FERTILITY DIFFERENTIALS BETWEEN MIGRANTS AND NON-MIGRANTS IN THE NORTH WEST PROVINCE

BY

PAUL BIGALA

A THESIS SUBMITED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SOCIAL SCIENCE

UNIVERSITY OF NORTH WEST

Dr. H. BARIAGABER

APRIL 2004

0600063900

North-West University
Mafikeng Campus Library

9185650 49
61556041 7
LIBRARY
MAFIKENG CAMPUS
Call No.: TH 304.622
2006 -02- 15 819
Acc. No.: 06 00298
NORTH-WEST UNIVERSITY

NWU LIBRARY

Declaration

I declare that the mini-dissertation for the degree of Masters in Social Science (Population Studies) at the University of North West hereby submitted, has not previously been submitted by me for a degree at this or any other University, that it is my own work in design and execution and that all material contained herein has been duly acknowledged

Signed.....

Date.....22/04/04.....

Acknowledgements

I would like to take this opportunity to thank The Lord Almighty for the guidance given to me during this long and laborious period of completing this mini-dissertation and the guidance given to me throughout my Education.

I would also like to express my gratitude to Professor .I. Kalule-Sabiti and the Department of Population Training and Research Unit (POPUNIT) for their support in any way possible that has given me the opportunity to complete this mini-dissertation.

To my Supervisor Dr. Hadgu Bariagaber of the University of Botswana, your constant supervision and endless advice you gave to me during the whole research period is highly appreciated. My gratitude goes to Dr. Martin Palamuleni (POPUNIT) for his timely advice and suggestions.

Special thanks go to my Parents and Brothers who have supported me both morally and financially during this period and not forgetting my colleagues at POPUNIT who supported me in any way possible. Johnson Arkaah and Martin Chansa from the Statistics Department are not forgotten.

Abstract

The aim of this study was to examine the fertility differentials between migrants and non-migrants in the North West province of South Africa. Evaluation of fertility behavior of migrants at the destination area and the causes of fertility differentials of migrants and non-migrants was also undertaken. Data used in this study were obtained from the 1996 Census and the 1998 South African Demographic and Health Survey.

It was found that migrant behavior at the destination areas tends to be influenced by the new environment, which motivated them to, adapt to the norms and values that would affect their fertility.

Although South Africa has a lower fertility rate than to the rest of Sub Saharan Africa, It appeared that fertility differentials have existed between migrants and non-migrants. Fertility was higher among migrants than non-migrants and the difference between the two population groups has declined between 1996 and 1998.

However fertility differentials were vividly observed with respect to Education, income age and employment status among both migrants and non-migrants in 1996 and income and age at first intercourse among both migrants and non-migrants in 1998.

The study concludes by recommending that further research be done particularly on the issue of ethnicity and its impact on fertility since there is no concrete evidence to suggest that there is any marked link between migrants and non-migrants. Also, this kind of research should be done in other provinces to establish the state of migrant and non-migrant fertility and any variations among different socio-economic and demographic groups of Household society.

Furthermore, Education should be universalized as a powerful tool to regulate fertility as it has shown to affect fertility, particularly in areas where fertility is still relatively high among both migrants and non-migrants.

TABLE OF CONTENTS

	Pages
Declaration	i
Acknowledgments	ii
Abstract	iii
Table of contents	iv
List of Tables	v
List of illustrations	vi

CHAPTER ONE: INTRODUCTION

1.1 Background	1
1.2 Statement of the problem	3
1.3 Significance of Study	4
1.4 Rationale of Study	5
1.5 Objective of the study	5
1.6 Research Question	6
1.7 Conceptual Framework	7
1.7.1 Definition of concepts	9

1.8 METHODOLOGY

1.8.1 Universe	11
1.8.2 Data Source and limitations	11
1.8.3 Constraints	11
1.8.4 Data processing	13
1.8.5 Organisation of the Study	14

CHAPTER TWO: LITERATURE REVIEW

2.1 Levels of fertility	15
2.2 Causes of fertility Differentials	
2.2.1 Contraceptive use	21
2.2.2 Educational level	22
2.2.3 Cultural factors	23
2.2.4 Place of Residence	25
2.2.5 Urbanization	26
2.2.6 Health issues: Sterility	28
2.2.7 Race/Ethnicity	29
2.2.8 Mortality	29
2.2.9 Age at Menarche	31

2.2.10 Income 32
2.2.11 Redistribution Policy 32

CHAPTER THREE: ANALYSIS

3.1 Socio-economic characteristics of migrants and non-migrants 33
3.2 Demographic characteristics of migrants and non-migrants 37
3.3 Comparing socio-economic characteristics of Census 1996 and DHS 40
3.4 Age specific fertility rates of females by migration status 43
3.5 Occupation and age of migrants 47
3.6 Parity of women by age and migration status 47
3.7 female respondents by Education 49

CHAPTER FOUR: APPLICATION OF STATISTICAL MODELS

4.1 Chi-Square analysis of Respondents by migration Status 51
4.2 Means of migrants and non-migrants (Census and DHS) 51-52
4.3 ANOVA of migrants and non-migrants (Census and DHS) 53-54
4.4 Correlation matrix for migrants and non-migrants (Census and DHS) 55-65
4.5 Multiple regressions for migrants and non-migrants (Census and DHS) 65-69

CHAPTER FIVE: DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Discussion 70
5.2 Conclusion 72
5.3 Recommendations 74

Bibliography 76-85

LIST OF TABLES

Table 3.1(a)	Socio-economic characteristics of migrants and non-migrants in relation to fertility	34
Table 3.1(b)	Socio-economic characteristics of migrants and non-migrants in relation to fertility	36
Table 3.2 (a)	Demographic characteristics of migrants and non-migrants	38
Table 3.2(b)	Demographic characteristics of migrants and non-migrants	40
Table 3.3	Comparing Socio-economic characteristics of migrants and non-migrant Females from the DHS 1998 and Census 1996	42
Table 3.4	Age specific fertility rates for females by migration Status	44
Table 3.5	Occupation and age of migrants	47
Table 3.6	Parity of women by age and migration Status	48
Table 4.1	Chi-Square analysis of respondents in relation to migration status	51
Table 4.2	Means by Migration Status (Census)	52
Table 4.3	Means by Migration Status (DHS)	52
Table 4.4	ANOVA by Migration Status (Census)	53
Table 4.5	ANOVA by Migration Status (DHS)	54
Table 4.6	Correlation Matrix for non-migrants (Census)	58
Table 4.7	Correlation Matrix for migrants (Census)	59
Table 4.8	Correlation Matrix for migrants (DHS)	58
Table 4.9	Correlation Matrix for non-migrants (DHS)	64
Table 4.10	Multiple regressions by migration Status (Census)	66
Table 4.11	Multiple regressions by migration Status (DHS)	68
Table 4.12	Beta coefficients by migration Status, comparing DHS and Census	69

LIST OF ILLUSTRATIONS

Figure 3.1	ASFR of migrants and non-migrants (Census and DHS)	46
Figure 3.2	Female respondents' level of Education by Migration Status	49

CHAPTER 1

INTRODUCTION

1.1 Background.

Migration is one of the major processes of population change and the other two being mortality and fertility. Migration on one hand affects population both internally and internationally. A person is considered a migrant if he or she moves from one defined boundary to another and stays in the destination area for a given period of time usually more than six months.

There are several types of migration, but in the case of South Africa urban-rural migration, rural to urban migration are common. The fertility level of most rural-urban migrants is usually higher than those of non-migrants in the urban areas (Gardner and Blackburn 1996). This may be as a result of the fact that rural migrants' attitudes towards fertility may be different from those of the non-migrants because of the influence of societal norms and culture which encourage higher fertility which may be further instigated by a lack of adequate knowledge about family planning. According to Davids (1990), this may boost urban fertility as a result of their rural reproductive behavior.

Some research has been done on the fertility differentials between rural-urban migrants and rural residents in which the fertility level of rural-urban migrants tends to be lower than the rural inhabitants (lee and Poll 1993). However, Herdeshort's findings of 1985 showed that fertility of migrants and rural inhabitants were virtually identical suggesting that there may be no significant fertility differential between migrants and those

inhabitants (Nkwane, 1990). The attitude of rural migrants will, in the destination area, have a negative impact in form of high fertility, necessitating limited resources to be diverted to the maintenance of large migrant families in form of provision of housing, education, health facilities and employment.

Migration in South Africa, both within and across its borders is a common occurrence. This has had a tremendous effect particularly on the net-sending countries that rely on migrant worker's remittances and the net-receiving areas like the Gauteng and Northern province. Kok et al (2003) have pointed out that little data on migration existed in South Africa before 1996 when the first population census took place. The two previously taken censuses of 1980 and 1991 excluded the former homelands of Transkei, Venda and Bophuthatswana were substantial migration took place. South Africa's overall population density was approximately 33 persons per square kilometers in 1996, making it one of the least densely populated Nations listed in the World population data sheet (Population report 2000). However, the country's Population distribution is highly uneven with densities varying significantly from one province to the other and within provinces themselves. This is as a result of the level of socio-economic development among provinces such that provinces like the Northern Cape that had a Population Density of just more than 2 persons per square kilometer in 1996 is the least developed among the 9 provinces in South Africa in addition to its harsh climate. Gauteng province, which is the smallest of the 9 provinces in area, accommodated 432 persons per square kilometer at the time. Past segregationist policies, especially influx control, which prevented the African population from migrating out of the homeland areas, contributed to high population densities in these areas (population Report 2000).

1.2 Statement of the problem

Since the end of Apartheid era, there has been a marked increase in the mobility of the population both young and old throughout South Africa, with some provinces gaining while others losing as a result of the socio-economic imbalances between these provinces. This may have serious implications in as far as fertility is concerned because migrants may be moving from areas with relatively high fertility regimes to areas that have lower fertility regimes which may impact negatively at the destination areas. The north west province according to the State of South Africa's population 1998 is 65% rural suggesting that much of its population is rural and thus most migrants are mainly from the rural areas. Rural areas are mainly associated with low levels of socio-economic development, which to a greater extent has a positive impact on fertility. So far much of the literature has tended to focus on rural-urban fertility differences with no or little attention paid to migrant fertility and how it differs from non-migrant fertility at the destination areas. The few studies are mainly based on female migrants who are usually the target population primarily because they carry the burden of childbearing (Campbell 1989).

1.3 **Significance of study.**

In the past few years, there has been a marked rise in the concentration of people in the urban centers as a result of rural-urban migration despite the fact that people do go back occasionally to their home lands to set up businesses and farms. The fact that there still exists unbalanced economic development between rural and urban areas in the North west province and South Africa in general is the main reason for concern because research carried out shows that fertility levels vary between migrants from the source areas and non-migrants in the destination area which in this case tends to be the urban area. Urgent need should be addressed to the rural areas where high fertility is not only influenced by the level of development but culture.

The South African government through the national Population unit recognizes the need to reduce the rate of population growth, in order to cater for the youth, in terms of education, health and employment as well as reducing increasing pressures on natural resources. Though the government has identified the need and implemented rural development with implications for fertility regulation, this study will help address further the importance of development, which is a key component to fertility reduction.

Health institutions could be assisted by this study in their implementation of reproductive health programmes. Such programmes should consider the effort of fertility differences between migrants and non-migrants especially as culture is a sensitive issue.

It is hoped that non-governmental organizations will use this research study to set up projects in the source areas of migrants to simulate development and thus have an indirect

influence on fertility as well as promote family planning programmes through encouraging contraceptive use.

1.4 **Rationale of study**.

A great majority of the Rural Dwellers' main economic activity is Subsistence agriculture and working in farms where they get very little incomes in addition to the unpredictable weather, which may inhibit farming productivity. These kinds of activities may partly explain the fertility differentials between migrants from the rural areas with a high fertility rate of 5 to 6.3 in certain areas per woman compared to 4.6 for the period of 1985 to 1990 per woman in the urban areas. Some communities were found to have as low as 1.7 births per woman in the urban settings. (National report on population 1993). It is important that this study establishes the root causes of the fertility differences between migrants and non-migrants at the destination areas.

1.5 **Objective of the study**

The general objective of the study is to examine the fertility differentials between migrants and non-migrants in the Northwest Province as well as investigate the behavior of migrants and the causes that bring about the fertility differentials. This study will also be used to make recommendations on how the fertility gap between migrants and non-migrants can be reduced in the long term.

Specific objectives include

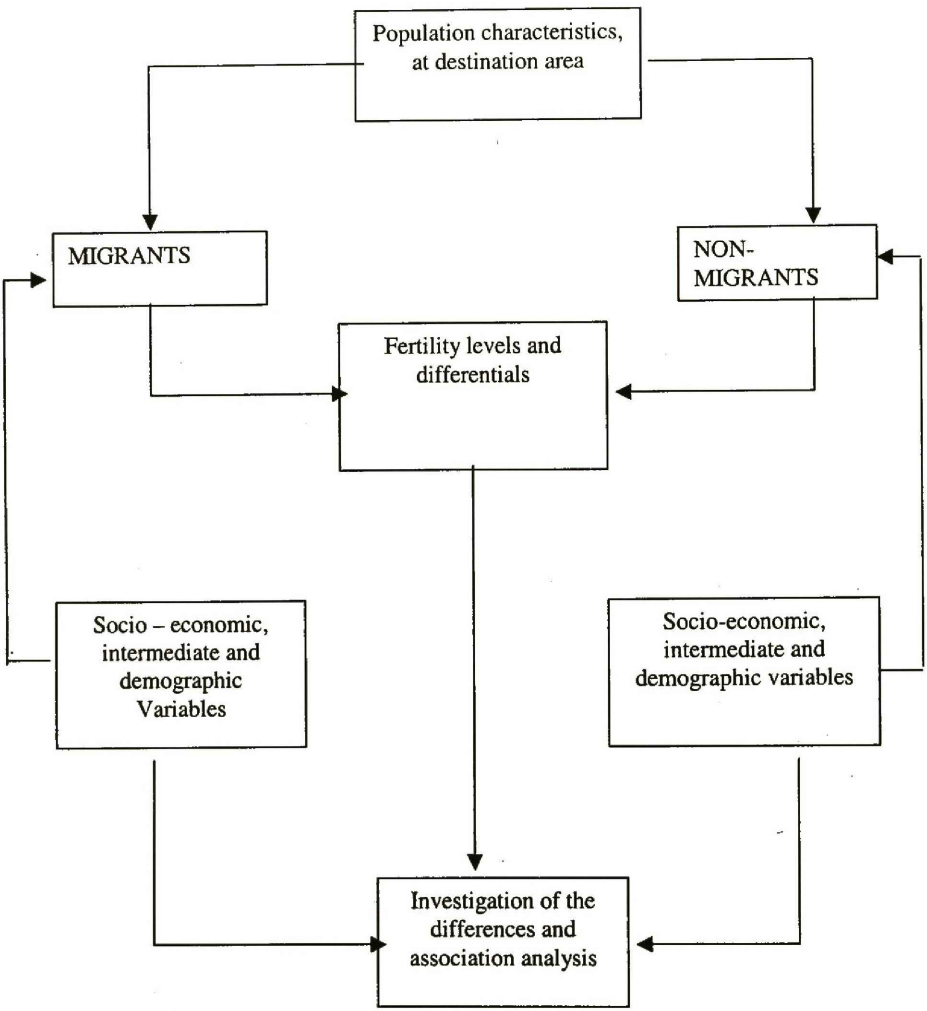
1. To find out the fertility levels of migrants and non- –migrants.
2. To establish the Causes of fertility differentials between migrants and non-migrants.
3. To suggest policy implications of migrants' and non-migrants' fertility.

1.6 **Research Question/ Hypothesis**

1. The migration status of the respondent will be influenced by Age.
2. The number of surviving children of migrants and non-migrants are significantly different by age.
3. There are more migrants than non-migrants that have never married.
4. The level of Education of migrants is significantly different from non-migrants
5. There is an association between migration status of respondent and contraceptive use.

1.7 **Conceptual framework**

The general framework of fertility differentials between migrants and non-migrants is shown in the figure below



The fertility differences between migrants and non-migrants in the destination area are influenced by socio-economic, demographic, background and intermediate variables, which impact on fertility. Most destination areas exhibit better educational, health and sanitation facilities that directly or indirectly influence fertility of the non- migrants compared to the migrants who come from areas that don't have such facilities. For example, Education, a socio- economic variable, will impact on fertility directly in terms of postponement of child bearing to later years.

It is assumed that non-migrants at the destination areas could have lower fertility level than migrants because of the differences in the level of development in the urban areas that have better facilities which impact on their characteristics.

1.7.1 Definition of concepts

1.7.1.1Fertility

Fertility refers to the number of children born to women. When we refer to a high fertility society, this is a population in which most women have several children, while a low fertility society is one in which most women have few children.

1.7.1.2 Migration

Migration is defined as any permanent change in residence. It can be classified into two aspects internal and international migration. Migration could also be defined as a move from one place in order to go and live in another place for a continuous period of at least one year. This is to exclude seasonal migration across international borders and to allow for comparison with international recommendations. (NIDI-Push & Push team 2001). In defining migration in the South African context, Kok et al (2003) refer to those movements that involve a change in the usual place of residence from one magisterial district to another.

A migrant is a person who intends to move permanently from a defined area or boundary to another boundary. A non-migrant is a person who has no incentive of leaving his or her current place of residence or has just moved from one place to another but with in the same locality

1.7.1.3 Rural/Urban Classification

A place is considered a rural area if more than 75% of its inhabitants are engaged in subsistence farming with very little or no form of any other economic activity. In most cases, these areas are still underdeveloped with very few social amenities such as

drinking water and electricity. It may also be considered a rural area if the population is less than five thousand.

1.7.1.4 Place

A place is classified as an urban area if more than 75% of its inhabitants are engaged in non-agricultural activities with the area having transport and health centers, manufacturing establishments, as well as considerable share of raw material- oriented industries. It is also considered an urban area if the population is greater than Five thousand.

1.7.1.5 Origin and Destination

Source area is considered as a place of origin of the migrant or the area he or she previously resided before making the decision to move permanently, while a destination area is the place that the migrant intends to stay or live.

METHODOLOGY

1.8.1 Universe

Data was collected from a sample of women from the nine provinces of South Africa. All females aged 15 years and over were eligible for enumeration in the survey. Questions were asked only to women who are usual residents of that Household. Also another set of data was collected of all the respondents in that household from all the nine provinces of South Africa.

1.8.2 Data Source and Limitations

The study is aimed at using Secondary data sources. The South African demographic health survey (SADHS) 1998 and the 1996 census dataset will be used. The 1996 Census dataset will focus on the socio-economic aspect, while the South African health Survey will focus on the Demographic aspect of migrants and non-migrants

1.8.3 Constraints

The Limitations of using secondary data particularly the South African Demographic health survey (SADHS) is that its main focus is on women particularly those of reproductive ages yet the focus of this study would like to look at migration and fertility. Migration looks at both sexes though until recently biased towards males. Secondly, the question on place of birth was not included which could adequately differentiate the respondents as either migrants or non-migrants. However, the question on defacto place of residence was asked of the female respondents, which to some extent can help to determine a migrant from a non- migrant. Also the question on childhood place of residence can be used to determine whether the respondent was a migrant or not.

NWU LIBRARY

However, for the sake of distinguishing a migrant from a non –migrant the concept of city and towns were recoded as urban areas while the country side was recoded as non-urban areas. Some questions were not answered leaving several missing values.

Since a census is a national counting of all Households or individuals staying in a country most of the questions asked are general in nature. The 1996 Census data is no exception. That's why issues like contraceptive use, their Knowledge and types of family planning methods were excluded. Questions on children ever born and Number of children born in the past year were included making it possible to calculate the Total fertility rates. However, the responses, particularly on births in the past year were inconsistent . Some of the responses indicated that a woman had given birth to more than three children in a year, which biologically is not possible. Another major draw back of the census was that most questions were left unanswered with responses like unspecified or not applicable being used to answer questions on issues like marital status, which focused on those respondents of 15 years and above. Thirdly, it could not be possible to determine whether the respondents were from the rural or urban areas since no question was asked or designed to give such responses. This could have made it easier to determine whether the migrants were from the rural areas and hence rural migrants or not.

Also, it's worth pointing out that the question on place of usual residence did not yield an adequate response to who is a migrant and who isn't, since all respondents either said that they were usual residents or visitors. According to Shylock et al (1976) a migrant is a person who moved from one political area or administrative area to another. Thus looking at the census questionnaire who ever was a visitor was a person who moved only within a political or administrative area (shylock et al 1976).

Another question from the census questionnaire (From where did the person move?) tried to shed some light on who is a usual resident or not since the respondents were asked from where they had moved before settling in their current place of residence. The responses were either they had never moved or they indicated the place they originally come from. Those who indicated that they had never moved were from the northwest province and thus constituted non-migrants while those who indicated that they moved into the Northwest province from other provinces and from one magisterial district to another within the Northwest province constituted migrants.

The other data sets like the October Household survey done in 1999 covers a range of development and poverty indicators, including unemployment rates, access to education and access to infrastructure (Statistics South Africa 1999). It therefore does not have fertility and migration aspects that are central to this study. While the South Africa integrated household survey is similar to the census data since it covered all the provinces but is inaccessible and was done in the Old South Africa that had homelands and just five provinces.

1.8.4 Data processing

Coding of the data shall be done at the University of the Northwest where data processing will be performed by microcomputers using Statistical package for social Science (SPSS) Software (version 11). The statistical methods that will be used in the study are the chi - square test which examines whether the observed results correspond with what is expected. Regression methods would be used to ascertain the relationship between the variables that are to be tested and to establish whether the relationship is a systematic

one. With the help of Correlation matrix the study will attempt to further establish the strength of that relationship. Lastly Analysis of variance (ANOVA) shall be used to test the significance of the two populations' differences in their characteristics, which ultimately affects fertility.

1.8.5 Organization of the study.

This study comprises four chapters. Chapter one contains the introduction, statement of the problem, rationale, significance, objectives and the methodology which gives a detailed account of the data sources to be used for this study and their limitations. Chapter two contains the literature review and chapter three has the findings and interpretation of the tables and diagrams. Chapter four comprises of statistical models used to investigate fertility differentials between migrants and non-migrants, and the last chapter contains the discussions, conclusions and recommendations.

CHAPTER II

LITERATURE REVIEW

2.1 Fertility Levels of migrants and non-migrants

Australia like many developed nations annually receives immigrants from all over the world. Studies have clearly indicated that in the shorter-term immigrant women particularly from developing nations like Asia generally exhibited higher fertility rates than the native born Australian women. With continuous exposure to their new environment that advocates for lower fertility, immigrant women tended to change their behavior to the norms of the Australian women. For example Turkish women that migrated to Australia initially had a total fertility rate of 2.6, which was slightly less compared to their homelands. After a period of more than fifteen years in their new home their total fertility rate fell to 2.3,compared to their country of origin, which had increased to 3.6. With Regard to South African Women that immigrated to Australia in the same period their fertility rate had lowered to 1.3 compared to their counterparts back at home that stood at 1.9 (Abbasi- shavazi 1991). Though this decline among South African migrant women is still insignificant compared to their non-migrant counterparts in South Africa

In contrast Sidney Goldstein (1978) indicated almost no difference between the fertility levels of lifetime migrants and those of natives at the place of destination. However, the fertility of five-year migrants is below that of non-migrants at both destination and origin, with the lowest fertility-characterizing women moving to Bangkok from other urban areas. Goldstein showed that rural migrant women still had higher fertility even after their move to Bangkok.

Contextual factors such as the availability of work at the destination area, the absence of an extended kin-network and greater access to family planning services can all influence fertility behavior. There is considerable scope for the study of the differences in the labor force participation of migrants and non-migrants. Censuses and labor force survey data for developing nations show that migrants are usually less paid than non-migrants (United Nations 1993).

However, there is little indication to suggest that varying differences in incomes may have any effect on fertility levels on migrants and non-migrants. Urban residents typically marry at later ages than rural residents resulting from the socio- economic differences in development between the urban and rural areas and the gap has widened, as increases in the age at marriage has been greater for urban people.

In the developed countries, rural fertility has consistently been found to be higher than urban fertility (United Nations 1977). For example in Belgium the average number of births was estimated at 1.85 in the rural areas compared with 1.78 in the urban areas. But the difference in the number of births between the rural and urban areas was insignificant suggesting that these two areas may have similar Socio-economic backgrounds that usually have an impact on fertility.

As already shown by Brockerhoff (1993), most unmarried females move to urban areas seeking employment, though, the United states analysis of the 1960 census data showed that a greater proportion of migrants that were married migrated more than single persons. Suarez (1994) argues that the fertility differential between migrant and non-

migrant women appears to be the result of a higher exposure of the latter to the risk of childbearing as they spend more time of their reproductive period in a stable relationship. There is no great difference in contraceptive use between migrant and non-migrant in the urban areas, therefore migrants do not only have similar rates of contraceptive use, but also are as likely as non-migrants to use effective methods and rely on contraception at early stages of family formation.

Studies among the Yoruba tribe of South – Western Nigeria indicated that urban people preferred more children than the rural people suggesting that in the case of migration to the urban area, rural migrants will have a lower fertility (Bankole 1995). In the case of Botswana both men and women in the rural areas preferred slightly more children than those in the urban areas implying that rural to urban migrants had slightly a higher fertility. Among the migrant sexes, male migrants preferred more children than female migrants, but the difference in this case found to be insignificant (Campbell at al, 1997).

Citing Lightborne, Vanderpost (1992) noted that differences in fertility by urban rural residents were in general not very large in Africa. He found that urban women had about 0.5 children more than rural women suggesting that women at the destination area still preferred having more children like their rural counterparts. In another African study by White (2002) on Urbanization and fertility transition in Ghana, he showed that fertility of migrants was slightly higher, a Total fertility rate of 3.74 compared to second generation residents of 2.68 and the urban native women of 2.56 which was slightly lower than that of the second generation migrant.

Looking at Canada most immigrants that happened to be of European origin showed a lower fertility regime compared to their Canadian counterparts simply because of the

lower fertility rates in Europe. However women that immigrated from high fertility societies quickly adjusted to with a vengeance to Canada's low fertility levels (Maxim 1996). This could be due to the fact that there were easy access to family planning methods at the destination areas compared to their place of origin. In Brussels and Flanders most immigrants were of Turkish and Moroccan origin. The desired number of children and the number born to migrant women was higher than the corresponding numbers amongst Belgian women but lower than those of non-migrant couples in turkey and morocco (Lodewijckx 1993). Belgium like most European states are liberal states and as result these migrant women from Turkish and Moroccan origin had the choice of regulating their fertility.

Idris (1993) pointed out that at a Macro level, there was insignificant fertility differences between migrants and non-migrants in Addis Ababa but at the micro level, controlling for the proximate determinants, the migrant had a higher fertility rate compared to the non-migrant in the urban areas.

Given the fact that at the over all level the difference was negligible, this suggested that generally women were still exposed to those elements that encouraged more children particularly in the destination area. Empirical data on persons of German ethnic origin migrating to Germany from the Former Soviet Union indicated a relatively strong fertility decline among these migrants during their first years in their new Homes suggesting that fertility levels in the Former Soviet Union were Lower than their new places of residence (Dinkel et al 1997).

In the northern Part of Burkina Faso, substantial Variation in short term migration rates of young Fulani men to the urban areas provides an opportunity to explore interaction

between migration and fertility. The groups most involved in seasonal labor migration experience significantly lower fertility than non-migrant groups in the rural areas (Hampshire et al 2002). This could result from the disruption effects associated with migration were fertility is lower but only for a short period of time.

A study of the demographic health survey data for eight Latin American countries found that native urban women had an average of three children; rural to urban migrants averaged four children while rural non-migrants averaged six children. Overall rural migrant women had more children than non-migrant urban women (population reports 1996). The DHS for 22 developing nations shows that among women of ages 30 to 34 years, the average number of children ever born is higher for the rural to urban migrants than urban non-migrants in the 19 of the 22 developing countries, with differences of more than one child per woman in morocco, Peru and Senegal (Population Reports 1996).

In looking at Broche Hoff's study, the fertility levels of the rural migrants in five sub-Sahara African nations were significantly higher than the non-migrants at the destination area. However contrary to expectations, the situation changed in the Latin American region where nearly all the five nations examined showed that rural migrants had a lower fertility level compared to the urban non-migrants with the exception of Guatemala. Valenzuela (1999) examined the impact of internal migration on fertility using Bongaarts proximate determinants model. His results show that the reproductive patterns of migrants and non-migrant populations were clearly differentiated and that the fertility levels of migrants were 17.5% higher. This could be attributed to the lower Socio-economic background of migrants at their place of origin.

In the case of Europe were migration for a better life is prevalent Fassman points out that Migrant fertility which is higher than the Native European fertility level is contributing to the growth of the overall population due to the young age structure of the migrants. Most migrant populations originate from North Africa and the Asia particularly from Morocco and Turkey (Pfleger 2002). In another study done by karaduman (2000) most of the rural to urban women migrants had at least 5-9 years of education which was 70.7% compared to only 57.1% of non-migrants in the destination area. However, 14.2% of the non-migrants had 10 years or more of education compared to just 3.2% of rural to urban migrants. In his comparisons of the Total fertility rates and age specific fertility rates of Turkish non-migrant women and rural migrant women in the period 1985 to 1990, the total fertility rate values were 2.9 for urban migrants, 3.6 for rural migrants and 2.1 for non-migrant women. In contrast, the 1993 Turkish demographic and health survey results were slightly lower for all the three categories with the exception of the non-migrants at 2.3. (Karaduman 2000).

In the case of Egypt, most rural to urban migrants had more children than their rural counterparts in Upper Rural Egypt. Most of these migrants were less educated and poorer than those they left in their villages. More than half the number of migrants interviewed wished to have more children especially Sons. It can be assumed that most Egyptian migrants were sex selective that could have contributed to their high fertility. The overall mean desired number of children was 5.6, higher than the fertility rate of Upper Egypt, which were 4.5. Consistent with this, the contraceptive prevalence rate among migrant Laborers was found to be about half the general level in rural Upper Egypt (Conclusions 1997). In the state of Illinois most in-migrants that were of Hispanic origin had a total

fertility rate of 2.71, which was marginally higher than black non- migrants with a total fertility rate of 2.56 but significantly higher than the white non-migrants who had a total fertility rate of 1.9 (Population trends).

2.2 Causes of fertility differences between migrants and non-migrants

2.2.1 Contraceptive use

There are several causes of fertility differentials between migrants and non-migrants at the destination area. Analysis of the fertility data from the censuses of Papua New Guinea provides some evidence of rural-urban differentials which probably reflect the relatively more extensive use of contraceptives among the younger and educated respondents in the destination areas or among the non-migrants (Agyei, 1988). In another study done in Nepal, Pathak (2000) showed that accessibility of contraceptive use was a factor that had created fertility differentials between migrants and non-migrants despite the fact that there was an overall increase in accessibility of contraceptives in the rural areas in 1996 compared to 1991. Fifty percent of rural migrants still had no access to contraceptives, while 80% of the current users in the urban areas were getting contraceptives locally. In consonance with the above, a lack of accessibility to reproductive health services among Burmese migrant workers had also contributed to the higher fertility in the place of origin compared to their new place of residence in Thailand. About 70% of Thai women were using or had access to basic health care facilities, and there overall Total fertility rate currently is 2.0 compared to a total fertility rate of 5.4 births in 1970. A project called the reproductive health services for Burmese migrant workers was set up to help them have access to health facilities in addition to safe abortions and reduce violence against

immigrant women (Parenthood 2002). This in the long run would have a positive impact on fertility which is expected to fall as a result of the project.

In another study done in Belgium most migrant women from Turkey and Morocco approved the use of contraceptives, had some knowledge of contraceptive methods and had an idea where to obtain family planning services. That's why according to Lodewijckx (1993) their " contraceptive profile" is more "modern" than that of their non-migrant compatriots.

Nkwane (1990) in a sample study of some residents of Urban Botswana showed that 18.9% of the non-migrants are illiterate while 28.1% had secondary education in the 25-34 age group. This may partly explain the fertility variation between migrants and non-migrants because with education there is a higher probability of knowing about contraceptive use.

2.2.2 Educational levels

The Zambian demographic health survey (1992) and the Botswana family health survey 2(1988) further stressed the negative relationship between education and ideal family size, such that migrants with no education had a large family size compared to migrants with education. It is well known that females that go to school lessen their chances of having early births and thus postpone child bearing to latter. In Bombay for example non-migrants at the destination area had a higher educational level than the migrants, which would suggest lower fertility for the non-migrants since education has a negative effect on fertility. In the same study, nearly 50% of non-migrant males had completed matriculation compared to 41% of rural male migrants. This gap was even wider among the females in which 40% of migrant females were illiterate compared to only 19% of the

female non-migrants. DHS data for 22 countries show that in all but one country, Niger the level of illiteracy was higher among the rural migrant women of reproductive age than the female urban non-migrants of the same age. Nations like Cameroon, Haiti and Pakistan all reveal that migrant women had a higher illiteracy rate compared to the urban non-migrant women. Consequently this partly explains the fertility differentials between the groups of women were by fertility was higher among the migrant women with higher illiteracy rates (Population reports 1996). In some nations however the difference in illiteracy levels is small between the rural migrants and non-migrants in the destination area like in Kenya and the Philippines were most non-migrant and migrant women of reproductive age have secondary education. The fertility differentials thus can only be explained by other factors, which could be socio-cultural in nature (Population Reports 1996).

White et al (2002) also clearly highlights fertility differences between migrant women and the natives of Kumasi Ghana in that migrant women had lower education, which is linked, to higher levels of child bearing. Even with the introduction of controls of education and the household socio-economic status, migrant women are predicted to have nearly one half child (ever born) more than other wise equivalent urban natives. [1]Women in the second generation are predicted to have slightly higher fertility than Kumasi natives.

2.2.3 Cultural factors

Another explanation for the differentials between migrants and non-migrants at the destination area is based on the premise that residential patterns structure the norms and

[1] According to White et al (2002) this difference is not statistically significant

beliefs of individual residents regardless of or in addition to their categorical membership for other social factors (United Nations, 1987).

As such, the higher fertility level of migrants are thought to be due to rural residence per se since, rural life is associated with a wide range of norms and beliefs that tend to encourage bigger families. This explanation has been referred to as sub- cultural hypothesis (united Nations, 1977). Culture and language often set migrants apart from the non-migrants in the destination area. Bridging differences in culture and language sometimes may present a different set of challenges. For instance differences in Language obviously makes communication difficult and can discourage people from obtaining services.

Mass media messages about family planning, sexually transmitted diseases and other health care issues may not reach or mean much to migrants whose language and culture differ from those of the surrounding population (Population reports 1996). Consequently, Culture and customs affect reproductive health and health care in several ways. For example Rural women may prefer traditional attendants and also many people's, ideas about how illness originates and women's customary health related behavior during pregnancy and postpartum differ from western medical views which are more widely accepted by non-urban migrants. This may partly explain the fertility differentials between migrants who are affected by cultural norms compared to the urban non-migrants who are more accustomed to the western medical views and thus easily accept the kind of treatment received.

In line with the above, the conservative nature of most rural urban migrants from Upper Egypt partly explains the fertility differences between them and the non-migrants in

Cairo. This is because most migrants lived in isolation, which undoubtedly restricted their exposure to the urban behavioral patterns and customs of the Egyptian urban people. This impacted negatively on their fertility and family planning practices, which continued to be higher than the local population in Cairo. The absence of male migrants from the village would assume lower fertility in the long run in the form of delayed marriage and time lost of couples being apart. Contrary to expectations, this was not the case among migrants who still had a higher than average fertility compared to their rural counterparts. [2]This may suggest that men usually returned home for short periods and might have necessarily been successful in impregnating their wives.

2.2.4 Place of Residence

In addition to the above, the fertility differentials of migrants and non-migrants may be influenced by place of residence. This however may involve various socio-economic and to a certain extent demographic variables. While it is easier to suggest that existing studies have not adequately explained the fertility differentials by place of residence, it is noted that there may be certain influences common with the place of residence at the destination area, which may influence fertility at an individual level. These could include location factors with such characteristics as availability of educational opportunities, health facilities, job opportunities in the modern sector, communication facilities and contraception information and supplies.

[2]This is not to discount the fact that fertility might have been higher before migration.

NWU LIBRARY

It is argued that in the urban areas, the higher cost of rearing children and their reduced labor force value can be expected to result in preferences for smaller families (United nations 1987). As Brockerhoff (1994) notes, a sharp increase in the use of contraception seems to occur in the second and third year of residence suggesting that place of residence may have a positive influence on fertility.

Studies on migration in Sierra Leone have shown that the desired family size of migrants in the western area of the country exceeded that of non-migrants as a result of the position of that area. The changing role or status of men and women may tend to depress fertility behavior in a short period of time, but may not change the preference positions with in the same period (Campbell 1989). In the same study, there seemed to be fertility differences among the elite groups whereby those from the Northern province tended to have a higher fertility than those from eastern and southern provinces which according to Campbell, could best be explained by economic and social values placed on children who maintain traditional values. In the case of migrants that were returning from the Former Soviet Union, slightly better living conditions in destination areas might have been responsible for the further reduction in the migrant fertility rates compared to the non-migrants. Those migrants that belonged to certain religious groups that supported high fertility also might have been influenced by the norms in their new place of residence apart from the better living conditions, leading to a drastic fall in their fertility levels (Dinkel et al 1997).

2.2.5 Urbanisation

The impact of urbanization is apparent among migrants in the city and this most probably explain much of the changes in the differential fertility in the western area of Sierra

Leone. This is an area that is divided into greater Freetown and the Western rural area, which is not as rural as a traditionally remote area. This is consistent with the position in the city because their settlement areas are located around the city, which supports the classical theory of lower migrant fertility than that of non-migrants that is apparent with the Creole (Campbell 1989). However, calculations show that this theory may not apply to this area because of uncertainty about living conditions in the destination area such that the migrants' fertility may be distorted for a short period causing it to fall below that of the non-migrant, which in any case may be temporary.

In a research carried out in Cuba, it was discovered that the average number of children ever born for all migrant women aged 15-49 was 2.09, a value which represented 0.89 births per woman more than that of non-migrants at the destination area. The number of children women had at the end of their family formation period (45-49) is notably higher for migrants, also indicating an excess of 0.86 births per woman of this age group in comparison with non-migrants (Suarez, 1994). From this research, it is observed that migrants who are possibly from the rural areas have their births at younger ages than non-migrant women.

Women living in areas designated as urban areas were more likely than those in the rural areas to know where to get family planning assistance. In this regard, female migrants from the rural areas had less access to family planning assistance and therefore have a higher fertility as compared to the urban non- migrants. However, Urbanization may not be significant in determining fertility differences in some countries like Costa Rica, Indonesia, Malaysia and Trinidad and Tobago. Service design may again play a role in certain areas like Korea, where considerable emphasis has been placed on outreach

programs into rural areas such that migrants may have already had access to family planning facilities before migrating, making fertility differentials insignificant to non-migrants in the urban areas

(Jones 1984). The indications are that with urban exposure, lifetime urbanities are more likely to use contraceptives than lifetime rural dwellers with rural urban migrants neatly falling in between.

2.2.6 Health issues: sterility

In the northern part of Burkina Faso, seasonal rural to urban migration of young men is become increasingly important. Fertility Differentials among migrants and non-migrants at the destination area has been accounted for by higher rates of secondary sterility among the migrants as a result of increased incidence of sexually transmitted diseases. Such mechanisms as changes in attitudes and knowledge regarding birth control and the undermining of traditional practices of marriage, breastfeeding and sexual abstinence are far less important (Randall et al 2000). In the case of HIV/Aids fertility is presumed to be lower between HIV positive people compared to those that are HIV negative. Lure et al (2000) showed that 33.7% of one or both partners amongst migrant couples was HIV positive compared to 19.2 % of non-migrant couples. Migrant couples were nearly 3 times more likely to be HIV [3]discordant. Assuming a change in Behavior between HIV positive migrants and non-migrants, given Lure et al (2000) findings fertility of migrants would be lower than that of non-migrant couples since migrants have a higher prevalence rate of HIV. However the relationship between HIV/AIDS and fertility has not yet been

[3] In this case one of the couples is a HIV positive migrant and the other HIV negative non-migrant

established with little indications that fertility is falling in areas where the epidemic is high.

In reviewing this literature, it is observed that migrants' behavior is susceptible to change in the destination area, due to various socio-economic conditions that exist. We are therefore compelled to examine the source areas of where migrants come from.

2.2.7 Race/ethnicity

In a study done in Canada, the race or ethnic composition of foreign-born women rather than their likelihood to have children explains most of the fertility differentials between the native born women and the foreign born women. Immigrant women tended to have higher children ever born ratio at younger ages than their native counter parts. Most Immigrant women were from Mexico, others from Central American nations or Asia that made up 80% of all foreign-born women (Lovell 1996). However these fertility differences may have their roots imbedded in differences in socio cultural norms at their place of origin rather than race or ethnicity.

2.2.8 Mortality

The higher Mortality levels amongst Migrant children may also indirectly explain the fertility differentials between migrant and non-migrant women. Stephenson (1996) indicated that the chances of survival for a child of migrant woman were lower compared to children in the destination area. He cited Brockerhoff, who indicated that children from rural areas before and immediately after migration hold the greatest risks of mortality, because of the physical process of migration that may lead to a new set of determinants of infant and child mortality. Exposure to new disease pathogens, which together with the

possible physical hardship of the move and the temporary unavailability of health services, can act to increase the health vulnerability of the infant. It is also important to note that the extent of adaptation to their destination areas can affect the fertility levels of the migrants because studies indicate that mortality remains higher, which keeps migrant fertility slightly higher than non-migrant fertility. Rural to urban migrants in the developing world live and work in appalling conditions, working in economically inferior sectors of the city and leaving in informal dwellings and lacking proper health and sanitation facilities. All the above discrepancies lead to more deaths to migrant children, which increase their fertility level as a result of the replacement effect. Brockerhoff (1994) noticed that the decline in child mortality in most rural areas in the developing nations had stagnated due limited progress of international health programs particularly in the place of origin. He suggested that it would be better if the migrant children stayed in their place of origin with foster care than encountering the uncertainty in the destination areas. Other factors like termination of breastfeeding that is vital to the child's health and exposure to new diseases like prenatal HIV transmission may increase the risks of child survival (Brockerhoff 1994). Brockerhoff (1995) reiterated that female migrants are usually at a disadvantage in the big cities and their children thus face a higher mortality due to low quality housing and in part to fertility patterns at early ages of children.

A study done in the Brazilian Amazon in estimating child survival rates among children born to native and migrant women showed that the probability of death among children was quite similar when making comparisons between the two groups (Elliot 1996). However, after controlling for Household economic activity and income, death rates were

higher among migrant children. As expected, the findings suggest that non-migrants are better able than the migrants to mobilize physical and social environments to safeguard the health of their children (Elliot 1996). McKay et al (2003) in their review of international literature on migration and health indicate that many factors affect the process of migration and thus affect migrant mortality and morbidity rates. Migrants do not necessarily display worse mental or cardiovascular health than non-migrants but they generally tend to exhibit disadvantaged risk factor profiles and are more frequently subject to hypertension, chronic conditions and obesity compared to non-migrants.

From the literature review, the differences in socio-economic conditions at the source areas and the destination areas could be balanced regarding development which in most cases is a hindering factor as far as fertility reduction is concerned. However, societal norms could still have an influence on migrants especially in areas where migrants intend to stay in the destination area for a long time, which encourages them to adopt the new characteristics of their new surroundings.

2.2.9 Age at menarche.

In Kombio, Papua New Guinea a decline in the age at menarche for nutritional reasons and reduction in the birth interval for behavioral reasons may explain the higher fertility rates of the migrants in the urban area compared to the non-migrants particularly in the age group 15-19 years. This may suggest that rural migrants have a higher nutritional intake and are thus healthier than the urban non-migrants (umezaki et al 1998). Consequently it is expected that young migrants would have a higher fertility than non-migrants at the destination area. However socio-economic variations may also explain these fertility differences between migrants and non-migrants.

2.2.10 Income

In Pakistan the reason for the lower fertility levels of Migrants compared to non-migrants is as a result of Income differences were by the migrants earned a higher income than the non-migrants despite the fact the non-migrants had longer on- the-job experience. Ahmed (1992) pointed out in his study that higher levels of income or wealth would lead to higher demand for Children, but the higher perceived costs of children on the other hand would lead to lower fertility. However Ahmed also points out that the disruptive effect of moving contributed to the above differences and not just income per se. Accordingly, education is directly linked to income and thus its plausible that migrants may have been more educated than the non-migrants.

2.2.11 Redistribution policy.

The Vietnam War and the redistribution policy or doimoi policy may have contributed to the differences in fertility between migrants and non-migrants. White et al (2000) showed that on average migrants had fewer children than non- migrants as a result of continuous spatial mobility. The average number of moves in one month or more was nearly 2 per migrant compared to only 0.2 per non-migrant. He further suggested that the moving process also led to latter marriages and postponement of fertility to latter years since most migrants had their first two children at older ages than non-migrants as a result of several moves made.

In conclusion therefore fertility differences between migrants and non-migrants may vary from place to place which are affected by socio-economic and demographic factors.

CHAPTER III

4.3 SOCIO – ECONOMIC CHARACTERISTICS OF MIGRANTS AND NON-MIGRANTS IN THE NORTH WEST PROVINCE OF SOUTH AFRICA

According to Chandra Dharma (2002) studies have indicated that migration mainly occurs for economic reasons. Economic motives such as the search for cash employment, improvements to and upgrading of jobs leading to increased wages and salaries plus improvements in education for employment related needs are all important determining factors of migration. As a result it's not surprising to note that most migrants are of the working category or are those who move to the destination areas to pursue their higher Education. In this context therefore it would be expected that most migrants are young at age between 20 to at most 39 years. In Dharma's analysis of the socio- demographic and economic characteristics of migrant heads in Fiji, most migrants where between the ages of 20 to 39 years with most women migrants migrating between the ages of 20 to 29 years There are cases were by children have to move with their parents or older people migrate to the destination area to stay with their working children or visit them. At the end of the day one can assume that migrants may move back to their source areas or place of birthplaces. However this will clearly depend on the social economic and political conditions back at home, which will determine whether they move back or not.

Tables' 3.1a and b below examines the socio-economic characteristics of migrants and non-migrants in relation to fertility.

There were 45.6% of non-migrants in the age group, 15 and less which was about 26.2% more than the migrants in the same age group. This indicates that most non-migrants were children living with their non- migrant parents or guardians, which is in accordance with expectations. Most migrants are usually young at age either seeking job opportunities at the destination area or improving their education. Consequently this partly explains the relatively high percent of migrants between the ages of 15 years to 44 years. A significant percentage number of migrants were also below the age of 15 years

and above 55 years at 19.4% and 12.2% respectively. This may be due to the fact that the younger children moved with their migrating parents while the older migrants moved with their working children for security. It is also possible that these older migrants were still in search of jobs at the destination area.

Looking at gender by age, there were more male non-migrants than female non-migrants, which can be attributed to the high sex ratio at birth. In both sexes there was a substantial percentage number of young migrants 15 years and below which is due to the fact that these young migrants migrated with their parents. A substantial percentage number of migrants, both male and female were between the ages of 15 to 44 years either in search of better jobs or pursing further education. Also there were a higher percentage number of male and female migrants at older ages (55+ years) either because they moved with their working children or they too were seeking better jobs.

Table 3.1a Socio-economic Characteristics of migrants and non-migrants in the North West province of South Africa (Census 1996)

Age	Non-migrant	Migrant	Unspecified
< 15	45.6	19.4	17.7
15-24	20.8	19.5	16.8
25-34	11.5	21.5	21.6
35-44	8.0	17.3	17.7
45-54	5.3	10.0	10.7
55+	8.7	12.2	15.6
Total	100 (165981)	100 (118346)	100 (14544)
Female			
<15	44.3	19.2	18.4
15-24	20.6	20.2	18.4
25-34	11.9	21.6	20.3
35-44	8.1	16.2	15.5
45-54	5.4	9.6	10.2
55	9.7	13.0	17.1
	100 (86164)	100 (60229)	100 (7003)
Age (male)	Non-migrant	Migrant	Unspecified
< 15	47.1	19.6	17.1
15-24	21.0	18.6	15.2
25-34	11	21.3	22.7
35-44	7.9	18.3	19.7
45-54	5.2	10.3	11.1
55+	7.7	11.3	14.1
Total	100 (79817)	100 (58207)	100 (7540)

The table below looks at income in which over 93% of non-migrants indicated that they earned no income compared to 80% of migrants. The results in general indicate that more migrants earned higher incomes than non-migrants, which may suggest that migrants had a higher level of education than the non-migrants. Education has a positive relationship with income which means the migrants earned higher incomes because of their higher level of education. From the analysis below, this may suggest that migrants would have lower fertility than the non-migrants since education has a dampening effect on fertility.

Examing gender, there were more non-migrant females and males that earned less than a thousand Rand compared to migrants and those respondents who did not indicate their migration status. From the results more female and male migrants earned higher incomes compared to non-migrants, which could be as a result of the higher levels of education of migrants. Looking at migrants, more males earned higher incomes than females resulting from the fact that most jobs may be male dominated.

According to Education table 3.1b below indicates that most non-migrants had secondary education compared to migrants and those respondents who did not indicate their migration status. It is expected that the higher the education the greater the chances of migrating and therefore finding a better job which ultimately leads to better incomes. Thus from the results there were more migrants (23.2%) with tertiary education than non-migrant respondents (15.4%). This is in accordance with theory were migrants have higher educational levels compared to their non-migrant counter parts. This may suggest that migrants may have lower fertility levels than non-migrants particularly those with tertiary education.

From the table 3.1b below, about 58% of migrants indicated that they had never married which was 13.2% higher than non-migrants. It can be assumed that the higher percentage of never married among migrants is due to the fact that they might be of school going age and were interested in pursing their careers before thinking of marriage. Assuming that marriage is still considered an institution for having children, migrants would have lower

fertility based on the results in table 1 in relation to marital status. The state of South Africa's Population Report (2000) however indicates that marriage seems to have lost its value as a determinant of fertility with the total fertility rate for never married at 3.9 compared to 4.3 for the married women.

According to the world fact book (2002) based on the 1996 population Census, the South African population is mainly 75.2% black, 18.6% white, 8.6% colored and 2.6% Indian. The Northwest province upon which this study is based used to be an independent "black homeland set up by the former apartheid Government to resettle expelled blacks from Johannesburg and Cape Town in 1976. From the analysis, irrespective of migration status there were more blacks than any other population group with 96% being non-migrant blacks compared to 86.3% migrant blacks and another 84.4% of blacks that did not indicate their migration status. From the DHS report 1998, the African population had the highest fertility at 3.1 compared to 2.5 for coloreds and 1.9 for whites. With this in mind, the overall fertility of the African race though relatively low compared to other African countries would impact negatively both at the source and destination areas in terms of higher fertility.

Table 3.1 b Socio-economic Characteristics of migrants and non-migrants

Level of income	Non-migrants	Migrants	Unspecified
< R1000	93	80	78.6
R1000-1999	4.6	12.8	14
R2000-2999	0.7	2.8	2.6
R3000-3999	0.3	1.8	1.5
R4000-4999	0.4	1.4	1.6
R5000+	0.3	1.4	1.5
Total	100 (153773)	100 (110198)	100 (12875)
Income level female			
<R1000	95.8	87.9	89.3
R1000-1999	2.9	7.4	6.5
R2000-2999	0.5	1.9	1.7
R3000-3999	0.2	1.3	0.8
R4000-4999	0.3	0.9	1.2
R5000+	0.1	0.5	0.4
Total	100 (79624)	100 (55611)	100 (6081)

Income level male			
< R1000	91	71.0	69.0
R1000-1999	6.5	18.0	21.0
R2000-2999	1.1	4.0	4.0
R3000-3999	0.5	2.4	2.0
R4000-4999	0.6	2.0	2.0
R5000+	0.4	2.4	2.4
Total	100 (74149)	100 (54585)	100 (6794)
Level of education			
No education	25.4	23.0	27.3
Primary education	16.5	15.5	16.9
Secondary education	42.5	38.2	20
Tertiary education	15.4	23.2	35.6
Total	100(73928)	100(78910)	100(9998)
Marital status			
Never married	44.8	58.0	39.5
Married: Civil	34.6	20.2	30.4
Married: traditional	7.19	11.4	16.6
Living together	6.9	3.1	6.3
Widowed	4.6	4.8	4.7
Divorced	1.7	2.7	2.3
Total	100(88596)	100(95299)	100(11802)
Ethnicity			
African	96	86.3	84.8
Colored	1.2	1.6	1.2
Indian	0.2	0.3	0.7
White	2.5	11.7	13.3
Total	100(165100)	100(123387)	100(14423)

Source: 1996 Census

4.3 DEMOGRAPHIC CHARACTERISTICS OF MIGRANTS AND NON-MIGRANTS IN RELATION TO FERTILITYIN THE NORTH WEST PROVINCE OF SOUTH AFRICA

Tables 3.2 a and b examines the demographic characteristics of migrants and non-migrants. In general there were more non-migrant females at younger ages than older ages, which is in accordance with expectations at the place of origin. Looking at migrant women there was a relatively high percentage number of women from age 15 to 39years. It can be assumed that job opportunities and the need to pursue their education further may partly explain the high percentage number of migrants at younger and slightly older ages.

According to the South African demographic and health survey (1998) the median age at first intercourse for urban residents was 18.6% compared to 17.9% for the non-urban urban residents. From table 3.2 a below, 24.9% of non-migrant females indicated that their age at first intercourse was between the ages of 10 to 15 years. This was over 9% more than the migrants at 10.5%. About twice the number of migrants had their first age at intercourse between the ages of 21 to 30years compared to non-migrant females. Cultural norms at the source areas were migrants come from may partly explain the age huge difference. Weeks (1994) suggests that women who have sex at older ages have less children because of the shorter time she will bat at risk of conceiving. Based on the results it means that migrants would have a lower fertility than non-migrants.

In relation to age at first birth, over 50% of migrants and non-migrants had their age at first birth between 17 to 21 years. There were more migrants having their age at first birth between 22 to 26 years at 29.3% compared to non-migrants at 21.3%

In general there were more non-migrant females that had lower ages at first birth, which may mean higher fertility than migrant females. The aspect of education, which is higher among migrant women, may account for this significant difference. The Disruption effect though temporary may have played its part.

Table 3. 2 a Demographic characteristics of migrants and non-migrants

Age	Non-migrants	Migrants
15-19	18	15.7
20-24	19	15.7
25-29	18.6	14.5
30-34	15.5	18.6
35-39	12.2	15.7
40-44	10.1	11.1
45-49	6.6	8.7
Total	100 (672)	100 (172)
First intercourse		
10-15	24.9	15.5
11-20	70.0	74.4
21-30	5.1	10.1
Total	100 (714)	100 (170)

Age at first birth		
12-16	14	12.8
17-21	59.4	52.6
22-26	21.3	29.3
27-31	4.2	4.5
32-36	1.1	0.8
Total	100 (478)	100 (133)

Source: DHS1998

From table 3.2 (b) below, most migrants and non-migrants had their age at first marriage between 20-29 years. However, there were more migrants than non-migrants who indicated having their age at first marriage in this age group than non-migrants. David Lucas (1980) contends that in most societies births occur with in marriage, which according to him is the legal form of sexual union. This means that the lower the age at first marriage the higher the fertility. With this in mind, non-migrants would have a slightly higher fertility than migrants based on the fact that there were more non-migrants with a lower age at first marriage than migrants.

Ninety four percent of non-migrant females indicated that they had never terminated a pregnancy that was 5.8% more than migrant females. However, nearly twice the percentage number of migrant females (12.2%) indicated that they had never terminated a pregnancy compared to non-migrant females (6.4%). This may indicate a lower fertility for migrant females given the higher percentage number of termination of pregnancy since according to weeks (1994) termination of pregnancy, which is legal in South Africa, is a form of birth control.

Looking at contraceptive use between migrant and non-migrants, 60.6% of non-migrants indicated that they had never used contraceptives, nearly 2% more than migrant females at 58.9%. This means that there were slightly more migrants that had used contraceptives than non-migrants suggesting therefore that migrant fertility would be lower than non-migrant fertility at the destination area. It is possible that the migrants are older and more educated than the non-migrants, which accounts for the higher percentage of non-migrants who had never used contraceptives.

Table 3.2 b Demographic characteristics of migrants and non-migrants

First marriage		
10-19	33.8	30.1
20-29	56.3	62.1
30-39	9.7	7.8
40-49	0.6	0.0
Total	100.0 (298)	100.0 (298
Ever terminated pregnancy		
NO	93.6	87.8
YES	6.4	12.2
Total	100(674)	100(173)
Ever used contraceptives		
NO	60.6	58.9
YES	39.4	41.1
Total	100(605)	100(168)

Source: DHS1998

3.3.COMPARING SOCIO-ECONOMIC CHARACTERISTICS OF THE CENSUS 1996 AND DHS 1998.

From table 3.3 below, there were more non-migrants according to the census 1996 results at younger ages of 5-24years compared to the DHS 1998 results. This may indicate that there was a slightly older female non-migrant population 1998 than in 1996. In looking migrant females, there were slightly less migrants between the ages of 20 to 29 years from the 1998 DHS results suggesting that migrants were able to find jobs at their places of origin but at older ages there were more migrants as compared to the 1996 census results.

In contrast to the 1996 census results, there was a substantial percentage increase of non-migrants and migrants with secondary education according to the 1998 DHS results. There was also a substantial decline in the percentage number of migrants and non-migrants with no education between 1996 and 1998. Higher education does affect fertility, which may indicate that overall fertility may decline among migrants, and non-migrants since more women are staying longer in school than before. It must be pointed out that there was a slight percentage decline in the tertiary education of migrants and non-migrants between 1996 and 1998 though there were still more migrants than non-migrants who had tertiary education.

In relation to marital status, the table below indicates a decline in the percentage number of migrants and non-migrants who had never married, while there was a marked percentage increase of non-migrants and migrants who had married between 1996 and 1998. It can be assumed that most females became older and thus wanted to get married which could account for the large decline in the never married female migrants and non-migrants. It's also worth pointing out that the percentage number of migrants and non-migrant who were widowed also decreased between 1996 and 1998 particularly with the migrant females. The increase in the percentage married may suggest increased fertility for both migrant and non-migrant females. However the easy access of contraceptive at the destination area may control the fertility.

As pointed out earlier, the South African population is over 70% black. Its thus with this in mind that both the 1996 census and 1998 DHS results show a higher percentage number of blacks regardless of their migration status. However, the results indicate an increase in the percentage number of colored and white migrants between the census and DHS results that might be attributed to the need to find better jobs at the destination areas. There was a general decline in the percentage level of black migrants and non-migrants according to the DHS 1998, that may be due to the fact that there might have been less non-migrants and migrants compared other population groups.

In relation to income, there was a general increase in the level of income for migrants and non-migrants according to the 1998 DHS results particularly with those that earned over 5000 Rands where the increase was significant. Also, the percentage number of migrants and non-migrants that earned less than a thousand Rands decreased drastically suggesting that both migrant and non-migrant females were able to find jobs. Theory has it that income is positively correlated to education which means that by 1998 most women migrants and non-migrants had a higher level of education which has contributed to higher incomes. The only realistic explanation is that they were able to get better jobs in 1998 compared to 1996. This has negative implications in as far as fertility is concerned which would be lower in the long run.

Table 3. 3 Socio – economic characteristics of female non-migrants and migrants from DHS and census

Age	Non-migrants (census 96)	Non-migrants (DHS 98)
15-19	26.1	18
20-24	21.2	19
25-29	14.8	18.6
30-34	12.5	15.5
35-39	10.1	12.2
40-44	8.5	10.1
45-49	6.7	6.6
Total	100(37573)	100(672)
	Migrants	Migrants
15-19	15.1	15.7
20-24	17.4	15.7
25-29	17.2	14.5
30-34	16.6	18.6
35-39	14.0	15.7
40-44	11.2	11.1
45-49	8.3	8.7
Total	100(39146)	100(172)

Level of education	Non-migrants (census 96)	Non-migrants (DHS 98)
No education	29.6	7.4
Primary education	27.2	27.3
Secondary education	33.6	58.4
Tertiary education	9.7	6.8
Total	100(62962)	100(673)
	Migrants	Migrants
No Education	24.1	9
Primary education	20.7	21.7
Secondary education	35.5	55.3
Tertiary education	19.6	14
Total	100(50250)	100(175)

Marital status	Non-migrants (census 96)	Non-migrants (DHS 98)
Never married	76.2	58.4
Married	16.4	29.6
Living together	1.8	8.3
Widowed	4.0	2
Divorced	1.1	1.8
total	100(85623)	100(673)
	Migrants	Migrants
Never married	51.8	47.7
Married	33.7	40.0

Living together	5.2	6.8
Widowed	6.4	0.5
Divorced	2.8	5.0
Total	100(59889)	100 (175)

Ethnicity	Non-migrants (census 96)	Non-migrants (DHS 98)
African	95.7	92.7
Colored	1.2	3.4
White	0.2	3.7
Indian	2.4	0.1
Total	100(85730)	100(672)
	Migrants	Migrants
African	85.8	83.9
Colored	1.71	4.0
White	0.37	8.0
Indian	12.0	4.0
Total	100(61383)	100(174)

Income level	Non-migrants (census 96)	Non-migrants (DHS 98)
>1000	95.8	7.3
1000-1999	2.9	7.3
2000-2999	0.5	6.8
3000-3999	0.2	10.9
4000-4999	0.3	4.7
5000+	0.1	62.8
Total	100(79624)	100(191)
	Migrants	Migrants
>1000	87.9	10.8
1000-1999	7.4	2.7
2000-2999	1.9	6.7
3000-3999	1.3	6.7
4000-4999	0.9	5.4
5000+	0.5	67.5
Total	100(55611)	100(74)

4.3 AGE SPECIFIC FERTILITY RATES FOR FEMALES BY MIGRATION STATUS.

Table 3.4 below looks at the age specific fertility rates of migrants and non-migrants from the census and Demographic health survey 1998. The tables clearly indicate the births for migrants and non-migrants from the census and DHS results take place at younger ages particularly between the ages of 20 to 29 years before they decline.

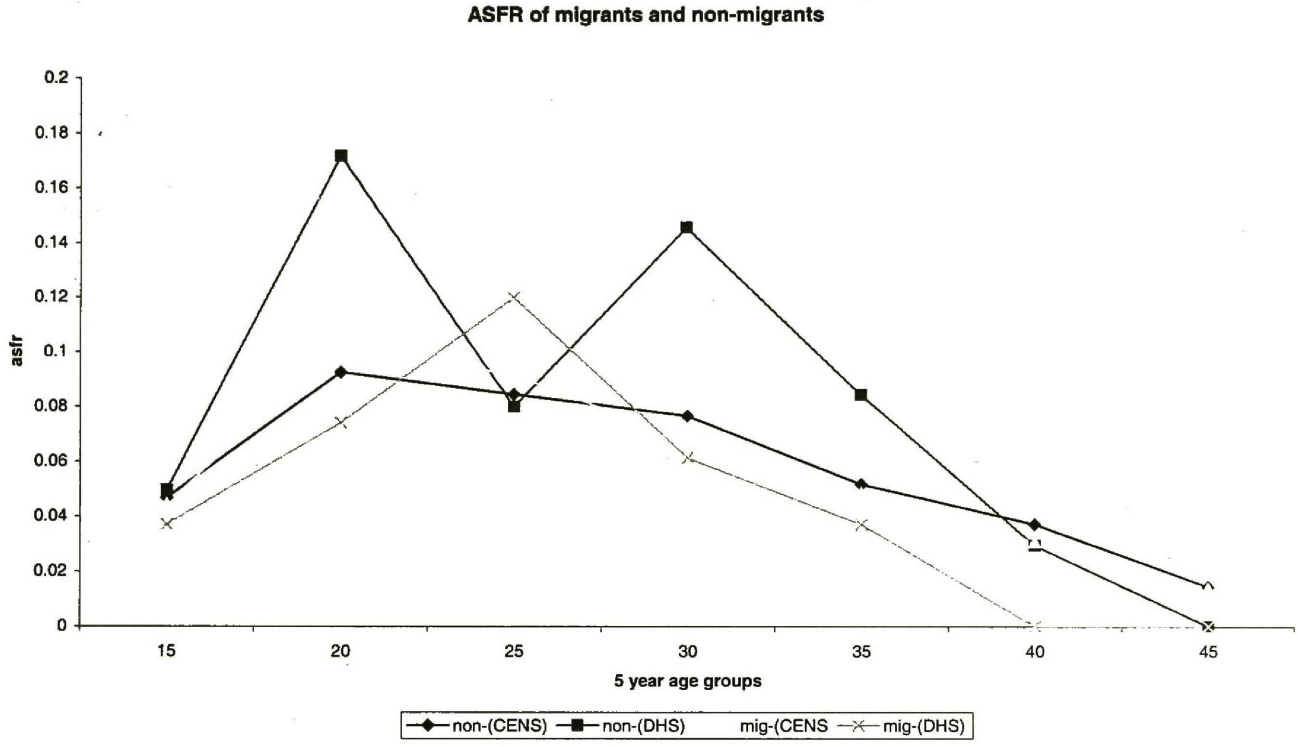
However the decline is more apparent from the 1998 DHS results where there were no women with Children.

Table 3.4 age specific fertility rates of migrants and non-migrants DHS and CENSUS

AGE	DHS MIGRANTS	DHS NON-MIGRANTS	CENSUS MIGRANTS	CENSUS NON-MIGRANTS
15-19	0.0714	0.03922	0.0446	0.04670
20-24	0.2200	0.13761	0.1021	0.09250
25-29	0.1273	0.07143	0.09163	0.08450
30-34	0.1304	0.14516	0.06747	0.07662
35-39	0.0851	0.04920	0.04851	0.05166
40-44	0.0270	0.01923	0.03070	0.03709
45-49	0	0	0.01403	0.01444
TOTAL	**0.02294**	**0.0756**	**0.06255**	**0.06350**

From the diagram below, non-migrants from the 1996 census results tended to have lower fertility levels at younger ages except for those non- migrants who were between the ages of 25 to 29 years were their fertility was similar to those non-migrants from the DHS 1998 results. Older non-migrant females from the census results had a higher fertility rate than non-migrant females according to the DHS 1998 results. The relatively higher fertility of young non-migrants in the DHS 1998 results may be due to higher rates of early pregnancy particularly between the ages of 15 to 24 years. The decline in fertility in the 25 to 29 year age group may be due to the fact that non-migrant females may still be pursing higher education, which has a negative effect on fertility, after which they may attempt to have more children, as is the case from the diagram below where the fertility drastically rises before falling again. It should also be pointed out that childbearing at older ages is difficult which may partly explain the steep rise in fertility suggesting that these non-migrant women may want to complete childbearing before they become much older. In looking at the migrants from the 1996 and 1998 results, it can be seen that migrants from the 1996 results initially had a higher fertility rate as compared to the 1998 migrants especially before the age of 25 years. This may be due to the fact that migrants from the 1996 census got their children at younger ages while migrants from the 1998 DHS results opted to have their children somewhat latter say between the ages of 25 to 30

years because they were still in school. Regardless of migration status fertility of females at older ages (40 and above) according to the 1998 DHS had lower fertility rates than females from the 1996 census data. Easy access to contraceptives and employment opportunities may have led to the decline between the two periods.


ASFR of migrants and non-migrants
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
asfr
15
20
25
30
35
40
45
5 year age groups
non-(CENS)
non-(DHS)
mig-(CENS
mig-(DHS)

4.3 OCCUPATIONS AND AGE OF MIGRANTS

Empirical evidence suggests that most migrants are usually young at age and educated, which leads them to seek better paying jobs at the destination areas. It's with this in mind therefore that from table 3.5, regardless of the kind of occupation, most migrants were between the ages of 25 to 44 years and were either professionals, working in the legislature, as technicians, clerks and in the service sectors. This may indicate that they had a higher level of education considering the fact that most migrants were employed in these sectors. On the other hand there were fewer migrants between the ages of 15 to 24 years that were employed which may indicate that they were still in school. The majority of the older migrants (55 years and over) worked in the agriculture and fishery sector, which may suggest that not many older migrants had higher levels of education compared to the younger migrants or because of their relatively advanced age they were not eligible for better paying jobs.

Table 3.5 Occupation and age of migrants

Age	Legislature	Professional	Technician	Clerk	Service	Agric& fish	Crafts	Plant& machine	Elementar
5-24	6.0	6.0	9.0	12.0	12.0	14.0	7.0	5.0	11.0
5-34	26.0	39.0	36.0	40.0	44.0	29.0	36.0	33.0	30.0
5-44	36.0	35.0	32.0	31.0	27.0	22.0	34.0	38.0	29.0
5-54	22.0	14.0	16.0	12.0	12.0	18.0	16.0	17.0	20.0
55+	10.0	6.0	7.0	5.0	6.0	18.0	7.0	7.0	10.0
tal	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: 1996 Census

4.3 PARITY OF WOMEN BY AGE AND MIGRATION STATUS

In looking at the parities of migrant and non-migrant females from the demographic health survey, some differences are seen particularly between the ages of 30 to 34 years and 40 to 44 years were parities are significantly lower for migrant females compared to their non-migrant counterparts. This may be due to the fact that non-migrants may have started childbearing slightly earlier and given the fact that migrants in these age groups may have been on the move some 10 to 20 years ago. Overall parities between migrants

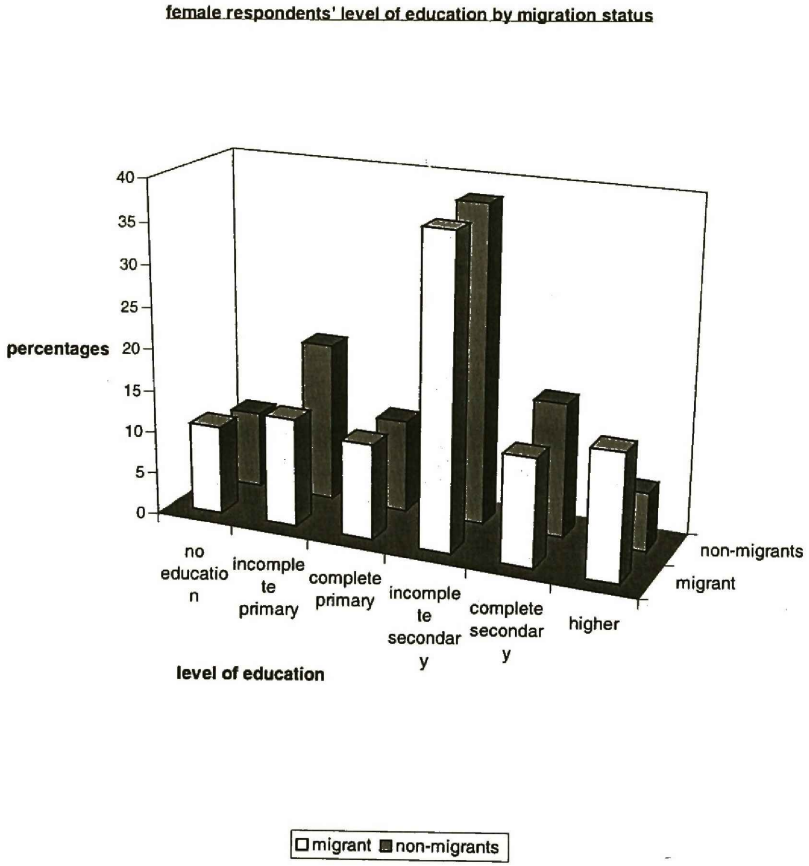
and non-migrants didn't indicate much difference though as expected it was marginally lower for the non-migrants than migrants.

In looking at the census parities, there doesn't seem to be much of a difference in parities amongst the various age groups. Overall parity may be said to manifest differentials of migrant and non-migrant fertility in which case its slightly higher among migrant women by 0.3 compared to non-migrant women. Comparing the migrant and non-migrant parities from the census and DHS results, it is evident that there is a slight decline in the overall fertility as shown from the 1998 DHS Results particularly the migrant females were the parity fell from 2.2 in 1996 to 1.9 in 1998, a 14% decline in 2 years. This may be due to the fact that migrant females might have been older than non-migrants.

Table 3. 6 Parity of women by age and migration status

DHS Age	Non-migrants	CEB	PARITY	Migrant	CEB	PARITY
15-19	121	10	0.08	28	5	0.2
20-24	125	97	0.7	30	25	0.8
25-29	125	172	1.4	26	41	1.6
30-34	103	245	2.4	32	63	2.0
35-39	83	261	3.1	26	88	3.4
40-44	68	248	3.6	22	64	2.9
45-49	45	188	4.2	15	63	4.2
TOTAL	670	1221	1.8	179	349	1.9
CENSUS						
15-19	6585	1322	0.2	3982	845	0.2
20-24	6398	5287	0.8	5556	4852	0.9
25-29	4968	7879	1.6	6134	10216	1.7
30-34	4345	10641	2.4	6040	14821	2.5
35-39	3558	11646	3.3	5243	16288	3.1
40-44	3043	12150	3.9	4167	15675	3.8
45-49	2421	10747	4.4	3120	13316	4.3
Total	31318	59672	1.9	34242	76013	2.2

FIGURE 3.2



Source:1996 Census

From the above diagram the percentage number of female migrants and non-migrants is relatively similar with slightly, more migrants with no education. More non-migrant females had incomplete primary education than their migrant counterparts while those with incomplete secondary were relatively high between both groups (over 35%). Education has a negative impact on fertility particularly among those

with higher education since they postpone childbirth until they have completed their education. Most migrant females according to the diagram had completed higher education compared to non-migrant females, which could partly explain their higher age at birth in the previous table leading to a lower fertility.

CHAPTER IV

APPLICATION OF STATISTICAL MODELS

In this chapter statistical models are used to investigate migrant and non-migrant fertility in the northwest province from the South African Demographic and health survey and the Census.

Quantitative techniques employed for the analysis include multiple regression, correlation ANOVA and Chi-square. ANOVA is used to compare the variations between the two groups, which in this case are the migrants, and non-migrants. Multiple regressions will be used to predict the variations in the dependent variable. The Chi-square analysis shall be used for the Demographic health survey to establish any association between fertility and migration status. Also the data set is suited for this kind of analysis.

Table 4.1 Chi-square (x^2) analysis of respondents in relation to migration status

Variable	Computed (x^2)	df	Tabulated (x^2)α=0.05	Decision at α <.05
Age	5.693	6	12.59	Association
Terminated pregnancy	6.54	1	3.84	No Association
Used contraceptives	0.1649	1	3.84	Association
Age at first intercourse	13.2766	2	5.99	No association
Age at first birth	3.933	4	9.49	Association
Age at first marriage	1.894	3	7.82	Association

Source:1998 DHS

From the table above Age, ever used contraceptives, age at first birth and age at first marriage are statistically significant suggesting that there were associations between the above significant variables and fertility particularly ever used contraceptives and age at first marriage that were highly significant. For instance from the previous chapter in table 3.1a in relation to age, there were more migrants in the higher age groups (25+) than the non-migrants at the destination area. Also, there more migrants that had used contraceptives than the non-migrants as seen from table 3.2 b also in the previous chapter.

4.2 MEANS of migrants and non-migrants (Census)

From previous analysis, indications are that migrants and non-migrants may be different in their socio-economic and demographic characteristics. To further establish this we

examine the means of migrants and non-migrants in relation to their socio-economic and demographic variables. From table 4.2 below, it can be seen that migrants and non-migrants do differ in their socio economic characteristics particularly with education were on average a migrant had secondary education and with education directly linked with income and the kind of employment, its expected that migrants on average would earn higher incomes than non-migrants as is clearly indicated from the table below. The average age of the non-migrant was 22 years compared to the migrant at 31 years which is inconsonance with theory since those that move are young at age seeking better employment at the destination area.

Table 4.2 means of non-migrants and migrants. (Census)

Socio-economic characteristics	Non-migrants	Migrants
Educational level	Primary	Secondary
Income	61	871
Age	22	31
Employment status	Scholar	Homemaker

In line with the above analysis, migrants and non-migrants do differ in their demographic characteristics. To further investigate this we look at the means of migrant and non-migrant demographic characteristics. From table 4.3 below, the average migrant was 31 years old, which is 2 more years older than the non-migrants (29years). Regardless of the migration status, the average age was higher which indicates that generally the population is older which may suggest a declining fertility. Migrant's age at first intercourse was slightly higher than the non-migrant's average by 2 years and the average income slightly differed between the two populations by 220Rands. Educational level, age at first birth and age at first marriage were similar between the migrant and non-migrant females.

Table 4.3 means of non-migrants and migrants. (DHS)

Demographic characteristics	Non-migrants	Migrants
Age	29	31
Educational level	Incomplete Secondary	Incomplete Secondary
Age at first birth	20	20
Age at first marriage	22	22
Earnings	4500	4288
Age at first intercourse	15	17

4.3 **ANOVA** for migrant and non-migrants

The above MEAN results have clearly shown that there are some differences between migrants and non-migrants in relation to socio economic characteristics. However, it is imperative that further analysis of the above differences is done to thoroughly support these results. Accordingly we determine any differences in the socio economic variables between the two population groups using Analysis of variance. (Migrants and non-migrants)

Table 4.4 ANOVA for migrants and non-migrants_CENSUS(1996)

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
highest education level	Between Groups	13726045	25	549041.809	621.807	.000
	Within Groups	2.69E+08	304358	882.977		
	Total	2.82E+08	304383			
individual income	Between Groups	43574201	25	1742968.027	2765.612	.000
	Within Groups	1.92E+08	304358	630.229		
	Total	2.35E+08	304383			
age	Between Groups	36248680	25	1449947.180	179.730	.000
	Within Groups	2.46E+09	304358	8067.373		
	Total	2.49E+09	304383			
population group	Between Groups	1946.920	25	77.877	88.311	.000
	Within Groups	268396.6	304358	.882		
	Total	270343.5	304383			
marital status	Between Groups	282500.4	25	11300.015	8531.819	.000
	Within Groups	403108.6	304358	1.324		
	Total	685609.0	304383			
employment status	Between Groups	1.29E+08	25	5166785.629	3284.238	.000
	Within Groups	4.79E+08	304358	1573.207		
	Total	6.08E+08	304383			
age of mother at first birth	Between Groups	2.53E+08	25	10112290.80	81331.611	.000
	Within Groups	37842071	304358	124.334		
	Total	2.91E+08	304383			
religion	Between Groups	32328377	25	1293135.087	2752.681	.000
	Within Groups	1.43E+08	304358	469.773		
	Total	1.75E+08	304383			

From the above table, all the independent variables are statistically significant, suggesting therefore that there is a difference of means between the two populations (migrant and non-migrant females) in relation to number of children ever born or parity (dependent factor). Table 4.2, which indicates the means of migrants and non-migrants, clearly indicates that there are differences in age, income, Education and Employment status. Table 3.1 b in the previous chapter further illustrated the differences between migrants

and non-migrants in relation to the above independent variables, where in terms of education for example there were more migrants with tertiary education than non-migrants.

The ANOVA table below shows some of the variables from the Demographic health survey (1998). All the independent variables except for age at first marriage are statistically significant at 5% level suggesting that there is a difference of means between the migrant and non-migrant populations in relation to Number of children ever born. This is particularly evident in the 5-year age group, yearly earnings and age at first intercourse.

Table 4.5 ANOVA for migrants and non-migrants DHS(1998)

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
age 5-year groups	Between Groups	1747.324	10	174.732	114.279	.000
	Within Groups	1371.511	897	1.529		
	Total	3118.835	907			
ethnicity	Between Groups	5.601	10	.560	2.204	.016
	Within Groups	226.672	892	.254		
	Total	232.272	902			
educational attainment	Between Groups	216.606	10	21.661	13.470	.000
	Within Groups	1442.482	897	1.608		
	Total	1659.088	907			
age of respondent at 1st birth	Between Groups	343.554	9	38.173	3.020	.002
	Within Groups	8078.023	639	12.642		
	Total	8421.577	648			
ever had a terminated preg.	Between Groups	2.809	10	.281	4.403	.000
	Within Groups	57.224	897	.064		
	Total	60.033	907			
ever use of any method	Between Groups	263.666	10	26.367	21.623	.000
	Within Groups	1093.779	897	1.219		
	Total	1357.444	907			
age at first marriage	Between Groups	247.463	10	24.746	.829	.601
	Within Groups	12211.295	409	29.856		
	Total	12458.758	419			
age at first intercourse	Between Groups	17060.578	10	1706.058	21.723	.000
	Within Groups	69427.287	884	78.538		
	Total	86487.865	894			
worked in last 12 months	Between Groups	68.259	10	6.826	9.573	.000
	Within Groups	639.572	897	.713		
	Total	707.831	907			
yearly earnings for work	Between Groups	1.92E+13	9	2.128E+12	2.021	.037
	Within Groups	2.82E+14	268	1.053E+12		
	Total	3.01E+14	277			

This is in support with the means from table 4.3 that clearly indicate differences in age, yearly earnings and age at first intercourse between migrants and non-migrants. However, age at first marriage from the ANOVA table (4.5) was insignificant suggesting no differences between migrants and non-migrants which was supported by the mean results from table 4.3 where the age at first marriage was 22years for both migrants and non-migrants

In comparing the DHS and Census ANOVA results, Age and income were statistically significant for migrants and non-migrants suggesting that differences between the two populations still existed. However the differences from the 1996 census were not the same differences for the 1998 DHS. This is clearly seen in relation to income were from the means the average income for the non-migrants was slightly more than the migrants compared to 1996 census were migrants earned far more incomes than the non-migrants.

4.4 **Correlation matrix** for non-migrant and migrant females (Census 1996)

Non-migrant correlation matrix results

From the correlation regression table 4.6 of the non-migrants, the dependent variable was positively correlated to education (x_1) income (x_2) population group (x_4) employment status (x_6) age of the mother at first birth (x_7) and religion (x_8). It was negatively correlated to age (x_3) and marital status (x_5). The correlation between education and age is expected to be positive in the sense that the higher the age the higher the education. However, contrary to expectations, the correlation matrix results show that the relationship is negative suggesting that younger people are more educated than the older people. This might be attributed to the old apartheid policies were skin color determined whether you proceed further in education or not. Also from the results the correlation between education and age is negative as is expected since single people have no family commitments and are able to concentrate on pursuing their education further.

Migrant correlation matrix results

Looking at the correlation regression table 4.7 of migrants, the dependent variable was positively correlated to income (x_2) Educational level (x_1), employment status (x_6) age at

first birth of mother (x_7) and religion (x_8). While the dependant variable was inversely correlated to Age (x_3), Population group (x_4) and Marital status (x_5). All the independent variables from the non-migrant and migrant correlation coefficients were statistically significant at 1% level except for Population group (x_4) in the migrant correlation coefficient that was insignificant. Contrary to expectations the age is inversely correlated to parity, which may suggest that younger females gave birth to children more than the older females. Also inconsonance with the above age and education are inversely correlated suggesting that young females are more educated than the older females as a result of the opportunities accorded to them compared to the older females. In comparing the migrant and non-migrant correlation results, population group in the migrant correlation coefficient was inversely correlated to the dependant variable and was insignificant while in the non-migrant results population group was highly significant at 1% and just like the migrant results was inversely correlated. All the other independent variables were highly significant at 1% in both correlation coefficient results. Education and age in the migrant coefficients are positively correlated as is expected since the higher the age the higher the educational level. Also, marital status and education are inversely correlated in both the migrant and non-migrant correlation results, as is expected.

Y = Number of children ever born.

X_1= educational level

X_2 = income level

X_3 = age

X_4= population group

X_5 = marital status

X_6 = Employment status

X_7 = Age of mother at first birth

X_8 = Religion

Table 4.6-correlation matrix for non-migrants (Census)

variables	Y1	X1	X2	X3	X4	X5	X6	X7	X8
Parity (Y_1)	1								
Educational level (x_1)	0.235**	1							
Income level (x_2)	0.037**	0.055**	1						
Age (X_3)	-0.088**	-0.079**	0.033**	1					
Population group (x_4)	0.011**	0.049**	0.081**	0.032**	1				
Marital status (x_5)	-0.242**	-0.148**	0.018**	0.149**	0.067**	1			
Employment (x_6)	0.437**	0.401**	0.020**	-0.218**	0.000	-0.360	1		
Age at first birth (x_7)	0.713**	0.178**	0.030**	-0.062**	0.008**	-0.300	0.410	1	
Religion (x_8)	0.015**	0.011**	0.012**	0.013**	0.003	0.019**	0.010**	0.015**	1

** Correlation is significant at 0.01level (2 tailed)

* Correlation is significant at 0.05 level (2 taiied)

variables	Y_1	X_1	X2	X3	X4	X5	X6	X7	X8
Parity (Y_1)	1								
Educational level (x_1)	0.115**	1							
Income level (x_2)	0.132**	0.080**	1						
Age (x_3)	-0.029**	0.020**	0.056**	1					
Population group (x_4)	-0.005	0.114**	0.069**	0.021**	1				
Marital status (x_5)	-0.021**	-0.020**	0.425**	0.134**	0.045**	1			
Employment (x_6)	0.340**	0.237**	0.278**	-0.094**	0.009**	0.062**	1		
Age at first birth (x_7)	0.762**	0.097**	0.107**	-0.007*	0.004	-0.091**	0.336**	1	
Religion (x_8)	0.128**	0.027**	0.371**	0.050**	-0.079**	0.417**	0.242**	0.108**	1

** Correlation is significant at 0.01 level (2tailed)

* Correlation is significant at 0.05 level (2 tailed)

Table 4.7 correlation coefficient of migrants (Census)

4.4 b Correlation matrix for migrant and non-migrants (DHS1998)

Correlation matrix results for migrants

Table 4.8 presents the migrants correlation coefficients. The dependent variable, total children ever born is positively correlated to age, ethnicity, ever terminated pregnancy, ever used contraceptives, age at first intercourse, and worked in past year. While it was inversely correlated to education, age at first marriage and income level. The independent variables; age, contraceptive use and age at first intercourse were statistically significant at 1% level while education was statistically significant at 5 % level. Contrary to expectation, age and educational level are inversely correlated according to the results suggesting that young migrants are more educated than their older counterpart that is expected since migrants are usually younger and move to areas with better job opportunities and also to further their education, though this relationship was insignificant. Consistent with expectations, from the results age and contraceptive use is positive since migrants that are on the move would want to control their fertility, which was also significant.

Correlation matrix results for Non-migrants

Table 4.9 presents the non-migrant correlation coefficients. The dependent variable, total children ever born are positively correlated to age, ever terminated pregnancy, ever use of contraceptives, age at first intercourse, worked in last year and income. It was inversely correlated to ethnicity, education, and age at first birth and age at fist marriage. The independent variables age, education, age at first birth, ever terminated pregnancy, contraceptive use, and age at first intercourse and worked in last year were all statistically significant at 1 % level. The correlation between age and education was negative and significant suggesting that young non-migrants were more educated than older non-migrants. Also education and contraceptive use was positive and significant suggesting that with education comes the knowledge and use about contraceptive use, which is in line with expectations.

In comparing the migrant and non-migrant correlation matrix results age, contraceptive use, age at first intercourse were statistically significant at 1 % level while education was statistically significant at 1% and 5 % levels respectively. In both results, the independent variables age, ever terminated pregnancy, used contraceptives, age at first intercourse and worked in last 12 months were positively correlated to the dependant variable while age at first marriage, age at first birth and education were inversely correlated to the dependant variable.

LIBRARY

Table 4.8 Correlation matrixes for migrants.(DHS)

Variables	Y1	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10
Parity (Y1)	1										
Age (x_1)	0.730**	1									
Ethnicity (x_2)	0.111	0.245**	1								
Educational level (x_3)	-0.244*	-0.124	0.348**	1							
Age at first birth (x_4)	-0.219	0.2134	0.273*	0.398**	1						
Terminated pregnancy (x_5)	0.133	0.260**	0.246*	0.0133	0.1109	1					
Used contraceptive (x_6)	0.314**	0.280**	-0.068	-0.0713	-0.1109	0.1552	1				
Age at first marriage (x_7)	-0.074	0.119	-0.0110	0.334**	0.25910	0.0014	0.1143	1			
Age at first intercourse (x_8)	0.324**	0.360**	0.0366	-0.1432	-0.0814	0.0401	0.216*	0.1604	1		
Worked in past yr (x_9)	0.159	0.430**	0.0554	0.1182	0.1519	0.0410	0.0927	0.1093	0.0878	1	
Income level (x_{10})	-0.023	0.340*	0.0651	0.3033	0.2895	-0.0592	0.0832	0.1782	0.2238	0.2500	1

** Correlation is significant at 0.01 level (2 tailed)

* Correlation is significant at 0.05 level (2 tailed)

Table 4.9 Correlation matrixes for non-migrants (DHS)

Variables	Y1	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10
Y1	1										
Age (x1)	0.710**	1									
Ethnicity (x2)	-0.0023	0.0831*	1								
Education (x3)	-0.334**	-0.197**	0.228**	1							
Age at first birth (x4)	-0.205**	0.148**	0.212**	0.197**	1						
Terminate pregnancy (x5)	0.161**	0.231**	0.185**	-0.003	0.0589	1					
Used contraceptives (x6)	0.260**	0.245**	-0.049	0.152**	0.0109	0.0190	1				
Age at first marriage (x7)	-0.0263	0.150**	-0.058	0.0520	0.333**	-0.0130	-0.0820	1			
Age first intercourse (x8)	0.360**	0.437**	0.089*	-0.0240	0.0464	0.103**	0.372**	-0.072	1		
Worked in past yr (x9)	0.203**	0.391**	0.162**	0.0590	0.118**	0.1612**	0.166**	0.087	0.133**	1	
Income level (x10)	0.0720	0.0650	-0.046	-0.0086	0.0650	0.0590	0.0457	-0.032	-0.006	0.056	1

**Correlation is significant at 0.01 level (2 tailed)

*Correlation is significant at 0.05 level (2 tailed)

In comparing the Correlation results for the 1996 census and 1998 DHS, regardless of the migration status of females, Age and Education were statistically significant. However, age was inversely correlated in the census results suggesting that older people were either migrants or non-migrants. In the same case Education from the 1996 census was positively correlated suggesting that either migrants or non-migrants had lower or no education. In relation to income and employment, they were statistically significant at 1% according to the 1996 census correlation results, but insignificant in the DHS 1998 results.

4.5 **Multiple regressions** for non-migrant and migrant females.(Census)

Since the dependent variable, which is number of children ever born is continuous; multiple regression models appear to be appropriate.

In this case the multiple regression model is expressed as

$$Y_i = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \beta_3 x_{3i} + \ldots + \beta_n x_{ni} + E$$

Where β_0 = Y intercept

β_1 = slope of y with variable x_1 holding variables $x_1, x_2, \ldots . x_p$ constant.

β_2= slope of y with variable x_2 holding variables $x_1, x_2, \ldots ., x_p$ constant.

E is the random error in y for observation i

From table 4.10 of the Census regression results for migrants and non-migrants below, 54.9% and 59.3% of the variations were explained by the independent variables in relation to the dependent variable, which are children ever born. We examine the relationship between the independent variables and the dependent variable from the standard beta coefficients. Theory has it that education; income and employment have An inverse relationship in relation to fertility while it's expected that age, age at first birth and marital status do have positive relationships with fertility. From the census multiple regression results, Education, income and employment (particularly for migrants) have a positive relationship to fertility. In the case of education, it could be possible that both older migrants and non-migrants might have had no or just primary education compared to the younger migrants and non-migrants. Its Secondary and tertiary education were the effects on fertility are felt because of the longer time spent in higher education, which lessens the chances of bearing more children thus less fertility. In this case older migrants

and non-migrants were 35 years and older. With income, the relationship with fertility from the regression results is positive mainly as a result of the fact that most migrants and non-migrants earned little or no income. Employment in the case of non-migrants for example, could be explained from the fact that they earned low paying jobs, which partly explains the positive relationship between income and fertility. The low incomes are as a result of low levels of education. Marital status in the migrant coefficient regression results was negative instead of positive because most migrants were not yet married. Examing the level of significance among the different variables in relation to migrants and non-migrants, Race, marital status and religion were insignificant according to the non-migrant results compared to the migrants. Migration usually takes place among the young people, who in most cases are single which may partly explain the significance of marital status. Looking at religion, it is possible to suggest that migrants may be affiliated to a religion that encourages family planning or birth control, which may partly explain the results being significant compared to the non-migrants at the destination area. Its worth pointing out that other factors like education may have a more significant role in influencing fertility in the non-migrant results which may also explain why the above variables were insignificant.

Table 4.10 multiple regressions for non-migrants and migrants for CENSUS

	Non-migrants			Migrants		
Model	Standardized Beta	T	Sig	Standardized Beta	T	Sig
Education	0.114	47.880	.000	.500	145.319	.000
Income level	0.039	18.024	.000	.290	86.267	.000
Age	-0.005	-2.437	.015	.061	20.814	.000
Race	-0.001	-0.494	.622	.064	22.514	.000
Marital status	0.003	1.137	.256	-.035	-12.518	.000
Employment	0.501	166.396	.000	-.027	-9.864	.000
Age at first birth	0.288	101.468	.000	.019	6.441	.000
Religion	0.000	0.021	.983	.017	5.667	.000
	$R^2 = 0.549$			$R^2 = 0.593$		

We examine the multiple regression for non-migrants and migrants using the South African Demographic health survey data set.

From the Demographic health survey regression results for migrants and non-migrants below, 64% and 49% of the variations were explained by the independent variables in relation to the dependent variable. According to theory, education, contraceptive use, income and termination of pregnancy are negatively related to fertility. Thus the reason for the positive relationship between education and fertility in the migrant beta coefficient might be due to the fact that older migrant women were less educated than the young migrant women. In this case, older migrant women were considered to be 35 years and older. With regard to contraceptive use, its relationship with fertility from the regression results is positive for both migrants and non-migrants, which may be due to the fact that most female migrants and non-migrants might be using contraceptives infrequently or they might be using unreliable methods, which could lead to a higher fertility rate. In relation to termination of pregnancy, its relationship to fertility for both migrant and non-migrant females in the regression beta coefficients was positive which could be explained by the fact that more older women (35years and above) might be terminating unwanted births compared to younger women. Also, as women grow older child bearing becomes more difficult resulting into termination of pregnancy. Age, age at first birth, age at first intercourse and age at first marriage have positive relationships with fertility. Among migrant and non-migrant women age at first birth from the beta coefficient results were negative which could be explained from the fact that migrant and non-migrant females may have had their first birth at older ages than younger ages. Also age at first marriage for the migrant females was negative which might be as a result of migrant females marrying at later ages compared to non-migrant females. We examine some of the differences in the level of significance between migrant and non-migrant variables. Education, which is usually positively correlated to income/occupation, was insignificant according to the migrant results. This may be due to the fact that migrant women may have relied on contraceptives, which might have been easily accessible regardless of place of residence. The use of contraceptives may not have been widespread among non-migrant women compared to their migrant counterparts. Age at first intercourse was statistically significant according to the migrant results in table 4.11 which could be

explained from the fact that most migrants may have been influenced by their cultural background were sexual unions was only permitted in marriage.

Table 4.11 multiple regression for migrant and non-migrant respondents.(DHS)

	Migrants			Non-migrants		
Model	B	T	Sig	B	T	Sig
Age	0.704	3.307	0.003*	0.397	5.986	.000*
Ethnicity	-0.106	-0.470	0.643	0.061	0.804	0.423
Education	0.034	0.146	0.885	-0.393	-5.175	0.000*
Age at first birth	-0.332	-1.734	0.098*	-0.273	-3.594	0.000*
Terminated pregnancy	0.188	-1.093	0.287	0.046	0.694	0.489
Used contraceptives	0.332	2.225	0.037*	0.105	1.611	0.110
Age at first marriage	-0.031	-0.192	0.858	0.036	0.497	0.620
Age at first intercourse	0.347	1.792	0.088*	0.044	0.701	0.484
Worked in past yr	-0.032	-0.176	0.862	-0.114	-1.742	0.084*
Income level	-0.228	-1.332	0.197	0.073	-1.003	0.259

$R^2 = 0.647$ for migrants $R^2 = 0.494$ for non-migrants

In comparing the 1996 census and 1998 DHS regression results, education coefficients for the non-migrants in relation to fertility are positive and negative respectively suggesting that with the DHS regression results non-migrant women were more educated than non-migrant women in the 1996 Census. Education has a dampening effect on fertility that means that Non-migrant women from the DHS Data could have a lower fertility than non-migrant women from the 1996 census in the long run. However, Education coefficients for migrants were positive for both 1996 census and 1998 DHS results. Income and Education are positively related and since the income coefficient was negative from the DHS 1998 results, this may indicate that migrants did have a higher level of education in 1998 compared to 1996. Age was positive between the two periods for migrants, which is expected since with the increase in age the chances of migrating increase.

Table 4.12 Migrant and non-migrant beta coefficients (Census and DHS)

	Non-migrants		Migrants	
	1996	1998	1996	1998
Education	0.114	-0.393	0.500	0.034
Income	0.039	0.073	0.290	-0.228
Age	-0.005	0.397	0.061	0.704
Ethnicity	-0.001	0.061	0.064	-0.106

CHAPTER V

DISCUSSION CONCLUSION AND RECOMMENDATION

5.1 Discussion

Using the 1996 census data and the 1998 Demographic Health Survey, it has been shown that most migrants are young which is in accordance with theory where migrants are usually young in the Northwest province. Education tends to have a positive effect on migration in the sense that educated people tend to move to areas were there are better paying jobs. According to the census most of these migrants were employed in the legislature, professional, service, crafts and plant and machinery sectors. This gives an indication about their level of education, which from table 3.3 of the census and DHS analysis was relatively high. In relation to age, a significant number of migrants were also in the slightly older ages in both the census and DHS suggesting that they were either looking for better employment or staying with their working children.

Overall fertility in South Africa is generally low compared to other African nations, but there are variations with in the nine provinces ranging from total fertility rate of 3.9 in the North province (limpopo) to a total fertility rate of 2.2 in the free state according to the South Africa demographic and health survey 1998. In regards to the northwest province, the results indicate that the total fertility rates for both the non-migrants and migrants fell from 2.2 for migrants and 1.9 for non-migrants according to the 1996 census to 1.9 for migrants and 1.8 for non-migrants according to the 1998 DHS results.

The results of statistical analysis (multiple regressions from the census analysis) show that the independent variables namely education, income, age, employment status and age at first birth were significant for both migrants and non-migrants. The other independent variables like race marital status and religion were significant for the migrants. The aspect of religion being significant may be attributed to cultural values at the source areas since religion and culture are linked. However different forms of religion may affect

fertility either negatively or positively. For example Catholicism is against the use of modern contraception. Other results (correlation matrix) also show that all the socio-economic and demographic variables were statistically significant for both migrants and non-migrants with the exception of race in the migrant results.

The Demographic and health survey findings initially concentrated on the intermediate variables affecting fertility of migrants and non - migrants. These intermediate variables include age at first birth, age at first marriage, ever terminated pregnancy, ever used contraceptives and age at first intercourse. The chi- square results indicated age, ever used contraceptives, age at first birth, age at first marriage were significant particularly with ever used contraceptives and age at first marriage that were highly significant, while age at first intercourse and ever-terminated pregnancy were insignificant. In relation to other results (multiple regressions using DHS analysis) age, contraceptive use and age at first birth also tended to be significant in relation to the socio economic variables like income, education and occupational status. Age was also highly significant for both migrant and non-migrant results with education only highly significant among non-migrants. This does suggest that intermediate variables like contraceptive use alone can influence fertility decline of both groups of populations. Socio – economic variables like education may help in further influencing fertility decline particularly at the destination areas.

In looking at the differences between the migrant and non-migrant groups between the 1996 census and the 1998 DHS survey, it is clear that there are variations that are indicated in tables 4.2 and 4.3. Age and income for example have risen substantially between the 1996 census and 1998 DHS survey results. For example age on average for the non-migrants rose by eight years, while income for the two population groups also by over 100%. This has implications for future fertility decline since the rise in age and incomes suggests more of an older population than a younger population.

5.2 Conclusion

The main theme of this study was to find out the fertility differentials between migrants and non-migrants based on assumptions that there was an association between Education, age, contraceptive use, and termination of pregnancy and marital status and migration status of the respondents

The results show that there is an association between level of education and the migration status of the respondent with more migrants having a higher educational level than non-migrants in both census and DHS results. Education and income are positively correlated and the results have also shown that more migrants had a higher income level than non-migrants because of their level of education.

In line with expectations, there is an association between the age of the respondent and the migration status. Most migrants are young at age in such of better opportunities at the destination area. The larger than expected migrants below the age of 15 years as seen in the census and DHS results are as a result of children moving with migrant parents.

Accordingly, results shows that fertility of migrants and non-migrants slightly declined from 1.9 for non-migrants and 2.2 for migrants in 1996 to 1.8 for non-migrants and 1.9 for migrants in 1998.

This study has also indicated that most migrants use contraceptives than non-migrants as shown from the demographic characteristics of migrants and non-migrants. According to the chi-square there is an association between contraceptive use and migration status. This suggests that an increase in contraceptive use by migrants would lower their fertility further than the non-migrants.

However, ever-terminated pregnancy was insignificant according to the chi-square analysis suggesting no association between migration status of respondent and ever terminated pregnancy. The above association also tended to be insignificant with the inclusion of socio –economic variables as shown on table 4.11 under the DHS analysis.

According to the1996 census and 1998 Demographic health survey, major findings have shown that there are differences in means between migrants and non-migrants specifically in age, education, income and race. While the DHS results indicate that additional differences are found at age at first intercourse, use of contraceptives, occupational status and termination of pregnancy.

From the literature, migrant fertility behavior is influenced by different socio-economic conditions at the source areas that may impact negatively or positively at the destination areas. For instance migrants from areas with relatively low socio-economic progress tended to have a higher fertility than non-migrants from areas that are well developed socially and economically. This has helped to explain the different fertility levels between migrants and non-migrants. Contextual factors such as the availability of work at the destination area, the absence of extended kin-network and greater access to family planning services may all influence fertility behavior. In line with expectations, this study has shown that non-migrant fertility tended to be lower than the migrant fertility in both the Census and DHS datasets. In general the results indicate a further decline in fertility between the two periods that is 1996 and 1998 that may further be attributed to improved socio-economic conditions. It is imperative to point out that the South African situation is unique in the sense that compared to other Sub Saharan nations the general fertility outlook has been low regardless of population group.

5.3 Recommendations

In reviewing the literature and the findings migrants are usually young and move for economic reasons. The reasons for their movement is inherit in the social economic imbalance between the destination areas and the source areas. The northwest province is predominantly rural (60%) with few urban areas left to sock up all the pressure from migrants. It is thus imperative that the government puts more emphasis on social economic development particularly from the source areas.

It is worth pointing out that the results have indicated a low fertility rate in both non-migrants and migrants suggesting that family planning is easily accessible, however if population fertility is to go lower its necessary that the overall level of development is uniform throughout the province.

The relationship between Ethnicity and fertility should also be investigated further especially in relation to each population group. The census multiple regression results (table 5.6) revealed that there is an association between population group and fertility in relation to migration status, yet much of the population is mainly black/ African. It would be more appropriate to have an equal proportion of each population group to further investigate this relationship to get clear results because one cannot conclude that the relationship between fertility and population group in relation to migration status is positive or negative because of the biased population ratio.

The aspect of migration in South Africa has been and is still very important especially to government and the private sector for socio – economic development. In this regard questions to determine the nature of a respondent that is whether he/she is a migrant or not should be clearly stated so that socio-economic and demographic characteristics of migrants can obtained and more research done. The researcher of this study found it difficult to determine the appropriate question(s) to determine who was a migrant or not especially from the census because the question(s) were not properly structured. A question on place of birth should be included in the questionnaires.

Also studies of this nature should done in other provinces since they are not the same in terms of their levels of socio – economic development for example the Eastern Cape is the poorest province of the nine provinces and thus it would be expected that such a province would have a high rate of out migration. While gauteng the richest province would have a high rate of in-migration. This would therefore require different solutions based on the migrant and non-migrant fertility results.

It has been shown that education plays a significant role in influencing fertility, either directly or indirectly to impact on fertility. For example the knowledge of Contraceptive use through Education may help to further reduce fertility. Its imperative that Local governments and private institution use education to regulate fertility because with education there is better paying jobs, higher incomes, delayed pregnancy that is all as a result of education.

BIBLIOGRAPHY

Agyei, W.A.(1988): fertility and Family planning in the third world". A case study of Papua New Guinea. Croom helm, London.

Bankole, A (1995): " Desired Fertility and Fertility behavior among the Yoruba of Nigeria". A study of couple preferences and subsequent fertility. Great Britain (49) pp 317-328

Brockerhoff M. (1994) " Impact of Rural-urban migration on child Survival. http://nceph.anu.edu.au/htc/pdfs/brocker1.pdf

Brockerhoff, M. (1995) " Fertility and family planning in African cities". The impact of female Migration. Population council, New York Volume 27 pp347-358.

Campbell, E. K. (1989): "A Note on the Fertility Migration inter-relationship". The case of men in Western Area, Sierra Leone. Demography India, Volume 18 pp 103-114.

Campbell E. K. and Campbell P. (1997): " Family size and sex preferences and eventual fertility in Botswana". Cambridge University Press, Journal of biosocial science (29) 191-204.

Cohen B. (1993): "Demographic change in sub-Saharan Africa". Fertility differentials and trends. National Research council, national academic Press Washington D.C.

Davids C. (1990): " Fertility Behaviour of Migrants to those of stayers in Botswana".

Unpublished Bachelor of Arts Dissertation. University of Botswana, Gaborone.

Gardner, R and R. Blackburn (1996): " People who move". New Reproductive health Focus. Population Reports, series J, Number 45, John Hopkins School of Public Health, Baltimore.

Jones E. F. (1984): "The availability of contraceptive services". World Fertility survey number 37. International statistical Institute, Voobing Nether lands.

Kanter J.F. and M. Lee. (1975), Population and development in South East Asia. Lexington books, Lexington.

Smith E. M. (1981), Demographic and social characteristics of Urban Migrants: The case of Gaborone, Botswana.

Suarez M. (1994), Fertility of migrant and Non-migrant women in Cuba. United Nations Population Fund, The Hague.

Vanderpost C. (1992) "Fertility in three contrasting Villages in Botswana". National Institute of Development and cultural Research, documentation unit, University College of Botswana and Swaziland, Gaborone.

Weeks J R. (1994) Population: an introduction to concepts and issues. Fifth edition wads worth Publishing Company, Belmont California

South African Demographic and health survey full report. (1998) Department of health Republic of South Africa.

United nations. 1987, Fertility behaviour in the context of development: Evidence from the World fertility survey.

United Nations. 1993, The Internal Migration of Women in Developing Countries. New York. Zambia Demographic and health survey: Demographic and health surveys, 1992.

INTERNET

Abbasi-shavazi J. M. (1991) " People and place." The fertility of immigrant women in Australia.

http://www. Electpress.monash.edu.au/pnp/pnpv6n3/jalal.html

Bollini P. and H. Siem (1995) " No real progress towards equity. " Health of migrants and ethnic minorities on the eve of the year 2000.

http: // www.southalabama.edu/nursing/field/REFERENCES.PDF.

Dinkel R. H. and U.H. Lebok (1997) "The fertility of migrants before and after crossing the border." The ethnic German population from the former Soviet Union as a case study (p 253-270).

http://www.cicred.ined.fr/rdr/rdr_a/revues/revue86/51

Diler S. R. A. Avci and G Seydaoglu (2003) " Emotional and behavioural problems in-migrant Children."

http://www.smw.ch/pdf200x/2003/01/smw-09943.PDF

Elliot R. ( ) " Frontier settlement and child survival in the Brazilian Amazon. Chateauquay Road, Barnard.

http://www.cicred.ined.fr/rdr/rdr_a/revues/revue87/91.87_a.html.

Hampshire K. and Randall S. (2000) " Pasturalists, agro-pasturalists and migrants." Interactions between fertility and mobility in Northern Burkina-Fusso. Population studies, vol 54, number 3.

http://www.cicred.ined.fr/rdr/rdr-uni/revue103/58-103.html.

Kedraliah idris (1993) Migrant and non-migrant fertility differentials: The case of Addis-Ababa. Population research

http://www.un.org/popin/regional/africa/ethiopia/research/number 3

Kok P M O Donovan O Bouare and J van Zyl (2003) Post Apartheid Patterns of Internal Migration In South Africa.

http://www.hsrcpublishers.co.za/index.html?internal_migration.html~content

Lovell P A. (1996) " Fertility of immigrant women in California." Department of Sociology, University of Pitts burg. Volume 17, number 5 (p391-407)

http://www.cicred.ined.fr/rdr/rdr_a/revues/revue 87/91-87_a.html

Lure M B Williams and A W Storm (2000) " HIV discordance among migrant and non-migrant Couples in South Africa." Centre for scientific and Industrial Research. Johannesburg, Durban.

http://www.safaids.org.zw/n/30abstn.html.

Lucas D. (1980) " beginning Population studies". Development studies centre, Australian national University Canberra. 236pp

http://demography.anu.edu.au/publications/demog-publications-refs/demog-publs-69-93.txt

Maxim P S. (1996) " Estimating fertility differentials between immigrant and non-immigrant women in Canada."
http://publish.uwo.ca/~maxim?fert-cps.pdf.

Maro W E ( ) Migration and Labour market History.
http://tcpiii.tripod.com/migrate.pdf.

McKay L S Macintyre and A Ella way (2003) " Migration and health: a review of the international literature."
http://www.msoc-mrc.gla.ac.uk/reports/PDFS/Occasional-papers/OP012.pdf

Nogle J M (1996) 'immigrants on the move." How internal migration increases the concentration of the foreign born.
http://www.cis.org/articles/1996/back196.html

Orrenius P. (1999) "Role of income shocks and family networks in migration and migrant self – selection." The case of return migrants from Mexico: 1965-1994. University of California, Federal reserve Bank of Dallas.
http://www.itam.mx/lames/papers/contrses/orrenius.doc

Pathak R S. (2000) "Population and development in Nepal." Ready accessibility to contraceptives. Volume Vii.

http://www.cdps.edu.np/documents/abstracts-P&D-Vol7.htm

Randall S. and T. Grand (2000)" Is child mortality important?" Reproductive Decisions, strategies and outcomes in Senegal.

http://www.crde.umontreal.ca/cashiers/17.2000-cah.pdf.

Rofriquez S ( ) Does international migration benefit non – migrant households? Evidence from the Philippines. National Statistics Office.

http://www.brocku.ca/epi/casid/rodriquez.htm

Salas M. (1986) "Population and Urbanisation." United nations

http://www.unescap.org/pop/journal/1996/

Stephenson R. (1999) " Migration and Mortality in India." A Literature review.

http://www.users.globalnet.co.uk/~rossm/issue2/rob/migration.htm-71k.

Taylor J E. and P L. Martin (1999) " Human capital." Migration and Population Change.

http://www.reap.ucdavis.edu/working-papers/human.pdf.

Umezaki M. and R. Ohtsuka (1998) "Impact of rural-urban migration on fertility." A Population ecology analysis in the Kombio, Papua New Guinea.

http://www.cicred.inedfr/rdr/rdr_a/revues/revue95-98/55-95-98_a.html.

Wahba S (1996) Temporary Labour Migration in Egyptian agricultural Households: Implications for gender differences in school enrolment. Vol 3 No 4 http://www.erf.org.eg/nletter/dec96-05.asp.

White M J. Y K. Djamba and D. Nguyen Anh (2000) "Implications of Economic reform and spatial mobility on fertility in Vietnam." http://www.pstc.brown.edu/papers/wp-2000/2000-01.pdf

Zhu N (1991) " Impact of income gap on migration decision in china." A verification of the Todaro model. http://www.cerdi.org/colloque/IDREC/l/Zhunong.pdf.

Bophuthatswa: The Colombia encyclopaedia 6th edition 2001 http://www.bartleby.com/65/bo/bophutha.html.

Dynamics of Internal Migration in Vietnam: UNDP Hanoi, December 1998. http://www.undp.org.vn/undp/docs/1998/migration/

Family planning International assistance: Planned Parenthood. Federation of America. http://www.planedparenthood.org/fpia/thailand.html.

Expert group meeting on completing the fertility transition: Population division. Department of economic and social affairs. United Nations Secretariat, New York 2002. http://www.un.org/esa/population/publications/completing fertility/ LIM paper. PDF.

Human Capital: Migration and rural population change. http://www.reap.ucdavis.edu/working-papers/human.pdf.

Nutrition Assistance program report series; participant and program characteristics 1998 http://www.abtassoc.com/reports/ES-20006343640181.pdf

People on the Move: New Reproductive health focus. Population Reports. Population information program, center for communication programmes John Hopkins School of Public health. http://www.jhuccp.org/pr/j45edsum.stm

Population, distribution and migration. United nations Population information network. (1993). http://www.un.org/popin/icpd/recommendations/expert/10-html

Push and pull factors of international migration. NIDI- Push and pull team march 2001 http://www.nidi.nl/pushpull/stud/indexstud.htm/

Statistical release P0317 October household survey (1999). http://www.statssa.gov.za/default3.asp

South African Demographic health survey 1998 – Sexual Reproductive and woman's health.

http://www.doh.gov.za/facts1998/women.html.

The world fact book 2002.

http://www.cia.gov/cia/publications/factbook/geos/sf.html#people.

United Nations estimates and projections (1995)

http://www.iipsindia.org/as.pdf