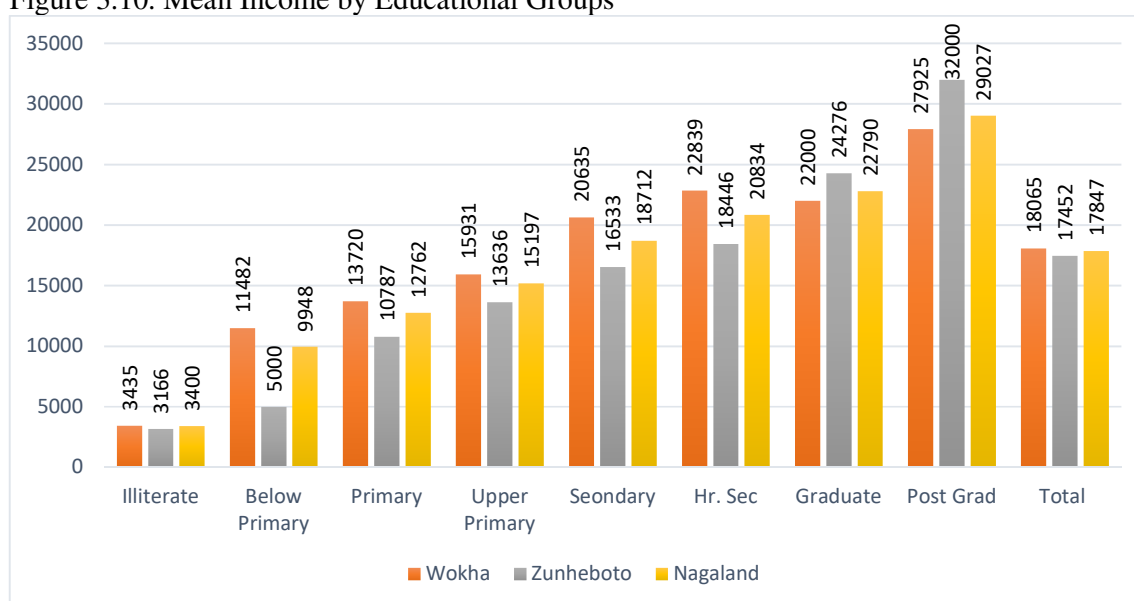
Source: Appendices table A.7.

Between the two districts, the mean income is higher in Wokha district for all educational levels up to higher secondary. However, for graduate and post-graduate workers, income is higher for Zunheboto district as compared to Wokha. Mean income is found to have increased with increase in educational levels showing higher income for more qualified workers as compared to lesser qualified workers. The mean income for Nagaland is ₹3400 for illiterates, ₹9948 for below primary, ₹12762 for primary, ₹15197 for upper primary, ₹18712 for secondary, ₹20834 for higher secondary, ₹22790 for graduates and ₹29027 for post graduates. The total mean income for Wokha is ₹18065, while it is ₹17452 for Zunheboto and ₹17847 for Nagaland as a whole. Thus, monthly mean income increases with an increase in educational levels, however, the gaps across educational levels and gender reduces with an increase in education.

3.1.4. REGRESSION ANALYSIS FROM MONTHLY MEAN INCOME

The relationship between education and income was analyzed using Ordinary Least Squares (OLS) method of simple regression where mean income is taken as the dependent variable and education, defined by the years of schooling for each educational group, such as 0 for illiterate, 3 for below primary, 7 for primary, 10 for upper primary, 12 for secondary, 14 for higher secondary, 17 for graduate and 19 for post graduates and above, is taken as the independent variable.

The regression equation is given as;

$$Y = a + bX + \varepsilon \qquad\qquad (1)$$

Where Y is the mean income per month, α is the intercept or the constant, b is the coefficient of regression and X is the years of schooling, such as 0,3,7...19., and ε is the residuals.

i)   Wokha

The correlation between education and mean income is found to be robust and positive with .970 for Wokha as a whole, .933 for rural Wokha, .969 for urban Wokha, .929 for Male and .938 for females. The adjusted R square is also very high for both region and gender indicating the accuracy of regression, and the coefficient for the years of schooling are all statistically significant at 1 percent. The coefficient for the years of schooling are 1130 for Wokha (total), indicating that income increase by a margin of ₹1130 for every one-year increase in the years of schooling. The coefficients for rural, urban, male and females for Wokha are 987, 1293, 953 and 1358 respectively, showing a higher coefficient for urban area and females. It implies that for each one-year increase in the years of schooling would result in higher rate of increase in income for urban and female worker as compared to rural and male workers.

Table 3.5. Regression Estimates from Monthly Mean Income, Wokha

	Wokha	Rural	Urban	Male	Female
Correlation (R)	0.970	.933	.969	.929	.938
Adjusted R Square	.931	.850	.929	.841	.860
Constant	5660	5741	4662	9225	-208
Coefficient (Education)	1130	987	1293	953	1358
	(9.77)***	(6.36)***	(9.60)***	(6.17)***	(6.62)***
'p' value	.000	.001	.000	.001	.001

*The figures in the parenthesis refers to the 't' values. ***Significant at 1 percent.*
Source: Own calculations based on field survey 2014

ii)   Zunheboto

The correlation between education and income for Zunheboto as a whole is .975, while it is .841 for rural areas, .969 for urban areas, .968 for males and .900 for females showing a very strong relationship. As is the case in Wokha, the adjusted R squares are also high and the coefficients are statistically significant at 1 percent except for rural area which is significant at 5 percent. The coefficient for the years of schooling is 1413 for Zunheboto (total), indicating that income increase by a margin of ₹1413 for every one-year increase in the years of schooling. Likewise, the coefficients for rural, urban, male and females for Zunheboto are 1497, 1257, 1557 and 1378 respectively, showing a higher rate of increase in monthly income for rural area and male workers.

Table 3.6. Regression Estimates from Monthly Mean Income, Zunheboto

	Zunheboto	Rural	Urban	Male	Female
Correlation (R)	.975	.841	.969	.968	.900
Adjusted R Square	.942	.659	.929	.926	.778
Constant	987	-863	3203	1312	-2690
Coefficient (Education)	1413 (10.69)***	1497 (3.81)**	1257 (9.62)***	1557 (9.43)***	1378 (5.04)***
'p' value	.000	.009	.000	.000	.002

*The figures in the parenthesis refers to the 't' values. ***Significant at 1 percent, **at 5 percent.*
Source: Own calculations based on field survey 2014.

iii)   Nagaland

For Nagaland as a whole, the correlation between education and income as shown in table 3.7, is found to be .985, while it is .938 for rural area, .990 for urban area, .961 for males and .935 for females, showing positive and strong correlation between educational attainments and income.

Table 3.7. Regression Estimates from Monthly Mean Income, Nagaland

	Nagaland	Rural	Urban	Male	Female
Correlation (R)	.985	.938	.990	.961	.935
Adjusted R Square	.965	.860	.977	.910	.853
Constant	4368	3556	4403	7613	-1045
Coefficient (Education)	1191 (13.86)***	1182 (6.62)***	1257 (17.09)***	1066 (8.46)***	1359 (6.43)***
'p' value	.000	.001	.000	.000	.001

*The figures in the parenthesis refers to the 't' values. ***Significant at 1 percent.*
Source: Own calculations based on field survey 2014

The coefficients are also found to be statistically significant at 1 percent for both the regions and gender, and for Nagaland as a whole. The coefficients for education for Nagaland is found to be 1191, indicating that income tends to increase by a margin of ₹1191 per month for each additional increase in the years of schooling. The coefficients for rural, urban, males and females are 1182, 1257, 1066 and 1359 respectively, showing that females and urban workers have slightly higher returns to education.

Between the two districts, returns to education are marginally higher for Zunheboto at ₹1413 per month comparing to Wokha at ₹1130 per month. Returns to education for each one-year increase in the years of schooling is also found to be highest for males in Zunheboto at ₹1557 while it is lowest for males in Wokha at ₹953 per month.

3.1.5. RETURNS TO EDUCATION

The rate of returns on education is further calculated using the Mincerian human capital earning function, which involves the fitting of the natural logarithm of earnings as the dependent variable, and years of schooling, potential work experience and its square as independent variables.

$$\text{In } Y = a + bS + cX + cX^2 + \varepsilon \qquad (2)$$

Where S represents years of schooling, X represents the years of potential work experience, X^2 is the work experience square and ε is a statistical residual. In the absence of direct information on job experience, Mincer used the potential experience which is the number of years an individual of age A could have worked, assuming he started school at age 6, finished S years of schooling in exactly S years, and began working immediately thereafter (Card, 1999)[59]. Therefore, potential work experience,

$X = A - S - 6$.

However, if we assume the minimum age for joining the workforce to be 15 years, the above potential work experience function gives misleading results, as every worker does not necessarily stay enrolled in the school till 15 years of age. Aslam (2007)[60], also encountered

[59] Card, D. (1999). "The Causal Effect of Education on Earnings". In: Ashenfelter O, & Card D. (Eds.), "Handbook of Labor Economics" Volume 3. Elsevier Science B.V.
[60] Aslam, M. (2007). "Rates of Return to Education by Gender in Pakistan." GPRG-Working Paper Series No. 064.

similar problem for Pakistan. If for instance, we are to find out the potential work experience for a 20-year-old worker who spend only four years in school, the above potential work experience function would give X = 20 - 4 - 6 = 10 years of work experience. This cannot be true because a person does not normally enter into the workforce by the age of 10.

Therefore, for the sake of simplicity, for workers who gave up schooling before attaining 15 years, the potential experience is derived as X = A – 15. Moreover, as the years of schooling for this study has been counted from pre-primary level, and the average years of pre-primary pupils are 4 years, the experience function used here is X = A – S – 4.

The coefficient on the years of schooling or the '*b*' in equation (2) is normally considered to be the rate of return on education. According to Psacharopoulos (1994)[61], the coefficient on years of schooling can be interpreted as the average private rate of return to one additional year of education. Card (1999)[62], also agreed that, assuming each additional year of schooling has the same proportional effect on earnings, the coefficient '*b*' in equation (2) completely summarizes the effect of education in the labor market. Checchi (2001)[63] also contends that 'b' in the human capital earning function is the (percentage) rate of return to education. Therefore, the study also used the conventional method to refer '*b*' as the returns to education.

This study, however, found the coefficient for the experience square (X^2) in equation (2) to be statistically insignificant in all the analysis, therefore X^2 is dropped from the analysis. As such, the adjusted earning function is:

In Y = a + bS + cX + e   (3)

The relationship is examined in terms of gender (male and female) and region (rural and urban) and total, for Wokha, Zunheboto and their aggregate representing Nagaland.

i)   Wokha
The result of the regression analysis presented in table 3.8 indicates that the correlation between the years of schooling, work experience and income is positive for all. However, the

[61] Psacharopoulos, G. (1994). "Returns to Investment in Education: A Global Update" World Development, Vol. 22, No 9.
[62] Card, D. (1999). "The Causal Effect of Education on Earnings". In: Ashenfelter O, & Card D. (Eds.), Handbook of Labor Economics. Volume 3. Elsevier Science B.V.
[63] Checchi, D. (2001). "Education, Inequality and Income Inequality". DARP No 52. The Toyota Centre Suntory and TICERD, London School of Economics

relationship is strong only for female at .76, while it is moderate for rural, urban and Wokha and relatively weak for male. The adjusted R square for Wokha is .35, implying that only 35 percent of the change in income is explained or determined by the years of schooling and work experience. However, the coefficient of regression for years of schooling is found to be statistically significant at 1 percent for both region and gender as well. Similarly, the coefficient of regression for work experience were found to be statistically significant at 1 percent for whole Wokha and urban area, and for male and female. The coefficient for rural area is not statistically significant as the p value is greater than the critical value of 0.05.

Table 3.8. Returns to Years of Schooling and Work Experience, Wokha

	Wokha	Rural	Urban	Male	Female
Correlation (R)	.59	.51	.629	.35	.76
Adjusted R Square	.35	.256	.388	.119	.57
Degree of Freedom	561	289	271	344	216
Coefficients Years of Schooling	.055 (16.01) ***	.048 (8.5) ***	.057 (12.6) ***	.028 (6.69) ***	.069 (13.8) ***
Experience	.015 (3.67)***	.003 (.172)	.027 (5.3) ***	.012 (2.55) ***	.013 (2.4) ***

*The figures in the parenthesis refers to the t value. *** Significant at 1 percent.*
Source: Own calculations based on field survey 2014

The return to schooling as indicated by the coefficient of regression is found to be .055 for Wokha, indicating that monthly income increases by 5.5 percent for every additional increase in the years of schooling. The returns to schooling is higher for urban areas at .057 as compared to rural areas at .048. Females have higher returns to schooling at .069 as compared to .028 for males. The returns to work experience was however, found to be low at .015 for Wokha, indicating that income increase by only 1.5 percent for every one-year increase in work experience. The regression coefficient for work experience are .003 for rural area, .027 for urban area, .012 for male and .013 for females, indicating that work experience has lesser effect on income as compared to years of schooling.

ii)   Zunheboto

Table no 3.9 show that the coefficient of correlation between years of schooling, income and work experience is found to be positive, which are moderate for rural, female and for Zunheboto as a whole, but are relatively weak for urban and male.

Table 3.9. Returns to Years of Schooling and Work Experience, Zunheboto

	Zunheboto	Rural	Urban	Male	Female
Correlation (R)	.554	.61	.398	.452	.656
Adjusted R Square	.303	.374	.148	.196	.419
Degree of Freedom	310	148	161	205	104
Coefficients					
Years of Schooling	.071 (11.6) ***	.077 (9.3) ***	.048 (5.3) ***	.052 (7.2) ***	.073 (7.5) ***
Experience	.011 (5.87) ***	.011 (3.9) ***	.009 (3.9) ***	.009 (4.5) ***	.005 (1.19)

The figures in the parenthesis refers to the t value. *** Significant at 1 percent.
Source: Own calculations based on field survey 2014.

The adjusted R square for Zunheboto is .30, implying that 30 percent of the change in income is explained or determined by the years of schooling and work experience. The coefficient of regression for the years of schooling are all found to be statistically significant at 1 percent. Similarly, the coefficient for work experience was also found to be statistically significant at 1 percent, except for females which is not significant.

The coefficient of regression for the years of schooling was found to be .071 for Zunheboto, which implies that monthly income increases by 7.1 percent for each additional increase in the years of schooling. The returns to schooling is higher for rural areas at .077 comparing to urban areas at .048. Likewise, it is higher for females at .073 as compared to males at .052. The returns to work experience are lower than the returns to years of schooling at .011 each for Zunheboto as a whole and rural area, .009 each for urban and male workers, and .005 for females.

iii)   **Nagaland**

The correlation for Nagaland as a whole is .55, while it is .51 for rural, .52 for urban, .35 for male and .69 for females, showing moderate but positive relationship between years of schooling and income, expect for females where the relationship is relatively weak. The adjusted R square for Nagaland is .30, similar with Wokha and Zunheboto. The coefficients for years of schooling were found to be statistically significant at 1 percent for both the region and gender and also for Nagaland as a whole. Coefficient for work experience were also found to be statistically significant at 1 percent.

Table 3.10. Returns to Years of Schooling, Nagaland

	Nagaland	Rural	Urban	Male	Female
Correlation (R)	.558	.514	.529	.356	.692
Adjusted R Square	.309	.261	.277	.124	.476
Degree of Freedom	872	438	433	550	321
Coefficients					
Years of Schooling	.057 (18.8) ***	.052 (11.4) ***	.053 (12.7) ***	.033 (8.7) ***	.064 (13.46) ***
Experience	.008 (7.4) ***	.005 (3.4) ***	.009 (6.9) ***	.005 (4.2) ***	.006 (2.72) ***

*The figures in the parenthesis refers to the t value. *** Significant at 1 percent,*
Source: Own calculations based on field survey, 2014.

The returns to years of schooling is found to be .057 for Nagaland, suggesting that monthly income increase by 5.7 percent for every one-year increase in the years of schooling. The returns to schooling for rural and urban areas are similar at .052 and .053 respectively. Females have higher returns to schooling at .064 as compared to males at .033. The returns to work experience were however, found to be very low at .008, .005, .009, .005 and .006 for Nagaland as a whole, rural, urban, male and female worker respectively.

Figure 3.11. Returns to Years of Schooling for Wokha, Zunheboto and Nagaland
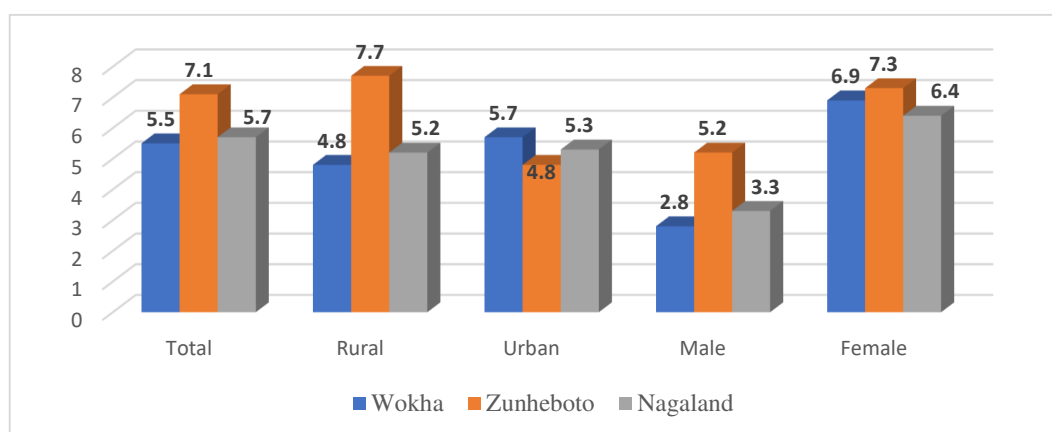
Source: Table 3.8, 3.9 and 3.10.

Between the two districts, the educational rate of return is higher for Zunheboto at 7.1 percent as compared to 5.5 percent for Wokha. The returns are also higher for Zunheboto for rural areas, males and females at 7.7, 5.2 and 7.3 percent as compared to 4.8, 2.8 and 6.9 percent for Wokha. However, the returns to schooling is higher for urban areas in Wokha at 5.7 percent as compared to 4.8 percent in Zunheboto.

3.1.6. Returns to Years of Schooling by Educational Level

Returns to years of schooling were also analyzed according to educational groups, where income earning individuals were classified into elementary, secondary and higher education. The results obtained from the regression analysis are discussed below.

i) Wokha

The study found positive correlation with relatively moderate degree for elementary education and relatively weak relationship for secondary and higher education in Wokha. The adjusted R square is found to be 26.5 percent for elementary education, while it is 8.6 and 7.7 percent for secondary and higher education, showing that the years of schooling and experience explain the variations in income better for elementary education as compared to secondary and higher education.

Table 3.11. Returns to Education and Experience by Educational level, Wokha

	Elementary	Secondary	Higher
Correlation (R)	.520	.315	.297
Adjusted R Square	.265	.086	.077
Degree of Freedom	253	136	173
Coefficients			
Years of Schooling	.066 (9.5) ***	.057 (2.34) ***	.073 (3.03) ***
Experience	.006 (3.28) ***	.007 (3.46) ***	. 009 (3.3) ***

Source: Own calculations. *The figures in the parenthesis refers to the t value.*
 ***Significant at 1 percent.

The coefficient of regression for the years of schooling is found to be .066 for elementary, .057 for secondary and .073 for higher education, all statistically significant at 1 percent, indicating that returns to education are higher for higher education, followed by elementary education and secondary education. The returns to work experience are however, low at .006 for elementary, .007 for secondary and .009 for higher education.

ii) Zunheboto

The coefficient of correlation is found to be .41, .42 and .34 showing positive but moderate relationship for elementary and secondary education and relatively weak relationship for higher education. The adjusted R square is found to be low at 15 percent for elementary, 17 percent for secondary and 9 percent for higher education.

Table 3.12. Returns to Education and Experience by Educational Level, Zunheboto

	Elementary	Secondary	Higher
Correlation (R)	.412	.429	.344
Adjusted R Square	.154	.170	.097
Degree of Freedom	105	119	84
Coefficients			
Years of Schooling	.068 (4.46) ***	.083 (2.25) ***	. 067 (1.77)
Experience	.007 (1.89) **	.016 (5.12) ***	. 009 (3.15) ***

Source: Own calculations. *The figures in the parenthesis refers to the t value.*
*** *Significant at 1 percent, ** at 5 percent.*

The coefficient of regression is found to be .068 and .083 for elementary and secondary education, which are both significant at 1 percent; while the coefficient for higher education is found to be .067, but is not statistically significant as the p value exceeds the critical value of 0.05. The coefficient of regression for work experience are .007 for elementary education which is significant at 5 percent, while it is .016 and .009 for secondary and higher education, which are statistically significant at 1 percent.

iii) Nagaland

The correlation is found to be .46, .32 and .318 for elementary, secondary and higher education, showing that the relationships are positive and moderate, but are relatively weaker for secondary and higher education. The adjusted R square is 21 percent for elementary education, 9.6 percent for secondary and 9.4 for higher education.

Table 3.13. Returns to Education and Experience by Educational Level, Nagaland

	Elementary	Secondary	Higher
Correlation (R)	.465	.320	.318
Adjusted R Square	.212	.096	.094
Degree of Freedom	359	256	255
Coefficients			
Years of Schooling	.063 (9.9) ***	.065 (2.93) ***	. 071 (3.50) ***
Experience	.006 (3.4) ***	.009 (5.1) ***	. 009 (4.75) ***

Source: Own calculations. *The figures in the parenthesis refers to the t value.*
* *Significant at 1 percent.*

The coefficient of regression for years of schooling are .063 for elementary education, .065 for secondary education and .071 for higher education, showing that returns are higher for higher education at 7.1 percent for every one-year increase in the years of schooling, followed by secondary education at 6.5 percent and elementary education at 6.3 percent. The coefficient for work experience are .006 for elementary education and .009 for secondary and higher education respectively.

Figure 3.12. Returns to Education by Educational Levels.
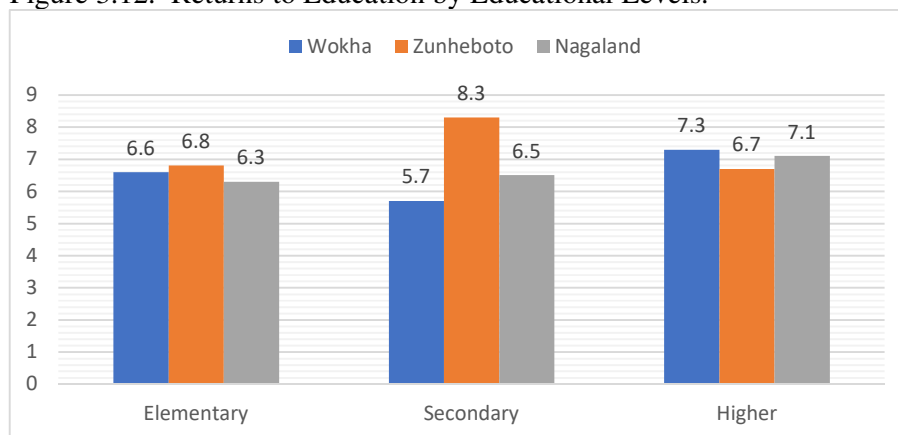
Source: Table No. 3.11, 3.12 and 3.13.

Between the two districts, returns are higher for Zunheboto for elementary and secondary education at 6.8 and 8.3 percent as compared to 6.6 and 5.7 percent respectively for Wokha. However, for higher education, returns are found to be higher for Wokha district at 7.3 percent as compared to 6.7 percent for Zunheboto. Overall, for Nagaland as a whole, returns are higher for higher education at 7.1 percent, followed by secondary education at 6.5 percent and elementary education at 6.3 percent.

3.2. IMPACT OF EDUCATION ON EMPLOYMENT

To analyze the level of employment and unemployment, workers are classified as employed or unemployed basing on their primary activity status. Any activity that results in production of goods and services that adds value to national product is considered as economic activity. The National Sample Survey Organization[64] use three parameters to classify an activity status, namely 1) working or employed, if engaged in economic activity. 2) Unemployed, if able and willing to work but does not find work, and 3) out of the labor force, for those who neither work nor seek for work. Therefore, activity status (1) and (2) constitute the labor force.

Employment or unemployment is determined through the Usual Principal Activity Status (UPS) method followed by the National Sample Survey Office[65]. The activity status on which a person spent relatively long time (i.e. major time criterion or seven months) during the 365 days preceding the date of survey was considered as the UPS of the person. Persons were categorized as those in the labour force, either employed or unemployed, depending on the major time spent during the 365 days preceding the date of survey. If an individual was working or was seeking or available for work for major part of the year preceding the date of survey then that person is considered as being part of the labour force.

3.2.1. Unemployment Rate

i)   Wokha

The data for employment and unemployment for Wokha district is provided in Appendices table A.8. Altogether there are 561 employed and 146 unemployed persons in Wokha, with a total labor force of 707 persons out of the total sample population of 1093. The labor force participation rate (LFPR), which is obtained by dividing the total labor force by the total population, for Wokha is therefore, 64.68 percent, while the worker population ratio (WPR), obtained by dividing the total worker by total population, is 51.32 percent. The proportion of unemployed (PU), obtained by dividing the total number of unemployed persons by the total population, is 13.31 percent.

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[64] Government of India (2001). "Concepts and Definitions used in NSS". National Sample Survey Organisation. Golden Jubilee Publication. Ministry of Statistics and Program Implementation

[65] Government of India (2014). "Employment and Unemployment Situation in India". National Sample Survey 68th Round. Ministry of Statistics and Program Implementation

Table 3.14. Unemployment Rate by Region and Gender, Wokha

Education	Rural	Urban	Male	Female	Total
Illiterate	0	0	0	0	0
Primary	7.2	0	1.6	10.5	5
Upper Primary	10.8	16.9	12.3	14.8	13.2
Secondary	26.3	32.14	23.3	41.6	29.2
Hr. Secondary	26.3	34.7	34.6	25.7	30.9
Graduate	27.8	30.1	27.2	33.3	29.3
Post Graduate	22.2	17.14	13.6	22.7	18.1
Total	16.7	24.4	19.5	22.3	20.6

Source: Own calculations based on field survey, 2014.

Figure 3.13. Employment and Unemployment Ratio, Wokha
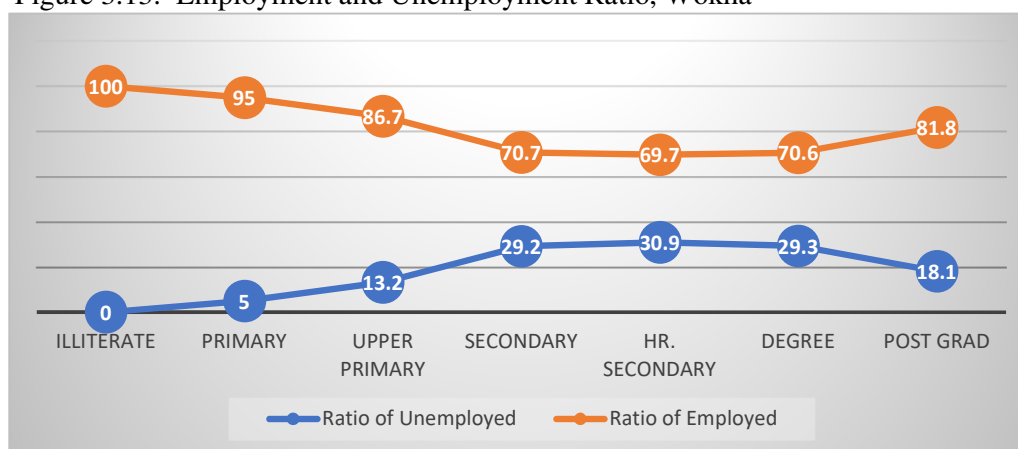
Source: Appendices Table A 8.

The unemployment rate by region is higher for urban areas at 24.4 percent as compared to 16.7 percent for rural areas. It is also higher for females at 22.3 percent against male unemployment rate of 19.5 percent. Overall, the unemployment rate for Wokha is 20.6 percent. Among the educational groups, individuals with higher secondary qualifications has highest unemployment rate at 30.9 percent, followed by graduates and secondary education at 29.3 and 29.2 percent respectively. Interestingly, there are no unemployed persons among the illiterates, while that of primary and upper primary education are 5 and 13.2 percent respectively, showing that unemployment rates are higher among higher qualified individuals, especially among secondary and bachelor degree holders.

ii)   **Zunheboto**

The data for employment and unemployment for Zunheboto district is provided in appendices table A.9. There are 301 employed and 92 unemployed persons in Zunheboto, with a labor force of 393 persons out of the total sample population of 899 individuals. The labor

force participation rate (LFPR) for Zunheboto is therefore, 43.71 percent, while the worker population ratio (WPR) and the proportion of unemployed (PU) is 33.48 percent and 10.23 percent respectively.

Table 3.15. Unemployment rate by Region and Gender, Zunheboto

Education	Rural	Urban	Male	Female	Total
Illiterate	0	0	0	0	0
Primary	26.6	0	21.4	15	19.5
Upper Primary	14.2	14.2	11.11	20	14.2
Secondary	11.7	24.19	20.63	18.18	19.7
Hr. Secondary	27.7	28.2	25	38.4	28.07
Graduate	31.4	32.6	23.7	43.18	32.03
Post Graduate	37.5	25	0	46.15	30
Total	22.7	24	19.19	29	23.4

Source: Own calculation from Field survey, 2014

Figure 3.14. Employment and Unemployment Ratio in Zunheboto
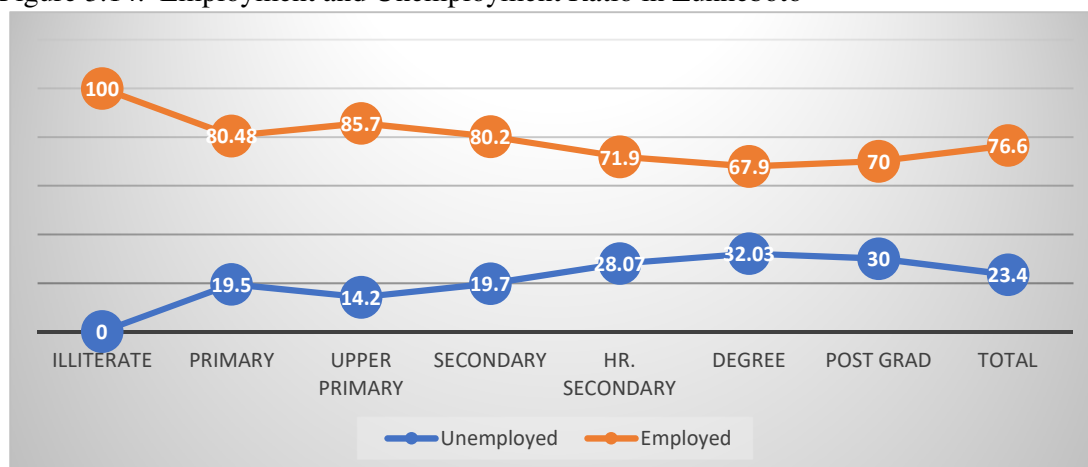
Source: Appendices Table A. 9.

As shown in table 3.15, the unemployment rate for urban areas for Zunheboto district is 24 percent which is higher than that of the rural area at 22.7 percent. Similar with Wokha, female unemployment rate is higher at 29 percent as compared to 19 percent for males. Overall, unemployment rate for Zunheboto district is 23.4 percent, with graduates having the highest unemployment rate of 32 percent, followed by post graduate at 30 percent and higher secondary at 28 percent. There are no unemployed persons among the illiterates, while it is 9 percent for individual with primary education and 13.6 percent for upper primary levels.

iii) Nagaland

The employment and unemployment figures for Nagaland as a whole is shown in appendices table A.10. In the sample survey, there are 862 employed and 238 unemployed persons in Nagaland, with a total labor force of 1100 persons out of the total sample population of 1992 individuals. The labor force participation rate (LFPR) for Nagaland is therefore, 55.22 percent, while the worker population ratio (WPR) and the proportion of unemployed (PU) is 43.27 percent and 11.94 percent respectively.

Table 3.16. Unemployment Rate by Gender and Region, Nagaland

Education	Rural	Urban	Male	Female	Total
Illiterate	0	0	0	0	0
Primary	13.1	0	7.7	11.7	9.2
Upper primary	11.8	15.9	11.94	16.6	13.6
Secondary	20.8	27.9	22.14	30.4	24.8
Hr. Secondary	26.7	31.7	30.1	29	29.7
Degree	29.5	30.7	26	37	30.2
Post Grad	29.4	19.14	10.3	31	21.8
Total	18.7	24.29	19.6	24.7	21.6

Source: Own calculation from Field survey, 2014

For Nagaland as a whole, the unemployment rate is 21.6 percent, with female unemployment at 24.7 percent which is higher that male unemployment rate of 19.6 percent. Urban unemployment is also higher at 24.3 percent as against 18.7 percent for the rural areas. Among the educational classification, graduates have the highest unemployment rate at 30.2 percent, followed by higher secondary at 29.7 and secondary at 24.8 percent. There are no unemployed persons among the illiterates, while it is 9.2 percent for the primary levels and 13.6 percent for upper primary levels.

Figure 3.15. Employment and Unemployment Ratio in Nagaland**.**
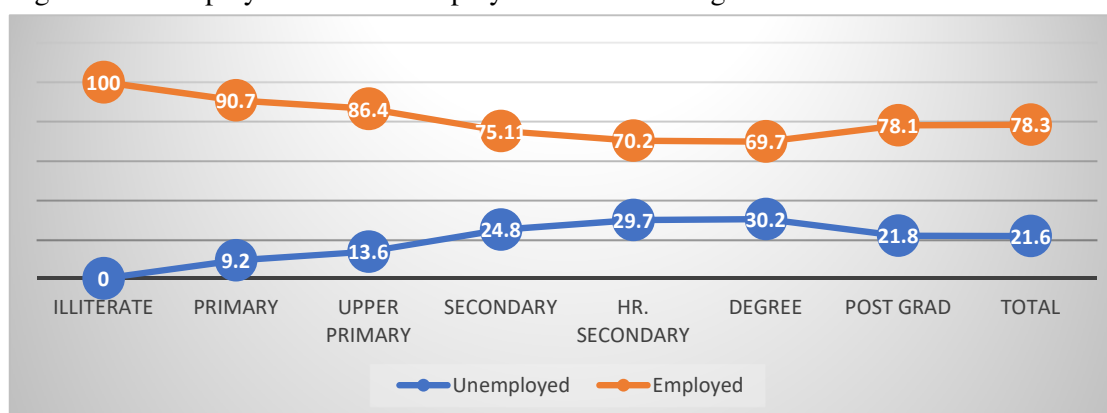
Source: Appendices Table A.10.

Figure 3.16. Unemployment Rate by Education Levels
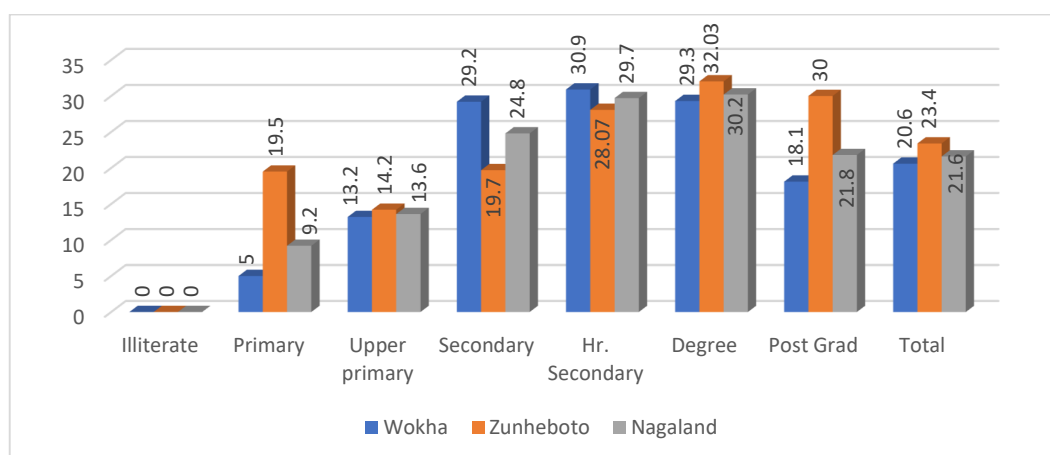
Source: Table 3.14, 3.15, 3.16.

Between the two districts, unemployment is higher for Zunheboto at 23.4 percent as compared to 20.6 for Wokha. For both the sample district and for Nagaland as a whole, unemployment is found to be higher for higher educated workers as compared to illiterates and lower educated workers. The unemployment rate is found to be highest for higher secondary workers for Wokha at 30.9 percent, while it is highest among graduates in Zunheboto at 32.03 percent. These findings show that the overall unemployment rate is high and that people with higher education have higher unemployment rates comparing to illiterates or lesser educated individuals. Moreover, the unemployment rate is higher for females than male, and it is also higher in urban area as compared to rural area in both the districts.

3.2.2. RESULTS OF LOGISTIC REGRESSION ANALYSIS.

The relationship between education and employment is examined using the binary logistic regression where the dependent variable is a categorical variable coded with 0 for employed and 1 for unemployed and regressed against the years of schooling of the individuals. Unemployed is intentionally coded as 1, so as to predict the likelihood of unemployment. As the dependent variable is not a continuous series, the goal of the analysis is to predict the likelihood that Y is equal to 1, rather than 0, given certain values of X. That is, if X and Y have a linear positive relationship, the probability that a person will have a score of Y = 1 will increase as the value of X increases.

The binary logistic regression analysis for Wokha, Zunheboto and Nagaland is presented in table 3.18, 3.19 and 3.20. The regression analysis was conducted for gender and region

separately and for the districts and for Nagaland as a whole. The Chi-square (χ^2) test from the omnibus test of model coefficient, examines whether or not the years of schooling (education) has a significant impact on employment or unemployment. In order to accept that education has a statistically significant impact on employment or unemployment, the 'p' value must be less than 0.05 ($p < 0.05$).

The coefficient 'B' is known as the log-odds, is found to be positive for all the analysis, and therefore shows a direct and positive relationship between the years of schooling and unemployment. The coefficient 'B' may be interpreted as, for every one-year increase in the years of schooling, the log-odds of someone being in unemployment increases by 0.134 times for Wokha, 0.099 for Zunheboto and 0.122 for Nagaland as a whole. But generally, the odds-ratio or Exp(B) is used to explain the relationship rather than from the 'log-odds'.

i)   Wokha

The total number of observation or (N) is 707 for Wokha with 561 employed and 146 unemployed. The same for rural area is 347 with 289 employed and 58 unemployed; 360 for urban area with 272 employed and 88 unemployed; 430 for male with 346 employed and 84 unemployed and 277 for females with 215 employed and 62 unemployed individuals. As the p values for the Chi square is less than .05 for all the analysis in Wokha, it is concluded that there is a statistically significant relationship between the years of schooling with employment or unemployment.

Table 3.17. Binary Logistic Regression for Education and Employment, Wokha

	Wokha	Rural	Urban	Male	Female
N	707	347	360	430	277
Employed	561	289	272	346	215
Unemployed	146	58	88	84	62
Chi-Square	38.23 (.000)	23.84 (.000)	9.89 (.002)	20.30 (.000)	19.14 (.000)
Constant	-3.079	-3.476	-2.52	-3.309	-2.83
B (Education)	.134	.159	.099	.142	.127
Exp(B) (Education)	1.143	1.173	1.104	1.153	1.136
S.E.	.024	.036	.034	.034	.032
df	1	1	1	1	1

(N= Number of observation. S.E.= Standard error. df = degree of freedom)
Note: Figures in the parenthesis refers to the p value. The predicted probability of membership is for unemployed.
Source: Own calculations from field survey, 2014.

Exp(B) which is the exponentiation of the B value, also known as the odds-ratio is 1.143 for Wokha, implies that the probability or likelihood of being unemployed increase by 1.143 times with one-year increase in the years of schooling. This means that there is direct relationship between years of schooling and unemployment or in other words, an inverse relationship between years of schooling and employment is evident. In simple sense, an increase in the years of schooling would increase the chances of being unemployed. To put it differently, an individual with lower years of schooling has a higher chance of being employed comparing to those with higher qualifications. The Exp(B) or log-odds of being unemployed is 1.173 for rural area, 1.104 for urban area, 1.153 for males and 1.136 for females.

ii)   Zunheboto.

For Zunheboto district, the total number of observation is 393 with 301 employed and 92 unemployed. For rural area, N is equal to 185 with 143 employed and 42 unemployed; for urban area, it is 208 with 158 employed and 50 unemployed; for male, it is 246 with 197 employed and 49 unemployed and for female, it is 147 with 104 employed and 43 unemployed. The Chi square is found to be significant for Zunheboto as a whole and for urban area and females; while it is found to be insignificant for rural area and males with the p values exceeding the critical point of 0.05. The odds-ratio or Exp(B) for Zunheboto, as shown in table 3.19, is found to be 1.104, which implies that, for every one-year increase in the years of schooling, the probability or likelihood of being unemployed increases by 1.104 times. The same for urban area is 1.144 while it is 1.178 for females.

Table 3.18. Binary Logistic Regression for Education and Employment, Zunheboto

	Zunheboto	Rural	Urban	Male	Female
N	393	185	208	246	147
Employed	301	143	158	197	104
Unemployed	92	42	50	49	43
Chi-Square	9.49	3.75	6.344	.334	12.79
	(.002)	(.053)	(.012)	(.564)	(.000)
Constant	-2.487	-2.20	-2.98	-1.733	-3.104
B (Education)	.099	.077	.135	.027	.163
Exp (B) (Education)	1.104	1.080	1.144	1.027	1.178
S.E.	.033	.041	.055	.046	.051
df	1	1	1	1	1

(N= Number of observation. S.E.= Standard error. df = degree of freedom)
Note: Figures in the parenthesis refers to the p value. The predicted probability of membership is for unemployed. Source: Own calculations from field survey, 2014.

iii) Nagaland.

The total number of observation or (N) for Nagaland is 1100 with 862 employed and 238 unemployed individuals.

Table 3.19. Binary Logistic Regression for Education and Employment, Nagaland

	Nagaland	Rural	Urban	Male	Female
N	1100	532	568	676	424
Employed	862	432	430	543	319
Unemployed	238	100	138	133	105
Chi-Square	47.56 (.000)	27.40 (.000)	15.86 (.000)	16.60 (.000)	33.05 (.000)
Constant	-2.88	-3.024	-2.65	-2.779	-2.915
B (Education)	.122	.130	.109	.105	.140
Exp (B) Education	1.130	1.139	1.115	1.110	1.150
S.E.	.019	.027	.029	.027	.027
df	1	1	1	1	1

(N= Number of observation. S.E.= Standard error. df = degree of freedom)
Note: Figures in the parenthesis refers to the p value. The predicted probability of membership is for unemployed.
Source: Own calculations from field survey, 2014.

The same for rural Nagaland is 532 with 432 employed and 100 unemployed; 568 for urban Nagaland with 430 employed and 138 unemployed; 676 for male with 543 employed and 133 unemployed and 424 for females with 319 employed and 105 unemployed individuals. The Chi-square is found to be statistically significant for all the analysis, and therefore, it is concluded that there is a statistically significant relationship between the years of schooling with employment or unemployment.

The Exp(B) or the odds-ratio for Nagaland is 1.130, which implies that, a one-year increase in the years of schooling would increase the likelihood of being unemployed by 1.130 times. The odds-ratio for rural area is 1.139, while it is 1.115 for urban area, 1.110 for males and 1.150 for females. The results show that higher qualified individuals are more likely to remain unemployed as compared to lesser qualified individuals. These findings correspond with the unemployment rates for Nagaland as explained in section 3.2.1, where unemployment rate is found to be highest for graduates and lowest for illiterates and primary education. Therefore, the hypothesis made in this study, that higher level of education is associated with higher level of employment is rejected.

3.3. Conclusion

Study on the relationship shows between education and income shows that income increase with an increase in the years of schooling, and that average income is significantly higher for higher educated individuals. The wage differentials between male and female is also found to be higher at lower levels of education, while income gap reduces significantly after reaching higher secondary levels, showing the positive effect of education in reducing inequality. However, the income gap between gender and regions is still high, and therefore, appropriate policy measures are required to address those issues.

The unemployment rate in Nagaland as obtained in this study is 21.6 percent which is unusually high as compared to India's unemployment rate of 3.5 for 2016 (see appendices table A.11). However, the unemployment rate obtained in this study is similar with the findings of the NSS 68th round, where unemployment for Nagaland is found to be 25.6 percent according to the Usual Status (PS) and 17.8 percent according to the Usual Status (Adjusted). Nevertheless, unemployment rates differ across the globe and there are many economies having high unemployment rates such as 25 percent for South Africa and Namibia, 24 percent for Greece, 19 percent for Spain and Libya, 5 percent for United States and 5.74 percent for the World average[66].

A high unemployment rate could be due to numerous factors including slow growth of the economy. For instance, the high unemployment rate for South Africa has been attributed to the legacy of apartheid, poor education and training, weak labor demand, and a general lack of entrepreneurial interest and crime[67]. In the case of Nagaland, the social, political and economic environment has been mired by conflicts, militancy and militarization for nearly seven decades due to assertion of Naga rights and identity and the demands for self-determination by Naga political groups. The conflicts came along with multiple taxation and extortions, violent encounters between Naga insurgent groups and Indian army, fratricidal killings and military abuses. All these factors adversely affected the growth and progress of the economy and therefore, limited the employment opportunities in the State.

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Because of this insurgency-related problem, most of the state resources are diverted for maintaining law and order in the State rather than channeled for economic development[68]. The lack of economic development also comes with a cost, as there were hardly any industries to absorb the expanding human resources[69]. The tumultuous business environment also dampened the entrepreneurial activity and restricted private sector investments both from within and outside the state. As a result, the government sector become the most preferred destination for employment. And since the government sector cannot absorb the teeming graduates, the outcome is a high unemployment rate for the educated labor force.

The high unemployment rate, especially for the educated workforce, is mainly due disequilibrium in the labour market. Gustavo (2015)[70] asserts that, if growth in demand for skilled workers does not keep pace with the rising supply of college graduates, relative wages decline and unemployment, underemployment, and over education increases. Job–education mismatches also arises if a large share of university graduates falls short of the quality standards and skills demanded by the labor market. Yamasaki (2012)[71] also suggests that high unemployment among the educated is possible, if the labor market is weak in terms of providing rewarding job opportunities for the skilled workers. According to Tremblay (2003)[72], unemployment rate could be higher for more qualified workers because individuals with higher qualifications prefer to wait for the right job rather than randomly enter the labor market. On the contrary, individuals with less schooling engages in the informal sector and are thus excluded from the unemployment statistics. Therefore, as the high level of unemployment could be due to several factors including slow economic growth, weak investment, low entrepreneurial activity and risk taking, poor quality of education. tumultuous business environment or law and order problems, further research is required to determine the causes and effects of high unemployment in the State. It is also felt that more research is needed to examine the weak relationship between education and employment in the State.

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Appendices

Table A.7. Monthly Mean Income by Education, Gender and Region.

Educational Group	Illit	B. Pmry	Pmry	Up. Pmry	Sec	Hr. Sec	Grad	Post Grad	Total
Wokha									
Wokha (R)	3566	12000	11923	14378	17690	22676	18681	26000	14931
Wokha (U)	3000	7000	16137	18604	23511	23000	23505	28600	21408
Income Gap (in %)	-16	-42	35	29	33	1	26	10	43
Wokha (F)	3181	3600	6576	8300	16043	23481	20565	28000	13428
Wokha (M)	4833	15631	17353	20157	21209	22275	22694	27857	20942
Income Gap (in %)	52	334	164	143	32	-5	10	-1	56
Wokha (T)	3435	11482	13720	15931	20635	22839	22000	27925	18065
Zunheboto									
Zunheboto (R)	3166	5000	9900	10040	15580	9833	22952	39400	14850
Zunheboto (U)	-	10000	12153	16633	17204	22484	25635	24600	19845
Income Gap (in %)		100	23	66	10	129	12	-38	34
Zunheboto (F)	3166	2333	2636	7470	8571	14777	23392	29200	12468
Zunheboto (M)	-	6857	14863	16394	21276	19315	24744	34800	19992
Income Gap (in %)		194	464	119	148	31	6	19	60
Zunheboto (T)	3166	5000	10787	13636	16533	18446	24276	32000	17452
Nagaland									
Nagaland (R)	3500	10200	11237	13282	16794	18197	20660	31583	14903
Nagaland (U)	3000	7750	14904	17794	20321	22725	24093	27800	20824
Income Gap (in %)	-14	-24	33	34	21	25	17	-12	40
Nagaland (F)	3178	3307	5435	8052	11941	21305	21572	28333	13115
Nagaland (M)	4833	13268	16469	18913	21238	20597	23396	29684	20612
Income Gap (in %)	52	301	203	135	78	-3	8	5	57
Nagaland (T)	3400	9948	12762	15197	18712	20834	22790	29027	17847

(R-Rural, U- Urban, M-Male, F- female, T-Total. Ill- Illiterate, B. Pmry- Below Primary, Up. Pmry-Upper Primary, Sec- Secondary, Hr. Sec- Higher Secondary, Grad- Graduate, Post Grad- Post Graduate)
Source: Field Survey, 2014.

Table A.8. Number of Employed and Unemployed in Wokha

Education	Employed	Unemployed	Total (N)	Unemployment Rate
Illiterate	39	0	39	0
Primary	95	5	100	5
Upper Primary	118	18	136	13.2
Secondary	80	33	113	29.2
Hr. Secondary	58	26	84	30.9
Graduate	135	56	191	29.3
Post Graduate	36	8	44	18.1
Total	561	146	707	20.6

Source: Field survey, 2014.

Table A.9.   Number of Employed and Unemployed in Zunheboto

Education	Employed	Unemployed	Total	Unemployment Rate
Illiterate	6	0	6	0
Primary	33	8	41	19.5
Upper Primary	60	10	70	14.2
Secondary	77	19	96	19.7
Hr. Secondary	41	16	57	28.07
Graduate	70	33	103	32.03
Post Graduate	14	6	20	30
Total	301	92	393	23.4

Source: Own calculation from Field survey, 2014

Table A.10. Number of Employed and Unemployed in Nagaland

Education	Employed	Unemployed	Total	Unemployment Rate
Illiterate	45	0	45	0
Primary	128	13	141	9.2
Upper Primary	178	28	206	13.6
Secondary	157	52	209	24.8
Hr. Secondary	99	42	141	29.7
Graduate	205	89	294	30.2
Post Graduate	50	14	64	21.8
Total	862	238	1100	21.6

Source: Own calculation from Field survey, 2014

Table A.11. Unemployment rates for some countries across the world

Countries	South Africa	Namibia	Greece	Spain	Libya	United States	India	World
Unemployment Rate	25.9	25.6	23.9	19.4	19.2	4.9	3.5	5.74

Source: The World Bank (2017)

CHAPTER 4

EDUCATION AND INCOME INEQUALITY

IN NAGALAND

CHAPTER 4
EDUCATION AND INCOME INEQUALITY IN NAGALAND

The issue of income distribution continues to dominate mainstream economic discourse across the world since the pioneering works of Simon Kuznets in 1955[73]. According to OXFAM[74], total global wealth has reached $255 trillion, of which, more than half of this wealth has been in the hands of the richest 1 percent in the world. At the very top, the richest eight individuals have a net wealth of $426 billion, which is equal to the net wealth of the bottom half of humanity, asserting that it's time to build a human economy that benefits everyone, not just the privileged few. These modern-day income inequalities have been driven by two main factors: a surge in income and wealth at the top end; and a combination of reduced wealth and slower income growth during good times and a fall in income during bad times, at the bottom end[75].

Over the past decades, labor markets have been profoundly transformed by the interplay of globalization, technological change and regulatory reforms. These changes have had a major impact on earnings and income. People with skills in high demand sectors have seen their earnings rise significantly, while workers with low skills have not kept up[76]. This is because technological changes disproportionately raise the demand for capital and skilled labor over low-skilled and unskilled labor by eliminating many jobs through automation or upgrading the skill level required to attain or retain those jobs (Card and DiNardo, 2002[77]: Acemoglu, 1998[78]).

Higher income inequality lowers growth by depriving the ability of lower-income households to stay healthy and accumulate physical and human capital[79]. Increasing

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concentration of incomes in the hands of few individuals also reduce aggregate demand and undermine growth, because the wealthy spend a lower fraction of their incomes than lower-income groups[80]. Further, it can lead to under-investment in education as poor children end up in lower-quality schools and are less able to pursue higher education. Therefore, in a world where technology is increasing productivity and simultaneously mechanizing jobs, raising skill levels is critical for reducing the dispersion of earnings[81].

Equal access to education is among the basic human rights and a component of wellbeing. Yet, educational attainment also differs among and within nations. To measure educational inequalities, two measures, namely the standard deviation of schooling and the educational Gini is used. However, the standard deviation is only a measure of absolute dispersion and it does not provide a consistent picture of the distribution of education, especially for countries with very low and high levels of average schooling. The Education Gini Coefficient, measured through the mean years of schooling, is therefore seen as a more consistent and robust measure of the distribution of education[82]. This chapter, therefore, employs an education Gini index to measure inequality in educational attainments. Similarly, this study used the Gini coefficient to examine the inequalities in income.

4.1. Educational and Income Inequalities in the Global Scenario

The educational inequalities measured through the Gini index by Benaabdelaali *et.al* (2012)[83] is presented in table 4.1. The results show that the extent of inequalities in educational distribution for 146 countries around the world has reduced from 42 percent in 1995 to 34 percent in 2010, showing that education is relatively more equally distributed in recent years than before. Between the gender, the educational Gini for male is lower at 30 percent in 2010, as compared to 38 percent for females, indicating that educational inequality is higher for females. However, both male and female have shown significant reduction in the Gini index

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over the period. The female educational Gini reduced from 46 percent in 1995 to 40 percent in 2005 and to 38 percent in 2010. Likewise, educational Gini for male also reduced from 37 percent in 1995 to 30 percent in 2010, showing rapid reduction in educational inequalities across the globe.

Table 4.1. Educational Gini Index across the world

Countries	Educational Gini			
	1995	2000	2005	2010
World (146)	42	39	36	34
Female	46	43	40	30
Male	37	34	31	34
Advanced Countries (24)	25	23	20	19
Female	27	24	21	20
Male	24	21	19	18
Developing Countries (122)	44	41	38	36
Female	49	47	43	41
Male	39	35	33	31
South Asia (7)	60	56	50	46
Female	71	67	61	57
Male	49	45	41	37

Source: Benaabdelaali et. al. (2012)

Between the advanced and developing countries, the educational Gini is lower for the advanced countries at 20 percent in 2010 as compared to 36 percent for the developing countries, showing that education is more equitably distributed in advanced countries. The gender gap in educational inequalities is also lower for the advanced countries with males and females educational Gini at 18 and 20 percent respectively in 2010. In contrast, the male and female Gini index for the developing countries stood at 31 and 41 percent respectively showing significant variation in educational inequalities among gender.

For seven south Asian countries, the educational Gini remained above global average, with 60 percent in 1995, 50 percent in 2005 and 46 percent in 2010. The gender gaps in educational inequalities is also higher among the south Asian countries with males Gini lower at 37 percent as compared to females at 57 percent, a difference of 20 percentage points in 2010. This shows that educational inequality is remarkably higher among south Asian countries, and particularly for females in these regions.

Table 4.2. MYS, Gini Index and HDI for Select Countries

Countries	MYS (2015)	Income Gini (2015)	HDI Rank (2016)
Norway	12.7	25.9	1
Australia	13.2	34.9	2
Denmark	12.7	29.1	5
Brazil	7.8	51.5	79
Indonesia	7.9	39.5	113
India	6.3	35.2	131
Nepal	4.1	32.8	144
Pakistan	5.1	30.7	147
Sierra Leone	3.3	34	179

Source: Human Development Report 2016, UNDP.

The Mean Years of Schooling (MYS), Income Gini index and the Human Development Index (HDI) for some countries are presented in table 4.2. The MYS for India was 6.3 in 2015, which is higher than 5.1 for Pakistan and 4.1 for Nepal; but lower than 7.8 for Brazil, 12.7 for Denmark and Norway and 13.2 for Australia. Sierra Leone, which is ranked 179 in the 2016 Human Development Index (HDI) has a very low MYS of 3.3 years in 2015. The Income inequality as measured from the Gini index for India was 35.2 percent showing a relatively equitable distribution, as compared to 51.5 for Brazil and 39.5 for Indonesia which showed higher income inequality, even though both the countries are ranked higher than India in the HDI for 2016. Norway and Australia, which are ranked number 1 and 2 in 2016 HDI rankings, has a Gini index of 25.9 and 34.9 respectively.

Table 4.3. India's HDI Trends based on Consistent Time-Series Data

Year	Life Expectancy at Birth	Expected Years of Schooling	MYS	GNI Per Capita (2011 PPP$)	HDI Value
1990	57.9	7.6	3.0	1751	0.428
1995	60.4	8.2	3.5	2035	0.460
2000	62.6	8.3	4.4	2495	0.494
2005	64.5	9.7	4.8	3191	0.536
2010	66.5	10.8	5.4	4358	0.580
2011	66.9	11.3	5.3	4594	0.590
2012	67.3	11.5	5.6	4776	0.599
2013	67.6	11.6	5.8	5027	0.607
2014	68.0	11.6	6.1	5329	0.615
2015	68.3	11.7	6.3	5663	0.624

Source: UNDP-HDR 2016 [84].

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[84] UNDP (2016). "Human Development for Everyone: Briefing Note for Countries on the 2016 HDR- India". Retrieved from http://www.hdr.undp.org/sites/all/themes/hdr_theme/country-notes/IND.pdf.

The MYS is used by UNDP in the Human Development Report (HDR) since 2010 as one of the educational development indicators in the calculation of HDI. As shown in table 4.3, the MYS for India have been increasing consistently over the years, from 3 years in 1990 to 5.4 year in 2010 and to 6.3 years in 2015. Likewise, the expected year of schooling also increased from 7.6 years in 1990 to 10.8 years in 2010 and to 11.7 years in 2015. These improvements in educational attainments have been accompanied by improvements in life expectancy from 57.9 year in 1990 to 68.3 years in 2015. Likewise, GNI percapita also increased from 1751$ in 1990 to 5663$ in 2015. As a result, the HDI value improved from 0.42 in 1990 to .053 in 2005 and to 0.62 in 2015.

Further, the correlation between the MYS and HDI obtained from table 4.3 is 0.988 which is statistically significant at 1 percent, showing that the MYS is strongly correlated with the HDI, and that a higher MYS would lead to an improvement in the HDI. Nevertheless, India's performances in these broad dimensions are still low in international standards and therefore needs further improvements.

4.2. Mean Years of Schooling (MYS) in Nagaland

MYS indicates the average number of completed years of education of a country's population, excluding years spent repeating individual grades. This study used the UNESCO Institute of Statistics (UIS)[85] method to derive the MYS. Educational levels were categorized into eight groups similar to the International Standard Classification of Education (ISCED) methods, such as, a) illiterate, b) below primary, c) primary, d) upper primary, e) secondary, f) higher secondary, g) graduation, h) post-graduation etc. The years of schooling for each educational group are counted from preprimary levels and are thus taken as 0, 5, 7, 10, 12, 14, 17, 19 respectively.

The MYS as an indicator is important because it is used widely as a measure of a country's stock of human capital. Moreover, it is required for the calculation of the educational inequalities. The MYS is obtained by multiplying the percentage of the population of the respective educational group with the highest years of schooling for each educational group.

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[85] UIS (2013): UIS Methodology for Estimation of Mean Years of Schooling. UNESCO, Institute for Statistics.

This study obtained the MYS for aged 20 and above for those who have completed or gave up education. The MYS for both region and gender is presented separately for Wokha and Zunheboto districts in table 4.4 and 4.5 and for Nagaland as a whole in table 4.6.

Table 4.4. Mean Years of Schooling for Wokha

Educational Level	Male	Female	Rural	Urban	Total
Illiterate	0	0	0	0	0
Below Primary	0.36	0.25	0.5	0.12	0.19
Primary	0.71	0.8	0.86	0.61	0.74
Upper Primary	2.28	1.84	2.55	1.65	2.11
Secondary	2.05	1.16	1.73	1.67	1.7
Hr. Secondary	1.25	1.67	1.35	1.49	1.41
Bachelor Degree	4.48	3.44	2.57	5.68	4.08
Post Graduate	1.04	1.48	0.45	2.02	1.21
MYS	12.2	10.67	10.04	13.28	**11.45**

Source: Own calculations based on field survey, 2014.

Table 4.5. Mean Years of Schooling for Zunheboto

Educational Level	Male	Female	Rural	Urban	Total
Illiterate	0	0	0	0	0
Below Primary	0.21	0.23	0.33	0	0.22
Primary	0.64	0.4	0.7	0.24	0.56
Upper Primary	1.94	2	2.01	1.91	1.96
Secondary	2.97	3.08	2.49	3.48	3
Hr. Secondary	2.31	1.06	1.31	2.41	1.9
Bachelor Degree	3.79	4.04	4.33	3.46	3.9
Post Graduate	0.64	1.26	0.63	1.05	0.85
MYS	12.52	12.1	11.83	12.58	**12.39**

Source: Own calculations based on field survey, 2014

Table 4.6. Mean Years of Schooling for Nagaland

Educational Level	Male	Female	Rural	Urban	Total
Illiterate	0	0	0	0	0
Below Primary	0.30	0.24	0.44	0.12	0.28
Primary	0.68	0.67	0.81	0.54	0.68
Upper Primary	2.15	1.89	2.36	1.75	2.06
Secondary	2.39	1.78	1.99	2.35	2.17
Hr. Secondary	1.65	1.47	1.33	1.83	1.59
Bachelor Degree	4.22	3.64	3.17	4.85	4.01
Post Graduate	0.89	1.41	0.51	1.66	1.08
MYS	12.32	11.14	10.65	13.13	**11.87**

Source : Own calculation, based on field survey, 2014.

The estimated MYS for Wokha is 11.45, with males having a higher MYS of 12.2 as compared to 10.67 for females. Among the regions, urban area has higher MYS of 13.28 as compared to rural areas at 10.04. For Zunheboto district, the MYS is found to be 12.39, with males MYS at 12.52 which is slightly higher than female MYS of 12.1. However, the gender gap in educational attainment is lower in Zunheboto, with a difference of .50 points, as against a difference of 1.53 points in Wokha. The MYS is also higher for urban areas in Zunheboto at 12.58 as compared to rural areas at 11.83. However, the difference in the MYS between rural and urban region for Zunheboto is only 0.75, whereas that of Wokha is 3.24, showing that the MYS is not only higher for Zunheboto but more evenly distributed among region and gender as compared to Wokha.

The MYS for the state of Nagaland is found to be 11.87 which is higher than the all India average of 6.3 in 2015 (See table 4.3). The MYS is found to be higher for the Urban areas at 13.13, while that of the rural areas is found to be 10.65. The MYS for male is also higher at 12.32 as compared to female at 11.14. The MYS obtained from this study for Nagaland is high as compared to India or other developing economies, considering the fact that Nagaland became one of the states of India only in 1963 and most of the educational development took place thereafter. An increase in the MYS, however, is the result of increased appreciation of the benefits of education by individuals and society, as well as increased government provision[86]. The growth in literacy and education in Nagaland and government's investment in the education sector as discussed in chapter 2, and the importance attached to education by the Society as a whole have contributed for this rapid improvement in educational outcomes.

4.3. Educational Inequality

Educational inequalities have long been a matter of significant policy concern, in both advanced and developing countries, as it is an important tool to assess the progress in educational development of a country. The way human capital is distributed across the population also have important economic consequences, affecting income distribution and economic growth. The Gini index of education is a measure of the relative inequality of the schooling distribution. It can be calculated using educational resources data, achievement, enrollment, or attainment data[87]. A popular and widely used method of calculating educational

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[86] .

[87] Benaabdelaali, W., Hanchane, S. and Kamal, A. (2012). "Educational Inequality in the World, 1950-2010: Estimates from a New Dataset". In: Inequality, Mobility and Segregation: Essays in Honor of Jacques Silber, Edition: Research on Economic Inequality, Volume 20. Emerald Group Publishing.

inequality is the one proposed by Thomas *et al.* (2000)[88] who calculated a Gini index of education based on school attainment data. Education Gini is popularly used as an important indicator of welfare, complementing average education attainment, health and nutrition, income per capita, and other indicators of welfare.

4.3.1. Wokha

The educational inequalities measured from the Gini index is shown in table 4.7. The educational Gini index is found to be 25.6 percent for Wokha as a whole showing a relatively equitable distribution of education. The educational Gini for males is 20 percent while it is 31 percent among females, showing higher educational inequality for females by 11 percentage points. The educational Gini for rural areas in Wokha is 27.6 percent, while it is 18.3 percent for urban areas. The difference in Gini index between rural and urban areas in Wokha is 9.3 percentage points, with the educational inequality higher in rural areas.

Table 4.7. Educational Gini index for Wokha, Zunheboto and Nagaland

Gini (E)	Wokha	Zunheboto	Nagaland
Total	25.6	17	22
Male	20	15.9	18.4
Female	31	21.1	27.8
Rural	27.6	21	25.5
Urban	18.3	16.5	17.4
Age 20-50	17	16.1	16.9
Age 51-80	36.3	20.5	31.8

Source: *Own Calculation, based on field survey, 2014.*

To bring out the inter-temporal dimensions in educational distribution, the population is further divided into two broad age categories such as 20-50 years representing the younger age cohort and age group of 51-80 years representing the older age cohorts. The Gini index for the younger age cohorts of 20-50 years is found to be 17 percent, while that of the older age cohorts of 51-80 years is found to be 36.3 percent, a net difference of 19.3 percentage points, showing that educational inequalities were more severe among the older age cohorts. The lower

DOI: 10.1108/S1049-2585(2012)0000020016.
[88] Thomas, V., Wang, Y. and Fan, X. (2000) "Measuring Education Inequality: Gini Coefficients of Education". Working paper 2525. The World Bank

inequalities for the younger age cohorts could be attributed to improvements in access to education in recent years through expansion of educational institutions in the State.

4.3.2. Zunheboto

The educational Gini for Zunheboto is found to be 17 percent showing highly equitable distribution of education in the district. The educational Gini is found to be 15.9 percent for males, 21.1 percent for females, 21 percent for rural areas and 16.5 percent for urban areas. The difference in the Gini index between rural and urban areas in Zunheboto is 4.5, while that of male and female is 5.2 percentage points, showing that variations in educational inequalities are lesser in Zunheboto as compared to Wokha for both gender and region. Among the age cohorts, the younger age cohort of 20-50 years has a lower educational Gini at 16.1 percent as compared to the older age cohorts of 51-80 years at 20.5 percent, a net difference of 4.4 percentage points.

4.3.3. Nagaland

The educational Gini for the State of Nagaland is found to be 22 percent which is fairly low comparing to world's average of 34 percent, developing countries at 36 and South Asian countries at 46 percent (see table 4.1). Urban Nagaland shows lesser inequality in educational distribution comparing to rural areas at 17.4 and 25.5 percent respectively. Educational inequality is also higher among female at 27.8 as compared to male at 18.4 percent. Likewise, it is higher for the older age cohorts of 51-80 years at 31.8 percent as compared to the younger age cohorts of 20-50 years at 16.9 percent.

The result shows that educational inequality is higher for Wokha as compared to Zunheboto, despite the fact that literacy rates for Wokha remained higher than Zunheboto since 1981. Interestingly, the mean years of schooling was also found to be higher for Zunheboto, except for urban areas which was higher in Wokha. However, in both the districts and for Nagaland as a whole, educational inequalities are found to be higher for females, rural areas and older age cohort as compared to males, urban area and younger age cohort.

4.3.4. Educational Distribution in Wokha

The details of the educational distribution for Wokha district by gender, region and age groups is presented in table 4.8 to 4.11. Out of the total sample population, 7 percent of the population were illiterate, while 93 percent were literates. Among the literates, elementary education comprising of below primary, primary and upper primary levels of education constituted 38 percent of the population; followed by higher education, comprising of graduates and post graduates constituting 30 percent; and secondary and higher secondary combined constituting 24 percent of the total population.

The MYS for illiterates is zero, because the percentage of the illiterate population multiplied by zero years of schooling is zero. The MYS for elementary education is 3.04 years, while it is 3.11 years for secondary education and 5.3 years for higher education. The calculated MYS for Wokha is therefore, 11.45 years.

Table 4.8. Educational Distribution for Wokha

Education	N	%	CF	MYS	%	CF
Illiterate	39	07	07	0.00	00	00
Below Primary	36	06	13	0.19	02	02
Primary	60	11	24	0.74	06	08
Upper Primary	119	21	45	2.11	18	27
Secondary	80	14	59	1.70	15	41
Hr. Secondary	57	10	70	1.41	12	54
Graduate	135	24	94	4.08	36	89
Post Graduate	36	06	100	1.22	11	100
Total	562	100		11.45	100	

N = Population
% = Percentage
CF = Cumulative Frequency
MYS = Mean Years of Schooling

Source: *Own calculations, based on field survey, 2014.*

Table 4.9. Educational Distribution by Gender (Wokha)

Education	Male						Female					
	N	%	CF	MYS	%	CF	N	%	CF	MYS	%	CF
Illiterate	6	02	02	0.00	00	00	33	15	15	0.00	00	00
Below Primary	25	07	09	0.36	03	03	11	05	20	0.25	02	02
Primary	35	10	19	0.71	06	09	25	12	32	0.81	08	10
Upper Primary	79	23	42	2.29	19	28	40	18	50	1.84	17	27
Secondary	59	17	59	2.05	17	44	21	10	60	1.16	11	38
Hr. Secondary	31	09	68	1.26	10	55	26	12	72	1.68	16	54
Graduate	91	26	94	4.48	37	91	44	20	92	3.45	32	86
Post Graduate	19	06	100	1.05	09	100	17	08	100	1.49	14	100
Total	345	100		12.20	100		217	100		10.67	100	

Table 4.10. Educational Distribution by Region (Wokha)

Education	Rural						Urban					
	N	%	CF	MYS	%	CF	N	%	CF	MYS	%	CF
Illiterate	30	10	10	0.00	00	00	9	03	03	0.00	00	00
Below Primary	29	10	20	0.50	05	05	7	03	06	0.13	01	01
Primary	36	12	33	0.87	09	14	24	09	15	0.62	05	06
Upper Primary	74	26	58	2.55	26	39	45	17	31	1.65	13	18
Secondary	42	14	73	1.74	17	57	38	14	45	1.68	13	31
Hr. Secondary	28	10	82	1.35	14	70	29	11	56	1.49	11	42
Graduate	44	15	98	2.58	26	96	91	33	89	5.69	43	85
Post Graduate	7	02	100	0.46	05	100	29	11	100	2.03	15	100
Total	290	100		10.05	100		272	100		13.28	100	

Table 4.11. Educational Distribution by Age Cohort (Wokha)

Education	Age 20 - 50						Age 51 - 80					
	N	%	CF	MYS	%	CF	N	%	CF	MYS	%	CF
Illiterate	8	02	02	0.00	00	00	31	19	19	0.00	00	00
Below Primary	6	01	03	0.07	01	01	30	19	38	0.94	13	13
Primary	30	07	11	0.52	04	04	30	19	57	1.31	18	30
Upper Primary	87	22	33	2.16	16	21	32	20	77	2.00	27	58
Secondary	60	15	48	1.79	13	34	20	13	89	1.50	20	78
Hr. Secondary	47	12	59	1.64	12	47	10	06	96	0.88	12	90
Graduate	130	32	92	5.50	41	88	5	03	99	0.53	07	97
Post Graduate	34	08	100	1.61	12	100	2	01	100	0.24	03	100
Total	402	100		13.29	100		160	100		7.39	100	

Table 4.9 shows the educational distribution by **gender** for Wokha. Among males, the percentage of illiterates is only 2 percent while that of females is 15 percent, showing higher illiteracy among females. For both males and females, the highest proportion of population is graduates with 26 percent for males and 20 percent for females. Elementary education constitutes 40 percent of the total population for males and 35 percent for females; whereas, secondary education constituted 26 percent for males and 22 percent for females and the proportion of higher education is 32 percent for males and 28 percent for females respectively. Likewise, the MYS for elementary education is 3.36 years for males and 2.9 years for females; while it is 3.31 years for males and 2.84 years for females for secondary education; and 5.53 years for males and 4.94 years for females for higher education. The MYS for males is 12.2 years, while it is 10.6 years for females.

The **regional** distribution of education is presented in table 4.10. The percentage of illiterates in rural areas is 10 percent while it is only 3 percent for urban areas. For rural areas, the largest proportion of populations were upper primary education with 26 percent followed by 15 percent for graduates and 14 percent for secondary education. For urban areas, graduates constituted the largest proportion at 33 percent followed by upper primary at 17 percent and

secondary at 14 percent. The proportion of elementary, secondary and higher education to total population for rural areas in Wokha is 48, 24 and 17 percent respectively, while that of the urban areas is 29, 25 and 44 percent respectively. Therefore, in the rural areas, the proportion of population who have completed schooling up to higher secondary levels constituted 82 percent of the population, while it is only 56 percent for the urban areas.

The MYS for rural areas is 3.92 years for elementary education, 3.09 for secondary education and 3.04 years for higher education with a total of 10.05 years. For urban areas, the MYS is 2.4, 3.17 and 7.72 years for elementary, secondary and higher education respectively with a total MYS of 13.28 years.

The educational distribution by **age cohort** as given in table 4.11 shows that among the younger age cohorts only 2 percent were illiterate as compared to 19 percent for older age cohort. The percentage of elementary, secondary and higher education are 30, 27 and 40 percent respectively for the younger age cohort of 20-50 years, as compared to 58, 19 and 4 percent respectively for the older age cohort. This shows that 77 percent of the population among the age cohort of 51-80 years are with higher secondary education and below as compared to 57 percent for the younger age cohorts.

Likewise, the MYS for the younger age cohorts are 2.75, 3.43 and 7.11 years for elementary, secondary and higher education with a total MYS of 13.29, as compared to 4.25, 2.38 and 0.77 years with a total MYS of 7.39 for the older age cohorts. This implies that the distribution of education is significantly equitable and a larger proportion of population get access to higher education among the younger age cohorts as compared to the older age cohort.

4.3.5 Educational Lorenz Curve for Wokha

The Lorenz curve, which shows the actual quantitative relationship between the percentage of population and the percentage of the MYS is presented by gender, region and age cohorts for Wokha in figure 4.1, 4.2 and 4.3. The Lorenz curve is derived from table 4.8 - 4.11 as given above. The more the Lorenz curve is located away from the diagonal or the line of perfect equality, the greater is the degree of inequality represented.

Figure 4.1. Educational Lorenz Curve for Gender, Wokha
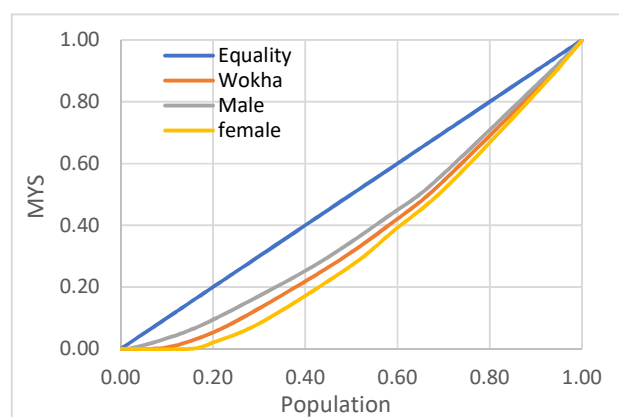
Source: Table 4.8, 4.9   .

Figure 4.2. Educational Lorenz Curve by Region, Wokha
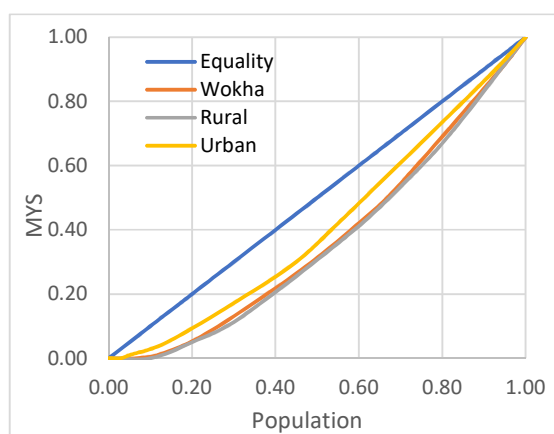
Source: Table 4.8, 4.10

Figure 4.3. Educational Lorenz Curve by Age Cohort, Wokha
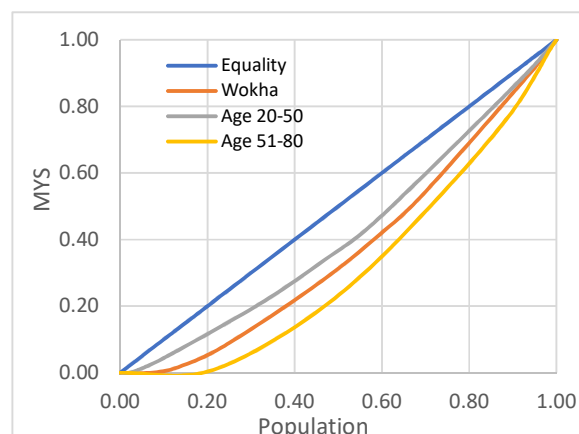
Source: Table 4.8, 4.11

The educational Lorenz curve for gender, shows that educational inequality is higher among females as compared to males. It is also observed that the gaps in inequalities narrows as the MYS increases. Further, for rural and urban region, educational inequalities are higher in the rural region as compared to the urban area. Among age cohorts, educational inequalities are higher among the older age cohorts as compared to the younger age cohorts. Further, the gaps in inequality between the age cohorts is greater than that of gender and region for Wokha.

4.3.6. Educational Distribution in Zunheboto

The educational distribution for Zunheboto district is presented in table 4.12 to 4.15. Out of the total sample population, only 2 percent of the population were illiterate. The proportion of population is highest for secondary education at 38 percent followed by

elementary education at 33 percent and higher education constituting 27 percent of the total population. This reflects that 72 percent of the population were of higher secondary education and below, while only 28 percent were having college and universities degrees. The corresponding MYS for elementary education was 2.74 years, while it is 4.9 years for secondary education and 4.75 years for higher education with a total MYS of 12.39.

Table 4.12. Educational Distribution for Zunheboto

Education	N	%	CF	MYS	%	CF
Illiterate	6	02	02	0.00	00	00
Below Primary	14	05	06	0.22	02	02
Primary	25	08	14	0.56	05	06
Upper Primary	61	20	34	1.96	16	22
Secondary	78	25	59	3.00	24	46
Hr. Secondary	42	13	72	1.90	15	62
Graduate	71	22	94	3.90	31	93
Post Graduate	14	05	100	0.85	07	100
Total	311	100		12.39	1.00	

N = Population
% = Percentage
CF = Cumulative Frequency
MYS = Mean Years of
        Schooling

Source: *Own calculations,
        based on field survey,
        2014.*

Table 4.13. Educational Distribution for Gender (Zunheboto)

Education	Male						Female					
	N	%	CF	MYS	%	CF	N	%	CF	MYS	%	CF
Illiterate	0	00	00	0.00	00	00	6	06	06	0.00	00	00
Below Primary	9	04	04	0.22	02	02	5	05	10	0.24	02	02
Primary	19	09	14	0.65	05	07	6	06	16	0.40	03	05
Upper Primary	40	19	33	1.94	16	22	21	20	36	2.00	17	22
Secondary	51	25	58	2.97	24	46	27	26	62	3.09	26	47
Hr. Secondary	34	17	74	2.31	18	65	8	08	70	1.07	09	56
Graduate	46	22	97	3.80	30	95	25	24	93	4.05	33	90
Post Graduate	7	03	100	0.65	05	100	7	07	100	1.27	10	100
Total	206	100		12.52	100		105	100		12.10	100	

Table 4.14. Educational Distribution for Region (Zunheboto)

Education	Rural						Urban					
	N	%	CF	MYS	%	CF	N	%	CF	MYS	%	CF
Illiterate	6	04	04	0.00	00	00	0	00	00	0.00	00	00
Below Primary	10	07	11	0.34	03	03	4	02	02	0.00	00	00
Primary	15	10	21	0.70	06	09	10	06	09	0.25	02	02
Upper Primary	30	20	41	2.01	17	26	31	19	28	1.91	15	17
Secondary	31	21	62	2.50	21	47	47	29	57	3.48	28	45
Hr. Secondary	14	09	71	1.32	11	58	28	17	74	2.42	19	64
Graduate	38	26	97	4.34	37	95	33	20	94	3.46	28	92
Post Graduate	5	03	100	0.64	05	100	9	06	100	1.06	08	100
Total	149	100		11.84	100		162	100		12.58	100	

Table 4.15. Educational Distribution for Age Cohort (Zunheboto)

Education	Age 20-50						Age 51-80					
	N	%	CF	MYS	%	CF	N	%	CF	MYS	%	CF
Illiterate	3	01	01	0.00	00	00	3	04	04	0.00	00	00
Below Primary	8	03	05	0.17	01	01	6	08	12	0.39	04	04
Primary	14	06	11	0.42	03	05	11	14	26	1.00	10	14
Upper Primary	42	18	29	1.79	14	18	19	25	51	2.47	24	38
Secondary	57	24	53	2.92	23	41	21	27	78	2.73	27	65
Hr. Secondary	36	15	68	2.15	17	58	6	08	86	1.09	11	76
Graduate	62	26	95	4.50	35	92	9	12	97	1.99	20	95
Post Graduate	12	05	100	0.97	08	100	2	03	100	0.49	05	100
Total	234	100		12.94	100		77	100		10.16	100	

The educational distribution by **gender** for Zunheboto is given in table 4.13. There were no male illiterates while 6 percent out of the total female population were illiterates. For both males and females, the highest proportion of population is secondary education with 25 percent for males and 26 percent for females. Elementary, secondary and higher education constituted 33, 42 and 25 percent for males and 31, 34 and 31 percent for females. Likewise, the MYS for elementary, secondary and higher education were 2.81, 5.28 and 4.45 years for males and 2.64, 4.16 and 5.32 for females. The MYS for males is 12.5 years, and 12.1 years for females.

The educational distribution by **rural and urban** region for Zunheboto is presented in table 4.14. The percentage of illiterates in rural areas was 4 percent while there were no illiterates in the urban area. For rural area, the largest proportion of populations were of graduates with 26 percent followed by upper primary at 20 percent. For urban area, secondary education constituted the largest proportion at 29 percent, followed by graduates at 20 percent. The proportions of elementary, secondary and higher education for rural areas in Zunheboto were 37, 30 and 29 percent respectively, showing that 67 percent of the population were having higher secondary education and below. For the urban areas, the proportion of elementary, secondary and higher education were 27, 46 and 26 percent respectively, showing that 74 percent of the population were having higher secondary education and below. The MYS for rural areas was 3.05 for elementary education, 3.82 for secondary education and 4.98 years for higher education with a total MYS of 11.84. For urban area, the MYS is 2.16, 5.9 and 4.52 years for elementary, secondary and higher education with a total MYS of 12.58.

The educational distribution by **age cohort** as given in table 4.15 shows that only 1 percent of the younger age cohorts were illiterate as compared to 4 percent for older age cohort of 51-80 years. The percentage of elementary, secondary and higher education for the age cohort

of 20-50 are 27, 39 and 31 percent respectively as compared to 47, 35 and 15 percent respectively for the older age cohort. This shows that 82 percent of the population among the age cohort of 51-80 are with higher secondary education and below as compared to 66 percent for the younger age cohorts. Likewise, the MYS for the younger age cohorts are 2.38, 5.07 and 5.47 years for elementary, secondary and higher education, as compared to 3.86, 3.82 and 2.48 years for the older age cohorts. The total MYS for the older age cohorts at 10.1 years comparing to 12.9 years for the younger age cohorts.

4.3.7. Educational Lorenz Curve for Zunheboto

The educational Lorenz curve by gender, region and age cohorts for Zunheboto district is presented in figure 4.4, 4.5 and 4.6, where the MYS is represented on the vertical axis and the percentage of populations is represented on the horizontal axis. The educational Lorenz curve for Zunheboto is constructed from table 4.12 - 4.15 respectively.

Figure 4.4. Educational Lorenz Curve for Gender, Zunheboto
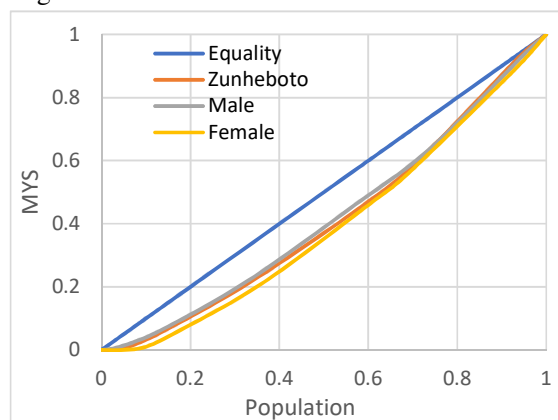
Source: Table. 4.12, 4.13

Figure 4.5. Educational Lorenz Curve for Region, Zunheboto
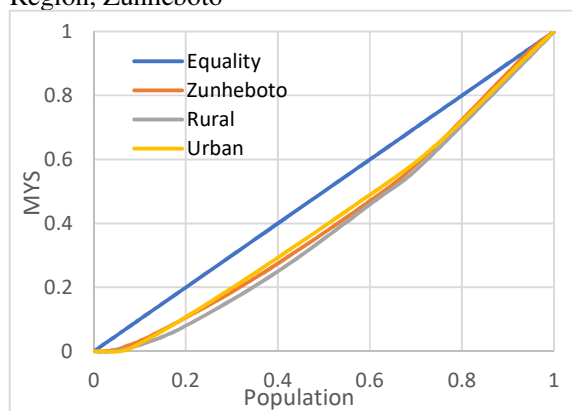
Source: Table 4.12, 4.14.

Figure 4.6. Educational Lorenz Curve for Age Cohort, Zunheboto
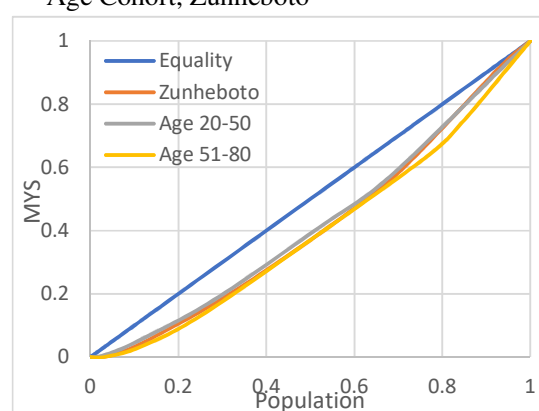
Source: Table 4.12, 4.15.

The educational Lorenz curve for gender, shows that educational inequality is slightly higher among females as compared to males. By region, it is higher for the rural area as compared to the urban area. By age cohorts, educational inequalities are higher among the older age cohorts as compared to the younger age cohorts. However, there are not much variations in educational inequalities within and between gender, region and age cohorts.

Between the two districts, the proportion of population in Wokha is higher in elementary education at 38 percent, while it is secondary education at 38 percent in Zunheboto. The proportion of populations with higher secondary levels of education and below was 70 percent for Wokha and 72 percent for Zunheboto. The proportion of illiterate population was however, higher in Wokha at 7 percent as compared to 2 percent in Zunheboto. Likewise, Zunheboto has a higher MYS at 12.3 years as compared to 11.4 years for Wokha.

By gender classification, graduates were highest in Wokha for both males and females at 26 and 20 percent, while it is secondary education at 25 and 26 percent in Zunheboto. Likewise, the proportion of populations with higher secondary and below were 68 percent for males and 72 percent for females in Wokha, while it is 74 percent for males and 70 percent for females in Zunheboto. MYS is also found to be higher for Zunheboto for both males and females at 12.5 and 12.1 as compared to Wokha at 12.2 and 10.6 years.

In rural areas, the highest proportion of population were of upper primary for Wokha at 26 percent, while it is graduates for Zunheboto at 26 percent. In the urban areas, graduates constituted the largest proportion of population in Wokha at 33 percent, while it was secondary education for Zunheboto at 29 percent. The proportion of population with higher secondary levels of education and below was 82 percent for rural areas and 56 percent for urban areas in Wokha, while it is 71 percent for rural and 74 percent in urban areas for Zunheboto. The MYS is found to be higher for rural areas in Zunheboto at 11.8 as compared to 10.05 in Wokha. However, for urban areas MYS is higher for Wokha at 13.2 as compared to 12.5 for Zunheboto.

By age cohorts, graduates constitute the highest proportion of population for the age group of 20-50 years for both Wokha and Zunheboto at 32 and 26 percent respectively. For the older age cohorts of 51-80, it is upper primary for Wokha at 20 percent and secondary education for Zunheboto at 27 percent. The proportion of population with higher secondary levels of education and below for the younger age cohort is 59 percent for Wokha, while it is 68 percent for Zunheboto. Likewise, for the older age cohorts, it is 96 percent for Wokha and 86 percent

for Zunheboto. The MYS is found to be higher for Wokha for the younger age cohorts at 13.29 as compared to 12.94 for Zunheboto. However, for the older age cohorts, the MYS is higher for Zunheboto at 10.1 as compared to 7.39 for Wokha.

4.3.8. Educational Distribution for Nagaland

The educational distribution for Nagaland is presented in table 4.16, 4.17, 4.18 and 4.19. Out of the total sample population, 5 percent of the population were illiterate. Among the literates, secondary education constituted 37 percent, followed by higher education at 30 percent and elementary education at 29 percent. This reflects that 71 percent of the population were of higher secondary education and below, while 29 percent of the population were having college and universities degrees. The corresponding MYS for elementary education was 3.03 years, while it is 3.7 years for secondary education and 5.09 years for higher education with a total MYS of 11.8 years for Nagaland.

Table 4.16. Educational Distribution for Nagaland

Education	N	%	CF	MYS	%	CF
Illiterate	45	05	05	0.00	00	00
Below Primary	50	06	11	0.29	02	02
Primary	85	10	21	0.68	06	08
Upper Primary	180	21	41	2.06	17	25
Secondary	158	18	59	2.17	18	44
Hr. Secondary	99	11	71	1.59	13	57
Graduate	206	24	94	4.01	34	91
Post Graduate	50	06	100	1.08	09	100
Total	873	100		11.88	100	

N = Population
% = Percentage
CF = Cumulative Frequency
MYS = Mean Years of
        Schooling

Source: *Own calculations,
        based on field survey,
        2014.*

Table 4.17. Educational Distribution by Gender, (Nagaland)

Education	Male						Female					
	N	%	CF	MYS	%	CF	N	%	CF	MYS	%	CF
Illiterate	6	01	01	0.00	00	00	39	12	12	0.00	00	00
Below Primary	34	06	07	0.31	03	03	16	05	17	0.25	02	02
Primary	54	10	17	0.69	06	08	31	10	27	0.67	06	08
Upper Primary	119	22	39	2.16	18	26	61	19	46	1.89	17	25
Secondary	110	20	59	2.40	19	45	48	15	61	1.79	16	41
Hr. Secondary	65	12	70	1.65	13	59	34	11	71	1.48	13	55
Graduate	137	25	95	4.23	34	93	69	21	93	3.64	33	88
Post Graduate	26	05	100	0.90	07	100	24	07	100	1.42	13	100
Total	551	100		12.32	100		322	100		11.14	1.00	

Table 4.18. Educational Distribution by Region, (Nagaland)

Education	Rural						Urban					
	N	%	CF	MYS	%	CF	N	%	CF	MYS	%	CF
Illiterate	36	08	08	0.00	00	00	9	02	02	0.00	00	00
Below Primary	39	09	17	0.44	04	04	11	03	05	0.13	01	01
Primary	51	12	29	0.81	08	12	34	08	12	0.55	04	05
Upper Primary	104	24	52	2.37	22	34	76	18	30	1.75	13	18
Secondary	73	17	69	2.00	19	53	85	20	50	2.35	18	36
Hr. Secondary	42	10	79	1.34	13	66	57	13	63	1.84	14	50
Graduate	82	19	97	3.18	30	96	124	29	91	4.86	37	87
Post Graduate	12	03	100	0.52	05	100	38	09	100	1.66	13	100
Total	439	100		10.66	100		434	100		13.14	100	

Table 4.19. Educational Distribution for Age Cohort (Nagaland)

Education	Age 20-50						Age 51 - 80					
	N	%	CF	MYS	%	CF	N	%	CF	MYS	%	CF
Illiterate	11	02	02	0.00	00	00	34	14	14	0.00	00	00
Below Primary	14	02	04	0.11	01	01	36	15	30	0.76	09	09
Primary	44	07	11	0.48	04	05	41	17	47	1.21	14	23
Upper Primary	129	20	31	2.03	15	20	51	22	68	2.15	25	49
Secondary	117	18	50	2.21	17	37	41	17	86	2.08	25	73
Hr. Secondary	83	13	63	1.83	14	51	16	07	92	0.95	11	84
Graduate	192	30	93	5.13	39	90	14	06	98	1.00	12	96
Post Graduate	46	07	100	1.37	10	100	4	02	100	0.32	04	100
Total	636	100		13.16	100		237	100		8.47	100	

The educational distribution by **gender** is given in table 4.17. Out of the total population, male illiterates comprise of 1 percent while it is 12 percent for females, showing higher illiteracy among females. For both males and females, the highest proportion of population are graduates with 25 percent for males and 21 percent for females. Elementary, secondary and higher education constituted 38, 32 and 30 percent for males and 29, 26 and 28 percent for females. Likewise, the MYS for elementary, secondary and higher education are 3.16, 4.05 and 5.13 years for males and 2.81, 3.27 and 5.02 years for females, with a total MYS of 12.3 years for males and 11.1 years for females.

The educational distribution by **rural and urban** region is given in table 4.17. The proportion of illiterates in the rural areas is found to be 8 percent while that of the urban areas is 2 percent, showing that illiteracy are higher in the rural areas. The highest proportion of population in the rural areas are upper primary levels with 24 percent, while that of the urban areas are graduates with 29 percent. Elementary, secondary and higher education constituted 45, 27 and 21 percent for the rural areas, while it is 29, 33 and 38 percent for the urban areas. Likewise, the MYS for elementary, secondary and higher education are 3.62, 3.34 and 3.7 years for the rural areas and 2.43, 4.19 and 6.56 years for the urban areas, with a total MYS of 10.6 years for rural areas and 13.1 years for urban areas.

Among the **age cohorts**, the percentage of illiterates for the age group of 20-50 is 2 percent, while that of the age group of 51-80 is 14 percent, showing that illiteracy is higher among the older age cohorts. The proportion of population for elementary, secondary and higher education are 29, 31 and 37 percent for the age cohorts of 20-50, while that of the older age cohorts are 54, 24 and 8 percent. This shows that the percentage of population with higher secondary and below education is 63 percent for the younger age cohorts while it is 92 percent for the older age cohorts. The MYS for elementary, secondary and higher education for the younger age cohorts are 2.62, 4.04 and 6.5 years for the age cohorts of 20-50, while it is 4.12, 3.03 and 1.32 years for the age cohorts of 51-80 years. The total MYS for the younger age cohorts is 13.16 years, while it is only 8.47 for the older age cohorts.

4.3.9. Educational Lorenz Curve for Nagaland

Figure 4.7. Educational Lorenz Curve for Gender, Nagaland
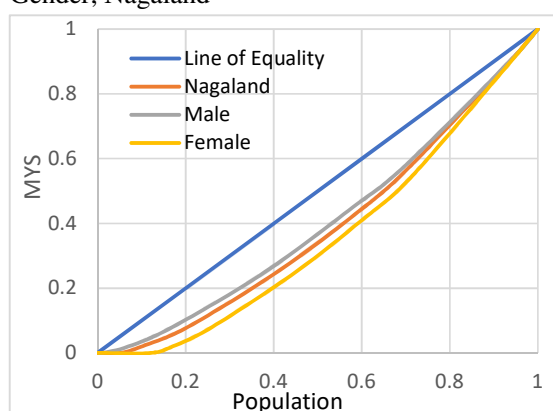
Source: Table 4.16, 4.17

Figure 4.8. Educational Lorenz Curve for Region, Nagaland
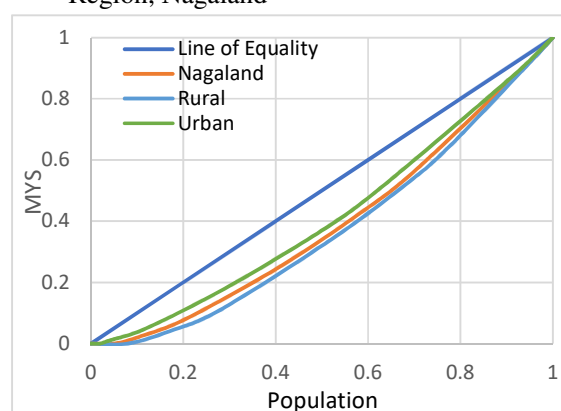
Source: Table 4.16, 4.18

Figure 4.9. Educational Lorenz Curve for Age Cohorts, Nagaland
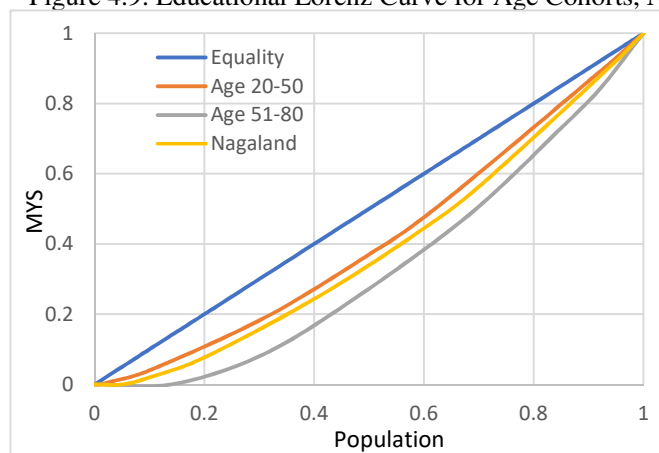
Source: Table 4.16, 4.19

The Lorenz curve for gender, region and age cohorts for Nagaland is presented above and the educational distribution from which the Lorenz curve is constructed is given in the table 4.16 to 4.19. The analysis shows that education inequality is lesser for males, urban and younger age cohorts as compared to females, rural and older age cohorts respectively. However, there is no significance difference in educational inequalities between gender and region, unlike the age cohorts, where the older age group of 51-80 years shows greater inequality as compared to the younger age cohorts of 20-51 years.

4.4. Income Inequalities

Income inequality refers to the extent to which income is distributed in an uneven manner among group of population. This section, therefore, examines the dimensions of income distribution across gender, region, age cohorts and educational levels for Wokha and Zunheboto districts and for Nagaland as a whole. The income inequalities as measured from the Gini index is presented in table 4.20. The Gini index for Wokha is found to be 33.5 percent, while it is 36 percent for Zunheboto and 34.5 for Nagaland. A Gini coefficient that lies between 0.20 and 0.35 is considered as relatively equitable distribution[89]. Therefore, with a Gini index of 34.5, income in Nagaland can be said to be relatively equitably distributed. However, there are variations between the districts, gender, region, age or educational groups which are discussed below.

Table 4.20. Income Gini Index

Gini (Y)	Wokha	Zunheboto	Nagaland
Elementary	38.5	43.5	38.8
Secondary	26	34	29.8
Higher	24.5	25	24.8
Male	27.7	29.8	28.4
Female	40	45.4	43
Rural	38.2	42	39.5
Urban	26.7	30	28
Age 20-50	30	34.7	32.5
Age 51-80	41.5	34.5	40.2
Total	33.5	36	34.5

Source: Own Calculation, based on field survey, 2014.

In Wokha district, income inequality is found to be higher for individuals with elementary education at 38.5 percent as compared to secondary education at 26 percent and

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[89] Todaro, M. P. and Smith S. C. (2015): *Economic Development*, Tenth Edition, Pearson Education Limited.

higher education at 24.5 percent. This result indicates that income inequality decreases with increase in educational levels. Income inequality is also found to be higher for females at 40 percent as compared to male at 27.7 percent, showing signification variation among gender. Similarly, rural areas have a higher Gini of 38.2 as compared to 26.7 for urban areas. Between the age groups, the Gini index is found to be lower for the for younger age cohorts at 30, while it is 41.5 for the older age cohort.

Zunheboto district also shows significant variations in the Gini index among educational groups, gender and region. However, there is no significant variations among the age cohorts unlike Wokha. Among the educational groups, inequality is found to be highest among individuals with elementary education at 43.5, followed by secondary education at 34 and higher education at 25 percent. Income inequality is found to be highest among females in Zunheboto at 45.4 percent while that of males is found to be 29.8 percent. Rural areas have higher inequality at 42 as compared to urban area at 30.

For Nagaland as a whole, income inequality is higher among elementary educated individuals at 38.8 percent, followed by secondary at 29.8 and higher education at 24.8 percent, showing that inequality reduces with an increase in education levels. Income inequality is found to be higher among females at 43 percent as compared to males at 28.4 percent. Likewise, inequality is higher for rural areas at 39.5 as compared to urban areas at 28 percent. Younger age cohorts have lower inequalities at 32.5 as compared to older age cohorts at 40.2 percent. Between the two districts, inequality is found to be higher for Zunheboto, except for the older age cohorts, where inequality is higher in Wokha. However, the overall Gini index is similar for both the district at 33.5 and 36 percent, respectively.

4.4.1. Income Distribution for Wokha

The Income distribution for Wokha districts is presented in table 4.21 to 4.26, while the mean income is presented in table 4.27. The mean income for male is ₹20942, while it is ₹13428 for females. Mean income is higher in urban area at ₹21408 as compared to rural area at ₹14931. Among the educational groups, mean income is highest for workers with higher education at ₹22952, followed by secondary education at ₹21510 and elementary education at ₹12901 per month respectively. By age groups, the mean income is marginally higher for the younger age cohorts of 20-50 year at ₹18288 as compared to the older age cohorts of 51-80 year at ₹17506 per month. Overall, the average mean income for Wokha is ₹18065 per month.

Table 4.21. Income Distribution for Wokha

Income Group	F	%	CF	Income	%	CF
1000-14000	241	42	42	1666000	16	16
14001-28000	221	39	82	4672000	46	62
28001-42000	82	14	96	2858000	28	90
42001-56000	11	2	98	511000	5	95
56001-70000	7	1	100	446000	4	100
Total	562	100		10153000	100	

F = Frequency.
% = Percentage
CF = Cumulative Frequency
Income in ₹.

Source: *Own Calculations, based on field survey, 2014*

Table 4.22. Income Distribution for Elementary and Secondary Education, Wokha

Income	Elementary						Secondary					
	F	%	CF	Income	%	C F	F	%	CF	Income	%	C F
1000-14000	158	62	62	919000	28	28	39	28	28	327000	11	11
14001-28000	70	28	0	1376000	42	70	70	51	80	1512000	52	63
28001-42000	22	09	98	739000	23	92	22	16	96	774000	27	90
42001-56000	0	00	98	0	00	92	5	04	99	235000	08	98
56000-70000	4	02	100	250000	08	100	1	01	100	70000	02	100
Total	254	100		3284000	100		137	100		2918000	100	

Table 4.23. Income Distribution for Higher Education, Wokha

Income	F	%	CF	Income	%	C F
1000-14000	44	26	26	420000	11	11
14001-28000	81	47	73	1784000	45	56
28001-42000	38	22	95	1345000	34	90
42001-56000	6	04	99	276000	07	97
56000-70000	2	01	100	126000	03	00
Total	171	100		3951000	100	

Table 4.24. Income Distribution for Gender, Wokha

Income Group	Male						Female					
	F	%	CF	Income	%	CF	F	%	CF	Income	%	CF
1000-14000	113	33	33	1019000	14	14	128	59	59	647000	22	22
14001-28000	154	45	77	3235000	45	59	67	31	90	1437000	49	72
28001-42000	63	18	96	2177000	30	89	19	09	99	681000	23	95
42001-56000	9	03	98	423000	06	95	2	01	100	88000	03	98
56001-70000	6	02	100	385000	05	100	1	00	100	61000	02	100
Total	345	100		7239000	100		217	100		2914000	100	

Table 4.25. Income Distribution for Region, Wokha

Income Group	Rural						Urban					
	F	%	CF	Income	%	CF	F	%	CF	Income	%	CF
1000-14000	161	56	56	961000	22	22	80	29	29	705000	12	12
14001-28000	95	33	88	2031000	47	69	126	46	76	2641000	45	57
28001-42000	28	10	98	992000	23	92	54	20	96	1866000	32	90
42001-56000	2	01	99	96000	02	94	9	03	99	415000	07	97
56001-70000	4	01	100	250000	06	100	3	01	100	196000	03	100
Total	290	100		4330000	100		272	100		5823000	100	

Table 4.26. Income Distribution for Age Cohort, Wokha

Income Group	Age 20 - 50						Age 51 -80					
	F	%	CF	Income	%	CF	F	%	CF	Income	%	CF
1000-14000	164	41	41	1229000	17	17	77	48	0.48	437000	16	16
14001-28000	175	44	84	3791000	52	68	46	29	0.77	881000	31	47
28001-42000	54	13	98	1854000	25	93	28	18	0.94	1004000	36	83
42001-56000	5	01	99	227000	03	97	6	04	0.98	284000	10	93
56001-70000	4	01	100	251000	03	100	3	02	1.00	195000	07	100
Total	402	100		7352000	100		160	100		2801000	100	

Table 4.27. Monthly Mean Income for Wokha

Wokha	Gender		Region		Education			Age Cohort		Total
	Male	Female	Rural	Urban	Elem.	Secon.	Higher	20-50	51-80	
Mean Income	20942	13428	14931	21408	12901	21510	22952	18288	17506	18065

Elem: Elementary, Secon: Secondary.
Source: Own Calculation based on Field Survey, 2014.

For Wokha district as a whole, the bottom quintiles of the population constituting 42.8 percent received only 16.4 percent of the income, while the bottom two quintiles constituting 82.2 percent received 62.4 percent of the Income. On the other hand, the top two quintiles constituting 3.21 percent of the population received 9.42 percent of income.

The population is divided into three educational categories namely, elementary, secondary and higher education to examine the intra inequalities within the educational groups. For elementary education, the bottom 62 percent received only 28 percent of income, while the bottom two quintiles representing 90 percent of the population received 70 percent of the income. On the other hand, the top 2 percent of the population received 8 percent of income. For secondary education, the bottom 28 percent received 11 percent of income, while the bottom two quintiles representing 80 percent of the population received 63 percent of the income. On the other hand, the top 5 percent of the population received 10 percent of the income. For higher education, the bottom 26 percent received 11 percent of the income, while the bottom 73 percent of the population received only 56 percent of the income, whereas, the top 27 percent of the population received 44 percent of the income.

For males in Wokha, the bottom 33 percent of the population received only 14 percent of the income, while the bottom two quintiles constituting 77 percent of the population received 59 percent of the Income. On the other hand, the top 5 percent of the population received 11 percent of the income. For females, the bottom 59 percent of the population received only 22 percent of income reflecting uneven distribution of income, while the bottom two quintiles

representing 90 percent of the population received 72 percent of income. On the other hand, the income share for the top 10 percent of population is 28 percent.

The income distribution by rural and urban region shows that the bottom 56 percent of the population received only 22 percent of income in the rural areas, while the bottom two quintiles representing 88 percent of the population received 69 percent of the income. At the upper quintiles, the top 2 percent of the population received 8 percent of income. For urban area, the bottom 29 percent of the population received 12 percent of income, while the bottom 76 percent of the population received only 57 percent of income. On the contrary, the top 24 percent of the population received 42 percent of income.

The distribution of income for the age cohorts reveals that the bottom 41 percent of the younger age cohorts received only 17 percent of income, and the bottom 84 percent of the population received only 68 percent of income. On the contrary, the top 15 percent of the population received 31 percent of the income. For the age group of 51-80, the bottom 48 percent received only 16 percent of the income, while the bottom 77 percent received only 47 percent of the income. At the higher quintile, the top 24 percent of the population received 53 percent of the income. The above income distributions show that majority of the populations are concentrated in the bottom two quintiles whose earnings are much lesser as compared to those that belong to the top three quintiles.

4.4.2. Income Lorenz curve for Wokha

The income Lorenz curve for Wokha district is presented in figure 4.10 to 4.13 for gender, region, age cohorts and educational groups. Income is represented on the vertical axis while the cumulative frequency of populations is depicted on the horizontal axis. By educational groups, inequality is found to be highest among the population with elementary education. The level of inequalities is similar for both secondary and higher education, with inequality slightly higher for the workers with secondary education as compared to higher education.

The Lorenz curve for gender shows that income inequality is higher for females as compared to males. Similarly, the Lorenz curve for region indicates that income inequality is higher for rural areas comparing to urban areas. Among the age cohorts, inequality is higher for the older age cohorts.

Figure 4.10. Income Lorenz Curve for Education, Wokha
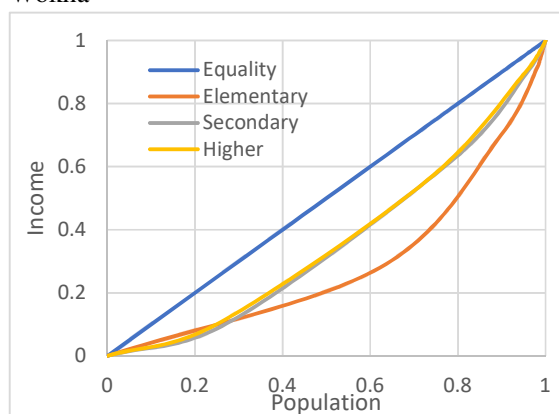
Source: Table 4.22, 4.23.

Figure 4.11. Income Lorenz Curve for Gender Wokha
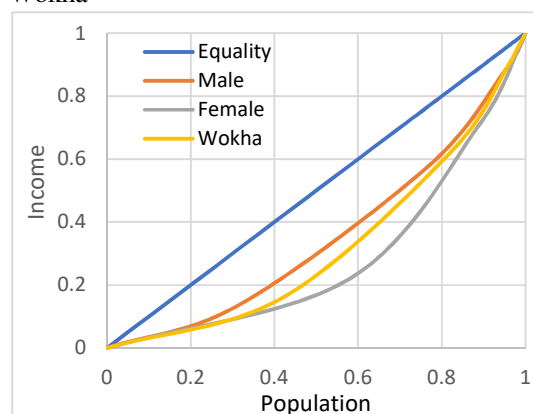
Source: Table 4.21, 4.24.

Figure 4.12. Income Lorenz Curve for Regions,
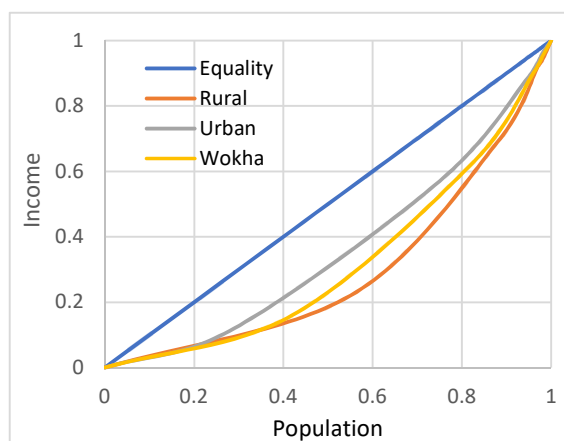
Source: Table 4.21, 4.25.

Figure 4.13. Income Lorenz Curve for Wokha Age cohort, Wokha
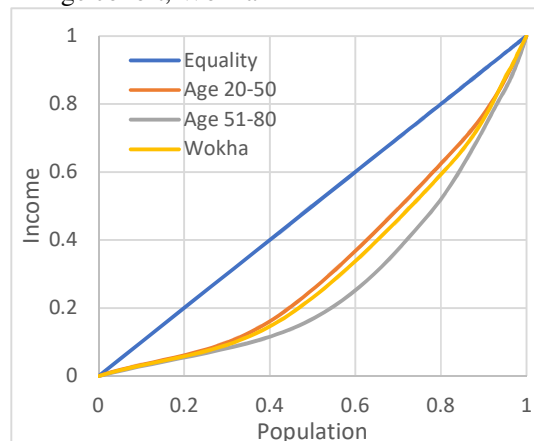
Source: Table 4.21, 4.26

4.4.3. Income Distribution in Zunheboto District

The income distribution pattern for Zunheboto district is presented in table 4.28 to 4.33, while mean income is presented in table 4.34. The monthly mean income for male is ₹19992, while it is ₹12468 for females. Mean income is higher for urban area at ₹19845 as compared to rural area at ₹14850 per month. Income is also higher for workers with higher education at ₹25031 as compared to workers with secondary and elementary education at ₹17191 and ₹11669 per month respectively. Among the age groups, income is higher for older age cohorts of 51-80 years at ₹22798 as compared to younger age cohorts of 20-50 year at ₹15693. Overall, the mean income for Zunheboto district is ₹17452 per month.

Table 4.28. Income Distribution for Zunheboto

Income Group	F	%	CF	Income	%	C F
1000-14000	135	43	43	781700	14	14
14001-28000	116	37	81	2427000	45	59
28001-42000	50	16	97	1712000	32	91
42001-56000	9	03	100	442000	08	99
56001-70000	1	00	100	65000	01	100
Total	311	100		5427700	100	

F = Frequency.
% = Percentage
CF = Cumulative Frequency
Income in ₹.

Source: *Own Calculations, based on field survey, 2014*

Table 4.29. Income Distribution for Elementary Education, Zunheboto

Income Group	F	%	CF	Income	%	C F
1000-8000	60	57	57	244000	20	20
8001-16000	17	16	73	230000	19	38
16001-24000	12	11	84	252000	20	59
24001-32000	12	11	95	323000	26	85
32001-40000	5	05	100	188000	15	100
Total	106	100		1237000	100	

Table 4.30. Income Distribution for Secondary and Higher Education, Zunheboto

Income Group	Secondary						Higher					
	F	%	CF	Income	%	C F	F	%	CF	Income	%	C F
1000-14000	52	43	43	341000	17	17	16	19	19	116700	05	05
14001-28000	47	39	83	950000	46	63	38	45	64	843000	40	45
28001-42000	18	15	98	614000	30	92	24	28	92	819000	38	84
42001-56000	2	02	99	93000	05	97	7	08	100	349000	16	100
56000-70000	1	01	100	65000	03	100	0	00	100	0	00	100
Total	120	100		2063000	100		85	100		2127700	100	

Table 4.31. Income Distribution for Gender, Zunheboto

Income Group	Male						Female					
	F	%	CF	Income	%	C F	F	%	CF	Income	%	C F
1000-14000	67	33	33	480500	12	12	68	65	65	301200	23	23
14001-28000	95	46	79	1984000	48	60	21	20	85	443000	34	57
28001-42000	35	17	96	1199000	29	89	15	14	99	513000	39	96
42001-56000	8	04	100	390000	09	98	1	01	100	52000	04	100
56001-70000	1	00	100	65000	02	100	0	00	100	0	00	100
Total	206	100		4118500	100		105	100		1309200	100	

Table 4.32. Income Distribution for Region, Zunheboto

Income Group	Rural						Urban					
	F	%	CF	Income	%	C F	F	%	CF	Income	%	C F
1000-14000	79	53	53	365700	17	17	56	35	35	416000	13	13
14001-28000	48	32	85	1018000	46	63	68	42	77	1409000	44	57
28001-42000	18	12	97	629000	28	91	32	20	96	1083000	34	90
42001-56000	4	03	100	200000	09	100	5	03	99	242000	08	98
56001-70000	0	00	100	0	00	100	1	01	100	65000	02	100
Total	149	100		2212700	100		162	100		3215000	100	

Table 4.33. Income Distribution for Age Cohort, Zunheboto

Income Group	Age 20 - 50						Age 51 - 80					
	F	%	CF	Income	%	C F	F	%	CF	Income	%	C F
1000-14000	113	48	48	675200	18	18	22	29	29	106500	06	06
14001-28000	90	38	87	1896000	52	70	26	34	62	531000	30	36
28001-42000	29	12	99	986000	27	97	21	27	90	726000	41	78
42001-56000	1	00	100	50000	01	98	8	10	100	392000	22	100
56001-70000	1	00	100	65000	02	100	0	00	100	0	00	100
Total	234	100		3672200	100		77	100		1755500	100	

Table 4.34. Monthly Mean Income for Zunheboto

Zunheboto	Gender		Region		Education			Age Cohort		Total
	Male	Female	Rural	Urban	Elem.	Secon.	Higher	20-50	51-80	
Mean Income	19992	12468	14850	19845	11669	17191	25031	15693	22798	17452

Elem- Elementary, Secon- Secondary.
Source: Own Calculation based on Field Survey, 2014.

For Zunheboto districts as a whole, the bottom 43 percent earns only 14 percent of the income, while the bottom two quintiles comprising 81 percent of the population received only 59 percent of the income. On the other hand, the top three quintiles comprising 19 percent of the population received 41 percent of the income.

The income distribution by educational groups shows that, for elementary education, the bottom 57 percent of the population received only 20 percent of the income, and the bottom two quintiles representing 73 percent of the population received 38 percent of the income. The middle 11 percent received 20 percent of the income, while the top 16 percent received 41 percent of income. For secondary education, the bottom 43 percent received 17 percent of income and the bottom 83 percent received 63 percent of the income. On the other hand, the top 18 percent received 38 percent of the income. For higher education, the bottom 19 percent

received 5 percent of income, while the bottom two quintiles constituting 64 percent of the population received 45 percent of the income, and the top 36 percent received 54 percent of the income.

The income distribution by gender is presented in table 4.31. For males in Zunheboto, the bottom 33 percent of the populations received only 12 percent of the income, while the bottom 79 percent of the populations received 60 percent of the income. On the other hand, the top 2 percent of the population received 11 percent of the income. For females, the bottom 65 percent of the populations received only 23 percent of income, while the bottom 85 percent received 57 percent of income. Conversely, the top 15 percent of the population received 43 percent of the income.

The rural and urban distribution of income for Zunheboto is presented in table 4.32. For rural areas, the bottom 53 percent received only 17 percent of the income, while the bottom two quintiles representing 85 percent of the population received 63 percent of the income. The top three quintiles, representing 15 percent of the population received 37 percent of the income. In urban areas, the bottom 35 percent received 13 percent of income, while the bottom 77 percent received 57 percent of the income. On the contrary, the top 24 percent received 44 percent of the income.

The income distribution by age cohorts as presented in table 4.33, shows that for the age cohorts of 20-50, the bottom 48 percent received 18 percent of income, while the bottom 87 percent received 70 percent of the income. On the other hand, the top 13 percent of the population received 30 percent of the income, For the age group of 51-80 years, the bottom 29 percent received only 6 percent of the income, while the bottom 62 percent received 36 percent of the income. The middle 27 percent received 41 percent of the income and the top 10 percent received 22 percent of the income respectively.

4.4.4. Income Lorenz for Zunheboto

The income Lorenz curve for Zunheboto district as derived from the above explanation is presented in figure 4.14 to 4.17, for gender, region, age cohorts and educational groups. By educational groups, those with elementary education has a higher level of inequality followed by secondary education and higher education, indicating that income inequality is higher among

lesser qualified individuals. The Lorenz curve for gender reveals that income inequality is higher for females as compared to males. Similarly, the curve shows a higher inequality of rural areas as compared to urban areas. However, it is found that the level of inequality is closely similar for the age cohorts, indicating that age does not have much influence in the determination of income inequalities in Zunheboto.

Figure 4.14. Income Lorenz Curve for Educational groups, Zunheboto
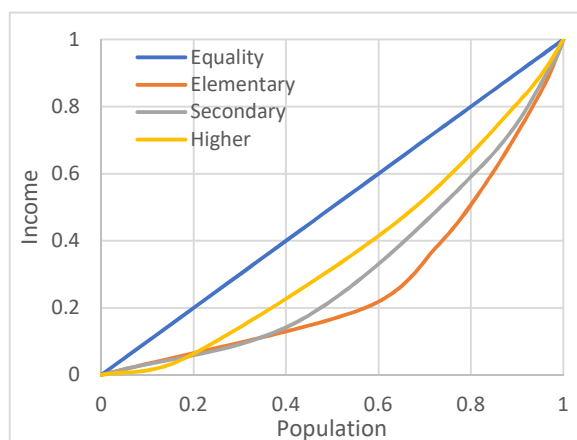
Source: Table 4.29, 4.30.

Figure 4.15. Income Lorenz Curve for Gender, Zunheboto
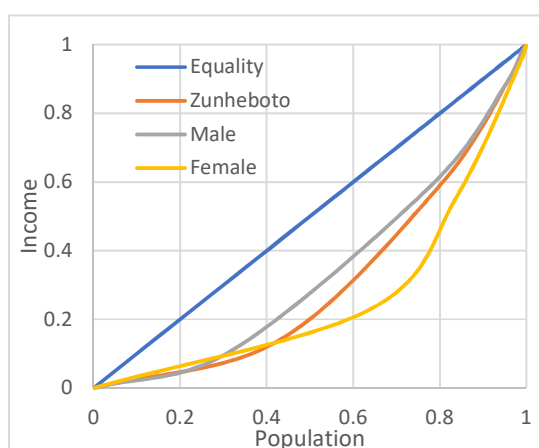
Source: Table 4.28, 4.31.

Figure 4.16. Income Lorenz Curve for Region, Zunheboto
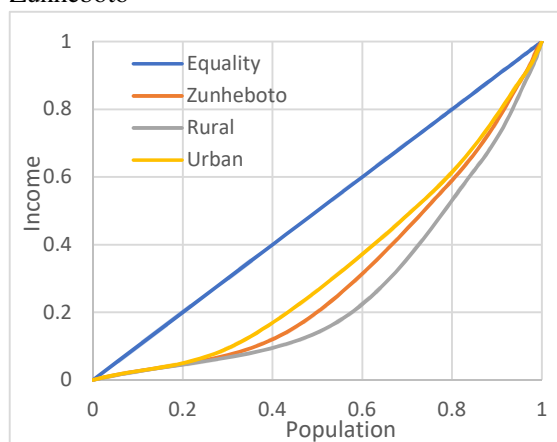
Source: Table 4.28, 4.32.

Figure 4.17. Income Lorenz Curve for Age Groups, Zunheboto
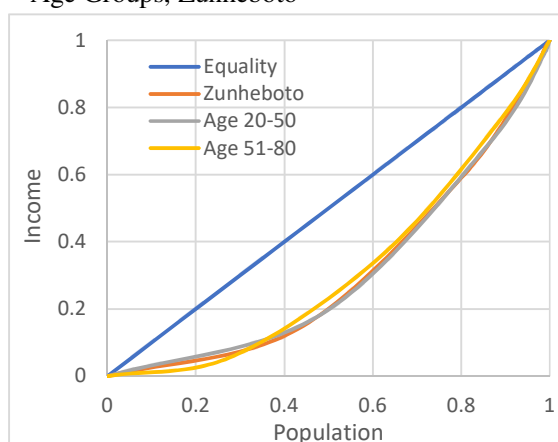
Source: Table 4.32, 4.33.

Both Wokha and Zunheboto shows similar distribution of income. For Wokha, the highest proportion of population are from the bottom income quintile at 42.8 percent followed by the second lowest income quintile at 39.32. The same for Zunheboto was 43 and 37 percent. The lowest income quintile in both the district received an income of 16.4 and 14 percent, while the second lowest income quintile received and income of 46 and 45 percent respectively. On

the other hand, the percentage of population from the top two quintiles for Wokha and Zunheboto was 3.21 and 3 percent receiving and income of 9.42 and 9 percent of income.

4.4.5. Income Distribution for Nagaland

The income distribution for Nagaland as a whole is presented in table 4.35 to 4.40, while the mean income is given in table 4.41. By, gender, the monthly mean income is higher for males in Nagaland at ₹20612 as compared to females at ₹13115. Among regions, mean income is higher for urban area at ₹20824 as compared to rural area at ₹14903. Between the educational groups, the mean income is highest among workers with higher education at ₹23744, followed by workers with secondary education at ₹19381 and elementary education at ₹12558 per month, respectively. Income is also higher for the older age cohorts at ₹19225 as compared to the younger age cohorts at ₹17333 per month. Overall, the mean income for Nagaland is ₹17847 per month.

As shown in table 4.35, out of the 873 income earning individuals, 43 percent from the lowest income quintile who received 16 percent of the total income; 39 percent of the population belonged to the second lowest quintile receiving an income of 46 percent; 15 percent are from the middle-income quintile receiving an income of 29 percent and 3 percent of the population are from the top two income quintiles who received an income of 9 percent respectively. This shows that the bottom two quintiles constituted 82 percent of the population who received an income of only 61 percent, while the top three quintile constituting 18 percent of the population received 38 percent of the income.

The income distribution by educational groups is given in table 4.36 and 4.37. For elementary education, the bottom income quintiles constituted 63 percent of the population who received 27 percent of the income. The bottom two quintiles constituting 91 percent received 72 percent of the total income. On the other hand, the top 9 percent received 29 percent of the income. For secondary education, the bottom 35 percent of the population received 13 percent of income, while the bottom two quintiles representing 81 percent of the population received 63 percent of the income. On the other hand, the top three quintiles constituting 20 percent of the population received 38 percent of the income. For higher education, the bottom 23 percent received 9 percent of the income, while the bottom 70 percent received 52 percent of income. The middle 24 percent received 36 percent of income while the top 6 percent received 12 percent of the income respectively.

Table 4.35. Income Distribution for Nagaland

Income Group	F	%	CF	Income	%	CF
1000-14000	376	43	43	2447700	16	16
14001-28000	337	39	82	7099000	46	61
28001-42000	132	15	97	4570000	29	91
42001-56000	20	02	99	953000	06	97
56001-70000	8	01	100	511000	03	100
Total	873	100		15580700	100	

F = Frequency.
% = Percentage
CF = Cumulative Frequency
Income in ₹.

Source: *Own Calculations, based on field survey, 2014*

Table 4.36. Income Distribution for Elementary and Secondary Education, Nagaland

Income	Elementary						Secondary					
	F	%	CF	Income	%	C F	F	%	CF	Income	%	C F
1000-14000	225	63	63	1243000	27	27	91	35	35	668000	13	13
14001-28000	101	28	91	2010000	44	72	117	46	81	2462000	49	63
28001-42000	30	08	99	1018000	23	94	40	16	96	1388000	28	91
42001-56000	0	00	99	0	00	94	7	03	99	328000	07	97
56000-70000	4	01	100	250000	06	100	2	01	100	135000	03	100
Total	360	100		4521000	100		257	100		4981000	100	

Table 4.37. Income Distribution for Higher Education, Nagaland

Income Group	Frequency	Percentage	CF	Income	Percentage	CF
1000-14000	60	23	23	536700	09	09
14001-28000	119	46	70	2627000	43	52
28001-42000	62	24	94	2164000	36	88
42001-56000	13	05	99	625000	10	98
56001-70000	2	01	100	126000	02	100
Total	256	100		6078700	100	

Table 4.38. Income Distribution for Gender, Nagaland

Income	Male						Female					
	F	%	CF	Income	%	C F	F	%	CF	Income	%	C F
1000-14000	180	33	33	1499500	13	13	193	60	60	906200	21	21
14001-28000	249	45	78	5219000	46	59	77	24	84	1541000	36	58
28001-42000	98	18	96	3376000	30	89	38	12	96	1168000	28	86
42001-56000	17	03	99	813000	07	96	13	04	100	547000	13	99
56000-70000	7	01	100	450000	04	100	1	00	100	61000	01	100
Total	551	100		11357500	100		322	100		4223200	100	

Table 4.39. Income Distribution for Region, Nagaland

Income	Rural						Urban					
	F	%	CF	Income	%	C F	F	%	CF	Income	%	C F
1000-14000	240	55	55	1326700	20	20	136	31	31	1121000	12	12
14001-28000	143	33	87	3049000	47	67	194	45	76	4050000	45	57
28001-42000	46	10	98	1621000	25	92	86	20	96	2949000	33	90
42001-56000	6	01	99	296000	05	96	14	03	99	657000	07	97
56000-70000	4	01	100	250000	04	100	4	01	100	261000	03	100
Total	439	100		6542700	100		434	100		9038000	100	

Table 4.40. Income Distribution for Age Cohort, Nagaland

Income	Age 20 -50						Age 51 -80					
	F	%	CF	Income	%	C F	F	%	CF	Income	%	C F
1000-14000	277	44	44	1904200	17	17	99	42	42	543500	12	12
14001-28000	265	42	85	5687000	52	69	72	30	72	1412000	31	43
28001-42000	83	13	98	2840000	26	95	49	21	93	1730000	38	81
42001-56000	6	01	99	277000	03	97	14	06	99	676000	15	96
56000-70000	5	01	100	316000	03	100	3	01	100	195000	04	100
Total	636	100		11024200	100		237	100		4556500	100	

Table 4.41. Monthly Mean Income for Nagaland

Nagaland	Gender		Region		Education			Age Cohort		Total
	Male	Female	Rural	Urban	Elem.	Secon.	Higher	20-50	51-80	
Mean Income	20612	13115	14903	20824	12558	19381	23744	17333	19225	17847

Elem- Elementary, Secon- Secondary.
Source: Own Calculation based on Field Survey, 2014.

The gender distribution of income for Nagaland is presented in table 4.38. For males, the bottom 33 percent of the population earned 13 percent of income, while the bottom 78 percent received an income of 59 percent. The middle 18 percent of the population received an income of 30 percent, while the top 4 percent received an income of 11 percent. For females, 60 percent of the population are from the bottom income quintile, whose income share was only 21 percent. The bottom two quintiles constituted 84 percent of the population who received an income of 58 percent. On the other hand, the top 16 percent of the population received and income of 42 percent, showing greater income inequalities for females as compared to males.

The Income distribution for rural and urban regions is given in table 4.39. For the rural areas, the bottom 55 percent of the population received 20 percent of income, while the bottom two income quintiles constituting 87 percent of the population received an income of 67 percent. On the other hand, the top 12 percent received 34 percent of the income. For the urban areas, the bottom 31 percent received 12 percent of the income, while the bottom two quintiles constituting 76 percent of the population received 57 percent of the income. The middle 20 percent received 33 percent of income, while the top 4 percent received 10 percent of the income.

The income distribution by the age cohorts is given in table 4.40. For the age cohorts of 20-50 years, the bottom 44 percent of the population received 17 percent of income, while the bottom two quintiles constituting 85 percent of the population received 69 percent of the

income. The middle 13 percent received 26 percent of income while the top 2 percent received 6 percent of the income. For the age group of 51-81, the bottom 42 percent of the population received only 12 percent of the income, while the bottom 72 percent received 43 percent of the income. The middle 21 percent received 38 percent of the income while the top 7 percent received 19 percent of the income.

4.4.6. Income Lorenz Curve for Nagaland

The income Lorenz curve for Nagaland is presented in figure 4.18 to 4.21. The extent of inequality as shown from the Lorenz curve indicates that income inequality is higher among females as compared to males or any other sub categories made in this study.

Figure 4.18. Income Lorenz Curve for Educational groups, Nagaland
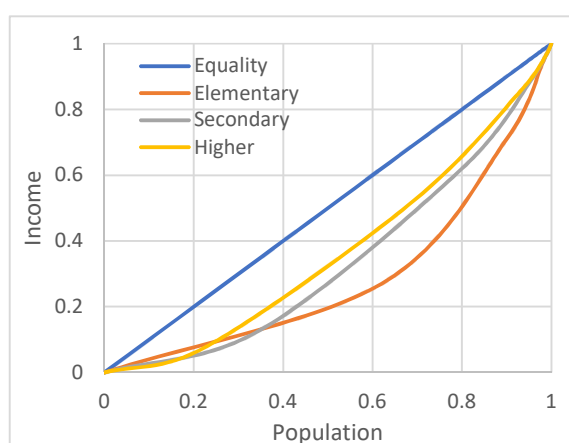
Source: Table 4.36, 4.37.

Figure 4.19. Income Lorenz Curve for Gender, Nagaland
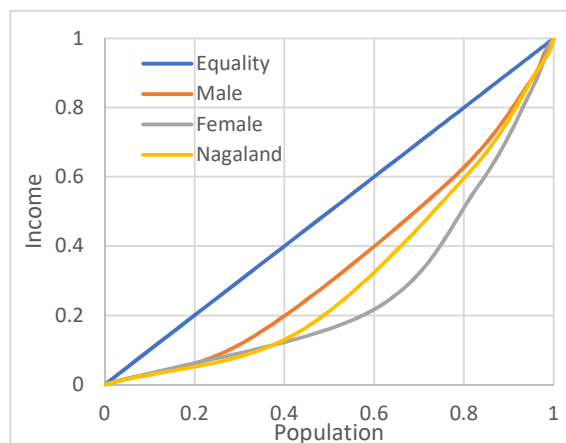
Source: Table 4.35, 4.38.

Figure 4.20. Income Lorenz Curve for Region, Nagaland
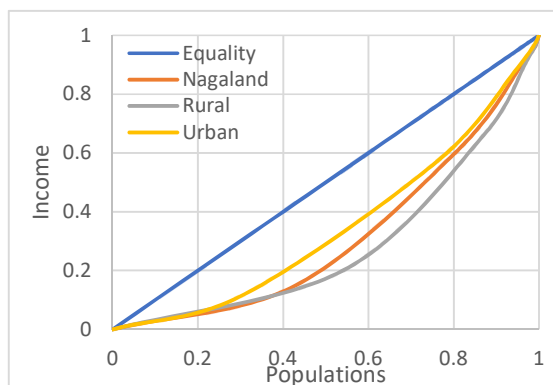
Source: Table 4.35, 4.39.

Figure 4.21. Income Lorenz Curve for Age Cohorts, Nagaland

Source: Table 4.35, 4.40.

By educational classification, inequality is higher among the elementary education followed by secondary education, with the higher education showing the lowest level of inequality. Among the regions, rural areas have higher inequalities as compared to the urban areas. Similarly, older age cohorts of 51-80 years show higher income inequality as compared to the younger age cohorts.

The above results show that income inequality is greater for females, rural areas, older age cohorts and elementary education for bo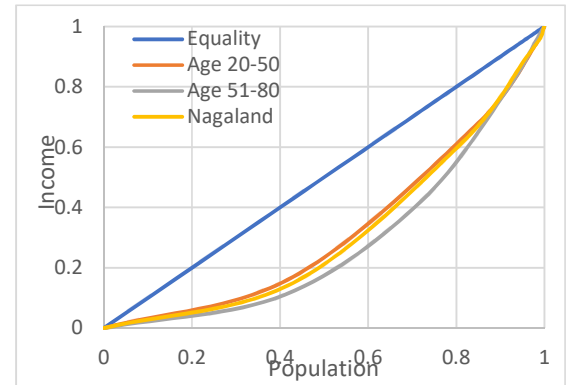th Wokha and Zunheboto and for Nagaland as a whole. Overall, for Nagaland, income is relatively equitably distributed for urban area, male, secondary and higher education and for the age cohorts of 20-50 years; while income is relatively unequally distributed for rural area, female, elementary education and for the age cohort of 51-80 years.

4.5. Relationship Between MYS and Income Gini

A simple regression analysis is conducted to determine the relationship between the income inequality and MYS, the results of which is presented in table 4.42.

Table 4.42. Regression Results for MYS, Income Gini and Educational Gini

Independent Variables	R	Adjusted R Square	df	Constant	B	'P' value
MYS	0.61	0.34	20	60.8	-2.21 (3.39)***	0.003

*(Figures in the parenthesis refers to the 't' value), *** at 1 percent.* Dependent Variable: Income Gini
Source: Own Calculations, based on field survey 2014.

For analysis, the values of MYS and Income Gini for Wokha, Zunheboto and Nagaland are taken together, with a total of 21 variables each, and regressed against each other to determine the relationship. The results reveal an inverse relationship between the MYS and Income inequality.

The coefficient (B) for the MYS is -2.21 which is significant at 1 percent, showing a negative relationship between the MYS and income inequality. The adjusted R square is 0.34 which denotes that the MYS accounts for 34 percent of the variance in income inequality. The correlation between MYS and Income Gini is 0.61 showing a moderate relationship between the two variables. Putting the variables in a simple regression equation;

Y = a + bX

Where Y denotes Income Gini, 'a' is the intercept, 'b' is the coefficient and 'X' is the mean years of schooling, we get;

Y= 60.8 + (-2.21. MYS)

This imply that an increase in the MYS would lead to a fall in income inequality, or a reduction in the MYS would lead to an increase in the income inequality. In other words, an increase in the MYS by one year would lead to a reduction in the income inequality by 2.21 percentage points. These results correspond to the findings of Becker and Chiswick (1966)[90], Checchi (2001)[91], Gregorio and Lee (2002)[92], in that income inequality is negatively related with mean years of schooling.

The finding reinforces the narratives on the overarching benefits of education. The skills and knowledge acquired through education provides a level playing field for everyone to participate and compete in the labour market and earn a decent income commensurate to their skills levels. The fact that income inequality is lower for higher educated groups demonstrates that mean earnings is not only higher among the higher educated individuals but that, income in more evenly distributed among the educated cohorts as opposed to less educated groups. Therefore, progress in education would be accompanied by an increased income as well as reduction in income inequalities in the economy.

4.6. Conclusion

The study found the MYS to be 11.4 for Wokha, 12.3 for Zunheboto and 11.8 for Nagaland, indicating high levels of educational attainment in the State. The educational Gini index shows a relatively equitable distribution of education for Wokha at 25.6 percent, and a highly equitable distribution for Zunheboto at 17 percent, with an overall Gini index of 22 percent for Nagaland. However, it is evidenced that inequalities in education are higher for females and for rural areas in both the district, and therefore, the need to emphasize on female education and to offer equal educational opportunities in the rural areas.

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The income inequalities for Nagaland is found to be 34.5 percent indicating a relatively equitable distribution of income in the State. The same for Wokha and Zunheboto districts are 33.5 and 36 percent respectively. However, there are significant difference between gender and region with females and rural area showing relatively unequal distribution of income. Income inequality is also found to be lower for individuals with higher education as compared to lower levels of education, indicating an inverse relationship between years of schooling an inequality.

The study also reveals an inverse relationship between income inequality and the MYS, indicating that income inequality decreases with an increase in the MYS. Therefore, if a lower level of inequality is desired, policy should be aimed at enhancing the educational attainment of the population.

CHAPTER 5

IMPACT OF
PARENTAL EDUCATION AND INCOME
ON
CHILDREN EDUCATION

CHAPTER 5

IMPACT OF PARENTAL EDUCATION AND INCOME ON CHILDREN EDUCATION

It is widely believed that higher educated parents have, on average, higher educated children. This relationship implies that, increasing education today would lead to an increase in the schooling of the next generation and, in this way, to an improvement of later life outcomes such as health, productivity and wealth[93]. Eccles (2005)[94] asserts that, the most prominent and direct explanation of the link between parents' education and their children academic achievement relies on the assumption that parents learn something during schooling that influences the ways in which they interact with their children, around learning activities at home.

For many families, investment in human capital is seen as the principal route out of poverty[95]. Study suggest that household income and parental education are the main factors influencing expenditures on children education, entertainment, and books[96]. Qian and Smyth (2011)[97] found that higher educated parents are more likely to spend more on their children education and that higher income groups with educated parents are more likely to send their children overseas for education. Knight and Shi (1996)[98] also found that parents' educational attainment is the most important factor influencing children's education. They also found that father's education has greater influence in children educational success than mother's education. This chapter, therefore, examines the impact of parental education on the educational attainment of their children. It also examines the impact of parental education and income on the expenditure on children education.

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5.1. Parental Education and Children Educational Attainment

The relationship between parental education and its influence on the children educational attainment is examined by using OLS regression, where the children years of schooling is regressed against the years of schooling of both the father and mother of the child. Data were analyzed only from households where the education of both the parents and children are known. Further, currently attending students were excluded in the analysis and only individuals who have either completed or gave up education were considered. The results of the analysis are discussed below.

5.1.1. Wokha

The regression results for the impact of parental education on children's educational attainment for Wokha district is given in table 5.1. The correlation is found to be .269, .426 and .399 for rural, urban and for Wokha as a whole, showing low level of relationship for rural area and moderate degree of relationship in urban and for Nagaland as a whole. The adjusted R square is found to be 0.067 for rural area, 0.17 for urban area and 0.15 for Wokha as a whole, indicating that only 15 percent of the variation in children education for Wokha is influenced by parent's education. The same for rural and urban areas are 6 percent and 17 percent.

The coefficient of regression for the father's years of schooling is found to be .193 for rural area, .138 for urban area and .189 for Wokha as a whole, which are all statistically significant at 1 percent. This implies that for every one-year increase in the father's years of schooling, the children's years of schooling would increase by 19.3 percent for rural areas, 13.8 percent for urban areas and by 18.9 percent for Wokha district as a whole, showing that the impact of father's education is higher in rural areas as compared to urban area.

Table 5.1. Parental Education and Children's Educational Attainment, Wokha

	Rural	Urban	Wokha
R	.269	.426	.399
Adjusted R Square	.067	.17	.15
Degree of freedom	316	316	633
Constant	10.8	11.68	10.93
Coefficients			
Father's Schooling	.193 (2.65) ***	.138 (2.61) ***	.189 (4.26) ***
Mother's Schooling	.086 (1.28)	.225 (4.55) ***	.185 (4.48) ***

The figures in the parenthesis represents the 't' values. *** indicates significant at 1 percent.
Dependent Variable: Children years of schooling.
Source: Own calculations based on field survey, 2014.

Similarly, the coefficient of regression for the mother's years of schooling is found to be .086 for rural area, .225 for urban area and .185 for Wokha district as a whole, which are statistically significant at 1 percent for both urban and Wokha, while it is found to be insignificant for rural area in Wokha, as the 'p' value is found to have exceeded the critical value of 0.05. This means that an increase of one year in mother's education would lead to an increase in children's educational attainment by 8.6 percent in rural area, 22.5 percent in urban area and 18.5 percent for Wokha as a whole. This shows that the impact of father's education is stronger for rural area and for Wokha district as a whole, while the impact of mother's education is found to be stronger in urban area.

5.1.2. Zunheboto

The regression results for Zunheboto district is given in table 5.2. The correlation is found to be .523, .312 and .436 for rural, urban and for Zunheboto as a whole, showing moderate degree of positive relationship. The adjusted R square is found to be .260 for rural area, .087 for urban area and .185 for Zunheboto as a whole, indicating that 18 percent of the variation in children's education for Zunheboto is explained by parental education. The same for rural and urban areas are 26 percent and 8 percent respectively.

The coefficient of regression for the father's years of schooling is found to be .098 for rural area, .158 for urban area and .241 for Zunheboto as a whole, which are statistically significant at 1 percent for rural and Zunheboto and at 5 percent for urban area. This implies that for every one-year increase in the father's years of schooling, the children's years of schooling would increase by 9.8 percent for rural areas, 15.8 percent for urban areas and by 24.1 percent for Zunheboto district as a whole.

Table 5.2. Parental Education and Children's Educational Attainment, Zunheboto

	Rural	Urban	Zunheboto
R	.523	.312	.436
Adjusted R Square	.260	.087	.185
Degree of freedom	124	176	301
Constant	10.51	11.59	10.93
Coefficients			
Father's Schooling	.098 (3.28) ***	.158 (2.02) **	.241 (3.92) ***
Mother's Schooling	.104 (1.18)	.119 (1.55)	.112 (1.98) **

The figures in the parenthesis represents the 't' values. *** and ** indicates significant at 1 & 5 percent. Dependent variable: Children Years of Schooling.
Source: Own calculations based on field survey, 2014.

Likewise, the coefficient for the mother's years of schooling is found to be .104 for rural area, .119 for urban area and .112 for Zunheboto district as a whole, which is significant at 5 percent, while it is found to be insignificant for both rural and urban area as the 'p' value exceeds the critical value of 0.05. This means that an increase of one year in mother's education would lead to an increase in children's educational attainment by 11.2 percent for Zunheboto as a whole. This shows that the father's education has a stronger impact on children's education as compared to mother's education.

5.1.3. Nagaland

The results of the regression analysis for Nagaland is given in table 5.3. The correlation is found to be .387, .377 and .421 for rural, urban and for Nagaland as a whole showing moderate degree of positive relationship between the observed variables. The adjusted R square is found to be .140 for rural area, .139 for urban area and .170 for Nagaland as a whole, indicating that 17 percent of the variation in children's education in Nagaland is influenced by parent's education. The same for rural and urban areas are 14 percent and 13.9 percent respectively.

The coefficient of regression for the father's years of schooling is found to be .250 for rural area, .130 for urban area and .199 for Nagaland as a whole, which are all statistically significant at 1 percent. This implies that for every one-year increase in the father's years of schooling, the children's years of schooling would increase by 25 percent for rural areas, 13 percent for urban areas and by .19.9 percent for Nagaland as a whole, showing higher impact of father's education in the rural areas.

Table 5.3. Parental Education and Children's Educational Attainment, Nagaland

	Rural	Urban	Nagaland
R	.387	.377	.421
Adjusted R Square	.140	.139	.170
Degree of freedom	441	493	935
Constant	10.53	11.7	10.95
Coefficients			
Father's Schooling	.250 (4.24) ***	.130 (2.99) ***	.199 (5.55) ***
Mother's Schooling	.112 (2.08) **	.180 (4.43) ***	.165 (4.97) ***

The figures in the parenthesis represents the 't' values. *** and ** indicates significant at 1 & 5 percent.
Dependent Variable": Children Years of Schooling.
Source: Own calculations based on field survey, 2014.

Likewise, the coefficient for the mother's years of schooling is found to be .112 for rural area, .180 for urban area and .165 for Nagaland as a whole which are statistically significant at 1 percent for urban area and Nagaland, and at 5 percent for rural areas. This means that an additional increase in mother's education would lead to an increase in children's educational attainment by .11.2 percent for rural area, 18 percent in urban area and by 16.5 percent times for Nagaland a whole. Therefore, father's education has a stronger impact on children's education for rural area and for Nagaland as a whole, while mother's education has a stronger impact on children's educational attainment in urban area.

Between the two districts, the impact of father's education is stronger in rural area in Wokha, while it is stronger in urban area in Zunheboto. Overall, the impact of father's education is stronger for Zunheboto district at 24.1 percent, as compared to 18.9 percent for Wokha. For mother's education, the impact is higher in Wokha district at 18.5 percent as compared to 11.2 percent for Zunheboto. The positive and direct relationship established between parental education and children's educational attainment reinforce the argument that higher educated parents tends to produce higher educated children. Therefore, the assertion made in the hypothesis of this dissertation that "higher parental education is associated with higher educational attainment of their offspring" is accepted.

5.2. Parental Education and Expenditure on Children's Education

The relationship between parental education and expenditure on children's education is examined for both Wokha and Zunheboto districts and for Nagaland as a whole. Parents were categorized by their levels of educational qualifications into three groups namely, elementary, secondary and higher education, to examine which educational group invest more on their children's education. Secondly, children's education was also classified into elementary, secondary and higher education, as the cost of education normally differs depending on the levels of education.

Private spending includes expenditure on schools, universities and other public and private institutions delivering or supporting educational services[99]. According to UNESCO[100], private expenditure on education is the sum of direct payments from students/households and

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[99] OECD (2017). "Private Spending on Education (indicator". Doi: 10.1787/6e70bede-en
[100] UNESCO (2017). "Total Private Expenditure on Education (Glossary)". Retrieved from:
   http://uis.unesco.org/en/glossary-term/total-private-expenditure-education

other private entities to educational institutions, in addition to expenditures such as, direct purchase of personal items used in education; and household expenditure for the living expenses of the learner. Private expenditure on education therefore, includes all direct expenditure on education including educational fees, textbooks, uniforms, private tutoring and student living costs.

5.2.1. Wokha

The average monthly expenditure on children's education, by parental education, is given in table 5.4 and a graphical representation of the tables is also shown in figure 5.1, respectively. In Wokha district, monthly expenditure per child was ₹1420 for elementary education, ₹2576 for secondary education and ₹7419 for higher education with a gross average of ₹3100 per child per month, showing that average expenditure on education increase with an increase in the educational levels of the children. Elementary educated parents in Wokha, spends on average, ₹1136 per child per month for elementary education, ₹2220 for secondary and ₹5178 for higher education, with a gross average of ₹2722 per child per month.

Table 5.4. Monthly Expenditure on Children's Education by Parental Education (Wokha)

Parental Educational Groups	Mean Monthly Expenditure on Children's Education (in ₹)			
	Elementary	Secondary	Higher	Average
Elementary	1136	2220	5178	2722
Secondary	1544	2950	8666	3891
Higher	1511	3094	12642	3053
Average (Wokha)	1420	2576	7419	3100

Source: Appendices Table A. 12.

Similarly, secondary educated parents spend on average ₹1544 for elementary education, ₹2950 for secondary education and ₹8666 for higher education, with a gross average expenditure of ₹3891 per child per month. And higher educated parents, the average monthly expenditure for students with elementary, secondary and higher education are ₹1511, ₹3094 and ₹12642 respectively, with a gross average expenditure of ₹3053 per child per month.

Figure. 5.1. Monthly Expenditure on Education, Wokha.
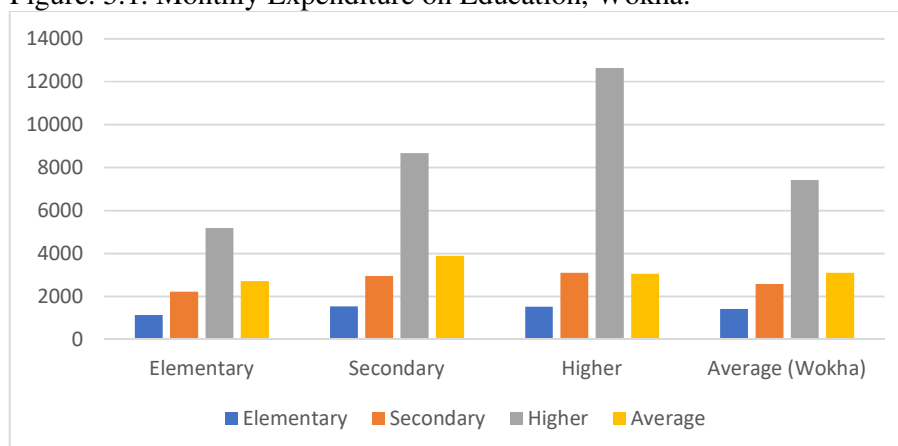
Source: Table 5.4.

On average, secondary educated parents spend 27 percent higher than parents with higher education and 42 percent higher that elementary educated parents. The analysis shows that monthly expenditure for education increases with increase in the children educational levels, with expenditure highest for the higher education. Moreover, higher educated parents tend to invest higher on higher education of their children, indicating that greater attention is given towards higher education. The expenditure on higher education made by higher educated parents is 45 percent higher than secondary educated parents and 144 percent higher than the average expenditure of elementary educated parents.

5.2.2. Zunheboto

The average monthly expenditure on children's education by parental education for Zunheboto district is given in table 5.5 and a graphical representation of the tables is shown in figure 5.2 respectively. For Zunheboto district as a whole, the average monthly expenditure on children education are ₹1309 for elementary education, ₹2241 for secondary education and ₹4598 for higher education with a gross average of ₹2261 per child per month, showing an increase in educational expenditure with an increase in education level.

Table 5.5. Expenditure on Children's Education by Parental Education (Zunheboto)

Parental Educational Groups	Monthly Expenditure on Children's Education (in ₹)			
	Elementary	Secondary	Higher	Average
Elementary	1191	1861	2833	1829
Secondary	1338	2239	4783	2344
Higher	1351	3307	8375	2721
Average	1309	2241	4598	2261

Source: Appendices Table A. 12.

Figure 5.2. Monthly Expenditure on Education, Zunheboto
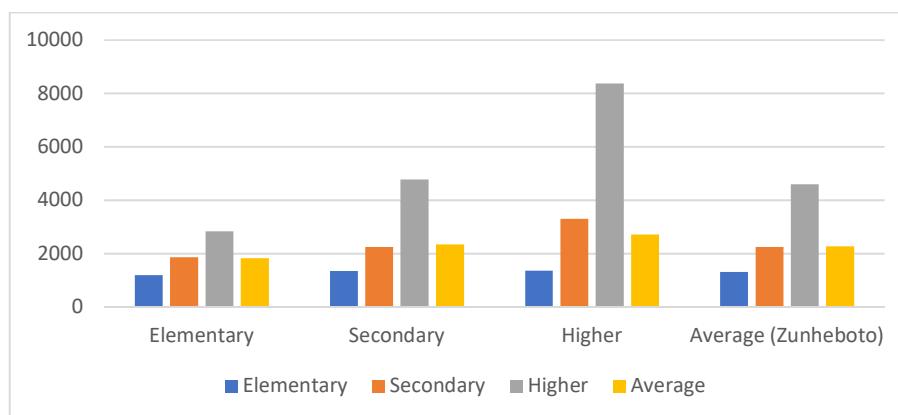
Source: Table 5.5

Elementary educated parents, on average, spend ₹1191, ₹1861 and ₹2833 for elementary, secondary and higher education, with a gross average of ₹1829 per child per month. On the other hand, secondary educated parents spend ₹1338 for elementary education, ₹2239 for secondary education and ₹4783 for higher education, with a gross average of ₹2344 per child per month. Likewise, parents with higher education spend on average, ₹1351 for elementary education, ₹3307 for secondary education and ₹8375 for higher education, with a gross average of ₹2721 per child per month.

Therefore, in Zunheboto, it is found that the average monthly expenditure on education increases with an increase in both the children and parental educational levels. The overall average expenditure for higher educated parents is 16 and 48 percent higher than that of secondary and elementary educated parents. Further, parents with higher education spends 75 percent higher than secondary educated parents and 195 percent higher than elementary educated parents on higher education, indicating that greater attention is given towards higher education by higher educated parents.

5.2.3. Nagaland

The average monthly expenditure on children's education by parental education is given in table 5.6 and a graphical depiction of the table is provided in figure 5.3 for Nagaland as a whole. Overall, parents in Nagaland spend on average, ₹1347, ₹2388 and ₹5695 for elementary, secondary and higher education, with a gross average of ₹2584 per child per month, showing that educational expenditure increased with increase in children educational levels.

Table 5.6. Expenditure on Children's Education by Parental Education (Nagaland)

Parental Educational Groups	Monthly Expenditure on Children's Education (in ₹)			
	Elementary	Secondary	Higher	Average
Elementary	1170	2050	4059	2259
Secondary	1374	2422	5734	2676
Higher	1436	3187	10366	2897
Average (Nagaland)	1347	2388	5695	2584

Source: Appendices Table A. 12.

Figure 5.3. Monthly Expenditure on Education, Nagaland
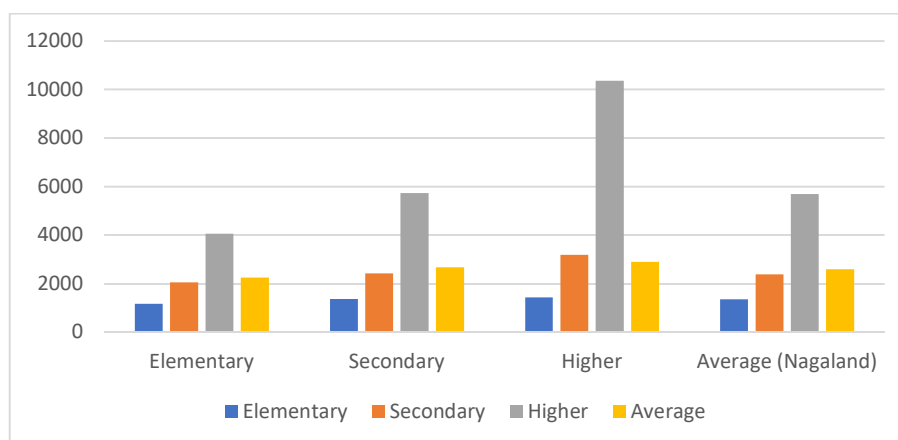
Source: Table 5.6.

Elementary educated parents spend on average ₹1170, ₹2050 and ₹4050 respectively, for elementary, secondary and higher education, with a gross average of ₹2259 per child per month. The same for secondary educated parents are ₹1374, ₹2422 and ₹5734 respectively, with a gross average expenditure of ₹2676 per child per month. Likewise, parents with higher education spends ₹1436 for elementary education, ₹3187 for secondary education and ₹10366 for higher education, with a gross average of ₹2897 per child per month.

Although, there is not much difference in the overall expenditure on education, it is found that higher educated parents spend higher amount per child for all levels of education. Further, average expenditure increases with increase in the education levels of both the children and parents. Higher educated parents spend on average 8 percent higher than secondary educated parents and 28 percent higher than elementary educated parents. Moreover, higher educated parents made the highest investment on higher education, which is 80 percent higher than secondary educated parents and 155 percent higher than elementary educated parents, indicating that greater importance is given towards higher education by higher educated parents. It is also found that, irrespective of parental education, expenditure on children's education

increase with an increase in the educational levels of the pupils. Between the two districts, average expenditure per child is found to be higher for Wokha district by 37 percent.

5.3. Parental Income and Expenditure on Children Education

The relationship between parental income and expenditure on children's education is also examined for both rural and urban regions for both Wokha and Zunheboto districts and for Nagaland as a whole. Parents were categorized into three income groups such as, ₹20000 and below, income between ₹20001 – 40000 and ₹40001 and above. Similarly, pupils were also classified into elementary, secondary and higher education, and the average monthly expenditure incurred by each income group for each educational level were examined.

5.3.1. Wokha

The average monthly expenditure on education, by parental income, is given in table 5.7, while a graphical representation of the table is provided in figure 5.4 respectively. For Wokha as a whole, the average expenditure on elementary, secondary and higher education are ₹1420, ₹2576 and ₹7419 respectively, with a gross average of ₹3100 per child per month.

Table 5.7. Expenditure on Children's Education by Parental Income (Wokha)

Parental Income Groups	Mean Monthly Expenditure on Children's Education (in ₹)			
	Elementary	Secondary	Higher	Average
Below 20000	1482	2535	7923	3219
20001-40000	1366	2119	6140	2632
Above 40001	1420	4350	8321	3591
Average (Wokha)	1420	2576	7419	3100

Source: Appendices Table A. 13.

Figure 5.4. Monthly Expenditure on Education (Wokha)
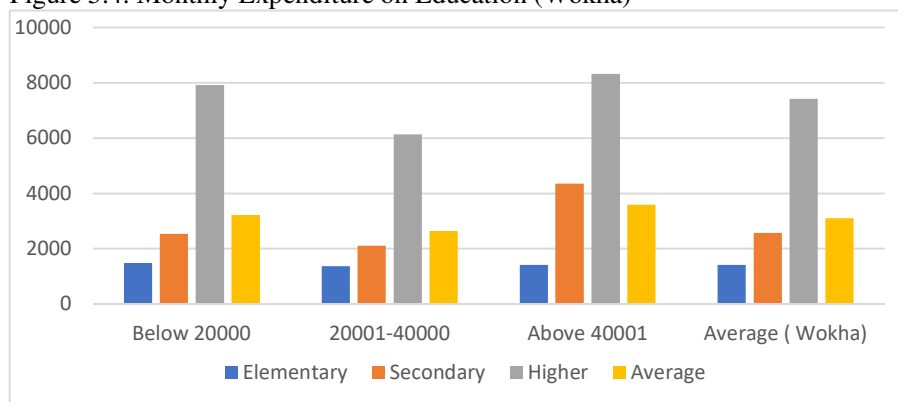
Source: Table 5.7.

Parents with income below ₹20000 spends on average, ₹1482, ₹2535 and ₹7923 for elementary, secondary and higher education with a gross average of ₹3219 per child per month. Similarly, parents with income between ₹20001-40000 spends ₹1366, ₹2119 and ₹6140 for elementary, secondary and higher education with a gross average of ₹2632 per child per month. Likewise, parents with income above ₹40001 spends on average, ₹1420 for elementary education, ₹4350 for secondary education and ₹8321 for higher education, with a gross average of ₹3591 per child per month.

This shows that for Wokha district, the average spending per child for the income group of ₹40001 is higher by 36 percent for parents with an income of ₹20001-40000 and 11 percent higher than parents with income below ₹20000. Further, the average expenditure on education increases with an increase in children's educational levels, irrespective of parental income. The average expenditure on higher education is higher than that of secondary education by 188 percent and elementary education by 422 percent.

5.3.2. Zunheboto

The impact of parental income on expenditure on children's education for Zunheboto district is analyzed below. The average expenditure for different educational levels are provided in table 5.8, while a graphical representation of the tables is presented in figure 5.5. The overall average expenditure for elementary, secondary and higher education are found to be ₹1309, ₹2241 and 4598 respectively with a gross average of 2261 per child per month. The monthly expenditure on education for parents with income below ₹20000 are ₹1322, ₹1666, and ₹3315 for elementary, secondary and higher education respectively, with a gross average of ₹1696 per child per month. For parents with income between ₹20001-40000, the monthly expenditure for elementary, secondary and higher education are ₹1258, ₹2489 and ₹4187 respectively, with a gross average of ₹2337 per child per month.

Table 5.8. Expenditure on Children's Education by Parental Income (Zunheboto)

Parental Income Groups	Mean Monthly Expenditure on Children's Education (in ₹)			
	Elementary	Secondary	Higher	Average
Below 20000	1322	1666	3315	1696
20001-40000	1258	2489	4187	2337
Above 40001	1410	2990	7100	3536
Average (Zunheboto)	1309	2241	4598	2261

Source: Appendices Table A. 13.

Figure 5.5. Monthly Expenditure on Education (Zunheboto)
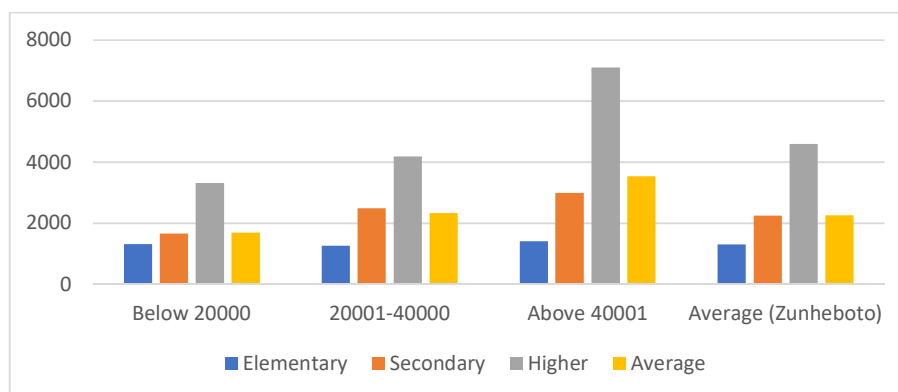
Source: Table 5.8

And for parents with income above ₹40001, the average spending for elementary, secondary and higher education are ₹1410, ₹2990 and ₹7100 respectively, with an overall average of ₹3536 per child per month. Therefore, for Zunheboto as a whole, the average spending per child is higher for parents with higher income groups for all levels of education. Further, it is found that, higher the level of parental income, higher is the expenditure made on children's education. Parents with income above ₹40001 spends higher than the average expenditure made on education by parents with income between ₹20001-40000 by 51 percent and parents with an income of ₹20000 and below by 108 percent respectively. Further, the average expenditure on higher education is higher than that of the secondary education by 105 percent and elementary education by 251 percent.

5.3.3. Nagaland

The monthly expenditure for education is given in table 5.9 and a graphical depiction of the table is also given in figure 5.6 respectively. The overall average expenditure for elementary, secondary and higher education are found to be ₹1347, ₹2388 and ₹5695 respectively, with a gross average of ₹2584 per child per month. For parents with income below ₹20000, the average expenditure for elementary, secondary and higher education are ₹1358, ₹2035 and ₹5187 respectively, with a gross average of ₹2189 per child per month. For parents with income between ₹20001-40000, the monthly expenditure for elementary, secondary and higher education are ₹1291, ₹2306 and ₹4810 respectively with a gross average of ₹2448 per child per month. The same for parents with income above ₹40001 are ₹1416, ₹3443 and ₹7689 respectively, with a gross average of ₹3564 per child per month, showing that parents with
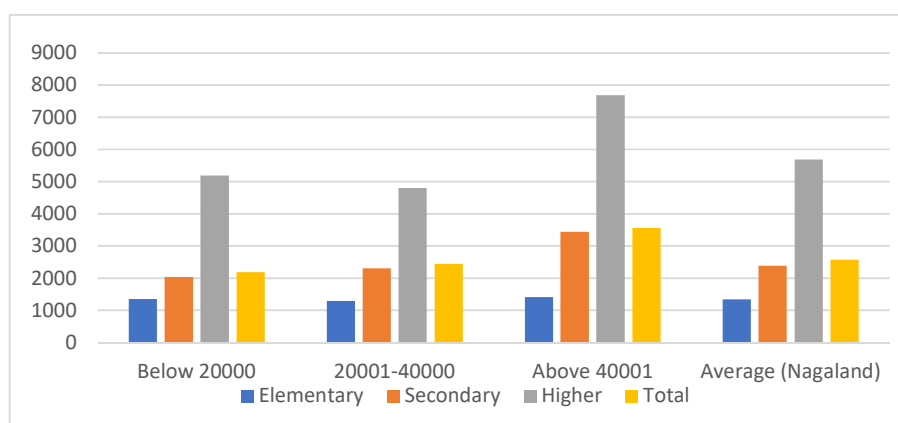
higher income spends higher on children's education, and that expenditure on education also increase with an increase in children's education levels.

Table 5.9. Expenditure on Children's Education by Parental Income (Nagaland)

Parental Income Groups	Mean Monthly Expenditure on Children's Education (in ₹)			
	Elementary	Secondary	Higher	Total
Below 20000	1358	2035	5187	2189
20001-40000	1291	2306	4810	2448
Above 40001	1416	3443	7689	3564
Average (Nagaland)	1347	2388	5695	2584

Source: Appendices Table A. 13.

Figure 5.6. Monthly Expenditure on Education (Nagaland)

Source: Table 5.9.

For Nagaland, parents with an income of ₹40001 and above spends on average, 45 and 62 percent higher than the average expenditure made on education by parents with an income between ₹20001-40000, and ₹20000 and below. Further, the average expenditure on higher education is higher than that of secondary and elementary education by 138 and 322 percent, respectively, indicating that the cost of education increases significantly with an increase in education levels.

The monthly expenditure on education as analyzed from both parental education and income levels shows that average expenditure on education increase with an increase in children's education levels. Further, the average expenditure is found to be higher for parents with higher education and income. As expenditure on education is an important determinant of educational outcomes, it may be concluded that children from higher educational and income background would have better educational outcomes as compared to children with low income

and educational background. Further, it is evidenced that parents with higher education and income invest higher on the higher education of the child. This indicates that children from higher education and income background would achieve higher educational attainments, as parental support is higher for these groups as compared to parents with lower education and income levels.

5.4. Results of Regression Analysis

To determine the relationship between parental education and income on the investment in children's education, regression analysis was conducted. The relationship between parental education and investment in children's education is examined by taking the highest education of any of the parents and regressed with the monthly expenditure on children's education. On the relationship between parental income and investment on children's education, the combined income of the parents was taken. It may be noted, that these relationship is examined only for those households that have currently attending students

The regression results for Wokha, Zunheboto and Nagaland is given in table 5.10. The correlation or 'R' is found to be .75 for Wokha, .87 for Zunheboto and .79 for Nagaland as a whole, showing high degree of positive correlation. Likewise, the adjusted R square was found to be .56, .75 and .63 for Wokha, Zunheboto and for Nagaland as a whole. This indicates that 56 percent of the variations in children educational expenditure is explained by the parental education and income in Wokha, 75 percent in Zunheboto and 63 percent for Nagaland.

Table 5. 10. Regression Estimates on Expenditure on Children's Education

	Wokha	Zunheboto	Nagaland
R	.75	.87	.79
Adjusted R Square	.56	.75	.63
Degree of freedom	202	323	526
Constant	-6487	-3196	-4724
Coefficients: Parent Years of Schooling	152 (3.20) ***	66 (2.88) ***	108 (4.38) ***
Parental Income	.007 (.645)	-.002 (.57)	.000 (.09)

The figures in the parenthesis represents the 't' values. *** indicates significant at 1 & 5 percent.
Dependent Variable: Monthly Expenditure on education.
Source: Own calculations based on field survey, 2014.

The coefficient of regression obtained for the parental years of schooling was 152 for Wokha, 66 for Zunheboto and 108 for Nagaland, which are all statistically significant at 1

percent. This implies that a one-year increase in the years of schooling of the parent would lead to an increase in educational expenditure of their children by ₹152 for Wokha district, ₹66 for Zunheboto district and ₹108 for Nagaland per month, indicating that the impact of parental education on children's educational expenditure is higher in Wokha as compared to Zunheboto.

The coefficient of regression for the parental income obtained in the analysis were found to be too low to have any significant impact on the children's educational expenditure. Further, the 'p' values for the coefficient of the parental income were all found to be higher than the critical value of 0.05. Therefore, as 't' is not statistically significant, it is concluded that parental income does not have significant impact on the children's educational expenditure.

The absence of any statistically significant relationship between parental income and expenditure on children's education in all the analysis is somehow surprising. However, this does not mean that household income does not influence investment in education. In real world, household income does have an impact on financing education; however, expenditure on education depends on a variety of factors, and not just on household income. The reason why statistically significant relationship could not be established between parental income and expenditure on children's education is probably because, other factors such as age and years of schooling of the pupil, types of schools and degrees and location from where education is availed etc. has greater influence in determining the cost of education.

During the field survey, it has been observed that the expenditure for education is low at lower levels of education, therefore, even if household income is high, their expenditure on children's education tend be low if children are enrolled at lower educational levels. Moreover, the number of children in the family also affects the expenditure on education per child. Even if household income is high, if the number of children is less, educational expenditure would be lesser. On the contrary, even if household income are low, if they have more children, or if they have children enrolled in higher education, or if those children are availing education from cities away from home, the cost of education for them would be high, in such case they would be devoting higher percentage of their income on children's education. Therefore, further research in a more detailed manner on a considerably larger sample is required to determine the effects of household income on education.

5.5. Conclusion

The relationship between parental education and its influence on the children educational attainment is examined using OLS regression. The result obtained showed that both father and mother education have similar impact on children's educational attainment at 18.9 and 18.5 percent respectively in Wokha district, suggesting that an increase in the parental years of schooling by one year would improve the educational attainment of their children by 18 percent. However, for Zunheboto district, father's education seems to have more impact on children's educational attainment at 24 percent as compared to 11 percent for mother's education. For Nagaland, the impact is marginally higher for father's education at 19.9 percent as compared to 16.5 percent. Therefore, it may be concluded that parental education have statistically significant impact on educational attainments of the children, however, it is found that father's education has greater influence on children's education.

On the relationship between parental education and expenditure on children education, it is found that higher educated parents spend higher amount per child for all levels of education. Further, average expenditure increases with increase in the education levels of both the children and parents. It is also found that irrespective of parental education, expenditure on children's education increase with an increase in the educational levels of the pupils. Among the two districts, average expenditure per child is found to be higher for Wokha district by 37 percent.

The analysis on the relationship between parental income and children education expenditure also reveals that parents with higher income spend higher on children's education, and that expenditure on education increase with an increase in children's education levels. Therefore, as expenditure on education is an important determinant of educational outcomes, it may be concluded that children from higher educational and income background would have better educational outcomes and attainments as compared to children with low income and educational background.

Regression analysis between parental education and income with the monthly expenditure on education, however, shows that only parental education has a statistically significant relationship with expenditure on children education. Studies made by Carneiro and Heckman (2003)[101] and Chevalier *et.al.* (2005)[102], have also made similar observation where

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[101] Carneiro, P. and Heckman, J. J. (2003) "Human Capital Policy." National Bureau of Economic Research, Working Paper 9495.

[102] Chevalier, A., Harmon, C., O'Sullivan, V. and Walker, I. (2005). "The Impact of Parental Income and Education on the Schooling of Their Children". IZA Discussion Paper No. 1496. Germany

parental education, instead of parental income, is found to have greater influence on children's education. Therefore, further extensive research is required to properly understand this relationship.

Appendices:

Table A.12. Parental Education and Expenditure on Children's Education

Monthly Expenditure on Children's Education by Parents with Elementary Education								
	Wokha			Zunheboto			Nagaland		
	Total	Average	N	Total	Average	N	Total	Average	N
Elementary	25000	1136	22	41700	1191	35	66700	1170	57
Secondary	95500	2220	43	72600	1861	39	168100	2050	82
Higher	119100	5178	23	59500	2833	21	178600	4059	44
Total	239600	2722	88	173800	1829	95	413400	2259	183
Monthly Expenditure on Children's Education by Parents with Secondary Education								
	Wokha			Zunheboto			Nagaland		
	Total	Average	N	Total	Average	N	Total	Average	N
Elementary	27800	1544	18	113800	1338	85	141600	1374	103
Secondary	47200	2950	16	103000	2239	46	150200	2422	62
Higher	104000	8666	12	177000	4783	37	281000	5734	49
Total	179000	3891	46	393800	2344	168	572800	2676	214
Monthly Expenditure on Children's Education by Parents with Higher Education								
	Wokha			Zunheboto			Nagaland		
	Total	Average	N	Total	Average	N	Total	Average	N
Elementary	66500	1511	44	52700	1351	39	119200	1436	83
Secondary	55700	3094	18	46300	3307	14	102000	3187	32
Higher	88500	12642	7	67000	8375	8	155500	10366	15
Total	210700	3053	69	166000	2721	61	376700	2897	130
Total Monthly Investment Per Child								
Parental Education	Wokha (Total)			Zunheboto (Total)			Nagaland (Total)		
	Total	Average	N	Total	Average	N	Total	Average	N
Elementary	119300	1420	84	208200	1309	159	326600	1347	243
Secondary	198400	2576	77	221900	2241	99	420300	2388	176
Higher	311600	7419	42	303500	4598	66	615100	5695	108
Total	629300	3100	203	732700	2261	324	1362900	2586	527

N- Number of observation. Source: Own Calculations based on Field Survey, 2014.

Table A.13. Parental Income and Expenditure on Children's Education

Monthly Expenditure on Children's Education by Parents with Income Below ₹20000								
	Wokha			Zunheboto			Nagaland		
	Total	Average	N	Total	Average	N	Total	Average	N
Elementary	34100	1482	23	104500	1322	79	138600	1358	102
Secondary	78600	2535	31	70000	1666	42	148600	2035	73
Higher	103000	7923	13	63000	3315	19	166000	5187	32
Total	215700	3219	67	237500	1696	140	453200	2189	207
Monthly Expenditure on Children's Education by Parents with Income between ₹20001-40000								
	Wokha			Zunheboto			Nagaland		
	Total	Average	N	Total	Average	N	Total	Average	N
Elementary	36900	1366	27	75500	1258	60	112400	1291	87
Secondary	76300	2119	36	92100	2489	37	168400	2306	73
Higher	92100	6140	15	134000	4187	32	226100	4810	47
Total	205300	2632	78	301600	2337	129	506900	2448	207
Monthly Expenditure on Children's Education by Parents with Income above ₹40001								
	Wokha			Zunheboto			Nagaland		
	Total	Average	N	Total	Average	N	Total	Average	N
Elementary	48300	1420	34	28200	1410	20	76500	1416	54
Secondary	43500	4350	10	59800	2990	20	103300	3443	30
Higher	116500	8321	14	106500	7100	15	223000	7689	29
Total	208300	3591	58	194500	3536	55	402800	3564	113
Total Monthly Investment Per Child								
Parental Education	Wokha (Total)			Zunheboto (Total)			Nagaland (Total)		
	Total	Average	N	Total	Average	N	Total	Average	N
Elementary	119300	1420	84	208200	1309	159	327500	1347	243
Secondary	198400	2576	77	221900	2241	99	420300	2388	176
Higher	311600	7419	42	303500	4598	66	615100	5695	108
Total	629300	3100	203	733600	2264	324	1362900	2584	527

N- Number of observation.
Source: Own Calculations from Field Survey, 2014.

CHAPTER 6

FINDINGS AND CONCLUSIONS

CHAPTER 6

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The effect of education on individuals' earning and employment opportunities is well researched and documented in economic literatures. However, reliable estimate of returns to education is not available for the state of Nagaland. The focus of the present study is, therefore, to estimate the relationship between the education (representing human capital) and earnings and employment, based on household survey conducted during 2013-14. Further, inequalities in income and education is also been analyzed; intergenerational transmission of education, expenditure on education and its relationship with parental income and education are also examined. Moreover, it examined in details the socio-economic profile of the State, with special emphasis on the educational development indicators. The major findings and important observations made in this study are summarized below.

6.1. SOCIO ECONOMIC PROFILE OF NAGALAND

The overview of the socio-economic profile of Nagaland is discussed in chapter 2, and the main observations made in this study are summarized here below.

6.1.1. Demographic Features

The total population of Nagaland as per 2011 Census is 19, 78,502, of which 51.7 percent are males and 48.2 percent are females, with a sex ratio of 931 in 2011. Amongst the districts, Zunheboto exhibits the highest sex ratio of 976, while Mon with a sex ratio of 899 is the lowest. The State has a predominant rural population with 71.14 percent living in rural area and only 28.86 percent residing in the urban area. Among the districts, Mon has the highest rural population (86.24 percent), while Dimapur is the most urbanized district with an urban population (52.23 percent). The density of population in Nagaland is 119 persons per sq.km. Amongst the districts, Dimapur has the highest density (409 persons per sq.km.), while Peren has the lowest density (58 persons per sq.km.).

6.1.2. Economy

Nagaland is an agrarian economy with more than 60 per cent of the population dependent on agriculture for their livelihood. Rice is the staple food of the State and thus covers about 70 percent of the net cultivated area with a production of 4,54,190 MT in 2014-15.

The shares of primary, secondary and tertiary sectors to GSDP were 28.42 percent, 10.27 percent and 60.29 percent, respectively in 2016-17, indicating that tertiary is the highest contributing sector to GSDP while secondary sector is the lowest. The growth of GSDP at constant price was fluctuated over the past years with an average growth of 4.16 percent during 2012 to 2017, which is lower than India's average growth of 6.82 percent for the same period. The per capita income for Nagaland at constant price was ₹71,065 in 2016-17, as compared to ₹82239 for India for the same year, showing that the PCI for India is higher by 15.7 percent.

6.1.3. Employment and Unemployment

According to 2011 Census, there were a total of 9,74,122 workers in Nagaland, with a total Work Participation Rate (WPR) of 49.2 percent. The WPR for male is found to be higher (53.4 percent) as compared to female WPR (44.7 percent). The WPR for the rural area is also higher at 54 percent as compared to 49.2 percent in urban area.

In 2011, employees in the State government sector constituted 9.37 percent of the total workforce. The employees of class 1 status were comprised mostly of graduate and above. For class 2 status, graduate and above constitutes about half of its total employees. On the other hand, matriculate and below constitute 69.15 and 97.5 percent for class 3 and 4 employees respectively. This implies that higher education enables employees to move up to higher status of job in the government sector.

The total number of job seekers in the State as registered in the employment exchanges was 64,121 in 2014, out of which male and female accounts for 64.12 percent and 35.87 percent respectively. During 2008 to 2014, both male and female job seekers have increased, but female show substantial increase as compared to male. Among the total registered job seekers in 2014, graduates constituted the largest proportion, followed by secondary and below, higher Secondary, postgraduates, technical degree and diploma holders, respectively, indicating that majority of the job seekers were graduates.

According to the NSS 68th Round, unemployment rate in Nagaland is found to be the highest in India in all four methods. Unemployment rate for Nagaland by Usual Status (Adjusted) method is 17.8 percent. The unemployment rate is higher in urban area than rural area. Likewise, females have higher unemployment rates as compared to males. Educated unemployment rate in Nagaland is found to be 33.4 and 31.8 percent for rural and urban areas, respectively according to Usual Status (Adjusted) method. Further, unemployment rate is found

to be highest among youths between 15-29 years of age with 40.3 percent for rural areas and 70.3 percent for urban areas.

As per NSS data, the Usual Status (Adjusted), the unemployment rate for India is only 2.3 percent with 1.7 percent in rural areas and 3.4 percent in the urban areas. This shows that unemployment rate in Nagaland is alarmingly high, especially with educated youth.

6.1.4. Health

During 2011-12 to 2014-15, it is observed that the health care facilities like health center, hospitals, and hospital beds have improved in the State; however, there has been a decline in the number of medical personals per population such as doctors, pharmacists and nurses.

The Maternal Mortality Rate (160 per 1 lakh live births) and Infant Mortality Rate for Nagaland (18 per 1000 live births) are lower than national averages (212 MMR and 40 IMR). However, the contraceptive prevalence and institutional delivery are lower in the State as compared to all India, indicating low awareness and practices on family planning and care in the State. Similarly, full immunization coverage in Nagaland is 35.6 percent as compared to 61 percent for India. The total fertility rate for Nagaland is 2 as compared to 2.7 for India.

In 2015-16, the budgetary allocation on health sector was 4.07 percent of the total budget and 2.50 percent of the GSDP at market price. The calculated per capita health expenditure for Nagaland was ₹1707 as per the National Health Profile 2016.

6.1.5. Human Development Index (HDI)

The HDI for Nagaland was 0.59 in 2001, which increased to 0.63 in 2011. The same for India was 0.47 and 0.54 respectively. Among the districts, Dimapur leads with a HDI of 0.81 in 2011, followed by Kohima and Wokha at 0.66 each, respectively. Mon district with a HDI of 0.50 is at the bottom, with Zunheboto is at second lowest with 0.51. Among the districts, Mon, Zunheboto, Tuensang and Longleng are placed at low human development category; Phek, Kiphire, Peren, Mokokchung, Wokha and Kohima are placed in the medium human development category and Dimapur under very high human development category. Apart from Dimapur, Kohima and Wokha, the HDI for the eight districts were below the State's average of 0.63, while Mon, Zunheboto and Tuensang districts were below the country's average of 0.547.

6.1.6. Trends of Educational Indicators

I.   Literacy

The literacy rate of Nagaland increased from 10.52 percent in 1951 to 79.55 percent in 2011. In Nagaland, male literacy rate was higher than that of female rate and urban literacy rate was higher than rural literacy rate. The average decadal growth of literacy for Nagaland during 1961-2011 was 43.57, while that of India was 26.7 percent. The growth in literacy in the state has been higher for females for all census years than that of male. In 2011, Mokokchung district leads with a literacy rate of 91.6 percent, followed by Wokha and Zunheboto at 87.7 and 85.3 percent respectively. At the bottom, Mon and Kiphire districts trails with a literacy rate of 57 and 69.5 percent respectively.

II.   Growth of Educational Institutions

Nagaland has witnessed tremendous increase and improvements in educational institutions since its statehood in 1963. The number of educational institutions increased from 766 in 1963 to 2806 in 2015-16, including 4 universities. Of the total institutions, government managed schools in 2015-16 was 91 and 76 percent for primary and middle school; 53 and 31 percent for secondary and higher secondary schools respectively. Overall, government schools accounts for 76.7 percent, while private schools accounts for 23.30 percent. Out of 63 colleges of general education, only 23.80 percent were government colleges, showing that government sector is the major provider of education at lower levels of education, while private sector is major provider at higher levels of education.

III.   Growth of Teachers

The growth of educational institution has been accompanied by similar increase in the number of teachers. During 1963-64 to 2015-16, the total number of teachers at all levels increased from 2554 to 32,268.

IV.   Enrolment

i.   In 2015-16, a total of 4,70,923 students were enrolled in various education levels, with a gender ratio of 97 girls per 100 boys. Students in primary section constitute 50.55 percent, followed by middle school at 23.70 percent and secondary at 12.57 percent.

The percentage of post graduate and Ph.D. students to total enrolments were very low at 0.38 and 0.034 percent respectively

ii. Enrolments in class 12 shows that in 2017, 76.5 percent are from Arts stream, 16.3 percent from Science stream and 7.18 percent are from Commerce stream. At the college levels, 53.6 percent are from Arts stream, 13.45 percent form education, 14.7 percent from Law, 6.7 from Science stream and 9.9 from Commerce stream, and around 2 percent from technology and management etc., indicating that greater number of students pursue Arts education.

iii. The GER in Nagaland in 2016, are 99.50 and 102.2 percent for primary and upper primary levels, 71.6 and 36.4 percent in secondary and higher secondary levels, and 14.9 percent for higher education. Enrolments ratio in Nagaland is found to be higher than India at elementary levels, while it is lower than India at secondary and higher education. On the other hand, The NER in Nagaland in 2016 was 83.2 and 80.9 percent for primary and upper primary levels, 46.4 and 22.6 percent for secondary and higher secondary levels. The NER for Nagaland is found to be higher than India for upper primary levels, and lower in primary and secondary levels. Girls have higher NER comparing to boys for both elementary and secondary levels.

V.   Pupil-Teacher Ratio

The PTR for Primary, Upper Primary, Secondary and Higher Secondary levels in 2016 in Nagaland are 10, 06, 15 and 21 respectively, while that of India are 23, 17, 27 and 37 respectively. Among the districts, Mokokchung has the lowest PTR of 9, while Mon has the highest PTR at 19 with the average for Nagaland at 14 pupils per teacher in 2015

VI.   Drop- Out Rates

The dropout rates for Nagaland in 2014-15 was 5.61 and 7.92 percent for primary and upper primary level, 18.2 and 6.9 percent for secondary and higher secondary levels, while that of India is found to be 4.13 and 1.03 percent primary and upper primary levels and 17.06 for secondary levels.

VII.   Teachers' Training

In 2006-07, only 25.14 percent of the total teachers in Nagaland were trained, which increased to 32.25 percent in 2015-16 as opposed to 80.3 percent for India, indicating that more than 67 percent of the teachers in the State are yet to be trained professionally.

VIII.   Examination Results

In 2017, a total of 22446 students appeared for HSLC examinations out of which, 15754 students qualified with a pass percentage of 70.19. The pass percentage for the private schools was 86.7 percent while that of the government schools was 42.6 percent, showing better performance of the private schools over government schools.

For HSSLE, the pass percentage for Arts, Science and Commerce in 2017 was 77.28, 86.94 and 70.92 percent respectively, showing that pass percentages were higher for Science stream followed by Arts and Commerce. Similarly, the pass percentage for bachelor and master degree examinations was 61.2 and 72.3 percent, respectively, in 2015.

6.1.7. Public Expenditure in Education

The budget allocated to the education sector increased from ₹28844 lakhs in 2005-06 to ₹166476 lakhs in 2015-16, with an average annual growth rate of 18.8 percent over the period. The percapita expenditure on education for Nagaland in 2015-16 is ₹35350 per student per year.

The share of expenditure on education sector as a percentage of State budget was 13.22 percent in 2015-16, while that of India and World was 14.09 and 14.13 percent respectively in 2013-14. On the other hand, the expenditure on education as a percent of GSDP was 11.6 percent in 2015-16, while that of India and World are 3.84 and 4.7 percent, respectively in 2013-14.

6.1.8. Profile of the Sample Area

i.   The sample survey covered a total of 344 household, of which, 179 are from Wokha and 165 are from Zunheboto. Altogether, 1992 persons were enumerated with 1093 from Wokha and 899 from Zunheboto district. The sex ratio is 964 females per 1000 males, which is higher than the State's sex ratio of 931. The mean family size for total sample population is 5.79.

ii. The literacy rate for the sample population is 93.2 with literacy rate marginally higher for the rural area at 94.31 percent as compared to 92.37 percent in the urban area. Among those who have attended education, 9.18 percent were having education below primary level, 13.2 percent are with primary education, 17.9 are from upper primary education, 18.07 for from secondary level, 14.4 percent from higher secondary level, 16.86 are graduates and 2.7 percent are with post graduate degrees.

iii.   There were 873 income earning individuals with an estimated mean monthly income of ₹17,847 per worker and per capita income ₹7821 for the sample as a whole. Out of the total sample population 43.27 percent were employed and among those, 39.4 percent are employed in the government sector while 60.55 percent in the private sector or self-employed.

6.2.   IMPACT OF EDUCATION ON INCOME AND EMPLOYMENT

The Impact of education on income and employment have been discussed in chapter 3. The major findings are summarized below.

6.2.1. Age- Earning Profile

Income was analyzed according to different age groups for Wokha, Zunheboto and for the whole sample representing Nagaland. The results show no significant relationship between the age of the workers and their income, in a sense that increase in the age of the workers does not necessarily lead to a higher income.

6.2.2. Mean Income by Gender and Region

The monthly mean income for the total sample is found to be ₹17847 per worker. The monthly mean income is found to be higher by 3.51 percent in Wokha district at ₹18065 per worker as compared to Zunheboto at ₹17452 per worker. Male workers earn 56 percent higher than females in Wokha, 60 percent in Zunheboto and 57 percent for the whole sample. Likewise, urban workers earned higher than rural workers by 43 percent in Wokha, 33 percent in Zunheboto and 39 percent for the whole sample.

6.2.3. Mean Income by Educational Groups

The monthly mean income for Wokha and Zunheboto districts as well as for the total sample is found to be lowest for illiterate workers and highest for post graduate workers. Further, mean income is found to have increased with an increase in education levels, indicating the positive effects of education on income. Moreover, the gender gaps in income is found to be significantly higher at lower levels of education, while the gap decreases with an increase in education levels, signaling that increase in education reduce the income differentials between gender.

6.2.4. Regression Analysis from Monthly Mean Income

Regression analysis was conducted to examine the relationship between education and income, by taking the mean income as the dependent variable, shows very strong degree of correlation of .970 for Wokha, .975 for Zunheboto and .985 for Nagaland as a whole. This conforms to the hypothesis made in this study that higher education is associated with higher income. The adjusted R squares are also found to be very high at over 90 percent, indicating that more than 90 percent of the variations in income is explained by education. Further, the coefficient of regression for the years of schooling were all found to be statistically significant at 1 percent, except for rural area in Zunheboto which is found to be significant at 5 percent.

6.2.5. Returns to Education

The returns to education is found to be 5.5 percent for Wokha, 7.1 percent for Zunheboto and 5.7 percent for Nagaland, which are all statistically significant at 1 percent, showing that the overall returns to education is higher in Zunheboto district. Among gender, returns to education is found to be higher for females by 4.1 and 2.1 percentage points in Wokha and Zunheboto and 3.1 percentage points in Nagaland, showing that education have greater impact on earnings for females as compared to males. The returns to work experience, however, is found to be low at 1.5 percent for Wokha, 1.1 percent for Zunheboto and 0.8 percent for Nagaland, showing weak impact of work experience on income.

6.2.6. Returns to Years of Schooling by Educational Level

The returns to years of schooling for the whole sample are found to be statistically significant at 1 percent at 6.3, 6.5 and 7.1 percent, respectively, for elementary, secondary and higher education, implying that, returns are higher for higher education, followed by secondary and elementary education. This also conforms to the hypothesis made in this study that higher level of education is associated with higher income.

The coefficient of regression for work experience were also found to be statistically significant at 1 and 5 percent, however, the coefficient are found to be too low, mostly below 1 percent, to have any significant impact on earnings.

6.2.7. Impact of Education on Employment

i.   WPR

The WPR is found to be 51.3 percent for Wokha, 33.48 percent in Zunheboto and 43.2 percent for the whole sample representing Nagaland, showing higher worker participation in Wokha by 17.8 percentage points.

ii.   Unemployment Rate

Overall, the unemployment rate is 20.6 percent and 23.4 percent in Wokha and in Zunheboto and 21.6 percent for the whole sample, showing that unemployment rate is higher in Zunheboto district by 2.4 percentage points. Female unemployment is found to be higher than males by 2.8 and 9.8 percentage points in Wokha and Zunheboto districts and by 5.1 percentage points for the whole sample representing Nagaland. Similarly, unemployment is found to be higher in urban area as compared to rural area by 7.7 and 1.3 percentage points in Wokha and Zunheboto district respectively, and by 5.5 percent for Nagaland.

Among the educational groups, unemployment is found to be zero for the illiterate, while the rate is lower for those with lower education levels as compared to workers with higher education, in both the sample districts and for Nagaland as well. This is because, illiterates and workers with less education engages in informal sector, mainly in agriculture or self-employment. The unemployment rate for workers with higher qualification is higher because, among other reasons, (i) they choose to wait in unemployment till they find a decent job or (ii) there is a mismatch between the output of the educational system and the demands of the labor market.

iii.   Logistic Regression Analysis for Unemployment

The binary logistic regression conducted to examine the relationship between education and employment shows direct relationship between education and unemployment or an inverse relationship between education and employment. In other words, the probability of being unemployed increases with an increase in the years of schooling. This shows that the likelihood of being in unemployment is higher for those with higher levels of education as compared to those with lower levels of education. The finding was consistent for both regions and gender in both the districts and for the whole sample. This result was in contravention to the hypothesis

made in this study, that higher level of education is associated with higher level of employment. Therefore, the hypothesis is rejected.

6.3. EDUCATION AND INCOME INEQUALITY IN NAGALAND

The extent of education and income inequality in Nagaland is examined in chapter 4, the major findings of which are summarized below.

6.3.1. Mean Years of Schooling (MYS) In Nagaland

The MYS is found to be 11.4 in Wokha, 12.4 in Zunheboto and 11.8 for the whole sample representing Nagaland. The MYS is found to be higher for males as compared to females and also higher for urban area as compared to rural area in both the district and for Nagaland as a whole.

6.3.2. Educational Inequality

The educational inequality as measured by the Gini index is found to be lower in Zunheboto district at 17 percent as compared to Wokha at 25.6 percent. For the whole sample representing Nagaland, educational Gini index is found to be 22 percent showing relatively equitable distribution of education in the State. In both the districts and for Nagaland as a whole, educational inequalities is found to be higher for females, rural areas and older age cohort as compared to males, urban area and younger age cohort.

6.3.3. Income Inequalities

The income inequalities as measured through the Gini index is 33.5 percent in Wokha, 36 percent in Zunheboto and 34.5 percent for Nagaland indicating that income is relatively equitably distributed in the State. The income inequality is found to be higher for females as compared to males by 12.3 and 15.6 percentage points in Wokha and Zunheboto and by 14.6 percentage points for the whole sample representing Nagaland, showing high variations in inequality among gender. Likewise, inequality is found to be higher in rural area as compared to urban area in both the sample districts and for Nagaland as a whole. It is also found that income inequalities decreases with an increase in educational attainments, indicating that education plays a positive role in equalizing income.

6.3.4. Relationship Between MYS and Income Gini

The relationship between the MYS and the Income Gini index is examined using simple regression analysis for the whole sample. The regression coefficient (B) for the MYS is found to be -2.21, which is significant at 1 percent, showing a negative relationship between the MYS and income inequality. This imply that an increase in the MYS by one year would lead to a reduction in the income inequality by 2.21 percentage points. In other words, higher the MYS, lower would be the income inequality. Therefore, increasing the MYS is essential in order to reduce the level of income inequality in the society.

6.4. PARENTAL EDUCATION AND CHILDREN EDUCATIONAL ATTAINMENT

The relationship between parental education and its influence on the children educational attainment has been discussed in Chapter 5, and the summary of the main findings are highlighted below.

6.4.1. Parental Education and Children Educational Attainment

The relationship between parental education and its influence on the children educational attainment is examined by using OLS regression. The results suggest that increase in father's education by one-year would lead to an increase in educational attainment of children by 18.5 percent in Wokha, 24.1 percent in Zunheboto and by 19.9 percent for Nagaland. Similarly, an additional increase in mother's education would lead to an increase in children's educational attainment by 18.5 percent and 11.2 percent for Wokha and Zunheboto and by 16.5 percent for Nagaland, showing that father's education has higher impact on children's educational attainment. The positive and direct relationship indicates that higher educated parents tends to produce higher educated children. Therefore, the assertion made in the hypothesis that "higher parental education is associated with higher educational attainment of their offspring" is accepted.

6.4.2. Parental Education and Expenditure on Children Education

The impact of parental education on children's education is analyzed through the monthly spending on education by different parental educational groups. The analysis found that, for the total sample, parents with higher education spend on average 8 percent higher than secondary educated parents and 28 percent higher than elementary educated parents, showing

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that higher educated parents on average, spend higher on children education. It is also found that higher educated parents spend higher amount per child for all levels of education. Moreover, average expenditure on education increases with an increase in the education levels of both the children and parents. Moreover, higher educated parents made the highest investment on higher education, which is 80 percent higher than secondary educated parents and 155 percent higher than elementary educated parents, indicating that greater importance is given towards higher education by parents with higher education. It is also found that, irrespective of parental education, expenditure on children's education increase with an increase in the educational levels of the pupils. Between the two districts, average expenditure per child is found to be higher for Wokha district by 37 percent.

6.4.3.   Parental Income and Expenditure on Children Education

The impact of parental income on children's educational expenditure is also examined by taking the monthly average educational expenditure. The result shows that, for the total sample representing Nagaland, parents with an income of ₹40001 and above spends on average, 45 and 62 percent per month higher than the average expenditure made on education by parents with an income between ₹20001-40000, and below ₹20000, showing that parents with higher income tends to spend more on children's education. The average expenditure on higher education is also higher than that of secondary and elementary education by 138 and 322 percent, respectively, indicating that the cost of education increases significantly with an increase in education levels.

6.4.4.   Regression Analysis

The relationship between parental education and income on the investment in children's education is examined for both the sample districts and for Nagaland through regression analysis. The result suggests that, one-year increase in the years of schooling of the parent would lead to an increase in educational expenditure of their children by ₹152 for Wokha district, ₹66 for Zunheboto district and ₹108 for Nagaland per month, showing that impacts are higher for Wokha as compared to Zunheboto. However, it is found that parental income does not have any significant impact on the children's educational expenditure.

6.5. CONCLUSIONS AND POLICY IMPLICATIONS

1. Investing in Human Capital

The benefits of education and human capital as discussed in this thesis are enormous. Empirical results show that income increases with an increase in education levels, indicating that people with higher levels of education earns higher income comparing to those with lower levels of education, which is true for both the sample districts and for Nagaland as a whole. The rate of return on education is found to be relatively higher in Zunheboto than Wokha. In Wokha, the rate of return to schooling is higher for urban and female workers than rural and male workers, whereas in Zunheboto, it is higher among rural and female workers. And in average, it is higher among female and urban workers.

Education is found to reduce income inequalities among the total workers. The result of the study shows that income inequality decreases with increase in educational attainments for both the sample districts and thus for the State as a whole, indicating that education plays a positive role in equalizing income across sections of population.

Parental education is also found to be positively related with higher educational attainments of their children. More educated parents have, on average, better educated children. Moreover, parental education is positively related to children's education expenditure, which is higher in Wokha than Zunheboto. The policy implication is that increase in education today would lead to an increase in schooling of the next generation, and in a way, to an improvement of life outcomes in later period, such as, better health, productivity and wealth.

 All these evidences, therefore, suggest that investing in human capital and competencies yields positive and gainful returns. Therefore, both government and private individuals should give greater importance in investing in human capital so that the State and its citizens can fully reap the benefits of education.

2. Bridging the Income Gap

The income gap between gender and region in the State is high, with males earning 57 percent higher than female on average, and urban workers earning 39 percent higher than rural workers. The income gap between genders is found to be significantly higher for below and primary levels, with males earning higher. However, results obtained in this study shows that the income differential among gender decreases with an increase in educational attainment,

especially after reaching higher secondary levels. This shows that education plays an important role in equalizing income in the population. One factor could be due to the higher rate of returns to education for females. The returns to education for female is found to be 6.3 percent for Nagaland, while it 3.3 percent for males. This implies that female income increases by nearly twice of the income increase for males, thereby reducing the income gap at every stage of education.

Hence, affording quality and higher level of education, especially to females could help bridge the income gap. Further, policies like equal pay for equal work should be implemented in all seriousness. Income inequality is also found to be lower among higher educational group at 24.8 percent as compared to elementary education at 38.8 percent for the whole sample. This implies that inequality decrease with an increase in education. Further, the MYS is found to be inversely related with income inequality, indicating that an increase in educational attainment would lead to a reduction of income inequality. All these findings, therefore, suggest that a higher level of educational attainment is desirable, both for raising the income level and also for reducing the income inequality.

Education yield high returns, even the basic primary education provides higher returns as compare to illiteracy for the both sample district and also for the State. However, there is an urgent need to improve the quality of the education, particularly at lower level as it lays foundation for every student for their future development. Nevertheless, primary education alone is not sufficient in equipping individuals with skills required in the labour market. As higher levels of education are associated with higher earnings, it entails for improvement of higher education, making it accessible and affordable for all.

3.   **Taking Agriculture Forward**

Data shows that 71 percent of the population lives in rural areas and that more than 60 per cent of the population in Nagaland depend on agriculture for their livelihood. However, the contribution of primary sector to GSDP is only 28.4 percent in 2016-17. In addition, the growth of primary sector has registered a negative growth rate in the last two years. The low contributions to GSDP by more than half of the population indicates that the productivity and income of those engaged in agriculture and primary sector are low, and therefore requires urgent policy measures. Because when majority of the population remain poor, unemployed or under employed, less productive with low levels of income, the overall health of the economy would be affected.

Despite 60 percent of its population engaged in agriculture, the State is yet to achieve food sufficiency and therefore, relies enormously on imports of agricultural and livestock products. Hence, policy should be targeted to enhance agricultural production and productivity through use of modern and mechanized technologies. Majority of the farmers resides in the rural areas; however, huge agricultural potentials remains untapped due to economic barriers and accessibility problems. As agricultural marketing depends on the state of road and transport infrastructure, special emphasis should also be given to develop those sectors.

4.   Boosting the Manufacturing Sector

The contribution of secondary sector to GSDP was around 10 percent. However, most of it is contributed by the construction sector. The share of manufacturing sector to GSDP was only 1.34 percent in 2015-16. The poor contribution of manufacturing sector indicates the lack of industrial production and entrepreneurial activity in the State. As the vast reserves of natural resources and minerals in the State are yet to be economically exploited, development of this sector is vital for economic growth and employment generation. Therefore, comprehensive industrial policy in the State is required to give impetus towards medium and large scale industrial production in the State.

5.   Focusing on Employment

The unemployment rate for Nagaland, according to the NSS 68th Round, is the highest in India. The unemployment rate obtained in this study is 21.6 percent with 19.6 percent for males and 24.7 percent for females. Similarly, unemployment rate according to NSS 68th round is 25.6 percent, as per usual status (PS) method and 17.8 percent according to (adjusted) method, in contrast to 2.3 percent for India. Youth unemployment is at alarming 40 percent for rural area and 70 percent in urban area. Such high levels of unemployment could create serious economic and social issues, unless addressed urgently. Firstly, unemployment is wastage of valuable productive resources to the economy. Secondly, it can lead to vicious circle of low income, low aggregate demand, and therefore low production which could again lead to reduced employment. Thirdly, it could lead to various social and political unrests and crime in the society.

Therefore, appropriate employment generation policies should be adopted with special focus on youth employment. Use of labor intensive technique in production methods, revitalization of agriculture sector, development of manufacturing sector, and expansion of small scale industries should be undertaken. Higher unemployment among the youths and

educated labor force also indicate a mismatch between the output of the educational system and the demands of the labor market. Therefore, the educational system should be reoriented to suit the demand of the labor market. Entrepreneurship, short term vocational and apprenticeship program may be offered to cater to the demands of the local labor market.

6.   Raising the Enrolment Rates

The GER in Nagaland for primary and upper primary levels is higher than that of India; however, it is lower than all India average by 11.71 percent for secondary, 54.15 percent for higher secondary and by 64.42 percent for higher education in 2015-16. Similarly, the NER for secondary and higher secondary levels in Nagaland is lower than that of India by 10.3 and 42.60 percent respectively. Low enrolment ratio indicates low participation in that respective levels of education, which could therefore, create educational imbalance in the long run. Policies such as providing quality, accessible and affordable education could improve the enrolment rates in the State. Moreover, improvement in pass percentage in secondary and post-secondary education could also reduce the dropout rates and improve enrolment ratio. Further, most of the educational institutions of higher learning are concentrated in Kohima and Dimapur districts. Therefore, efforts should be given to expand educational institutions especially at higher levels, either by way of grants or government- private partnership, into other areas as well.

7.   Diversifying Education and Trainings

Data shows that, at 10+2 level, 76.5 percent of the students are from Arts stream, 16.3 from Science and 7.2 percent are from Commerce stream. At higher education levels, the percentage for Arts, Science and Commerce students are 53, 9.7 and 9.3 percent respectively. This indicated that majority pursue Arts education. Concentration on Arts education could be one of the reason for high levels of educated unemployment, as an oversupply of a particular type of labor would create distortions in the labor market. Therefore, proper career planning and counseling should be provided to students at early levels, to enable them to pursue education with the right kind of information and goals. Secondly, there is a need to establish more science, commerce, technical and skills training centers across the State in order to provide ample opportunity for students and youths to pursue education of their choice. Diversified education system that offers life skills, career guidance, choices of elective subject's, practical course on various trades and vocations and entrepreneurship may be offered from secondary levels.

8.   Enhancing Teachers' Capacity and Training

In 2015-16, only 32.2 percent of the total teachers under school education are trained in Nagaland. The percentage of trained teacher for all India is 80.3 percent. Therefore, specified time frame must be set to train those 67 percent of the teachers who are yet to undergo professional teaching course. Further, short term and refresher courses should be conducted at regular intervals to equip the teachers with modern teaching skills and requirements, including use of information technologies.

9.   Strengthening Government Schools

Among the total number of schools in Nagaland, 77 percent of the schools, from primary to higher secondary levels, are owned and managed by the government in 2015-16. Being the major provider of education in the State, the onus of responsibility to provide effective and quality education, therefore lies with the State. However, the pass percentage of government schools in HSLC examinations in 2017 was only 42.6 percent as compared to 86.76 percent for the private schools. This shows that the quality and outcome of the government institutions are in a very bad shape. Therefore, it is incumbent upon the government to seriously examine the causes and factors responsible for such dismal performance.

Firstly, measures that improve teachers' attendance and commitment should be enforced strictly. Secondly, most of the school infrastructure are in poor condition. Therefore, an ambitious financing project to strengthen the schools' physical infrastructure should be given due attention. Thirdly, parental involvement in children's learning activities are vital for improving academic performances. Therefore, greater parental participation may be solicited by conducting periodic parents-teachers meeting and by offering systematic counseling programs, especially to parents from poor educational backgrounds.

Further, it is reported that 50 percent of government schools operate without math teachers[103]. Under such circumstances, schools cannot be expected to produce good results. Hence, vacancy of mathematics teachers should be filled up by floating advertisement even at national level. Secondly, students should be encouraged to pursue Math education with special incentives like mathematics scholarship. Thirdly, many science graduates do not wish to undergo additional 2 year B.Ed course, as a result they are ineligible to apply for teaching

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[103] Jamir, M. (2017) **"**Nagaland Govt. School Results: Outcome of Apathy?". The Morung Express. May 10 Issue. Retrieved from: http://morungexpress.com/nagaland-govt-school-results-outcome-apathy/

position. Therefore, an integrated four year B.Sc – B.Ed. course may be introduced in the State to encourage teaching aspirants from science background to acquire the requisite degree.

Conclusion

The knowledge and skill intensities embodied in a person are inevitably crucial for determining the income, health, social and political lives of the individual which in turn influence the living standard and welfare of the economy as a whole. Therefore, providing equal and affordable access to quality education have become one of the primary goals of every State across the globe. As advancement in skills and knowledge are necessary to remove social ills and economic backwardness, the State and all stakeholders must endeavor to create a knowledge economy with highly skilled workforce that can access, adapt and apply new ideas and technologies in personal and professional lives and thereby contribute towards the nation building process.

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