Validating the place of onchocerciasis in migration

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Abstract

Despite the rich empirical evidence which suggests that rural-urban drift is often induced by economic considerations and rural deprivation, the literature on onchocerciasis have often claimed that the disease induces massive out-migration from endemic communities. This study examined the actual causes of out-migration in the onchocerciasis endemic area of Patigi LGA, Kwara State, Nigeria. The study area, was stratified into three administrative districts, 200 heads of household were randomly selected from each stratum for questionnaire interview, using the LGA's onchocerciasis control register comprising of 3005 registered households as database. The Probit regression analysis showed that the significant migration factors were education (T = 8.3321, p<.01), economic factors (T = 6.0993, p<.01) and marriage (T = 5.0458, p<.01). The study concludes that, the assertion which states that Onchocerciasis leads to massive out-migration from endemic communities is not true.

1   Introduction and Research Problem

Onchocerciasis otherwise known as river blindness is one of the world's major endemic parasitic diseases which affects the eye and can lead to blindness when it reaches an advanced stage in the human body (Edungbola, 1991; Lieze *et al*, 1991). Onchocerciasis causes extensive skin disfiguration associated in some cases with severe discomfort. The skin manifestations of onchocerciasis are often characterised by dermatitis, thickening and atrophy of the skin and pigmentry aberrations such as leopard skin. Other debilitations of the disease include hanging groin and scrotal elephantiasis among many others (WHO, 1988; Edungbola, 1991; Ogunba, 1991). Apart from its effects on the human body, onchocerciasis has often been indicted for the devastation and decay of communities where it is endemic.

About 17.6 million people all over the world are infected with the disease (WHO 1995), out of which one million are totally or partially blind (WHO, 1989). More than 95 per cent of onchocerciasis infected persons are in Africa (Umen *et al,* 1996), and Nigeria is the most endemic country in the world, harbouring about 60 per cent of all onchocerciasis cases in West Africa (WHO, 1987) and 30 to 40 per cent of all cases in the world (Carter Centre, 1995). Pond (1995), estimated that the disease is endemic in over 15 thousand Nigerian rural communities.

In Kwara State, Edungbola (1982) reported an average prevalence rate of about 64 per cent in rural communities. Particularly, a high prevalence rate of about 68 per cent has been reported in Patigi area (Edungbola, 1982 and Africare, 1991), thus

making it the most endemic part of Kwara State. In fact, 100 per cent prevalence was recorded in some communities in Patigi area. The fact that Nigeria is the most endemic country in the world for onchocerciasis has prompted the Federal Ministry of Health in the country to embark on control measures (Gyoh, 1995). Sequel to government's intervention, the United Nations agencies (WHO, UNICEF), international and local non-governmental agencies, state and local governments have embarked on programmes aimed at controlling river blindness in Nigeria.

The pathological and entomological aspects of onchocerciasis have been widely studied (Budden, 1956; Duke, 1990, 2002; Edungbola, 1991, 1987; Edene, 2003;). Also, people's perception of the disease have been variously analysed (Oladepo, 1986; Gemade, 1982; Babatimehin, 2004, 2005;). Furthermore, Babatimehin (2008), studied the ecological and behavioural factors of vulnerability to the disease in some endemic areas in Nigeria.

There have also been numerous numrous attempts at drawing a relationship between onchocefrciasis and migration. Despite the rich empirical evidence that sugests that rural-urban migration is often induced by economic considerations and rural deprivation, the literature on onchocerciasis have often claimed that the disease induces migration from endemic communities. However, these assertions are not based on deductive findings from quantitative researches aimed at ascertaining the causes of migration from onchocerciasis endemic communities. Rather, they are based on intuition and are seldom subjected to rigorous statistical analysis.

Examples of such generalisation abound in the works of Hunter (1966), in Nangodi, Northern Ghana; Rolland (1972), in Saint Pierre, Burkina Faso; and Bradley (1976), in the Hawal Valley, Nigeria. In fact, some studies in the medical sciences also make these assertions (see Gemade, 1982; Oladepo, 1986; Edungbola and Parakoyi, 1991). For instance, Hunter (1966) observed a cyclical retreat and advance of settlements in onchocerciasis endemic river valleys of Nangodi, Ghana, and based on in-depth interview with society elites and his personal observations; he concluded that onchocerciasis was responsible for this pattern of movement. In the same vein, Bradley (1976) observed extensive depopulation and decay of onchocerciasis endemic communities in the Hawal River Valley, Nigeria, and with reference to Hunter (1966), concluded that onchocerciasis was most likely to be responsible for the large scale depopulation and decay of the communities.

Over the years, the work of Hunter (1966) has become a reference point for most researches on onchocerciasis. Today, most studies on onchocerciasis are based on the assumption that the disease induces extensive out-migration. Indeed, this assertion has tended to hinder a clear understanding of the place of onchocerciasis relative to other factors in settlement depopulation.

The Onchocerciasis Control Programme (OCP) in West Africa and the National Onchocerciasis Control Programme (NOCP) in Nigeria and other onchocerciasis control agencies have claimed substantial levels of success in the control of the disease. Incidentally, these acclaimed successes have not led to

corresponding repopulation of some sparsely populated onchocerciasis endemic communities. This calls to question, therefore, the validity of the claim that onchocerciasis constitutes the primary factor of out-migration from onchocerciasis endemic communities. It is a fact that onchocerciasis is predominantly a disease of isolated and remote rural communities (Kuti, 1991), where poverty and deprivation pervade. However, rather than attribute depopulation and decay in onchocerciasis endemic communities solely to the menace of the disease, it would be logical to conduct unbiased studies into the phenomenon of migration in such areas to determine whether or not onchocerciasis is a major factor of depopulation and decay. It may as well be that the disease only serves to compound an already precarious situation originally induced by other factors.

This study analyses the primary factors of depopulation of onchocerciasis endemic communities in Kwara State, Nigeria.

2   Research Hypothesis

The research hypothesises that "Onchocerciasis prevalence is a significant factor of out-migration"

Although the literature suggests a hypothesis of causal relationship between onchocerciasis and migration (Hunter, 1966; Bradley, 1976), it is also comparable with the assumption that villages with high prevalence of onchocerciasis are located at the end of the road, where difficult subsistence coincides with high incidence of the disease (Kuti, 1991). The basis for this hypothesis therefore, is to clearly bring out the

place of onchocerciasis in the migration of people from endemic communities and therefore determine whether or not the assertion in the literature that onchocerciasis induces the movement of people from endemic communities is true.

3   Conceptual Framework

3.1   A theory of migration

Lee's (1969), theory of migration is yet another framework for examining some pertinent aspects of migration. This model which drew its inspiration from Ravenstein's laws of migration seeks to outline some of the salient and personal factors which enter into the decision to migrate. Lee (1969) came up with a series of hypotheses about the volume of migration under varying conditions, the development of stream and counter stream and the characteristic of migrants (Gould and Prothero, 1974).

According to Lee, factors that enter into the decision to migrate and the process of migration include factors associated with the area of origin; factors associated with the area of destination; intervening obstacles and personal factors. Migration takes place in response to the prevailing set of factors both in the migrant's place of origin and in one or a number of potential destinations. In every area there are countless factors that act to hold people within the area or attract people to it and there are others that repel them. Lee identified these factors as positive, negative or neutral.

Lee's model is as an improvement over the simple and conventional "push-pull" framework of migration. On the one hand, the positive factors are those attracting forces at the potential destination which tend to pull people into them. On the other hand, the negative factors are those repulsive forces in the place of origin which tend to push people out of them, while the neutral forces are those to which people are indifferent.

In simple terms, migration is most likely to take place where the influence of negative condition in the place of origin and positive condition in a potential place of destination is greater than the conditions which attach people to their home area or dissuade them from moving elsewhere. The relative balance of positive and negative conditions may have a powerful influence not only on the incidence of migration but also upon the direction of movement, with streams of migration developing towards the more attractive destination areas. It may also have an influence on the duration of movements, with return migration being more likely to occur where the home community continues to hold an attraction to the mover. Lee further argued that some factors affect most people in the same way, and other factors affect different people in different ways.

A person's knowledge of conditions in his or her home area is always likely to be more complete, accurate and reliable than that relating to possible places of destination. In the case of the later, the potential migrant often has to rely on information from secondary sources such as the media or from return migrants. In

both cases the information and image that is conveyed may be incomplete and not totally accurate. Thus, a move to a new location may often be associated with a high level of risk and uncertainty because of deficiencies in the migrant's knowledge about that place, and about the opportunities and the conditions which may be found there in.

A further factor which influences the likelihood of people migrating is what Lee termed 'intervening obstacles'. These are potential barriers to migration (such as the cost of travel, the physical and cultural distance between places, family attachment, personal anxiety, government restrictions and lack of information about opportunities and conditions elsewhere), which to some people (those with the means to over come them in terms of money, contact, qualification and so on) may appear to be slight but which to others may seem insurmountable.

Lee however, cautioned against the use of a simple calculus of positive and negative factors to determine the likely volume of migration. He suggested that the factors in favour of migration would generally have to outweigh substantially those against because of people's natural reluctance to uproot themselves from the familiar surroundings of their home areas. It is also important to note that people cannot be expected to respond in an identical manner to these positive and negative forces. In the final analysis, much depend upon the individual's own circumstances, their personality and their perception of the conditions which surround them.

In terms of direction, rural-urban migration is still the most important in Nigeria and other developing countries. Basically, these rural areas are backward, under developed and lacking in basic "life cushioning" facilities, therefore, they do not attract economic investments and the marginal return to labour is generally very low. Therefore, in anticipation for better opportunities elsewhere, people living in the rural areas move to towns and cities perceived to offer better social and economic opportunities.

The above represents the view of most writers in explaining the motivational factor of migration. However, it should be stated that, there are movements from rural areas in which the supply push is basically the result of some environmental and social problems associated with the source region. Though the demand-pull of the cities may determine the timing and eventual destination of the migrants and such movements may in the long run be justified by the economic gains accruing to the migrants as a result of the move. Lee's model is useful in pointing in the direction of the factors that should be examined if we are to understand why people move. Thus, we need to be mindful of the circumstances that prevail in the areas from which migrants are moving and in the areas upon which their movement is focused. We also need to consider the migrant's propensity to move, and the factors that both facilitate and hinder the movements from one place to another.

4   **Literature Review**

4.1   **Dimensions of migration**

Migration is an important issue of our time and a major interdisciplinary field of inquiry in the social sciences (King and Black, 1998). Several writers (Hägerstrand, 1957; Peterson, 1958; Mangalan, 1968; and Aina, 1995) have defined migration in various ways. The definition given to the phenomenon at any point in time usually depends on specific research interest. However, most writers tend to explain migration from the economic point of view (Wolpert, 1965; Amin, 1974, 1995; Lundbroq, 1991, Iosifides and King, 1996; DeHaan, 1996; Blotevogel and Fielding, 1997). In whatever way one looks at it, migration involves a relatively permanent change in the usual residence (Lee, 1966; Clarke, 1986; Long, 1988; Aina, 1995; Mc Hugh, 1995), usually across an administrative boundary (Zelinski, 1971). It is therefore presumed that migration involves a severance of previous community ties in terms of cessation of regular and frequent contact with family, friends and community organisations and activities at the origin area.

The causes of human migration are extremely diversified. Various situations which stimulate migration decisions can be identified. Over the years, researches on migration have been mainly concerned with four questions which Mangalan (1968) summarised as: who migrates? Why do people migrate? What are the patterns of flow and what are the consequences of migration?

4.2   Disease and migration

Generally migration remains the most neglected of the components of population change. This is because compared with birth and death, which occurs once in a lifetime, migration, could take place several times in one's lifetime. Also, migration is much more elusive to define, measure, and understand. Whereas, mortality and fertility are largely absolute and specific, movement of people are generally not so specific either in place or in time (Gerger, 1968). The basis for this is that migration involves a moving population which in most cases are intractable and immeasurable. Data on migration are therefore usually very scanty and analysis is less complete than for other demographic data.

Migration and infectious diseases have been interacting for centuries and probably millennia, long before researchers had the ability to cogently study migration, disease agents cause the movement of people (Doyle and Lee, 1986; McNeil, 1976; Curtin, 1989). However, contemporary studies of disease and migration tend to emphasise disease transmission due to human mobility. Indeed, this is reflected in researches on malaria (see Prothero, 1961, 1965). Singhanetra-Renard (1993), writing on malaria transmission in Thailand stated that a known epidemic agent of the disease in border area is human migration. He stated further that migrants from an endemic locus could introduce the parasite into an area with no transmission but potent vectors. He particularly indicted non-immune carrying out clandestine activities in or across forest and border areas. Similarly, Elias (1993), writing on

malaria in Naya area of Colombia have shown that human mobility both in the form of migration and or circulation has been considered important in the transmission and control of malaria and other communicable diseases.

Some researchers have also written on the devastating effects of other infectious diseases both on individuals and communities, for instance schistosomiasis in Egypt (El Khoby *et al*., 1991), and Nigeria (Edungbola 1991). Recently, there has been tremendous attention on the importance of migration and human mobility in the transmission of HIV/AIDS (Orubuloye *et al*, 1994; Prothero, 1997; Wiseman, 1997; Wilkinson, *et al*., 1997). In their various researches they concluded that multi partnered migrants acquire and transmit HIV/AIDS more readily and easily than others in any society.

4.3   Onchocerciasis and migration

There have been a number of studies on the effect of migration on disease transmission. However, most studies on onchocerciasis have centred around the effect of the disease on the movement of people. Although migration decision making is multi-faceted, the role of onchocerciasis in the movement of people from endemic communities is said to be tremendous and human movement induced by the disease could take various patterns, it could be in the form of settlement retreat and advance (Hunter, 1966; Williams, 1974). The concept of settlement retreat and advance was first used by Hunter (1966), to depict the pattern of movement of people displaced by onchocerciasis in endemic communities in Nangodi, Northern Ghana. The concept

was amplified by Bradley (1976), in his study in the onchocerciasis endemic regions of the Hawal Valley of Northern Nigeria and Rolland (1972) in the settlement of St. Pierre in Burkina Faso.

The concept depicts a continuous cyclical retreat and advance of inhabitants of settlements in river basins severely infected with onchocerciasis. The pattern of movement is such that people migrate from the river valley in response to a high rate of onchocerciasis prevalence. Initially the population retreat towards the poor inland soils away from the river valleys, during which period, a fraction of the population migrate out-rightly away from the area in search of better opportunities. The retreat of population continues until a time when the memory of the disease and associated difficulties at the river valleys become faint or vague in the people's memory. At that point the inland soils are over worked and could no longer support the agricultural needs of the people. Therefore, people migrate again towards the better soils along the river valleys. As time goes on, the disease (onchocerciasis) once again takes its toll on the people and the cycle of advance and retreat continues. Along the retreating frontier of settlement, there is a pervading atmosphere of decline, decay and in fact death of settlements. The death of settlements is believed to be as a result of massive migration of inhabitants outside the region, in search of better opportunities and the death of inhabitants of such communities.

Similarly, Bradley (1976), reported in settlements around the Middle Hawal Valley Nigeria, that between 1924 and 1976 about forty settlements where

onchocerciasis was endemic have abandoned their sites due to the menace of the disease. Also, in his study of Tsakasimta, Nigeria, Bradley (1972) reported a prevalence rate of between 77 per cent and 100 per cent and blindness rate up to 20 per cent. This high level of onchocerciasis prevalence according to him has led to the out migration of able-bodied people to other locations. Furthermore, Budden (1956), in a study of Bura, Southern Borno, Nigeria, noted that population tend to reduce as the intensity of infection of the community with the disease increases, and villages appear to be completely evacuated when the blindness rate exceeds 10 per cent. Ogunba (1991), reported that "the grave socio-economic effect of onchocerciasis in many communities have compelled many to abandon their lands in fertile river valleys for over-crowded, over-worked and over grazed-lands, resulting in further degradation of land, erosion, poor agricultural returns and perpetual poverty".

However caution should be exercised in adducing massive out migration to the menace of onchocerciasis. The various studies that have led to this widely accepted conclusion are known to be biased. The studies out rightly zero down on onchocerciasis, therefore, the roles of other migration factors are subdued. In fact, the assertion made by most writers that onchocerciasis induces migration derives from the assertion of Hunter (1966) and other frontline writers on the subject. Despite Hunter's stands, he was quick to add that onchocerciasis alone should not be seen as the sole cause of migration because other possible causes of depopulation are slave raiding, soil erosion, and other riverine diseases such as trypanosomiasis (Hunter 1966). Also,

WHO (1968), opined that although striking associations support the hypothesis of a causal relationship between onchocerciasis and out-migration, "it is also comparable with the assumption that villages with high frequencies of onchocerciasis are located at the end of the road where difficult subsistence is coincidental with high incidence of the disease".

Over the years researchers have relied on the earlier assertion that onchocerciasis induces out-migration from endemic areas rather than face the challenge of actually locating the place of onchocerciasis among other factors in the migration of people from endemic areas. The need for a study of this nature has continued to manifest especially in the face of recent studies that have shown that some hitherto onchocerciasis endemic communities have not been repopulated after the effective control of the disease and in spite of the concerted efforts aimed at repopulating them. Therefore, the validity of the assertion that onchocerciasis induces migration becomes questionable. Was onchocerciasis responsible for the massive out migration of people or are there other factors responsible for the out migration of people. Again, given the cultural attachment of Africans to their home origin, are they likely to be uprooted from their home origin by a disease with a relatively low fatality rate as onchocerciasis?

5 Methodology

5.1 The study area

The study area is Patigi Local Government Area (LGA), Kwara State, Nigeria. The LGA is located within Latitudes 8º 30' N and 8º 57' N of the equator and longitudes 5º 30' N and 6º 11' E of the Greenwich Meridian. The LGA is one of the 16 in Kwara State; the 1991 census puts her population at 45494. Comprising of 22712 males and 22782 females, spread across 9619 households, in over 100 settlements. Patigi LGA is bounded in the North by River Niger, in the West by Nupe communities in Edu LGA, Kwara State, in the East by Nupe communities in Niger State, and in the South by Yagba communities of Kogi State (see Figures 1). Patigi LGA is endemic with onchocerciasis. The black fly, simulium damnosum that transmits the disease
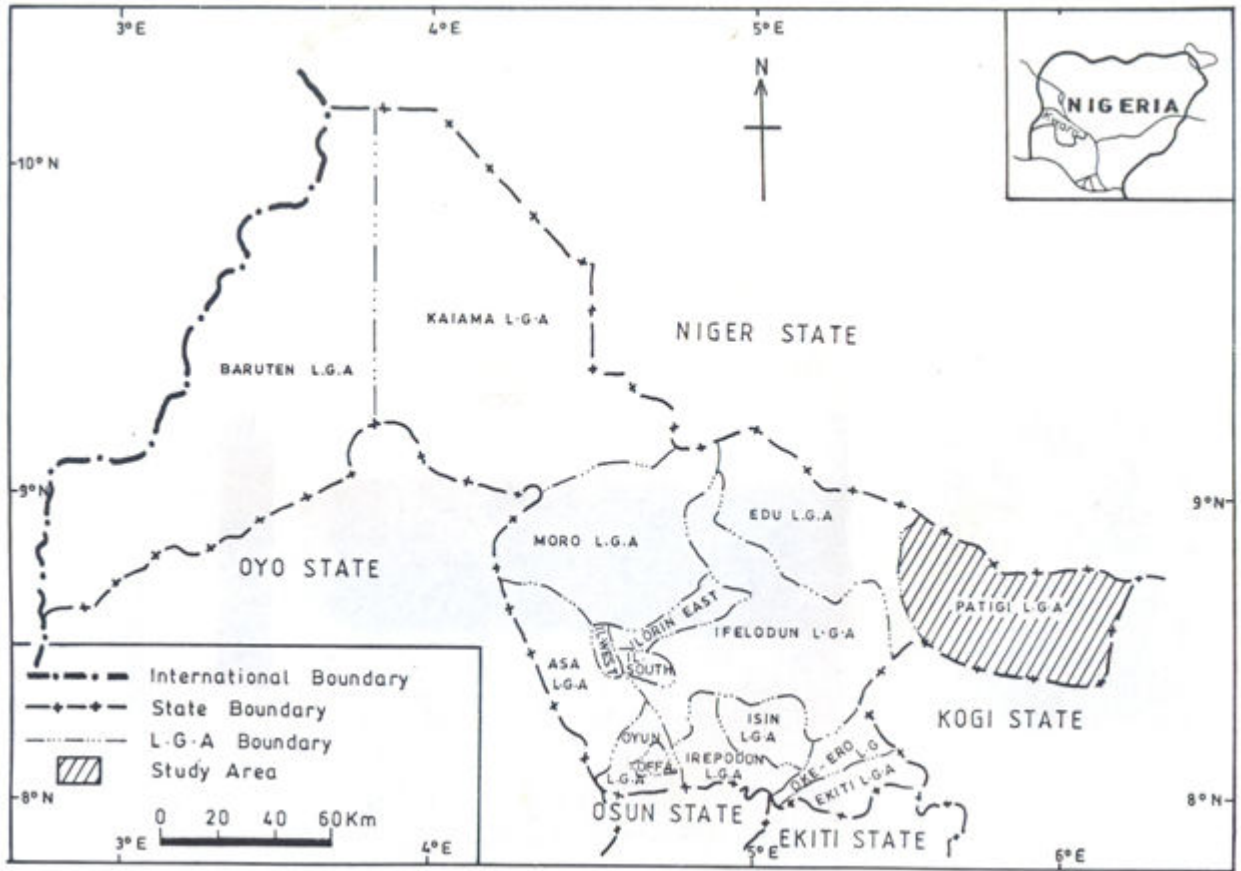
Figure 1: Kwara State showing Patigi LGA

parasite (*onchocerca-volvulus*), breeds mainly along the rivers and gullies in the study area (Edungola, 1982; Africare, 1991; Kwara State Ministry of Health, 1992).

5.2   Data sources

Basically, primary and secondary data were used for this study. The questionnaire administered on 600 randomly selected respondents in the study area served as the basic tool for collecting data from the primary source. The questionnaire sought information about the location and demographic characteristics of respondents and issues of migration in the household. The list of households as contained in the LGA's Onchocerciasis Control register served as the database for selecting the households interviewed. Also, information about available infrastructures in the LGA was collected from relevant organisations.

5.3   Sampling

Multi-stage sampling was employed in this study for collection of data from the primary source. Patigi Local Government Area was stratified into the three existing administrative districts Lade, Patigi and Kpada. From each stratum, 200 respondents were selected using the LGA's Onchocerciasis Control household register as the database (see Table 1 for distribution of questionnaire). The list has a total of 3005 registered households, out of which 600 households (representing about 20 per cent) were selected. The households interviewed were selected using the random sampling technique. The questionnaire interview was conducted at household level; the head of each selected household was interviewed.

Table 1: Distribution of Questionnaire

District	Village	Number of Question Naire	Percentage	Village	Number of Question naire	Percentage
Lade		**200**	**33.33**			
	Rani Woro	6	1.0	Dina	8	1.3
	Rani Ramat	2	0.3	Mari	6	1.0
	Rani Ndako	16	2.7	Ndanaku	7	1.2
	Sakpefu	16	2.7	Gada Woro	6	1.0
	Bissan	4	0.7	Gada Bozuwa	6	1.0
	Chaniagi	2	0.3	Lile	4	0.7
	Magya	5	0.8	Gada Ndako	2	0.3
	Dwajiwo	17	2.8	Gada Maajin	3	0.5
	Lade	28	4.7	Chita	19	3.2
	Kakafu	7	1.2	Esanti	8	1.3
	Gbodongi	11	1.8	Wodata	4	0.7
	Ekati	5	0.8	Kanworo	8	1.3
Kpada		**200**	**33.33**			
	Eka Cheta	7	1.2	Katsa	5	0.8
	Eka Kuso	4	0.7	Gbagafu	3	0.5
	Guluka	5	0.8	Suku	5	0.8
	Dzuruta	7	1.2	Koro	11	1.8
	Maagi	4	0.7	Dagbalodo	5	0.8
	Gulugi	3	0.5	Kajita	9	1.5
	Wako	2	0.3	Jida	5	0.8
	Lusama	3	0.5	Sokingi	5	0.8
	Zhituala	4	0.7	Kpada	16	2.7
	Dobo	3	0.5	Mashia	1	0.2
	Saaci	2	0.3	Gapan	6	1.0
	Latayi	10	1.7	Duro	7	1.2
	Namba	6	1.0	Tebu	3	0.5
	Shiagi	4	0.7	Reshe	8	1.3
	Rogun	18	3.0	Wodatai	2	0.3
	Nimbo	2	0.3	Agoro	20	3.3
	Yagbagi	5	0.8			
Patigi		**200**	**33.33**			
	Lalengi	9	1.5	Sheshi Tasha	10	1.7
	Emigi	11	1.8	Gbaradogi	10	1.7
	Kusogi	11	1.8	Chiakiagi	10	1.7
	Gazefu	10	1.7	Gbadopati	6	1.0
	Patigi	20	3.3	Esungi	3	0.5
	Kparumagi	10	1.7	Gbodokin	10	1.7
	Gudugi	10	1.7	Lazzi Yissa	10	1.7
	Lagada	9	1.5	Garogi	10	1.7
	Likofu	11	1.8	Edogi	18	3.0
	Kpotua	10	1.7	Koshi	2	0.3
Total				**77 Villages**	**600**	**100**

5.4   Data analysis

Both descriptive and inferential statistics were used to analyse the data generated in this study.   Particularlly, the probit regression analysis was used to determine the importance of the various migration factors in migration decision making.

6   Results

6.1   Demographic characteristics of migrants

The demographic characteristics of migrants in Table 2 show that males predominate in the migration stream.   Out of the total 886 migrants from Patigi, 673 (76 per cent) were males, while 213 (24 per cent) were females.   This implies that out of every four migrants from the area three were males.   Table 2 further shows that 570 (64 per cent) of migrants were below 21 years in age, while 259 (29 per cent) were aged between 21 and 30 years.   The migrants aged between 31 and 40 years were 55 (6.2 per cent), while only 2 (0.2 per cent) were aged between 41 and 50 years.   None of the migrants was above 50 years.   This is consistent with findings the world over that migration is selective of age where young people are known to migrate more than the elderly people (Makinwa, 1981; Makinwa-Adebusoye, 1997; Afolayan, 1997).

The educational attainment of the migrants in Table 2 indicates that 396 (45 per cent) migrants had primary education, 232 (26 per cent) had secondary education and 89 (10 per cent) had tertiary education. A total of 151 (17 per cent) had no formal western education, while 18 (2 per cent) had other forms of education (mainly quranic education).

Table 2: Demographic Characteristics of Migrants

Selected Demographic Characteristics	Categories	No of migrants	Percentage
Sex	Male	673	76.0
	Female	213	24.0
Age	1-10	83	9.4
	11-20	487	55.0
	21-30	259	29.2
	31-40	55	6.2
	41-50	2	0.2
Education	None	151	17.0
	Primary	396	44.7
	Secondary	232	26.2
	Tertiary	89	10.1
	Others	18	2.0
Occupation	Schooling	392	44.20
	Trading	97	11.0
	Farming	97	11.0
	Civil Servant	129	14.6
	House wife	60	6.9
	Others	111	12.5
Total		886	100

Source: Field Survey, 2000

Furthermore, Table 2 shows that out of the total 886 migrants, 392 (44.2 per cent) migrants were students, while 323 (37 per cent) were engaged in economic activities. Whereas, 129 (14.6 per cent) were civil servants; 97 (11 per cent) were traders and farmers respectively; and 60 (6.9 per cent) were full time housewives. Those in others unspecified professions constituted 12.5 per cent of the migrants.

6.2   Volume of Migration

Table 3 shows that migration was recorded in 431 (72 per cent) households. In all, 886 cases of migration were reported in the 600 households. This gives an average of 1.5 migrants per household. In Figure 2 it is shown that one person had migrated each

Table 3: Migration from Household

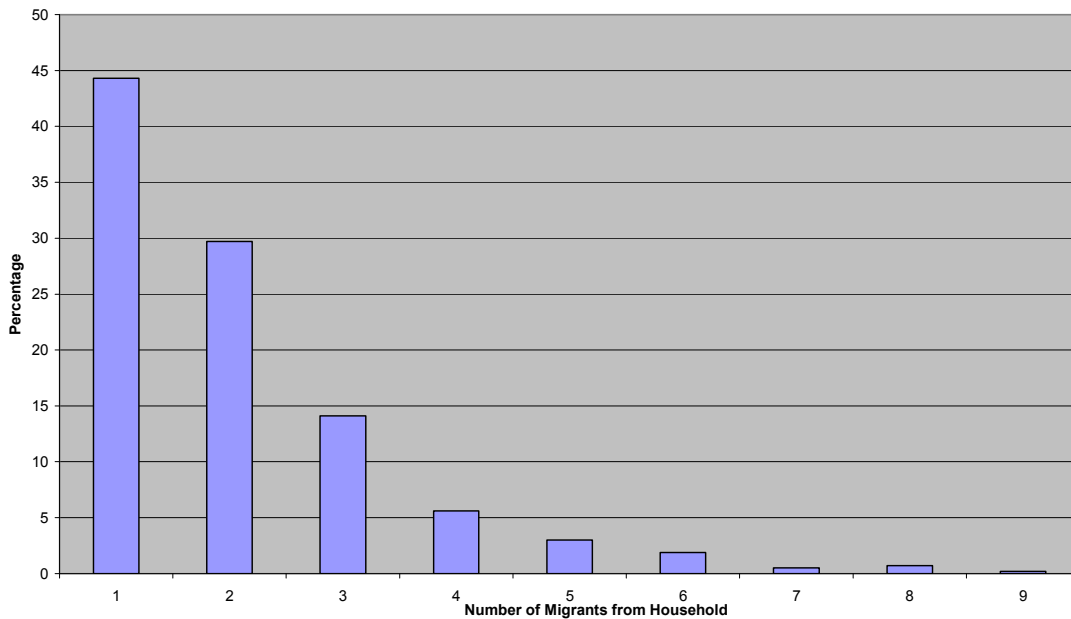| No of migrants from household	No of households	Total no of migrants Col 1 x Col 2	Percentage of households
1	191	191	44.3
2	128	256	29.7
3	61	183	14.1
4	24	96	5.6
5	13	65	3.0
6	8	48	1.9
7	2	14	0.5
8	3	24	0.7
9	1	9	0.2
Total	**431**	**886**	**100**

Source: Field Survey, 2000

Fig 2: Volume of Migration from Households

from 191 (44.3 per cent) households, two persons had migrated each from 128 (29.7 per cent) households, and 61 (14.1 per cent) households had recorded three migrants each. Four and five migrants were in 24 (5.6 per cent) and 13 (3 per cent) households respectively. Also, 8(1.9 per cent), 2 (0.5 per cent) and 3 (0.7 per cent) households

recorded 6, 7 and 8 migrants respectively. The highest number of migrants from any household was nine and this was recorded in just one household.

6.3   Flow of Movement

The various destination of migrants are presented in Tables 4 and 5. Generally, migration had been towards 61 different locations in Nigeria. No case of international migration was recorded during the survey. About 38 per cent of total migration took place within the rural communities in the LGA (see Table 4). Distance wass observed to influence the destination of migrants, movement decreases with increasing distance from the origin. The correlation coefficient shows that there was a negative relationship between volume of migration and distance travelled ($r = -0.244$; $p < 0.05$). In order words, the greater the distance away from origin the lesser the volume of migration to that destination.

The size of the local communities and their political importance was a major determinant of the volume of migration towards them. It could be seen in Table 4 that Patigi, the local government headquarters and the largest community in the local government had the highest level of attraction.   Patigi attracted about 70.9 per cent of internal migrants. Lade, a district headquarters and the second largest community attracted about 7.5 per cent of internal migrants, while Kpada another district headquarters and the third largest community attracted 2.4 per cent of internal migrants. Other important centres of attraction in the local government were Aghesea (2.7 per cent), Fey (1.8 per cent), and Raniworo (1.5 per cent).

Table 4: Migration within Patigi LGA

Center of Attraction	Number of Migrant	Percentage of internal migration	Percentage of total migration
Patigi	237	70.9	26.9
Lade	25	7.5	2.8
Kpada	8	2.4	0.9
Ageshea	9	2.7	1.0
Raniworo	5	1.5	0.56
Kusogi	4	1.2	0.45
Tsaban	4	1.2	0.45
Wodata	4	1.2	0.45
Gboagi	2	0.6	0.23
Ndanaku	2	0.6	0.23
Gada	2	0.6	0.23
Magya	2	0.6	0.23
Gakpan	2	0.6	0.23
Koshi	2	0.6	0.23
Ekati	4	1.2	0.45
Ezhigi	2	1.2	0.23
Godiwa	2	0.6	0.23
Latayi	1	0.3	0.11
Edogi	1	0.3	0.11
Fey	6	1.8	0.68
Emiworo	2	0.6	0.23
Fazhi	4	1.2	0.45
Lokogi	1	0.3	0.11
Doko	3	0.9	0.34
Total	**334**	**100**	**37.8**

Source: Field Survey, 2000

The importance of administrative affinity in migration could be enormous. Table 5 shows that Patigi, the local government headquarters, and Ilorin, the Kwara State capital, were the two most important centres of attraction. The former attracted 26.9 per cent while the later attracted 13.2 per cent of migrants, thereby accounting for 40.1 per cent of total migration. Another noticeable pattern is the fact that out migration was toward major towns. Prominent among which were Ilorin (13.2 per cent), Abuja (4.6 per cent), Minna (4.5 per cent), Lagos (4.4 per cent), Kaduna (2 per cent), Kano and Ibadan (1 per cent) respectively.

Table 5: Destination of Migrants

State	Centre of Attraction	Number of Migrant	Percentage	Distance from Origin (km)[1]
Migration within Patigi LGA		**334**	**37.8**	**0**
Kwara		**221**	**25.1**	
	Ilorin	116	13.2	155
	Bacita	40	4.5	121.8
	Lafiagi	27	3.1	70.05
	Jebba	14	1.6	150
	Tsaragi	10	1.1	92.95
	Share	2	0.23	100.5
	Afon	2	0.23	177.5
	Offa	5	0.57	211.25
	Omuaran	3	0.34	232.5
	Gbogbo	2	0.23	55
Niger		**160**	**18.1**	
	Bida	106	12	48
	Minna	40	4.5	130
	Katcha	6	0.68	91
	Egan	3	0.34	87.1
	Kontagora	2	0.23	
	Badegi	3	0.34	66
Kogi		**8**	**0.9**	
	Lokoja	3	0.34	246
	Isanlu	1	0.11	74
	Egbe	3	0.34	75
	Okene	1	0.11	205
FCT	Abuja	41	4.7	237.5
Plateau	Jos	2	0.23	504.5
Nasarawa	Nasarawa	4	0.45	593
Kaduna	Kaduna	18	2	362.3
	Zaria	9	1	433
Sokoto	Sokoto	4	0.45	832.5
Zamfara	Gusau	3	0.34	616
Kano	Kano	9	1	575.3
Jigawa	Gumel	2	0.23	699.8
Borno	Maiduguri	4	0.45	1055.8
Kebbi	Yauri	4	0.45	401.25
Taraba	Taraba	1	0.11	1125
Lagos	Lagos	39	4.4	462
Oyo	Ibadan	9	1	305
Osun	Oshogbo	4	0.45	260
Ondo	Ikare	2	0.23	227.5
Imo	Oguta	4	0.45	845.75
Total		882	100	

Source: Field Survey, 2000

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[1] Patigi, the LGA headquaters is used as the origin.

Proximity was another important factor that determined the direction of movement. A large proportion of migration was directed towards towns in Kwara and neighbouring states of Niger, Kogi, and Abuja, the Federal Capital. Migration to towns in the states mentioned above constitutes about 49 per cent of total out-migration.

Also, it is observed that cultural affinity was an important element that determined the direction of flow. About 38 per cent of total migration occured within the local government, 4.2 per cent was to Lafiagi, Tsaragi, and Gbogbo (other Nupe communities in Kwara State), while about 17.5 per cent was to Niger State, with Bida, a predominantly Nupe community in Niger State having 12 per cent of this total (about 60 per cent of total migration was to Nupe communities in Kwara and Niger states). Furthermore, 93.5 per cent of total migration was within the northern part of Nigeria, out of this 87.3 per cent was within the north-central states of Kwara, (62.9 per cent), Niger (18.1 per cent), Abuja (4.7 per cent), Kogi (0.9 per cent), Nasarawa and Plateau (0.68 per cent). Only 6.8 per cent of migration was to the south-west, while movement to the eastern part of the country was less than 1 per cent of total migration (see Figure 3).
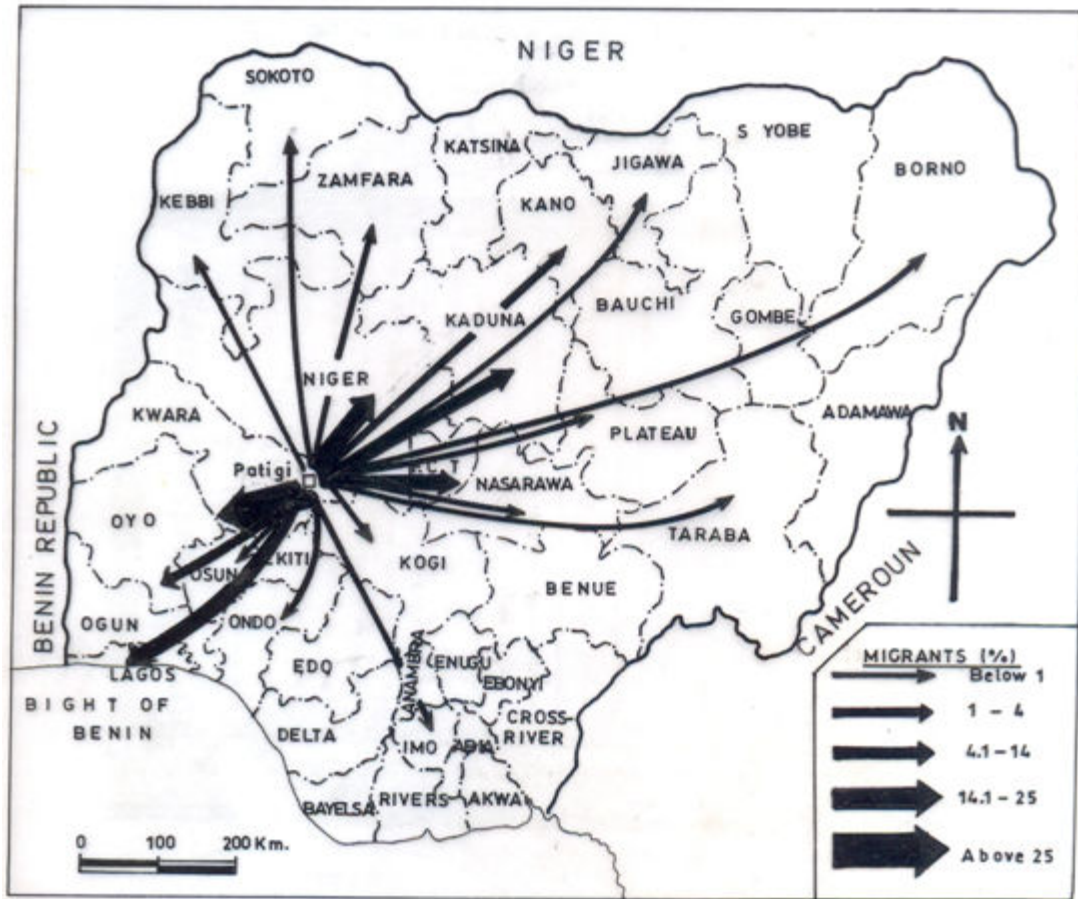
Figure 3: Migration Flow from Patigi LGA

## 6.4   Determinants of Migration

The head of each household was asked the most important reason why every migrant from his household migrated. The quest for education was reported as the most important push factor from the study area, 467 (53 per cent) migrants were reported to have migrated to acquire education elsewhere. Economic considerations were next with 318 (36 per cent) migrants having migrated to find employment. Thirty two (3.6 per cent) people migrated to join their spouses, while other migration factors such as lack of social amenities, socio-cultural constraints, land shortage and natural disasters (mainly flood and windstorm) constituted 3.7 per cent of migration factors. Only 4.1 per cent of migrants were reported to have migrated as a result of the scourge of onchocerciasis (see Table 6).

Table 6: Reasons for Migration

Factors of migration	Number of migrants	Percentage
Onchocerciasis	36	4.1
Economic reasons	318	35.9
Education	467	52.8
Marriage	32	3.6
Lack of social amenities	2	0.2
Socio-cultural constraints	1	0.1
Others	30	3.4
Total	**886**	**100**

Source: Field Survey, 2000

Furtherance to ascertaining the factors of migration from Patigi area, respondents were asked specifically, what in their opinion constituted the most important factor of migration from their respective villages. Again, education was reported as the most important factor of migration by 295 (49.2 per cent) respondents.
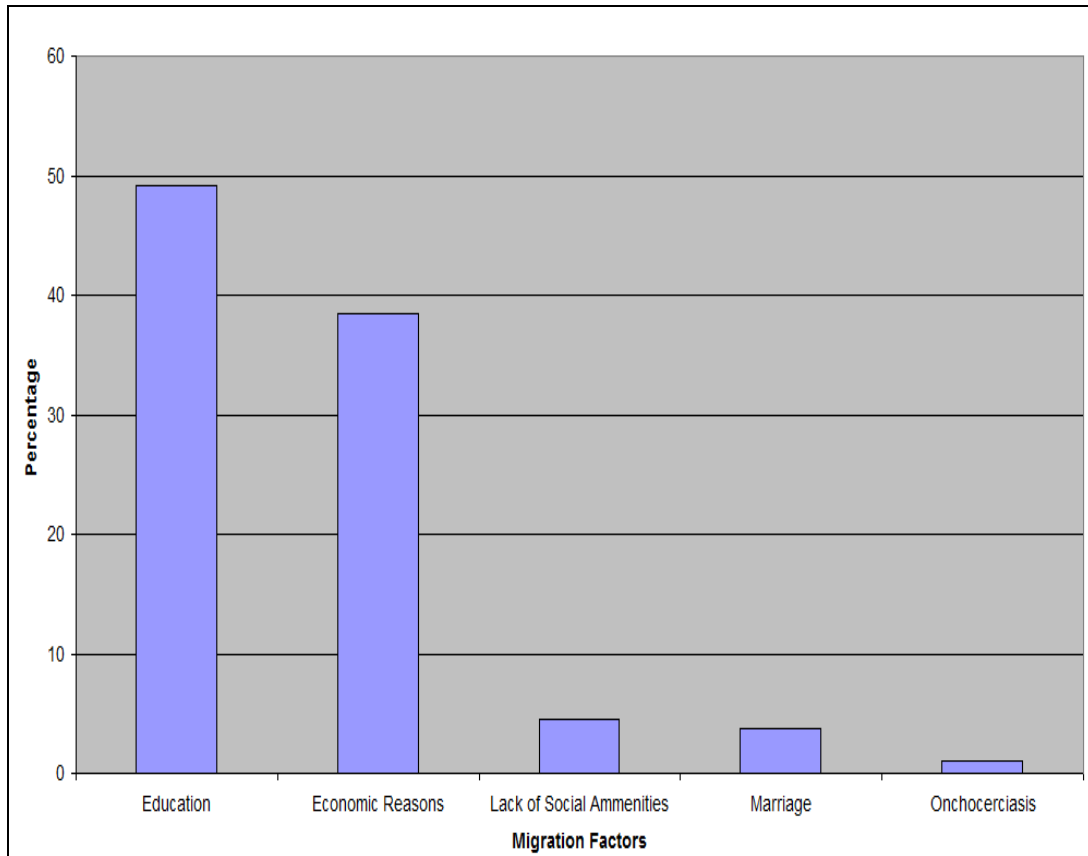
Fig. 4: Most Important Factors of Migration

Next were economic reasons with 231 (38.5 per cent) of the respondents reporting that economic factors were the most important consideration. Furthermore, 27 (4.5 per cent) respondents reported the lack of social amenities as the most important push factor, while 23 (3.8 per cent) respondents considered marriage as the most important factor of migration. Only 6 (1 per cent) respondents reported onchocerciasis prevalence as the most important consideration. Other migration factors such as socio-cultural constraints, land shortage and flood were reported as being the most important factors of migration by 3 per cent of respondents (see Figure 4).

In order to ascertain the importance of each of the migration factors in migration decision making, the probit regression analysis was carried out. One of the pre-conditions for using the probit analysis is that the variables are dichotomised. Therefore, the response to whether there had been migration from the household or not served as the dependent variable, any household where migration was recorded was given 1, otherwise 0. Also, the corresponding factor of migration for each migrant was given 1, while every other factor was assigned 0. Six factors - onchocerciasis, economic factors, socio-cultural constraints, lack of social amenities, the quest for education and marriage - were conidered. These constituted the independent variables. The model is of the form: $Y = a + b_1X_1 + b_2X_2 + ...b_nX_n + e$; where

Y = the dependent variable represented by the migration situation in the households;

$X_1, X_2.....X_n$ = the independent variables i.e. migration factors;

X_1 = Prevalence of onchocerciasis;

X_2 = Economic reasons;

X_3 = Socio-cultural constraints;

X_4 = Lack of social amenities;

X_5 = The quest for education;

X_6 = Marriage;

a = the base constant

b = the regression coefficient
e = error term.

Results of the probit analysis is presented in Table 6.

Table 6: Probit Result of Determinants of Migration

Variable	Regression Coefficient	Standard Error	T
Onchocerciasis	0.3110	0.2267	1.3715
Economic factors	0.3761	0.0617	6.0993***
Socio-cultural constraints	0.1289	0.1660	0.7764
Social amenities	0.1876	0.1077	1.7414
Education	0.4988	0.0599	8.3321***
Marriage	0.5463	0.1083	5.0458***
Diagnostic Statistic $X^2 = 3311.79$, DF = 593, $P < 0.0001$			

*** Model is significant at $p < 0.0001$

Source: Computed

It is shown in Table 6 that the Chi Square of 3311.79 with a degree of freedom of 593, is statistically significant at 1 per cent level, thus the model has an acceptable Goodness-of- Fit.

Out of the six independent variables included in the model, three were significant in determining migration from Patigi area, while the other three were not. The significant factors in the order of importance were the quest for education, economic factors and marriage; these factors were significant at 1 per cent level. The three other factors (lack of social amenities, onchocerciasis and socio-cultural constraints) were not significant in determining migration.

The probit analysis further confirms the fact that the quest for education was the most important push factor in Patigi area, followed by economic factors and marriage (those who migrated to join their spouses). This agrees largely with the frequency distribution discussed earlier. Deriving from this result is the fact that onchocerciasis does not significantly induce migration from the study areas.

Therefore, the assertion which states that Onchocerciasis leads to massive movement of people from endemic communities is not true. Rather, the hypothesis seems to be that there are usually some serious developmental problems in onchocerciasis endemic communities which tend to push people out of them, and then the disease sets in to further devastate the people left behind.

7 Summary

7.1 Education and Migration

Education stood out as the most important factor of migration from the study area. Respondents reported that the quest for education was responsible for about 53 per cent of all migration cases from their households, this stands at about 13 percentage points ahead of economic factors which is next. Furthermore, 295 (49.2 per cent) heads of household reported education as the most important push factor from Patigi LGA, about 11 percentage points ahead of economic reasons which is next in rank. The probit analysis also shows that education is not only significant in determining migration but was also the most important factor of migration from Patigi area.

The fact that education constituted the most important factor of migration was further explained by the age structure of the migrants. About 84 per cent of the migrants were youths between ages 11 and 30 years. The poor educational facilities available in the area further explians the observed patterns. Youths of school age are normally compeled to move elswhere to acquire basic and higher education. As at the time of this survey, there was no tertiary institution in the LGA, which implies that, as

many people that desired tertiary education had to acquire it elsewhere. Also, there were just eight secondary schools in the LGA, three of which were located in Patigi the local government headquarters. Two others were located at Lade and Kpada (the two other district headquarters). The remaining three were located at Tankpafu, Gadaworo and Kusogi respectively.

The spatial distribution of secondary schools in the area also goes a long way to explain the patterns of internal migration in the area. About 81 per cent of internal migration was towards the eight villages that accommodate the existing secondary schools. Available records show that there were about 60 primary schools servicing the needs of the over 100 communities in the local government.

Given the fact that there was no tertiary institution of any form, coupled with the problem of inadequate secondary schools and poor primary education facilities, most people in the area had no option but to migrate to places where good education was available in order to be educated. Therefore, the high migration rate due to the quest for education and toward places where educational facilities were available is expected.

7.2   Economic Factors, Underdevelopment and Migration

In this study economic considerations emerged as the second most important factor determining migration after education. Aside the frequency distribution which laid credence to this; the statement is further confirmed by the results of the probit regression analysis (see Table 6). The fact that economic consideration is a significant

factor of out migration from the study area could be explained by the relatively low economic activities in the area. Table 2 shows that, about 89 per cent of the people were engaged in primary activities, only 16 (2.7 per cent) respondents were traders, who in most cases were involved in low scale trading of agricultural produce. Government was not a major employer of labour in the area, the only government establishments that employed labour were the local government, health centres, the primary and secondary schools, which were concentrated at Patigi. Given the low level of economic activities in the area, people are bound to move to places that offer better economic opportunities in order to better their lot.

It must be emphasised too that the level of development of social facilities in the study area was extremely low. The roads were in terrible state of disrepair and neglect. Most of the roads were not motorable during the rainy season, when erosion would have washed away part of the roads and create gullies that can not be circumvented. Also, the waters would have risen to the level where they become impassable in the case of rivers and streams without bridge. In fact, there were still communities that were linked only by footpaths rather than roads. The reality of referring to onchocerciasis as an end of the road disease is very striking in the LGA because of poor accessibility.

Furthermore, people in the area do not have access to portable water, they got water mainly from rivers and steams. The few boreholes and deep wells provided by the government and other specialised agencies are hardly functional. This is

consistent with empirical findings which show that rural areas and the urban poor are normally discriminated against in the provision of basic facilities (Iyun, 1978; Okafor, 1990). Generally, development in the area was at a very low level, this created the enabling environment for people to migrate to places that offered better opportunities.

7.3   Onchocerciasis and Migration

It is evident from the study that onchocerciasis prevalence in Patigi LGA was not a significant factor of migration. Only 36 (4.1 per cent) out of the 886 migrants in the study are reported to have migrated because of the menace of onchocerciasis. Also, only 6 (1 per cent) of head of households considered onchocerciasis as the most important factor of migration from Patigi area (see Tables 5 and Figure 4). Furthermore, the result of the probit regression analysis showed that onchocerciasis was not significant in determining migration. Therefore, the assertion in the literature that onchocerciasis lead to the massive out-migration of people from endemic communities is not true, at least for the study area. It appears that onchocerciasis only sets in to complicate the problem occasioned by sparse population.

7.4   Conclussion

The study concludes that onchocerciasis is not a significant factor of out-migration from Patigi LGA. This tends to disprove the assertion in the literature that onchocerciasis leads to mass out-migration of people from endemic communities. Rather, the hypothesis seems to be that there are usually some serious developmental

problems in onchocerciasis endemic communities which tend to push people out of them, and then the disease sets in to further devastate the people left behind.

Therefore, in order to ascertain the veracity of these claims, we recommend that this study be replicated in other onchocerciasis endemic areas. Such studies should endeavour to ascertain the level of onchocerciasis prevalence that could make an area become pariah and the stage of infection with onchocerciasis that could make an individual want to leave.

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