Contract No. AID/OTR-5412-C-00-1205-00 July 1986

THE INFLUENCE OF RURAL-URBAN MIGRATION ON THE FERTILITY OF MIGRANTS IN DEVELOPING COUNTRIES: ANALYSIS OF CAMEROON DATA

Final Report

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Prepared for
Regional and Rural Development Division
Office of Multisectoral Development
Bureau of Science and Technology
Agency for International Development
United States International Development Cooperation Agency

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CHAPTER 1

INTRODUCTION

Tropical Africa is still the least urbanized part of the world, but, as measured by the rate of growth of urban population, it is the most rapidly urbanizing region. Although most of the cities in developing countries are growing at the rate of from 4 to 6 percent each year (doubling the city population every 12-16 years), some cities, including several in Africa, are increasing from 10 to 12 percent each year (doubling the city population every six or seven years). Furthermore, in most developing countries urbanization is concentrated in relatively few urban centers, particularly in primate cities or metropolitan areas. Therefore, it is not surprising that the major demographic issue in West Africa, surpassing the concerns for high fertility rates and natural growth, is the rate and concentration of urbanization. The massive movements of people from villages to cities along with natural population increase in these locations have led to a rapidly increasing concentration of people in urban areas. In turn, public services and social infrastructure have been overloaded.

According to Caldwell (1975), responses of West African governments to the problem created by rural-urban migration tend to be targeted against rapid growth of city populations. There are several reasons for this policy. First, urban misery is more visible than rural distress (although the latter in West Africa can often be horrifyingly greater). Therefore, governments feel the need to spend money on housing and other facilities in urban areas, while these activities are largely the product of individual or communial effort in the villages. In other words, governments do spend more per capita on urban populations. Therefore, reducing urbanward migration decreases

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government expenditures. Finally, many West African governments are increasingly worried by urban unemployment which they tend to link with rapid rural-urban migration.

The United Nation's report (1981) entitled Population Distribution Policies in Development Planning, pp. 1-4, categorizes government policies implemented to constrain urban growth as urban-oriented policies and rural-development programs. The former includes the "closed-city" programs; urban rustification programs; slum and squatter settlement improvement programs; dormitory towns and satellite-city programs; and intermediate-sized city or growth-center strategies. The latter includes capital-intensive agricultural programs, and integrated rural development schemes.

Most government intervention undertaken so far to improve the spatial distribution of population in LDCs has been characterized by: a) insufficient knowledge of the problems; b) lack of reliable knowledge about the likely impact of specific policy instruments; c) programs too expensive to justify direct intervention; and d) the existence, in many cases, of more efficient ways to achieve the same objectives than direct policy instruments for spatial redistribution (see Mera, 1981).

The fact that many government population redistribution policies are based on insufficient knowledge of the problems is pursuasively presented by Preston (1979). He argues that many common views concerning issues of urban growth and rural-urban migration in LDCs appear to be seriously misleading and unnecessarily alarmist. Urbanization in LDCs is not exceptionally rapid by historical standards. Rural-urban migration is fastest in countries whose economic performance allows the best possibilities for accommodation. Rapid rural-urban migration is not necessarily due to absolute deprivation in rural areas nor due to urban biases of government policies, but rather due to better

job opportunities in urban areas resulting from agglomeration economies. He also points out that the rapid growth of large metropolitan areas in LDCs results primarily from the natural increase of the urban population rather than from rapid inmigration with the exceptions of some economically successful countries such as Korea.

The fact that many population redistribution policies suffer from a lack of reliable knowledge about the likely impact of specific policy instruments is demonstrated by Findley (1981). Findley questions the validity of the popular belief that development activities in rural areas slow rural-urban migration and therefore help alleviate problems of urban poverty. She concludes that the integrated rural development schemes suggested by Todaro, which attempt to increase the relative attractiveness of rural areas and restrain the flow of rural-urban migration by: a) repairing and constructing rural roads or other forms of access to cities; b) developing marketing networks for inputs and produce; c) assembling labor intensive agricultural innovations; d) improving rural education and skill levels; and e) expanding off-farm employment opportunities, stimulate rather than slow rural-urban migration because these policies serve to increase available migration options. She also demonstrates that capital-intensive rural development programs have often resulted in greater agricultural output and productivity at the expense of rural income equity and increased rural outmigration.

The fact that many population redistribution programs are too expensive to justify direct intervention is postulated by Simmons (1981). He argues that "closed-city" programs, preventing rural migrants from entering large cities through various administrative measures such as registers, control cards, cash deposits, and transmigration, are neither economically nor administratively feasible. Administrative and legal measures employed in such

programs have frequently failed, and there have been many examples of evasion and corruption. He also shows that urban "rustification" programs, that is, the movement of urban residents to rural areas, require strong regulation, widespread social and politial support, effective administration, and integration with rural policies. The true social and economic costs of such programs, and their impacts on rural development, have not been established.

There are several new studies which propose more efficient ways to achieve national objectives for spatial redistribution. Preston (1979) proposes that it is typically more efficient and more beneficial to the nation to devote resources to family planning programs (rather than wasting the government's resources in the infeasible tasks of stemming rural-urban migration). The strategy is logical because the main cause of the rapid growth of large metropoitan areas in most LDCs is the rapid natural increase of urban populations. Furthermore, many approaches designed to improve rural standards of living are not effective in slowing the rural-urban migration.

Simmons (1979 and 1981) and Laquian (1981) suggest that because various direct policy measures encouraging urban residents to move to rural areas or preventing rural migrants from entering large cities are neither economically nor administratively feasible, the option of accommodating those families who move to the large metropolitan cities should be considered (Simmons, 1979). He argues that slum and sqatter improvement programs may be less expensive to solve poverty problems by improving housing, social services, employment, and income conditions in large cities. Dormitory towns and satellite-city programs, intended to deconcentrate growth within metropolitan regions, have been suggested as alternatives to urban migration. Intermediate-sized city or growth-center strategies, designed to create counter-magnets for migrants and to promote regional development, have been suggested as holding the potential

to accommodate much of the anticipated surge in urban population growth in developing countries.

Mera (1978a, 1978b, and 1981) argues that income disparities among regions and population concentrations in major metropolitan areas are brought about mainly by rapid economic growth and unavoidable costs in many cases. As an economy attains a certain level, maintaining rapid economic growth will bring decreases in income disparities between regions and population concentrations. Therefore, population concentration can be said to be a temporary problem, and the duration of the problem may be shortened by accelerating the growth of the economy. Thus, aggregate economic growth policy can be regarded as an alternative to direct spatial intervention policies. Mera (1981) also suggests that a great concentration of power in the central government necessarily leads to a spatial concentration of population and economic activities, and so in order to reduce population concentration, attempts should be made to reduce the power of the central government either by transferring some responsibilities to local governments or by deregulating some activities.

The above discussions appear to indicate that the literature on rural-urban migration has come full cycle. Lewis' rural-urban migration model (1954) assumes the existence of zero marginal productivity of labor in rural areas. Industrialization in urban areas induces surplus labor in rural areas to move to urban areas to garner higher earnings. This model assumes that as long as there is surplus labor in rural areas, urban wages cannot rise due to the continuous supply of labor from rural areas. Constant wages result in higher profits for the owners of the firms and more investment. Rural-urban migration is the most efficient way of utilizing surplus labor.

Todaro's rural-urban migration model (1969 and 1981) argues that the

Western inspired urban-industrial model is not applicable to LDCs. Increased rural-urban migration causes rapidly rising urban unemployment, and the solution to this situation is to discourage rural-urban migration by devoting resources to rural development projects. Several newer studies (Preston, 1979, Findley, 1981, Simmons, 1979, and Mera, 1978a, 1978b, and 1981) discussed above argue that the policy prescriptions of the Todaro model do not work in LDCs, and also emphasize the positive net effect of the rural-urban migration on economic development. In Chapter 2 we discuss a new model on rural-urban migration recently developed by Cole and Sanders (1985), and we also develop our own rural-urban migration model. Both of these emphasize the positive effect of rural-urban migration.

Mera (1981) argues that in a number of cases in which a direct policy instrument for altering spatial distribution of population and activities is implemented or is recommended for adoption, the objectives are not clearly identified or the impact of the instrument is merely assumed and not based on sound theoretical and empirical knowledge. Therefore, many of those direct policy instruments have not achieved the intended objective adequately or have induced unintended, undesirable consequences which more than offset the achievement of intended objectives. Thus, caution is called for before adopting direct measures for intervening in the market-oriented spatial distribution of population and related activities.

Mera further contends:

> "Little evidence exists that the overall marginal benefit of population increase in large cities declines for the size range of cities observed currently. The argument of excessive urban growth of the "new urban economists" based on increasing marginal cost and declining marginal benefit does not have a reliable empirical basis. This conclusion has an

> important implication. The marginal benefit curve may never intersect with the marginal cost curve within the feasible range and the optimal size may be beyond any size achieved thus far anywhere in the world. If so, the correct policy orientation is to encourage the growth of large cities rather than to restrict it. Therefore, the correct policy instrument may be to subsidize inmigrants rather than to tax them." (Mera, 1981, p. 36)

Policy decision makers, in the middle of the controversy on the net effect of rapid rural-urban migration in the LDCs, desperately demand information on quantified cost-benefit analysis of rapid rural to urban (particularly to large cities) migration.

The main objective of this study is to provide policy makers in developing nations a functional model that will enable them to quantify the benefits of rapid urbanization in reducing the fertility level of migrant women, and thus reduce national fertility levels. To the extent that rural-urban migration helps decrease the overall rate of population growth, then the potentially detrimental effects of added strains placed on urban educational facilities, employment, housing, and other urban services due to migration are to some extent mitigated.

In this study, which is a sequel to the two previous studies on Korea and Mexico, we have investigated the impact of migration from rural to urban areas on the fertility of women migrants in Cameroon.[1] We find that the

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[1] Our major project has three subtasks: The first one is the analysis of the 1974 Korean World Fertility Survey data which was completed in March 1981 and reported in Lee et.al.(1981). The second one is the analysis of the 1976 Mexican World Fertility Survey data which was completed in July 1983 and reported in Lee et.al. (1983). The final one is the analysis of the 1978 Cameroon World Fertility Survey data which is reorted in this report.

Korea, Mexico and Cameroon were selected as candidate countries for application of our model mainly because of the availability of the required data. The application of our model requires data on migration histories and

adaptation effect of rural-urban migration on fertility is relatively small in Cameroon. That is, the fertility level of rural-urban migrants in Cameroon is not significantly lower than that of rural stayers. In fact, it appears that the fertility level of the former is equal to, or slightly higher, than that of the latter. This is in direct contrast to the common observation in a number of previous studies which uniformly reveal that the fertility level of rural-urban migrants is significantly lower than that of rural stayers. Our previous studies of Korea (Lee, et.al, 1981) and Mexico (Lee, et.al, 1983) found that the adaptation effects resulted in a reduction of 2.57 and 1.20 births for Korean and Mexican migrants, respectively. The reasons cited for the smaller adaptation effect in Cameroon centers on the pro-natal effect that rural-urban migration had through a reduction in infertility and the stabilization of marital relationships. These factors nearly offset the fertility depressing effect of rural-urban migration on the demand for children in Cameroon. In other words, rural-urban migration improved the supply conditions for births about as much as it reduced demand.

It is true that increased rural-urban migration in Cameroon might bring on increases of fertility in the short run by reducing the incidence of infertility and the probability of multiple marriages. Nevertheless, in the long run, increased rural-urban migration should bring about a reduction in

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[1] (continued)
pregnancy histories for migrants and non-migrants in both the place of origin and the place of destination as well as the socioeconomic characteristics of both migrants and nonmigrants. Specifically, migration histories must include information on 1) place (name) of current residence, 2) place of previous residence, 3) the year of migration to current residence and 4) place of birth. According to our search for information, the 1974 Korean World Fertility Survey, the 1976 Mexican World Fertility Survey, and the 1978 Cameroon World Fertility Survey were the only data sources satisfying these requirements among developing countries that have active U.S. AID missions or representatives.

fertility rates. A reduction in infertility and an increased stability of marriages resulting from the increased rural-urban migration should provide Cameroonian women with the confidence needed to control their own family size and therefore should increase their incentive to use contraceptives.

Chapter 2 contains a discussion of theoretical backgrounds and a review of the literature on the influence of rural-urban migration on the fertility of migrants. In Chapter 2, we also review the new rural-urban migration model recently develeped by Cole and Sanders (1985) and an important study by Nag (1980) concerning the fertility increasing effect of modernization, urbanization, and wider spread of education. Chapter 3 provides general demographic background for the study by describing trends of migration, fertility, and marriage patterns in Cameroon. Chapter 4 is a description of migration patterns and fertility trends discerned in the 1978 Cameroon World Fertility Survey. This chapter presents the relationship between various socioeconomic and demographic characteristics and migration status. This chapter also provides some initial evidence on the relationship between migration patterns and fertility.

Chapter 5 is the major chapter that applies our regression model, the first difference autoregressive fertility model, to estimate the fertility adaptation effect of the rural-urban migration. This chapter also assesses the relationship between socioeconomic backgrounds of migrants and the extent of the fertility adaptation effect of the rural-urban migration.

In Chapter 6 we investigate more closely the relationship between marital instability and fertility. Four major hypotheses concerning the influence of marital instability on fertility behavior are tested using the multivariate regression model.

Chapter 7 is a detailed summary of our research findings and a presentation of policy implications.

Chapter 2

Theoretical Backgrounds and Literature on the Influence of Rural-urban Migration on the Fertilities of Migrants

2.1 Introduction

Three alternative hypotheses have been suggested in the literature concerning the relationship between rural-urban migration and fertility.[1] First, many writers have been proponents of the selection hypothesis (See, for example, Ribe and Schultz (1980)). This hypothesis suggests that lower fertility among rural-urban migrants can be accounted for primarily by the selectivity of the migration process: i.e., persons who migrate are a select group with different socio-economic and demographic characteristics such as education, occupational experience, age, and marital status, than those of the rural population as a whole. In addition, their preferences for family sizes are also different. Secondly, the disruption hypothesis proposed by Goldstein and Tirasawat (1977) contends that in the period immediately before or following rural-urban migration, migrants show a particularly low level of fertility due to the disruptive factors associated with the migration process. In addition, women who are pregnant or have small children have a lower probability of migration. Examples of disruptive factors associated with the migration process are the physiological consequences of the stressful situations typically associated with moving and the fairly common separate living arrangements of spouses during early stages of the migration process. The purported drop in fertility attributable to disruption is expected to be only temporary, and to be made up at a later stage of the life cycle (see

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[1] The extensive review of literature on the influences of rural-urban migration on migrant's fertility can be found in Zarate and Zarate (1975), Goldstein and Tirasawat (1977), Wolowyna (1980), Ribe and Schultz (1980), and Lee et. al. (1981), and Lee and Farber (1984).

Hervitz (1983)). Finally, the adaptation hypothesis suggests that rural-urban migrants face a different environment in their new place of residence, and that this environment provides distinctly different prices for a number of interrelated life-cycle consumption-investment choices. These include the rewards to women for labor market participation outside the family, the opportunity cost of fertility, and the chance for children to receive health care and schooling. The incentives of this new environment induce women to reduce their fertility from what it would have been had they not migrated. The adaptation hypothesis implies that even when selection effects are controlled, age-specific fertility rates of rural-urban migrants after migration will remain lower than those of rural stayers, even after the disruptive effects have ceased to be of importance. As a result, differences in cumulative fertility between rural-urban migrants and rural stayers increase as the length of urban residence increases.

In our previous studies of Korea and Mexico, we developed and estimated an autoregressive fertility model in which prior fertility is a control for preference differences between migrant and non-migrant households. (For Korean analyses see Lee et. al. 1981; Farber and Lee, 1984; Lee and Farber, 1984, 1985; and for Mexican analyses see Lee et. al. 1983; Lee, 1985, and Lee and Pol, 1985). Controlling for prior fertility, socioeconomic, and biological factors, the difference in post-migration fertility behavior between rural-urban migrants and similar rural stayers was considered the adaptation effect. Applying this fertility model to the data on detailed personal migration and birth histories of the 1974 Korean World Fertility Survey and the 1976 Mexican World Fertility Survey, our studies provided evidence that rural-urban migration is an important influence in lowering national fertility levels for both Korea and Mexico. In addition, these studies suggested that an important factor in explaining the lower fertility of rural-urban migrants

is the adaptation to urban constraints and fertility norms. However, the fertility adaptation effect of rural-urban migration is stronger in Korea than Mexico. The adaptation effect was calculated to be a reduction of 2.57 and 1.20 births in Korea and Mexico, respectively.

The major objective of this study is to estimate the fertility adaptation effect of rural-urban migration, using Cameroonian data. The results from the data analysis are compared with the results from our previous studies on Korean and Mexican data.

2.2 Review of Recent Studies which used both Migration and Pregnancy Histories

To our knowledge, there are four studies which have used both migration and pregnancy histories in assessing the influence of migration on migrants' fertility behaviors. Two of them are our previous studies using Korean and Mexican data which were discussed above. The third one is by Goldstein and Goldstein (1983) which uses both migration and fertility history data for Malaysian women in the analysis of the influences of rural-urban migration on migrants' fertility behavior. Major findings and limitations of this study were discussed in detail in our previous study on Mexico (Lee et. al., 1983). The major conclusions of the Malaysian study were that the data supported the thesis that residential stability is generally conducive to higher fertility, the significant disruptive effect was associated with migration, and the selection effect was also significant for some cases.

A study by Carlson (1985), which uses both migration and fertility history data from the 1971 Melbourne Family Formation Survey, analyzes the influences of immigration to Australia on immigrants' timing of marriage and births. He ignored the selection effect of migration by controlling for sociceconomic characteristics. In assessing the influence of immigration on

the timing of marriage, Carlson used the post-marital immigrants as the control group to further isolate the selection effect. He was interested in determining whether the effect of migration on the timing of marriage and births was a temporary, short-term or a pervasive, long-term impact. The former impact which is called the migration effect, corresponds with the disruption effect terminology that we have used. The latter impact, which Carlson called the destination effect does not exactly correspond with our adaptation effect. Unlike the case of rural-urban migration in less developed countries, the lifestyles for marriage timing and family sizes in Australia are not significantly different from those in immigrants' home countries for many immigrants originated from societies with late marriage and a history of low fertility. Examples of such home countries are northern or eastern Europe, other British Commonwealth nations or the United States. Therefore, his study does not allow for him to test the adaptation effect of migration. His destination effect reflects the long-lasting disruption effect rather than the adaptation effect.

As for the influence of migration on marriage timing, Carlson observed that female immigrants who came to Australia as young single adults (over age 15) and were not yet married delayed their marriages by approximately three years--24.6 years for these women versus 21.6 for women whose marriages either occurred before their arrival in Australia or coincided with it at. On the other hand, the age at marriage, 21.7 years, of immigrant women who arrived in Australia before they reached age 15 was not significantly different from that of post-marital immigrant women. From the above observations, Carlson concluded that there is no noticeable destination effect (the long-lasting disruption effect) on the timing of marriages for the immigrants who arrived as children. They usually spent several years after arrival attending

Australian schools, and by the time they began making decisions about marriage they had been in Australia for an average of a decade or longer. He reasoned that if there is a significant destination (long-term) effect of migration, these groups of child migrants would marry at much later ages than post-marital migrant women. Data analysis did not support this hypothesis. Nevertheless, he did conclude from the analysis that there was a migration (short run) effect on marriage timing. He reasoned that the migration effect which includes the disruptions following the "settling-in" process would be found most clearly among the people who immigrated after age 15 but before marriage.

As for the influence of migration on the timing of births, Carlson's results appear in Table 2.1. The table shows that the first birth interval women who arrived after marriage but before a first birth experienced dramatic delays in those first births, waiting more than an entire extra year on the average compared to first birth intervals of native borns. Second births were significantly delayed for those families who arrived during the second birth interval, waiting four extra years. Third births were significantly delayed for those families arriving during the third birth interval waiting four extra years. Fourth births occurred nearly half a decade later for families arriving during the fourth birth interval. Carlson concluded from these observations that immigration had a temporary short-term impact on the timing of the next birth, but had no effect on the timing of subsequent births. His overall conclusion was that only short-term disruptions in family formation could be attributed to the event of migration and that there is no evidence of a more pervasive, longer-term destination effect of the social environment in which migrants found themselves in the years following their initial adjustments.

Table 2.1 Median Length of Birth Intervals (Years)

by Nativity and by Family Status of the Foreign Born at Arrival

Nativity and family status of foreign born at arrival	1st birth interval	2nd birth interval	3rd birth interval	4th birth interval
Native born	2.38	2.91	2.55	2.83
Foreign born by status at arrival				
Under age 15	2.16	2.96	3.35	3.84
Age 15 and over				
Single	2.04	2.90	2.90	3.11
Married with				
Childless	(3.52)	3.30	2.97	3.74
1 child	1.76	(6.90)	2.77	5.71
2 children	1.76	2.91	(6.57)	4.41
3 children	1.71	2.75	2.40	(9.97)
4 or more children	1.49	2.44	2.03	2.26

Source: Table 3 in Carlson (1985).

Carlson's study is a careful analysis and supports the contention that the disruptive effect of migration does not have a pervasive, long-term impact, but has a temporary, short-term impact. However, his results should not be considered to imply that the adaptation effect of migration is not significant. First, as discussed earlier, because life styles in home countries are not significantly different from those in the destination of migration, his sample does not allow the test of the adaptation effect of migration. Second, in assessing the influence of immigration on the timing of marriages, he controlled for women's education levels and premarital work experience. This washes out a large part of the influence of immigration on child migrants' marriage timing because the influence of migration works through increasing education levels and premarital work experiences. His estimate of the difference in the age at marriages between child migrants and post-marital migrants must have been underestimated because of the control for the improvement of socioeconomic characteristics after arrival in Australia. Finally, one should not infer that there was an influence of migration on family size from the result of the influence on birth intervals. One should test the adaptation effect of migration directly looking at the data on family sizes, not the birth intervals. Now we turn to some recent studies on the rural-urban migration in less developed countries.

2.3 Recent studies on the rural-urban migration in less developed countries.

The literature on the rural-urban migration in LDCs was extensively reviewed and summarized in Lee et. al. (1981) and Lee et. al. (1983). Therefore, we include here only one recent major study.

The paper by Cole and Sanders (1985) highlights a crucial shortcoming of Todaro's rural-urban migration model.[2] They argue that the Todaro approach is limited to explaining the movement of persons possessed of sufficient human capital to qualify them for urban modern (U-M) sector employment. They emphasize that the mass of relatively uneducated persons migrate and work in an urban subsistence (U-S) sector or an urban informal sector world that cannot be explained by the structures of the Todaro model. They utilize the perspective of the urban subsistence sector to develop a new model that serves as a useful complement to that of Todaro. According to them, rural-urban migration is a dual phenomenon. Some migrants, those possessed of the requisite human capital, are bound for the U-M sector. Those who are less well endowed are intent on employment in the U-S sector.

Cole and Sanders (1985) demonstrate the relative importance of the urban-subsistence or urban informal sector by showing that the proportion of Calcutta's urban labor force relegated to the U-S sector is 43 percent; for Bogota, 45 percent; for Lagos, 50 percent, and 34 percent in the Federal District of Mexico City. They point out that two distinguising characteristics of U-S sector employment are very low capital-labor ratio and few if any formal human capital requirements. Therefore, there are few barriers to

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[2]The Todaro model assumes that the rate of rural-urban migration is a function of the difference between the present values of expected urban earnings and rural earnings. The size of the flow of expected urban earnings are significantly affected by the probability of obtaining employment in the urban modern (U-M) sector. The Todaro model was able to explain why masses of workers moved from the rural areas to the urban areas in the face of sizeable urban unemployment. Even though there might be a high urban unemployment, a potential migrant would decide to make a rural-urban move if the expected urban modern sector earnings, properly discounted by the probability of obtaining employment in the U-M sector, exceeded the streams of rural earnings. See Todaro (1969 and 1979).

entry into U-S sector employment. On the other hand, the U-M sector jobs carry education requirements that effectively exclude persons who have acquired little or no formal education. They argue that the majority of rural-urban migrants in LDCs have minimal educational levels and migration is becoming less and less selective in terms of education. They conclude that many persons move to the city with the expectation of finding long-term (not temporary) employment in the U-S sector. The Todaro model posits that rural-urban migrants are attracted by prospects of employment in the U-M sector. According to Todaro, urban labor components not employed in the modern sector represent a large pool of unemployed and underemployed who arrived in town earlier and still are waiting for a modern sector job.

Much like Todaro, Cole and Sanders develop their own migration model where the rural-urban migration bound U-M sector is governed by the difference between the discounted streams of expected U-M and rural subsistence (R-S) sector real incomes. But, the migration bound U-S sector is mainly influenced by the value of exports from the U-S sector to the U-M sector. They assume that the main export of the U-S sector is the menial labor services. Examples are domestic services, petty trades, and repair. They argue that the demand by the U-M sector for the U-S sector's export is influenced by the price of the U-S export, the income level of the U-M sector, the population size of the U-M sector, and the price of manufactured substitutes for the U-S export (service labor). The price of the U-S export, which equals the wage level of the U-S service labor, is, in turn, equal to the rural subsistence (R-S) sector wage levels. Their reason for this contention is that with U-S labor and R-S labor considered substitute, it follows that so long as the marginal product of labor in the R-S sector is at or near zero, the labor supply in the U-S sector will be perfectly elastic at a wage equal to that in the R-S

sector. They also assume that because no human capital is required (i.e., because of the ease of entry) in the U-S sector, the probability of employment at the existing U-S wage is unity for any given individual. They speculate domestic service, for example, is price elastic, because domestic services are in the nature of luxury. Their model, therefore, implies that masses of unschooled and relatively unskilled persons migrate to urban areas when population pressure on fixed agriculture land reduces the rural-subsistence wages significantly below that of the U-S sector. The decrease of R-S wages will reduce the price of U-S export and increase the value of U-S export, resulting in the increase of the rural-urban migration bound the U-S sector. They argue that while the Todaro model explains why those who possess human capital migrate, their model explains why masses of relatively uneducated persons migrate to the city.

Based on the model they question the theory which has led analysts to the seemingly fatalistic view that attempts to solve urban unemployment by creating new workplaces in the U-M sector increase migration and lead to increased urban unemployment. This theory forces analysts to conclude that the solution to the urban employment problem must be sought in the rural areas through creative and well-designed programs of rural development. Cole and Sanders argue that their model implies that much of the recent rural-urban migration appears desirable from society's perspective as well as from that of individual migrants. They conclude "because urban modern employment is likely for educated migrants, their mvoement contributes directly to economic growth. In turn, the growth of the U-M sector fuels demand for U-S sector exports. The growth of the demand imparts a tendency for wages to increase in the U-S sector which, pari passue, sparks urban-bound migration into that sector. That migration itself improves the overall productivity of the economy and enhances the welfare of both those who migrate to the urban subsistence sector

and those who remain in the rural subsistence sector." (Cole and Sanders, 1985, p. 493).

The work by Cole and Sanders is a significant contribution to the rural-urban migration model. They develop a model which formalizes the interdependence between urban modern sector and urban subsistence secter in the context of rural-urban migration. The model shows us that masses of uneducated migrants are not looking for jobs in the modern sector and their jobs in the urban subsistence sector are not temporary, transitory jobs. For these migrants, the urban unemployment used by Todaro which equals to $(N-E_m)/N$ where N is the total urban labor force and E_m is the number of workers employed in the urban modern sector, does not indicate the probability of being employed in the city. The correct unemployment figures for U-M and U-S sectors migrants should be

$\frac{U_m}{E_m + U_m}$; and $\frac{U_s}{E_s + U_s}$, respectively, where U_m and U_s are numbers of unemployed who are seeking for U-M sector jobs; and U-S sector jobs, respectively, and E_s is the number of workers employed in U-S sector. They argue that the value of $\frac{U_s}{E_s + U_s}$ is very small because of the ease of entry.

According to Todaro, the migrants who are employed in the U-S sector are underemployed. Therefore, a migrant's prospect for urban employment appears dim and so rural-urban migration is not a desirable resource movement. According to Cole and Sanders, a qualified migrant's prospect for an U-M employment is not dim, and so their movement contributes to economic growth. The income increase in the U-M sector raises the demand for the U-S sector's export, which, in turn, increases the rural-urban migration bound to the U-S sector. Since the probability of finding a U-S sector job is very high for the migrant, rural-urban migration is a desirable resource movement. The

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major contribution of the Cole and Sanders paper is the demonstration that the employment in the U-S sector is not underemployment. This paper expands the Lewis' two sector surplus labor rural-urban migration model to the three sector surplus labor rural-urban migration model. In Lewis' model, the R-S sector supplied food and surplus labor to the U-M sector. In Cole and Sanders model, R-S sector exports food to U-M, but supply surplus labor to U-S sector rather than to U-M sector. The U-S sector then exports service labor to U-M sector. In both models rural-urban migration is considered to be a desirable resource movement.

We now turn to the limitation of the Cole and Sanders model. Their model does not fully answer the following two questions: why do rural development projects stimulate and not reduce rural-urban migration?; and, why does rapid rural-urban migration continue even when the rural population declines? The above two questions, whose answers are yes in some rapidly developing countries such as Korea, cannot be completely answered either by the Cole and Sander model or the Todaro model. According to those models, rural development programs, or the decline of rural population, raise the R-S sector wages, raise the price of the U-S exports, and then slow rural-urban migration.

An alternative model can be developed using the international trade theory about the prices of traded and nontraded goods. Instead of dividing rural and urban sectors into rural-modern, rural-subsistence, urban-modern, and urban-subsistence sectors, one could divide rural and urban sectors into rural-traded-good (R-T), rural-nontraded-good (R-N), urban-traded-good (U-T), and urban-nontraded-good (U-N) sectors. Examples of nontraded goods are the service sectors in both rural and urban areas. The urban traded good is, for example, a manufactured good and the rural-traded-good an agricultural

product. According to the Balassa Effect (see Balassa, 1964), even though productivities of U-N workers do not increase faster than productivities of R-N workers do, prices of U-N which are equal to wages of U-N workers rise much more rapidly than prices of R-N if productivities of U-T workers rise more rapidly than productivities of R-T workers. In order to induce workers to stay in U-N sector jobs rather than move into the U-T sector high paying jobs, workers in U-N should be paid highly as long as the productivity in U-T rises rapidly and real wages in U-T workers increase rapidly. Therefore, workers in U-N will be paid much more than workers in R-N, even though productivities of the former are quite similar to those of the latter. According to this model, rural development programs creating rural workplaces would not slow the rural-urban migration as long as the productivity of R-T does not rise as rapidly as the productivity of U-T. Even though rural wage levels rise due to the decline of rural population, rapid rural-urban migration will continue as long as the productivity of R-T is much lower than the productivity of U-T. Finally until the productivity of R-T catches up the productivity of U-T, the rural-urban migration bound to U-N sector will continue. Therefore, governments should not waste their resources discouraging this migration stream and should concentrate their efforts and resources on accommodating these migrants, strengthening family planning programs in the cities, and stimulating economic growth.

In the last section of this chapter we reveiw Nag's (1980) important paper on the positive effect modernization has on fertility. This issue is very important in explaining the weak fertility adaptation effect of rural-urban migration in Cameroon.

2.4 Review of the paper by Moni Nag on the fertility-promoting effect of modernization.

Increased rural-urban migration brings or accompanies modernization in society. In his important paper, Nag (1980) suggests the following proximate

variables which are influenced by modernization and are likely to affect fertility significantly in sub-Saharan Africa: 1) The decrease of breast-feeding; 2) the decrease of infertility due to venereal disease; 3) the decrease of voluntary (post partum) abstinence due to polygamy; 4) the decrease of the incidence and the delay of widowhood due to high mortality rates; and, 5) the decrease of divorce/separation due to marriages arranged by parents rather than by the partners themselves.

It is apparent that except for item No. 2, the decrease of infertility, modernization, rural-urban migration, and increased education levels will altogether decrease the incidence of the above proximate variables. There is some debate concerning whether urbanization will increase or decrease the incidence of the infertility caused by venereal diseases. Larsen (1985) argues that urban residence, in particular, living in the Capital cities of Sub-Saharan African nations, is associated with higher sterility because venereal diseases are more prevalent in those places, possibly due to the more widespread practice of prostitution. Nag (1980) presents examples showing how the improvement in public health facilities can increase fertility by reducing childlessness resulting from venereal disease. We argue that the urbanization and increased educational levels render individuals more knowledgeable in the use of penicillin against gonorrhea, and residents in urban areas have better access to public health facilities. Therefore, urbanization is likely to reduce the incidence of infertility caused by venereal disease and so increase fertility.

There are studies suggesting that polygamous men are more likely to be infected by venereal diseases. Thus the decline of the practice of polygamy due to modernization, urbanization and higher education level will decrease the incidence of the infertility and so conversely increase fertility.

We now turn to Nag's discussions on how the declines of the above listed proximate variables due to modernization, urbanization, or increased education

level tend to increase fertility rather than decrease fertility in some less developed countries.

Nag argues that the reduction in the duration or abandonment of breast-feeding reduces the birth interval in a society in which no birth control is practiced. He shows that if the average period of amenorrhea among lactating women in such a society was 17 months, then the abandonment of breastfeeding would cause the average birth interval to be reduced by 40 percent, and this would raise their fertility by 64 percent. According to Nag, the decline of breastfeeding may increase fertility through three mechanisms. First, prolonged breast-feeding protects against pregnancy because it delays the return of ovulation and menstruation during the post partum period. Therefore, a decrease of breast-feeding increases the pregnancy. Second, women in some societies practice post partum abstinence only as long as they breast-feed; thus breast-feeding indirectly prevents pregnancy through abstinence. A decrease in the duration of breast-feeding may lead to a decline in post partum abstinence and hence increase fertility. Third, since breast milk is clean and nutritionally ideal and provides some immunity from disease, a shift from breast-feeding to bottle-feeding, in the absence of proper sanitary conditions and adequate substitute infant foods, leads to higher infant mortality. High infant mortality induces couples to increase their fertility.

Nag lists the reasons for the decline in the practice of breast-feeding in LDCs; the convenience and fashionability of bottle-feeding, the introduction of powdered milk and its commercial advertisement by multinational food companies, the tendency to imitate the behavior patterns of the developed countries, and a change in attitude towards the aesthetic value of the female breast. These factors are likely to be more influential in urban areas than

in rural ones, and among the educated than the uneducated. Nag presents substantial evidence showing that the reduction in the duration of breast-feeding is closely associated with increased urbanization and education.

In a cross-cultural study of 61 societies, Nag reports that one of the two factors (the other being sterility due to venereal disease) found to be significantly related to variation in fertility was the duration of post partum abstinence by women. Caldwell and Caldwell (1977) suggest that in most of sub-Saharan Africa, fertility is reduced not by post partum amenorrhea extended by prolonged breast-feeding, but by post partum abstinence. Of their samples, over one-half abstained for about 6 months longer and another fifth for about 12 months longer than the period of breast-feeding. In most societies the period of breast-feeding traditionally exceeds that of abstinence, but in African countries the reverse seems to be more common. Many people in Africa seem to think that pregnancy too soon after a birth is harmful to the existing child, attributing the harm to the spoiled milk of the mother. The length of the period of post partum abstinence is inversely related to education level, urbanization, and being monogamously rather than polygamously married. Post partum abstinence is more strictly observed by polygamously married women, since her husband can cohabit with other wives during the period of abstinence. The practice of polygamy has been declining with modernization, urbanization, and higher education levels. This is likely to cause a decline in the practice of post partum abstinence and hence an increase in fertility.

Mortality decline may cause a rise in fertility by increasing the duration of married life of couples even when the fertility behavior of couples within marriage does not change. Everywhere widowhood is a potential cause of loss of fertility. The incidence of widowhood tends to decline with decline of mortality rate. Modernization, urbanization, and higher education reduces

the mortality rate, and thus the incidence of widowhood, which in turn increases the duration of marriage and fertility.

It is controversal whether the disruptive effects of frequent divorce/separation increase or decrease fertility. Most studies on Latin American countries show that marital instability increases fertility because couples desire children to cement new marriages. Studies on Asian countries such as Malaysian (Palmore and Marzuki, 1969) and Indonesian (Hull and Hull, 1977), show that marital instability reduces fertility because of the loss of potential reproductive periods. As will be shown in Chapter 6, marital instability decreases fertility in Cameroon. We argue that there are three factors depressing the fertility of women with unstable marriages: first, the loss of reproductive periods caused by the marital disruption; second, the disruption effect of the unstable marriages; and, third, the physiological effect of unstable marriages. The last factor reflects the fact that the frequently married women are more likely to be exposed to venereal diseases, and so infertility reduces fertility.

In the studies of Malaysia (Palmore and Marzuki, 1969) and Indonesia (Hull and Hull, 1977) analysis shows that the divorce/separation rate is higher if the marriage was arranged by parents rather than by the partners themselves. For example, in Indonesia 30 percent of the first marriages arranged by parents ended in divorce/separation, while only 8 percent of self-arranged marriages. As will be discussed in the following chapter, there is a strong evidence suggesting that the prevalence of early marriages, parent-arranged marriages, and the large age difference (average 8 years) between husbands and wives are responsible for the very high instability of marriages in Cameroon. Our analysis also shows that rural marriages are more unstable than urban marriages. Modernization, urbanization, and increased education level reduces the parent-arranged marriages, encourage late marriages, and

reduce the age difference between husbands and wives. This will reduce the divorce and separation of marriages and thus increase the fertility.

The above discussion of Nag's paper implies that in some societies, particularly sub-Saharan African countries, modernization, urbanization, and higher education might increase rather than decrease fertility. It is well known that the process of modernization generally reduces the demand for children which, in turn, delays age at marriage and increases the use of contraceptives. However, the above discussion indicates that in some societies where the widespread use of modern contraceptives is absent, the fertility-increasing effect of modernization might more than offset the fertility-decreasing effect. Nag introduces a study suggesting that unless the prevalence of contraceptive use in a population reaches 30 percent, the fertility increasing effect of the decline in the practice of breastfeeding and post partum abstinence brought by urbanization and the spread of education more than offsets the fertility decreasing effect of these changes. The above results have a significant bearing on the major issue of this study, namely, the effect of rural-urban migration on migrant's fertility behavior in Cameroon. The adaptation to urban lifestyles by rural-urban migrants might reduce the desire for large families. However, rural-urban migration decreases the practice of breastfeeding, the incidence of venereal disease, polygamous marriages, the practice of early marriages and parent-arranged marriages, and the mortality rates. These changes bring the decline of post partum amenorrhea, infertility, post partum abstinence, and divorce/separation and widowhood, respectively. These declines generate the fertility-increasing effect of rural-urban migration. Therefore, in some societies such as Cameroon where the practice of contraceptive use is not widespread, it is

possible that the fertility depressing adaptation effect (demand for children) of rural-urban migration might be more than offset by the fertility increasing effect (supply condition of fertility). One could anticipate that the rural-urban migration may not cause the reduction of Cameroon's national fertility level, at least in the short run.

Before we conclude this section, it is important to explore an important point raised by Frank (1983). Frank argues that infertility presents a major obstacle to Africa's fertility transition because uncertainty in childbearing inhibits response to intrinsic and extrinsic pressures to reduce fertility goals. Early attention to infertility as a major health problem likely results first in an acceleration of population growth, but subsequently it can bring forward the timing of response to socioeconomic and other signals to limit childbearing. We feel that this argument by Frank concerning infertility should be equally applicable to the reduction of divorce/separation, widowhood, and the practice of polygamous marriages in any sub-Saharan African countries. It is true that increased rural-urban migration and the increase of women's education in Cameroon might bring an increase of fertility in the short run by reducing the incidence of infertility, the probabilty of divorce/separation and widowhood, and the practice of polygamous marriages. Nevertheless, in the long run, increased rural-urban migration and the increase in women's education levels bring about a reduction in fertility rates. The reduction in infertility and the increased stability of marriages resulting from increased rural-urban migration, for example, provides Cameroonian women with the confidence needed to control their own family size, and therefore should increase the incentive to use contraceptives.

Chapter 3

Background on Cameroon Migration, Fertility, and Marriage Patterns

3.1 Introduction

The Republic of Cameroon is situated in the Central African region and lies between latitudes 2 and 13 N and longitudes 9 and 16 E with an area of 465,210 square kilometers. It is bordered to the west by Nigeria; to the north by Lake Chad; to the east by Chad and the Central African Republics; to the south by the Congo, Gabon, and the Equatorial Guinea Republics; and to the southwest by the Atlantic Ocean.

Cameroon has wide ecological diversity. The generally low-lying southern parts have an equatorial climate characterized by high temperatures, rainfall and humidity which favor the growth of dense equatorial forest vegetation, and mangrove swamps along the coast. The central and western parts of the country are mainly plateau and highland areas ranging between 1000-2500 meters with the highest point being the Cameroon mountain (4070 meters) on the west coast. The west coast climate is generally humid and tropical, modified by altitude, and the vegetation is wooded savanna, in lower altitudes, and grasslands. Further north, the altitude drops to 800-900 meters with a typically dry tropical climate where there is little rainfall during 4 to 6 months of the year. The vegetation is generally savanna grassland which diminishes into sahel conditions northwards toward Lake Chad.

Historically, Cameroon was a German colony which became British and French mandated territory after World War I. It gained independence in 1960 as a federated state with a bilingual status. In 1972, the two federated states of West Cameroon (English-speaking) and East Cameroon (French-speaking) formed a unitary state as the United Republic of Cameroon. In 1983, it became simply the Republic of Cameroon.

Administratively, the territory of Cameroon today is subdivided into 10 provinces. However, there were only 7 provinces until 1983 when the Central-South province was split into the Centre and Southern provinces; and the Northern province was split into the Extreme Northern, Northern, and Adamaoua provinces. The remaining provinces include the Eastern, Littoral, Western, Northwest, and Southwest provinces. Subprovince geographic units are known as divisions (departments) which are comprised by a number of subdivisions (arrondissement). Some large or thickly populated subdivisions are also split into districts.

Cameroon is presently inhabited by a variety of peoples ranging from the Bantu groups in the south to the Semi-Bantu groups in the central plateau and highland areas, including the Sudanese, Paleonegritic and Hamito-Semitic Arab groups in the northern sections. These people constitute over 200 tribal groupings of various sizes with bewildering linguistic, socio-cultural, socio-economic, and religious diversity.

Efforts to study the population of Cameroon range from the early anthropological and ethnographic studies of the Germans to the administrative censuses of the British and French which were held during the 1960's. However, the only complete and exhaustive documentation of the population with its various characteristics was derived as the result of the General Census of the Population and Housing in Cameroon held in April 1976. The next census has been programmed for 1986. The 1976 census revealed a population of 7.66 million inhabitants with an average density of 16.5 persons per square kilometer, and an annual growth rate of about 2.4 percent. However, densities varied from one province to another (3.1 persons per Km^2 in the Eastern province to 74.5 persons per Km^2 in the Western province) as shown on Table 3.1. Moreover, these provincial statistics mask the wider density variation at the

Table 3.1 Population Distribution and Density by Province for Cameroon (1976)

Province	Population	% Proportion	Area (in Km)	Density (per Km^2)
Centre & South	1,491,945	25.0	116,172	12.9
Eastern	366,235	4.8	109,002	3.4
Littoral	935,166	11.1	20,229	46.2
Northern	2,233,457	29.1	164,054	13.6
North-West	980,531	12.8	17,409	56.7
Western	1,035,597	13.5	13,883	74.5
South-West	620,515	8.1	24,709	24.9
Cameroon	7,663,246	100.0	465,458	16.5

NB: Figures indicated on this table have been adjusted for the 7% census error of 1976.

Source: Bureau du Recensement (1978), Volume I, Tome 1.

division level where the range is from 1.9 persons per Km^2 in the Boumba and Ngoko division of the Eastern province to 221.4 persons per Km^2 in the Mifi division of the Western province. The bulk of the Cameroonian population is resident in the rural areas, with only 28.5 percent in the urban areas (towns) in 1976.

As can be seen in Table 3.2, agriculture is the main occupation, employing over 73% of the economically active population most of whom are self-employed. The system of land cultivation is mostly traditional and extensive. Over half of the population is still illiterate. However, the high percentage of children aged 6-14 presently in school (67.5) indicates that literacy levels will increase markedly in the future. The wide variation in the regional or provincial characteristics of the population is further evidence of the diversity in sociocultural and socioeconomic patterns and demographic evolution.

3.2 Migration in Cameroon - A Historical Perspective

3.2.1. Precolonial Period. The various ethnic groups that presently constitute the Cameroonian population are known to have either gradually drifted in from areas beyond its present borders or moved within the same territory. What is noteworthy, however, is that such movement usually involved whole lineages, ethnic groups or parts of them, in search of better land and resources (territorial expansion). Such movement also resulted from pressure from internal feuds or from hostile neighbors or invaders. Once a more convenient and hospitable or easily defensible site was found, the group often negotiated the necessary "diplomatic" relations with neighboring groups and this marked the end of the drift or at least a temporary halt. Even the nomadic groups such as the Pygmies and the Fulani or Foulbe herdsmen had a limited territorial sphere of movement. Among the settler groups the only

Table 3.2 Main Aspects of the Economic Activity and Educational Level of Cameroon in 1976

Place of Residence	Sex	Total Population	Percentage of Total Population	Economic Activity (Pop. 6+ Years)			Education	
				Active Persons as Percent of Total Population	Agric. Workers as Percent of Total Active Persons	Self-Employed Persons as Percent of Total Active Persons	Illiteracy rate (Pop. 10+ years)	Schooling rate (Pop. 6-14 years)
Cameroon	Male	3,491,433	100	60.0	64.6	65.3	45.2	68.3
	Female	3,640,400	100	37.2	87.3	61.1*	66.9	61.0
Urban	Male	1,039,596	29.8	56.2	21.8	NA+	24.2	87.1
	Female	965,627	26.5	22.3	53.2	NA+	45.1	83.2
Rural	Male	2,451,837	70.2	61.7	81.7	NA+	54.6	65.2
	Female	2,674,773	73.5	43.2	93.5	NA+	74.6	56.1

* Many women who were actually farmers were declared either as unpaid family workers (active but dependent workers) or as housewives (inactive) during the 1976 census.

+ N.A. - data not available.

Source: Op. cit. computed from Tables 13, 14 & 15.

other evidence of movement involved traders, though this hardly resulted in any substantial migration.

3.2.2 The Colonial Period. The only significant and documented migratory streams in Cameroon were brought about by the arrival of the colonialists. First, there was the long distance commuting along trade routes to the coastal markets and depots. Then came the short-term migration to the European plantations along the coastal regions and to the main sites where public works, especially road and rail construction, were being carried out. Eventually this was followed by definitive settlement consequent on acquisition of landed property or access to a new form of non-agricultural economic activity (trading, transportation or office employment).

In effect, the opening of large European-owned and individual plantations in the Mungo area and on the foothills of Mount Cameroon between 1910 and the early 1930's, set off waves of migration of the Bulu, Beti and Douala groups from the Central and Littoral parts of Cameroon. Eventually massive drifts of the Bamileki groups from the thickly populated western high plateau areas as well as grassfield groups from the Bamenda region became part of the migration. These movements, which were initially solicited, quickly became spontaneous but they were generally seen to be temporary.

The world economic crisis of 1928-1932 resulted in a dramatic turn of events. Though plantation workers lost their jobs and many returned home, a substantial number obtained access to landed property as a repayment for their service, through the purchase of fringe lands; or simply settling on unoccupied land. These acquisitions were markedly frequent around Nkappa-Souza in the Mungo (Barbier et. al., 1983). Urbanward migration, especially to the town of Douala which had earlier depended on labor demands by foreign companies, became more spontaneous by the mid 1930's. This led to the growth of this major town and colonial capital and drastically changed its population struc-

ture both with regard to the age-sex and ethnic compositions. These new developments set the groundwork for eventual and more substantial waves of migration toward the coastal areas.

A number of developments after the end of the World War II are seen to have contributed much to rural-urban migration in Cameroon. The suppression of the "laissez passer" system, which required that a person must obtain a permit before moving out of his place of residence; the end of forced labor; and the economic recovery, resulting from higher cocoa prices in the 1950's, were important incentives for migration. A further creation of more administrative headquarters, which served either as impetus for the further development of existing agglomerations or as nuclei for the development of new towns, increased the volume of rural-urban migration in Cameroon.

In addition to the major migration streams to the Southwestern Littoral regions of Cameroon, other smaller, short-distance moves were occurring in other areas. There was some movement of principally Bamileke groups northward into the fertile areas around Galim-Foumbot and toward the agricultural lands and small towns along the Ndikinemeki and Makenene areas. The increasing importance of Yaounde, as it gained greater administrative functions, made it a very attractive center; first, for the people of the surrounding central, southern and eastern subdivisions, and then for the larger streams of the western high Plateaux and the Littoral. In the northern parts of the country, the main perceptible movements were generally toward the main northern administrative headquarters of Garoua and to parts of the Adamaoua plateaux.

3.2.3. The Independence Period. The few years preceding the 1960 independence of Cameroon and the remainder of the 1960's and early 1970's were marked by a predominancce of rural-urban migration as opposed to the largely

rural-rural migration of earlier periods. The only main rural-rural drifts were to the plantation sites in the coastal areas, which had been taken over mostly by the government, as well as to the new agro-industrial project areas around Mbandjock (sugar) and in the plain of the Benoue (cotton). Others included spontaneous drifts into the Ndop and Mbo Nso plains of the north-western grassfields and largely remedial government stimulated resettlement schemes in the Yabassi-Bafang, Pont du Noun area, Magba, and the plans for the Kirdi mountain settlers of the northern parts of the country. Nearly all these later schemes failed to stimulate any substantial moves.

The various administrative reforms that immediately preceded and followed the independence of Cameroon resulted in the creation of several new administrative headquarters and in the emergence of many new towns, some of which usurped the functions and importance of some of the pre-existing colonial towns. Thus, there occurred a diversion of migratory streams from certain urban areas to others. While in 1960 there were only 20 divisions (departments, counties) with 85 subdivisions (arrondissements, localities) in the, then, Eastern Cameroon (French-speaking); in 1975, there were 35 divisions with 155 subdivisions in the same territory. In what was West Cameroon (English-speaking), the number of divisions increased from 6 to 9 within the same period, with about 26 subdivisions created between 1963-1966.

As a result of these administrative changes, the general socioeconomic and sociocultural changes accompanying the creation of more schools and health facilities in urban areas and the insecurity that was prominent in rural areas of the Western and Littoral areas of Cameroon, the urban population of Cameroon grew substantially. The changes in the urban population of the various provinces between 1967 and 1976, as shown on Table 3.3 bear testimony to this growth. Most of the towns in the Western and Littoral provinces, in addition to administrative and economic functions, also provided security for

Table 3.3 Total and Urban Population Distribution by Province for Cameroon (1967-1976)

Province	Total Population			Urban Population			Proportion of Urban Population (%)	
	1967	1976	Annual Growth Rate 1967/76 (%)	1967	1976	Annual Growth Rate 1967/76 (%)	1967	1976
Centre and South	1,103,791	1,393,608	2.6	237,121	463,370	7.7	21.5	33.3
Eastern	273,876	342,850	2.5	28,086	70,662	10.8	10.3	20.6
Littoral	608,222	841,456	3.7	377,602	623,717	5.7	62.1	74.1
Northern*	1,484,456	2,089,791	4.1	130,898	307,037	10.8	8.8	14.7
North-West	683,579	914,912	3.7	70,402	136,589	8.4	10.3	14.9
Western	784,083	968,856	2.4	152,803	216,856	3.9	19.5	22.4
South-West	499,611	580,360	1.8	114,047	186,992	6.5	22.8	32.2
Cameroon	5,437,618	7,131,833	3.1	1,110,959	2,005,223	6.8	20.4	28.1

*Comprises the Extreme Northern, Northern, and Adamaoua provinces of today.

Source: Adapted from J. Champaud (1983), Tableau No. 11, p. 128. (Computations from the 1967/68 administrative census and the 1976 census.)

people frightened away by the insecurity generated by the post-independence political strife that was effected in that part of the country. The city of Yaounde also falls into this category as a result of its increasing importance as the political capital and intellectual center of the country. In the northern parts of the country, both existing and new towns experienced rather high percentage growth rates (about 8 percent), though the figures represent only minor increases in absolute figures. Towns which showed evidence of low growth, were mostly in the western and south-western parts and included Foumban, Loum, Manjo, Kumba, and Tiko. On the other hand, there were towns whose growth was slackening as a result of the growth of other towns around them and migration to the cities of Douala and Yaounde. These include the towns of Bafoussam, Bafang, and Nkongsamba.

A number of towns to the south of the Western province experienced either stagnation or decline as a result of the excessive outmigration due to the prevailing insecurity during this period. These include Bangangte, Bazou, Bangou, Bansoa, Bamendjou, Tonga, and Dschang. In the Littoral province the towns of Yabassi and Dibombari lost most of their population to the city of Douala. In the South-West province, the diminishing trade with neighboring Nigeria caused the decline of Mamfe town, and the increasing importance of Douala and Yaounde after the reunification in 1972 was responsible for the decline of Victoria (Limbe), Tiko, and Buea towns. Administrative changes were largely responsible for the decline of Batibo and Ndop in the North-West province, Banyo in the Nothern province, Batouri in the Eastern province and Yoko and Ndikinemeki in the Centre province.

The preceding overview of the migration trends and the development of urban agglomerations in Cameroon is further substantiated by the analyses of the 1976 Census of Cameroon.

3.3 Migratory Flows as Indicated by the 1976 Census

The core questionnaire of the 1976 Census of Population and Housing in Cameroon contained questions vital for the study of migration: place of birth, place of previous residence and place of present residence with duration of stay at present residence. A migrant was considered to be any person found to be resident in a subdivision other than that of his birth.

Inter-regional migratory streams: Of all the provinces of Cameroon, the thickly populated Western province has remained a veritable zone of out-migration for many years. As can be seen in Table 3.4, with the exception of the four subdivisions of Foumbot, Galim, Bansoa, and Kekem, all subdivisions of this province showed a negative net migratory balance. Among those experiencing net out-migration, the subdivisions of Bangangte, with a net loss of over 60 percent of its resident population, and of Bafang (45 percent of its resident population) were the hardest hit. Others such as Foumban, Dschang, and Bangou suffered a net loss of over 10,000 inhabitants each. The main streams of migration were first towards the Mungo and then to the cities of Douala and Yaounde. In effect, 25 percent of the population of Mungo was born in the Western province. During the 1970's the main streams were directed towards the city of Douala and, to a lesser extent to Yaounde. Though migratory movements towards the other provinces were not as important as they had been, people of the Western province, constitute the majority of the migrant population in the neighboring provinces. Migratory exchange within this province has been mainly to the benefit of the Noun division (subdivision of Foumbot), receiving migrants from the Mifi and Bambontos divisions, and that of the Upper Nkam division (Kekem and Bansoa subdivisions), receiving migrants from the Mifi and Nde divisions.

In the Northern provinces, migratory flows are smaller in volume, as are the net balances of migration. None of the subdivisions in this part of the

Table 3.4 Migratory Balance in the Western Province by Subdivision (1976)

Administrative Unit	Total Pop.	Internal Immigrants	Internal Emigrants	Net Balance
Bamboutos				
Batcham	60,160	6,928	8,343	- 1,415
Galim	19,760	4,434	1,573	+ 2,861
Mbouda	75,269	13,107	21,603	- 8,496
Bamoun				
Foumban	129,003	13,904	27,185	-13,281
Foumbot	68,526	19,851	7,216	+12,635
Upper Nkam				
Bafang	47,998	13,051	34,828	-21,777
Bana	7,277	1,746	4,382	- 2,636
Bandja	21,490	4,077	6,236	- 2,159
Kekem	27,702	13,447	4,441	+ 9,036
Menoua				
Bansoa	54,924	9,096	7,538	+ 1,558
Dschang	146,485	19,084	30,949	-11,865
Mifi				
Bafoussam	118,642	36,098	42,285	- 6,187
Bamendjou	37,093	7,399	12,427	- 5,028
Bandjoun	46,144	8,054	15,037	- 6,983
Bangou	40,437	7,775	19,882	-12,107
Nde				
Bangangte	44,909	10,694	37,897	-27,203
Bazou	14,243	3,066	9,171	- 6,105
Tonga	8,790	2,095	2,854	- 759

country has ever suffered a net loss of up to 10 percent of its resident population. Areas with a relatively high out-migration are found in the most densely populated parts of the extreme north including the subdivisions of Kaele, Maroua, Meri, Mokolo and Mora. On the Adamaoua plateau (now the Adamaoua province) the subdivision of Tignere and Ngaoundere registered relatively smaller net losses. The main beneficiary of most of the migration in the northern provinces has been the Benoue division. Movement outside the province has been quite limited and consists mainly of the drifting of herdsmen into the northern parts of the Eastern province and migration into agro-industrial project sites for tobacco (in the Eastern province) and sugar production (around Mbandjock in the Centre province). The most substantial currents have been to the urban agglomerations of the Centre, South and Littoral provinces.

The Eastern province, with its sparse population, has very insignificant migratory movement. It has been marked by positive balances in its northern subdivisions which have been receiving migrants from southern subdivisions, along with the Northern Centre and Littoral provinces.

In the Centre and Southern provinces, the most prominent focus of migration has so far been the city of Yaounde in the Mfoundi division which receives migrants from virtually every subdivision within these two provinces. It is also the recipient of migrants from all other provinces and immigrants from other nations. Mbandjock subdivision too, with its agri-industrial sugar projects, has registered a very high positive balance with about 76 percent of its population being migrants. Only a few other subdivisions, for example, the Ntui and Ambam, have benefited from substantial migratory movements within these provinces.

Migratory exchange with other provinces has long been focused mainly on the Littoral and South-west provinces. Until the late 1960's, the balance was

largely in favor of these two provinces, though since the city of Yaounde began assuming greater importance, the exchange has tended to balance and has almost been reversed.

In the Littoral province, as Table 3.5 shows, the Wouri and Mungo divisions are the major areas of immigration. This has been the case for a number of years. Migration into Mungo was more substantial in the past (up to the early 1960's) when agricultural labor poured into it and new towns developed along the Bafang-Nkongsamba-Douala road. In essence, the Wouri division is Donala city and has been receiving the largest migratory flows in Cameroon ever since the late 1950's. In effect, it is responsible for the draining away of the populations of the Yabassi, Ngambe, and Dibombari subdivisions of the Littoral. The government has had to develop a resettlement scheme in order to compensate for this loss of population (the Yabassi-Bafang project). Population exchanges between the other provinces have been favorable to the Littoral province. Ever since independence, as a result of the growth of Yaounde City, the Centre province has received substantial flows from the Littoral.

Migration to and from the North-west province has always been quite small. During the colonial period and early years of independence, this province sent migrants mainly to the plantation areas of the South-west province. Beginning in the late 1960's, it has been registering net gains in almost all its subdivisions (Jakiri, Wum, Nkambe, Fundong, Nwa, Batibo, and Ndop) at the expense of the South-west province through return migration. Its net losses of population have been caused by the recent flow toward the two main cities of Douala and Yaounde since independence but more especially after the creation of the unitary state in May, 1972.

The South-west province, on the other hand, owes a great deal of its present population size to the migratory gains of the colonial period and early

Table 3.5 Migratory Balance for the Littoral Province by Subdivision

Administrative Unit	Total Pop.	Internal Immigrants	Internal Emigrants	Net Balance
Mungo		-		
Dibombari	23,561	6,946	8,573	- 1,627
Loum	55,204	32,040	20,245	+14,687
Manjo	33,261	16,191	10,985	+ 5,206
Mbanga	26,947	12,277	13,974	- 1,697
Melong	51,272	24,010	9,323	+14,687
Nkongsamba	85,211	40,702	48,416	- 7,714
Nkam				
Nkondjock	14,559	6,004	1,974	+ 4,030
Yabassi	15,965	5,038	18,717	-11,679
Yingui	3,849	1,257	2,694	- 1,437
Sanaga-Maritime				
Ngambe	13,776	3,995	11,170	- 7,175
Dizangue	17,891	8,460	7,754	+ 706
Edea	48,201	19,144	12,728	+ 8,584
Ndom	22,995	6,339	6,783	- 444
Pouma	9,687	3,608	3,266	+ 342
Wouri	419,077	193,483	127,618	+65,865

1960's. In 1976, over 32 percent of its population had moved in from other provinces and abroad, principally from neighboring Nigeria. The main subdivisions with positive gains have been Kumba, Tombel, Ekondo-Titi, Fontem, Isangele, Nguiti, and Muyuka. However, recent trends reveal substantial losses of population to the Littoral (city of Douala and the Mungo), the Centre province (city of Yaounde) and the North-west province (mostly return migration).

3.4 Rural-Urban Migration

The 1976 Census definition for urban areas was rather broad and covered all agglomerations with a population of 5,000 or more inhabitants with a minimum urban infrastraucture such as schools for higher education (post-primary), police stations, hospitals, and car parks, as well as all headquarters of administrative units from the province down to the district, irrespective of the sizes of their population. This second part of the definition evidently included very small hamlets in the urban category which in effect were not different from other adjacent village agglomerations (Y. Marguerat, 1979; Lamlenn, 1983). Urban ward migrants were considered to be persons who were counted in urban areas situated outside the subdivisions of their birth. In other words, any person who moved into an urban area within his subdivision of birth was not considered as a migrant. The same applies to those who had migrated earlier but returned to towns in their subdivisions of birth.

Analyses of urbanward migration in Cameroon (Bureau Central de Recensement, Vol. II, Tome 5, 1978) revealed that the 39 towns with 10,000 or more inhabitants had received over 90 percent of the urbanward migrants. The other towns, therefore, had very limited catchment zones where people rarely went beyond the subdivisions in which they were born. The analysis of urbanward migration has therefore been limited to 39 towns.

As can be seen in Table 3.6, the contribution of various regions of the country to urban population growth, as measured by the urbanward migration quotient of each subdivision reveals that the Western and Littoral provinces have sent the largest number of migrants to urban areas while the North-west, Eastern, and the Northern provinces sent relatively fewer urban migrants.[1] In the Western province, five subdivisions have a quotient of over 20 percent of their native population, including the Bangangte subdivision with over 47 percent; Bana, 43.4 percent; Bangou, 40.2 percent; Bazou, 38.5 percent; and Tonga, 23.6 percent. These subdivisions (mainly of the Nde division) are southern parts of this province and have a long history of migration. The Mifi and the Upper Nkam divisions also sent as much as 20 percent of their native populations to urban areas. The northern subdivisions of this province have a much lower propensity to send migrants to urban areas. Only the subdivisions of Dschang and Mbouda registered quotients above 10 percent.

Urbanward migration in the Littoral is focused on the main city of Douala. In fact, the only other subdivisions with urbanward migration quotients above 40 percent outside the Western province are found here. These include Yabassi with the highest quotient in the country (54.1 percent) along with Ngambe (40.9 percent), and Dibombari (40.1 percent). Many of the other subdivisions also have fairly high quotients -- above 25 percent (Pouma, Ndom, Mbanga, Nkongsamba, and Edea).

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[1] Urbanward migration quotient

$$= \frac{\text{Persons who moved out to urban areas from a subdivision}}{\text{Persons who were born in that subdivision (irrespective of their present residence)}}$$

Table 3.6 Urbanward Migration Quotient by Subdivision*

Administrative Unit	Quotient
Centre & South Provinces	
Bengbis	8.6
Djoum	8.1
Sangmelima	1.6
Zoetele	3.1
Mbardjock	7.2
Minta	7.6
Nanga-Eboko	2.6
Eva'oula	9.1
Monatele	0.7
Obala	1.6
Okola	4.1
Saa	1.8
Bafia	0.4
Bokito	0.3
Ndikinimeki	4.7
Ntui	9.9
Ombessa	9.5
Yoko	9.6
Akono	7.2
Awae	3.7
Bikok	3.4
Esse	7.2
Mbankomo	1.3
Mfou	9.6
Ngoumou	5.4
Mfoundi (Yaounde)	1.4
Ambam	5.7
Ebolowa	3.7
Ngoulemakong	2.6
Bot-Makak	2.6
Eseka	9.3
Makak	0.7
Messondo	2.8
Ngog-Mapubi	1.6
Akonolonga	9.5
Ayos	8.2
Dzeng	1.3
Mbalmayo	6.0
Ngomedzap	4.4
Akom II	3.7
Campo	5.0
Kribi	0.1
Lolodorf	0.7
Mvengue	1.3
Eastern Province	
Moloundou	1.2
Yokadouma	3.1
Abong-Mbang	8.8
Doume	5.8
Lomie	3.4
Messamena	5.9
Nguelemendouka	4.4
Batouri	3.7
Ndelele	3.1
Bertoua	6.6
Betare-Oya	4.8
Littoral Province	
Dibombari	40.1
Loum	20.5
Manjo	18.0
Mbanga	29.3
Melong	11.1
Nkongsamba	27.6
Nkondjock	13.7
Yabassi	54.7
Yingui	31.2
Ngambe	40.9
Dizangue	20.2
Edea	29.8
Ndom	25.3
Pouma	32.4
Wouri (Douala)	11.3

Administrative Unit	Quotient
Northern Provinces	
Banyo	2.9
Meiganga	3.4
Ngaoundere	6.1
Tibati	6.2
Tignere	3.5
Garoua	7.0
Guider	2.6
Poli	2.7
Tchollire	2.7
Bogo	8.4
Kaele	6.5
Maroua	5.4
Meri	5.3
Mindif	7.3
Kousseri	4.5
Makari	2.7
Mokolo	2.0
Mora	2.2
Kar-Hay	3.1
Yagoua	3.0
North-West Province	
Jakiri	2.4
Kumbo	2.9
Nkambe	2.2
Nwa	1.2
Fundong	1.9
Wum	3.3
Bamenda	8.4
Ndop	3.4
Batibo	3.8
Mbengwi	6.8
Western Province	
Batcham	10.2
Galim	6.1
Mbouda	15.9
Foumban	8.6
Foumbot	5.3
Bafang	38.2
Bana	43.4
Bandja	24.4
Kekem	13.6
Bansoa	10.9
Dschang	15.8
Bafoussam	21.6
Bamendjou	31.5
Bandjoun	28.4
Bangou	40.2
Bangangte	47.2
Bazou	38.5
Tonga	23.6
South-West Province	
Tiko	11.1
Victoria (Limbe)	13.5
Akwaya	1.7
Fontem	2.7
Manfe	14.9
Bangem	4.4
Kumba	9.3
Nguti	5.9
Tombel	11.6
Bamusso	1.9
Ekondo-Titi	2.8
Isangele	1.8
Mundemba	5.0

*Urbanward migration quotient

= persons who moved out to urban areas from a subdivision / persons who were born in that subdivision (irrespective of their present residence)

Source: Op. Cit., compiled from Table 4, pp. 69-72.

In the Centre and South provinces, urbanward migration is quite moderate and almost uniform in all the subdivisions. In effect, apart from the subdivision of Eseka with a quotient of 29.3 percent, the majority of the subdivisions have quotients varying between 10-25 percent, but most fall below the 20 percent line. The quotient is lowest for subdivisions that are far from the cities of Yaounde and Douala.

The South-west province is next in importance as far as the urbanward migration quotient is concerned. Apart from the Tiko, Victoria (now Limbe), Tombel and Mar fe subdivisions, no other subdivision has sent over 10 percent of its population into urban areas. In fact, a majority (8 out of 14) of them sent 5 percent or less.

The North-west, Eastern, and the Northern provinces have participated least in the growth of the urban population of Cameroon. Generally, the quotient falls below 5 percent, though it is higher for the subdivisions with the capital towns of these provinces (Bamenda, Bertoua, Ngaoundere, Garoua, and Maroua). In the extreme north, however, the Diamare division has higher quotients of above 5 percent for all its subdivisions and the Margui Wandala, though with a lower quotient, sends numerically significant urban migrants (9,500 persons).

Generally, the towns of Cameroon owe much of their rapid growth to rural-urban migration which is more pronounced in the southern parts of the country where over half of the populations of the towns are migrants (see Table 3.7). In effect, 20 out of the 39 towns with 10,000 or more inhabitants have a population which is over 50 percent migrant. Yaounde and Douala cities are the highest migrant agglomerations with 66.3 percent and 61.8 percent migrant populations, respectively. A majority of the other southern towns have migrant proportions of between 40 and 60 percent. But, as can be seen in Tables 3.8 and 3.9, one of the uniquenessess of the two cities Douala and

Table 3.7 Migration to Urban Areas With More Than 10,000 Inhabitants in Cameroon (1976)

Urban Areas (By Province)	Total Pop. in Town	Internal Immigrants	Foreign Immigrants	Total Immigrant Population	Proportion of Immigrant Pop. (%)
Centre & South					
Bafia	17,855	6,994	154	7,148	40.0
Ebolowa	17,025	7,716	343	8,059	47.3
Kribi	10,512	5,613	250	5,863	55.8
Mbalmayo	20,606	12,834	321	13,155	63.8
Sangmelima	13,776	6,356	252	6,608	48.0
Yaounde	291,071	183,647	9,293	192,940	66.3
Eastern					
Batouri	14,588	4,843	316	5,159	35.4
Bertoua	13,985	7,389	199	7,588	54.3
Littoral					
Douala	395,813	231,464	13,063	244,527	61.8
Edea	23,708	12,986	407	13,293	56.5
Loum	24,974	14,636	86	14,722	58.9
Majo	14,407	8,204	37	8,241	57.2
Mbanga	19,996	11,360	112	11,472	57.4
Melong	10,059	6,254	23	6,277	62.4
Njombe	12,518	7,942	101	8,043	64.3
Nkongsamba	65,775	35,667	397	36,064	54.8
Penja	11,358	6,941	101	7,042	62.0
Northern Provinces					
Banyo	10,293	1,119	80	1,119	11.6
Garoua	59,544	22,228	7,011	29,239	49.1
Guider	16,053	3,953	673	4,626	28.8
Kaele	10,898	2,003	469	2,472	22.7
Kousseri	11,627	4,299	2,257	6,556	56.4
Maroua	62,600	20,555	2,682	23,237	37.1
Meiganga	15,906	5,034	876	5,910	37.2
Ngaoundere	36,255	11,604	1,816	13,420	37.0
Yagoua	13,541	4,284	1,074	5,358	39.6
North-West					
Bamenda	44,764	14,555	1,879	16,434	36.7
Kumbo	11,699	2,317	215	2,532	21.6
Wum	15,149	2,107	79	2,186	14.4
Western					
Bafang	24,003	8,991	73	9,064	37.8
Bafoussam	57,971	31,607	226	31,833	54.9
Dschang	16,629	4,965	60	5,025	30.2
Foumban	31,492	3,245	95	3,340	10.6
Kekem	10,152	6,336	21	6,357	62.6
Mbouda	14,066	6,433	68	6,501	46.2
South-West					
Buea	22,948	10,343	1,216	11,559	50.4
Kumba	41,235	18,687	5,938	24,625	59.9
Tiko	13,824	6,021	2,283	8,300	60.1
Victoria (Limbe)	25,192	11,057	2,721	13,778	54.7

Note: The figures presented on this table are the reported figures (no adjustments for under-enumeration).

Source: Bureau Central du Recensement (1978), Vol. II, Tome 5, p. 73 (tableau 5).

Table 3.8 The 1976 Reported* Population of Douala City by Division of Birth

Division of Birth (by rank)	In Figures	% Proportion	Province in which division is found
1) Wouri (Douala)	151,284	38.2	Littoral
2) Mifi	28,805	7.3	Western
3) Mungo	26,071	6.6	Littoral
4) Nde	24,959	6.3	Western
5) Sanaga-Maritime	24,403	6.2	Littoral
6) Uppr Nkam	16,541	4.2	Western
7) Nkam	16,439	4.2	Littoral
8) Foreign-born	13,063	3.3	-
9) Menoua	12,840	3.2	Western
10) Mbam	10,946	2.8	Centre & South
11) Nyong & Kelle	8,048	2.0	Centre & South
12) Mfoundi (Yaounde)	7,555	1.9	Centre & South
13) Bamboutos	6,610	1.7	Western
14) Bamoun	6,475	1.6	Western
15) Lekie	4,354	1.1	Centre & South
16) Mezam	4,267	1.1	North-West
17) Other divisions	33,153	8.3	-
Total	395,813	100.0	

*The Post-enumeration Survey revealed a 15.8% under-enumeration for Douala city in 1976.

Source: Bureau Central du Recensement (1978) Vol. II, Tome 5, p. 78 (tableau 6).

Table 3.9 The 1976 Reported* Population of Yaounde City by Division of Birth

Division of Birth (by rank)	In Figures	% Proportion	Province in which division is found
1) Mfoundi (Yaounde)	98,129	33.7	Centre & South
2) Mefou	20,652	7.1	Centre & South
3) Lekie	18,939	6.5	Centre & South
4) Mifi	17,633	6.1	Western
5) Mbam	12,788	4.4	Centre & South
6) Wouri (Douala)	10,415	3.6	Littoral
7) Nde	9,343	3.2	Western
8) Foreign-born	9,293	3.2	-
9) Sanaga-Maritime	9,116	3.1	Littoral
10) Nyong & Kelle	8,159	2.8	Centre & South
11) Ntem	7,190	2.5	Centre & South
12) Menoua	6,588	2.3	Western
13) Mungo	6,621	2.2	Littoral
14) Nyong & So	6,462	2.2	Centre & South
15) Dja & Lobo	4,750	1.6	Centre & South
16) Upper Nkam	4,615	1.6	Western
17) Ocean	4,298	1.5	Centre & South
18) Nyong & Mfoumou	4,194	1.4	Centre & South
19) Mezam	3,246	1.1	North-West
20) Upper Sanaga	3,028	1.1	Centre & South
21) Other divisions	25,558	8.8	-
Total	291,071	100.0	

The Post-enumeration Survey revealed a 7.7% under-enumeration for Yaounde city in 1976.

Source: Op. cit. p. 80 (tableau 7).

Yaounde is that they both have a fairly wide catchment area of migration and a much longer history to go with their sizes (the only two agglomerations with over 100,000 inhabitants-314,000 for Yaounde and 459,000 for Douala). While Douala city is a priority area for migrants from 33 subdivisions, Yaounde is priority area for 24. Douala receives over 40 percent of the migrants from the Littoral (17 percent) and Western (24.3 percent) provinces, and Yaounde receives over 45 percent of its migrants from the Centre and South (31.1 percent) and the Western (14.9 percent) provinces. A comparison with the composition of the other 37 major towns by place of birth as shown on Table 3.10 clearly demorstrates that the two cities of Douala and Yaounde have far more composite population structures than any of the other towns. A further comparison in Table 3.11 of the history of migration to these two cities indicates that Douala city has a somewhat longer history of migration than Yaounde, with 48.8 percent of its migrant population having been there for five or more years, as compared to 46.9 percent for Yaounde city.

The preceding comparative study of the towns amply confirms the primacy of the cities of Douala (economic capital) and Yaounde (political capital). They are the only two agglomerations which fit a more rigorous definition of "urban" area. They have larger, more composite populations (from the point of view of origin and economic activity), a denser network of urban infrastructure (health, education, housing, sporting, cultural, and industrial), and a longer history of migration. These characteristics justify our contention that these two cities be recorded as the only urban agglomerations for the present study: a choice dictated by the limitations of base data from the Cameroon World Fertility Survey rendering the identification of other urban areas for the study of women's migration difficult.

Table 3.10 Population Distribution by Place of Birth for Urban Areas With More Than 10,000 Inhabitants (1976)

Town	Total Population	% Born in Same Subdivision	% Born in Same Division	% Born in same Province
Centre & South				
Bafia	17,855	60.0	74.4	82.6
Ebolowa	17,025	52.7	55.7	76.6
Kribi	10,512	44.2	59.9	77.2
Mbalmayo	20,606	36.2	39.7	74.1
Sangmelima	13,776	52.0	60.9	81.9
Yaounde	291,071	33.7	33.7	65.8
Eastern				
Batouri	14,588	64.6	67.9	74.8
Bertoua	13,985	45.7	49.0	62.6
Littoral				
Douala	395,813	38.2	38.2	55.1
Edea	23,708	43.5	67.9	75.3
Loum*	24,974	41.1	47.6	53.6
Majo*	14,407	42.8	51.3	54.5
Mbanga*	19,996	42.6	50.5	57.3
Melong*	10,059	37.6	42.7	44.4
Njombe*	12,518	34.5	42.4	51.0
Nkongsamba*	65,775	45.2	50.7	54.7
Penja*	11,358	38.0	44.1	56.9
Northern Provinces				
Banyo	10,293	88.4	91.1	93.6
Garoua	59,544	50.9	57.5	77.5
Guider	16,053	71.2	78.5	94.5
Kaele	10,898	77.3	84.2	91.6
Kousseri	11,627	43.6	61.6	77.7
Maroua	62,600	62.9	80.1	93.2
Meiganga	15,906	62.8	77.9	88.5
Ngaoundere	36.255	63.0	69.8	79.8
Yagoua	13,541	60.4	66.8	89.0
North-West				
Bamenda	44,764	63.3	65.9	80.1
Kumbo	11,699	78.4	85.0	94.9
Wum	15,149	85.6	86.8	95.1
Western				
Bafang	24,003	62.2	76.8	88.9
Bafoussam	57,971	45.1	72.0	86.8
Dschang	16,629	69.8	73.9	88.9
Foumban	31,492	89.4	91.2	95.2
Kekem	10,152	37.4	61.7	88.3
Mbouda	14,066	53.8	74.8	89.2
South-West				
Buea	22,948	49.6	52.1	63.8
Kumba	41,235	40.3	43.8	58.6
Tiko	13,824	39.9	50.9	64.8
Victoria (Limbe)	25,192	45.3	48.7	63.8

* The case of the towns of the Mungo division is quite peculiar in that over 30% of their populations migrated from the Western province; Loum, 37.6%; Majo, 39.6%; Mbanga, 33.9%; Melong, 45.0%; Njombe, 37.3%; Nkongsamba, 37.4%; and Penja, 30.7%.

Source: Op. cit. computed from table A-3, pp. 180-192.

Table 3.11 Migrant Population of Yaounde and Douala Cities by Sex and Duration of Residence

City	Sex	Migrant Pop.		Less Than 1 Year		1 - 4 Years		5 - 9 Years		10+ Years	
		No.	%	No.	%*	No.	%*	No.	%*	No.	%*
Yaounde	Total	170,735	100.0	23,825	14.0	66,829	39.1	38,139	22.3	41,941	24.6
	Male	92,953	54.4	13,066	14.1	36,385	39.1	20,781	22.3	22,721	24.4
	Female	77,782	45.6	10,759	13.8	30,444	39.1	17,358	22.3	19,221	24.7
Douala	Total	256,659	100.0	33,853	13.2	97,760	38.1	56,096	21.9	68,950	26.9
	Male	139,955	54.5	18,326	13.1	53,584	38.3	30,903	22.1	37,142	26.5
	Female	116,704	45.5	15,527	13.3	44,176	37.9	25,193	21.6	31,308	27.3

* The percentages of different migration cohorts are relative to the total migrant population for each sex and each city.

Source: Op. cit. computed from table A-2, pp. 139-179.

Sex - Differentials in urbanward migration: As can be seen, in Table 3.11, in Cameroon, men have generally been more mobile than the women. During the colonial period, when migration was mainly to the plantations and public project sites, the migratory streams were almost entirely made up of men. With time and as a result of acquisition of landed property and entry into non-agricultural professions as towns grew, the women followed the men. This trend has continued with the development and rapid growth of towns even though the time lag has been greatly reduced as a result of the multiplicity of motivations for urbanward migration. The movement of women is increasingly dependent of the decisions of the men especially among the younger age groups who move urbanwards for further education and in search of jobs.

The 1976 census results revealed that regions of out-migration were equally as unattractive to men as to women. Although the attractiveness of main areas of immigration was equal for both men and women, the volume of the streams were smaller for the females.

Another crude indicator of the sex selectivity of urbanward migration in Cameroon is the generally low sex ratio (male to female) seen in Table 3.12 for the rural areas especially in parts of the country reputed for out-migration. However, this indicator could be deceptive in those rural areas with a long history of out-migration (since the women eventually follow the men) and in those rural areas which have experienced immigration. A majority of the rural areas of Cameroon, however do not fall into these categories and the evidence of male outmigration is still quite prominent.

3.5 Reasons for Rural-Urban Migration

As can be gleaned from the section on the historical development of migration in Cameroon, the primary motivation for migration has been economic - the search for jobs in the plantation areas or in the towns. These motives

Table 3.12 Sex (Male to Female) Ratios for Urban and Rural Areas by Division

(Cameroon - 1976)

	Urban	Rural
Cameroon	107.7	91.7
Centre & South Province	111.5	88.3
Dja & Lobo	111.2	89.6
Upper Sanaga	132.0	87.3
Lekie	101.4	85.8
Mbam	101.2	89.9
Mefou	111.1	85.5
Mfoundi	114.2	94.2
Ntem	103.7	91.0
Nyong & Kelle	98.8	86.8
Nyong & Mfoumou	101.8	91.9
Nyong & So	114.4	86.6
Ocean	104.2	89.8
Eastern Province	102.1	96.2
Boumba & Ngoko	100.8	96.3
Upper Nyong	103.3	92.0
Kadei	99.2	99.3
Lom & Djerem	103.7	96.8
Littoral Province	110.5	96.9
Mungo	107.3	99.2
Nkam	102.5	93.4
Sanaga-Maritime	103.7	92.2
Wouri	112.9	108.0
Northern Provinces	100.7	94.5
Adamaoua	100.8	101.1
Benoue	104.1	91.1
Diamare	96.2	93.4
Logone & Chari	104.7	102.7
Margui-Wandala	94.8	92.6
Mayo-Danay	104.3	93.7
North-West Province	99.2	93.2
Bui	99.2	93.0
Donga-Mantung	98.8	96.1
Mentchum	91.6	94.5
Mezam	104.7	92.6
Momo	93.4	88.4
Western Province	101.9	78.8
Bamboutos	124.4	77.4
Bamoun (Noun)	95.0	97.8
Upper Nkam	94.2	80.8
Menoua	121.9	74.2
Mifi	105.2	70.4
Nde	88.6	75.8
South-West Province	116.8	106.2
Fako	112.3	115.9
Manyu	106.5	94.5
Meme	110.7	104.2
Ndian	177.1	133.5

Source: Bureau Central du Recensement (1978) Vol. I, Tome 1, computed from table 2, pp. 18-19.

have continued to play an important part in urbanward migration today. Such motivation has been generated by the relative economic backwardness of the rural areas. The traditional agricultural sector predominant in the rural areas has undergone little change, and the revenue from agricultural production is low and often unpredictable. There is a lack of adequate storage and evacuation facilities for agricultural produce. Recent motivations and remedial measures by the government, as shall be seen later, have had only a limited impact. The urban areas have been receiving the bulk of investment for development. The prospect of an urban or a plantation job with a guaranteed monthly income, or some sort of activity within the now expanding informal sector in the urban areas, has been instrumental in the departure of most youth from the rural areas. This aspect was recognized in 1978 for Douala.[2] Certainly these economic calculations are not as intricate as the Todaro (1969) model posits, but they do play an important role when operating along with other motivations.

A number of researchers have blamed the exodus from rural areas on the low productivity of agricultural land, or conventionally, the population pressure on land. And many have argued that as a result of high population density on the available land, people have tended to move away to other areas. Hurault, studying the case of the Bamileke lands of the Western Province, saw the idea of indivisibility of inherited property as the main cause.[3] When out of a large family, only one son became the heir, other children had to move elsewhere. Actually, many anticipate this outcome and move even before

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[2]Egerton, E.C.E. 1938) concludes, "...but economic necessity is mainly responsible for the exodus. At home, a young man can have land, but that is about all. There is little money to be made and money is becoming more and more necessary" (p. 123).

[3]Hurault, T. (1920) quoted by Champaud (1983).

the heir is designated, with some never returning. Another frequently advanced reason for migration in rural areas has been the poor soils in many rural areas which produce very low returns as well as the long distances separating farms from settlements as a result of the extensive system of agriculture.

Intergenerational conflicts have also been presented by a number of social scientists. In an attempt to explain the exodus of Christians, Rev. A. Albert pointed to the arbitrary authority and wrath of the chiefs and elders as custodians of the traditional religion against the converts who had to seek refuge in the more liberal urban areas.[4] A more recent study on the town of Bangangte takes the same view -- traditional values prevalent in the rural areas are still exercising excessive pressure and constraints on an increasingly emancipated youth.[5] On the other hand, S.E. Kame[6] as far back as 1956, saw the crumbling of the traditional society as the cause of exodus among the Bamileke people. He argued that the traditional administration had become corrupt and its authority had been degraded under the influence of the colonial administration and Christian missions. As a consequence, the youth could no longer play the role they had been playing in the original society and felt forced to leave. Barbier, et. al., also have stressed the conflict arising from youth wanting to share in the proceeds from agricultural produce.[7] Another point about intergenerational conflict which has often been mentioned but almost never substantiated is the practice of witchcraft, rampant among the rural communities in most of the southern parts of Cameroon.

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[4] Albert (1943), p. 264 quoted by Champaud (1983).

[5] E. Nganso (1977), Memoire DES.

[6] S. E. Kame (1956) quoted by Champaud (1983).

[7] J. C. Barbier, G. Courade & P. Gubry (1982) Cahier ORSOM, No. 1, pp. 112-118.

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Youths have reportedly been scared away from their villages by the elderly generations who are purported to have magical powers.

It has often been argued that many people move urbanward in order to benefit from the facilities that towns offer -- health, better health care, schools, transportation, lighting, cleaner water, entertainment and other distractions. Most of these advantages are nonexistent in the rural areas. The urban environment is therefore seen as more convenient. This impression for the most part is generated by the increase in the knowledge of urban conditions as a result of regular visits made by urban residents to their areas (rural) of origin. Schooling has also contributed immensely to the broadening of knowledge about the external world. Another determinant in the choice of the urban area of destination, is the attitude of earlier migrants towards the new arrivals. The existence of family relations, friends or merely members of the same village in an urban area is generally a guarantee for board, lodging and often assistance in obtaining employment. As described in detail by Champaud[8] and Barbier, et. al.[9] the existence of elaborate family, village, or divisional associations in the areas of immigration have contributed greatly to migration among the Bamileke peoples in Cameroon. These social structures help to integrate the new migrant into the urban environment while the money gathered through the traditional rotating credit schemes ("njangi," "tontines," "esusu") often constitute a solid financial boost to start a business. Interpersonal relations in such associations often guarantee job opportunities for the new migrants.

The modern formal educational system in Cameroon is so far the greatest cause of urbanward migration. It is those who had obtained some level of

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[8]Champaud, J. (1983), pp. 202-211.

[9]Barbier, J. C., Champaud, J, and Genbreau (1983).

schooling, who had access to white-collar, better paying jobs in the urban areas during the colonial and early independence years, who were in the position to welcome more migrants and provide them with jobs. The situation at present is much more critical. Most of the post-primary educational institutions are situated in urban areas. Therefore, many of the children (10-12 years old) who continue into post-primary schooling must move to the urban areas. Since only few of these institutions offer boarding facilities, these young persons are exposed to all aspects of urban life while at school and become fully integrated by the time they graduate or drop out from the school system. Even if many boarding schools existed, the fact remains that young persons who continued within the school system up to university level automatically would be forced to move from small to medium-sized towns and finally to the capital city.[10] Another issues concerns the fact that the school curricula have very little agricultural or rural development components and therefore can hardly help the youth to develop any interest in the rural environment. As a consequence, even those who drop out from school generally prefer to stay in the urban areas. Education provides them with knowledge of the outside world and with rudimentary proficiency in the French and/or English languages, thus reducing the obstacles they might encounter in urban areas. A recent study on the aspirations of Cameroonian youth by the year 2000 confirms preferences for urban residence, government jobs and, to some extent, mechanicized agriculture.[11] It is not surprising that a young person who leaves the

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[10]There exists an official text which recommends the creation of a government high school or Lycee and a government technical college for each division and at least a government secondary school for each subdivision. These are usually opened at the headquarters of these administrative units. The university is in Yaounde though recently, university centers have been opened in Douala, Dschang, Ngaoundere, and Buea.

[11]Lamlenn, B. S. (1985), pp. 45-62.

rural area at a young age without any farm, house, or other landed property, with neither the interest nor the training in agriculture and whose peers and friends have remained with him in the urban area would prefer urban life. With the present high rates of schooling in Cameroon (68 percent of persons aged 6-14 years were in primary schools in 1976), the educational system is certain to be the main source of rural-urban migration in the future.

Marriage has to some extent, contributed to the urbanward migration of women and children in Cameroon. The post-marital migration of a husband eventually results in the migration of the wife and children, especially when the couple is young and possesses little landed property. The general trend has been for a migrant bachelor to return to look for a wife from his area of origin. Other motivations for women as described by Barbier, et. al., are the desire to become more emancipated, the search for more money even if, in the absence of other jobs, prostitution is resorted to, and to some extent, divorce.

A number of other motivations or inducements can be found in the historical development of Cameroon up to the present date. With the opening of European plantations and the formation of urban agglomerations, migration was encouraged and later became spontaneous, especially after the 1930 economic crisis. With the beginning of World War II, migration was drastically reduced by the institution of the "Laissez Passer" over the whole territory, according to which every person was required to obtain a permit from the administrative head of his place of residence before moving out. The lifting of this ban in 1946, as well as the end of forced labor, significantly liberated the population and increased migratory streams toward plantation areas and to towns. The creation of new administrative units in the late 1950's and early 1960's also stimulated the growth of towns in the hinterland which attracted migrants

from the neighboring rural areas. The political uprising of the early 1960's also contributed significantly to massive departures from the rural areas of parts of the Western, Littoral, and Centre provinces. The approach that was used to quell these riots was the forceful concentration of residents of these areas along the main roads or into clusters or "regroupements" which could then easily be monitored and protected. The persistent insecurity, the absence of any community facilities, and the distance from farms and fertile land prompted many people to seek refuge elsewhere. Finally, the fact that development policies since independence have been predominantly urban-oriented is a great inducement for rural-urban migration.

3.6 Government Reaction to Migration

The government of Cameroon has become increasingly sensitive to both the consequences of past migration trends and the increase in the volume of urban-ward migration, especially to the main cities of Douala and Yaounde.

A number of resettlement schemes have since been launched or supported to encourage migration into sparsely populated, relatively more fertile agricultural lands. One of these is the Yabassi-Bafang project to the north of Douala city in the Littoral province. This elaborate resettlement scheme was initiated to make up for massive drift of the population out of this region into the city of Douala during the early years of independence. In the Nde division of the Western province, the "Pont du Noun" resettlement project aimed at settling on an empty stretch of land between the Nde and the Noun divisions. And further north, in the Benoue plain, the goal of the North-east Benoue project was to resettle large numbers of the Mafa and other Kirdi mountain dwellers in the relatively more fertile and more hospitable, but sparsely populated, plains to the north of Garoua town. This project was a more humane approach than the forceful evictions of the Mafa mountain dwellers around Mora

in the 1960's. In addition, the government has supported smaller scale resettlement projects as part of development projects in the Mbo plain, the Ndop plain, and around Galim, the Mbo Nso plain and Wum. Apart from these later small scale projects, government resettlement projects have so far created very little impact on migration in Cameroon (Barbier, 1971; Bonnamour, 1972).

The other approaches have been geared towards the development of the rural milieu with the view to rendering it more economically viable and hospitable, and thereby reducing the propensity for rural dwellers to move to urban areas. In order to improve the agricultural output, farm tools are made more available and such inputs as fertilizers and pesticides are provided at subsidized rates. Active research is being carried out on new seed species and methods. Farmers are being offered expert advice by trained farm demonstrators stationed in rural areas and through the cooperative societies which have recently been overhauled to render them more efficient. The greatest incentive, however, has been the constant increase in the prices of the main cash crops even though it is felt that these do not match market price increases.

In addition, more encouragement is given to farmers to regenerate their plantations. Competitions such as the "best farm" competition from the level of administrative unit up to the national level, as well as the five yearly agricultural shows with handsome prizes, are designed to spur farmers to produce more and to attract the younger persons. Agricultural investment is also facilitated through the National Fund for Rural Development (FONADER) or the "farmer's bank." To ease evacuation and sale of agricultural produce, a dense network of roads is being constructed and maintained and the Mission for the Development of Foodcrop Production (MIDEVIV) was created to assist in the purchase of foodcrops in the rural areas for sale in the urban areas.

Furthermore, ambitious projects are underway for the development of storage facilities for easily perishable agricultural products such as cereals, tomatoes, potatoes, cocoyams, and plantains.

In order to further attract the younger person into agriculture, the National Civic Service for Participation in Development was established to provide more intensive courses in tropical agriculture and rural development with the use of adapted modern tools and methods. Graduates from this service are settled in rural areas and provided with the necessary tools and some funds to start off. So far the number of youths trained under this system has been small, and the number of defections has been on the increase. Furthermore, rather timid efforts have been made recently to introduce agriculture into the curricula of the primary and secondary schools of the country with a "best school farm" competition.

Efforts aimed at making rural areas more attractive have included the provision of potable water (pipe borne or wells), electricity, more schools, health services (introduction of primary health care) and rural mobile postal services, development of rural markets and facilities for entertainment, better transportation and other communication networks.

In the same vein, measures have been taken to divert migration streams from the cities of Douala and Yaounde through the development of more interior growth poles mainly at the headquarters of the various provinces. To this end, the major towns have been provided with pipe borne water and electricity and there has been a gradual decentralization of the administrative and economic machinery so as to give more effective f ctions to the towns of the hinterland. The investment code provides adequate incentives for investment in smaller towns while the National Fund for the Development of Small and Mediuim-sized Enterprises (FOGAPE) has been created to assist young entrepre-

neurs. Furthermore, communication lines between urban areas have been greatly improved.

In order to coordinate, harmonize, and monitor the implementation of the various projects, regional integrated development bodies have been created. These include the ZAPI (Zones d'Action Prioritaires Integres) of the Eastern province, the North-west Development Authority (MIDENO), the Littoral and Development Authority (MEAL) for the coastal regions of the South-West, Littoral, Southern provinces, the Western Plateau Project of the Western province, and the North-east Benoue Project in the North province. More of these types of bodies with a wide regional competence are being planned.

The net effect of these various efforts of the government on migration in Cameroon shall definitely be measured during the forthcoming population census in 1986.

3.7 Reflections on the Possible Relationships Between Rural-Urban Migration and Fertility in Cameroon

The existing literature and statistical evidence on the fertility behavior of migrants or on the relationship between the urbanization and fertility in many developing, especially African countries, has not identified any precise trends. Urban fertility studies have been quite fragmentary in Cameroon and the 1978 World Fertility Survey of Cameroon brought little conclusive clarification on this subject. It is for these reasons that we have had to resort to mere reflections on the various factors that are most likely to cause either a decrease or an increase in fertility or no change in urbanward migration in Cameroon.

A possible drop in fertility could be attributed to the adaptation of the migrants to the urban environment. In this case the town is seen as the embodiment of western values which generally favor lower fertility. As a result

of the mixture of several ethnic groups an urban culture is born which advocates smaller families. The levels of education and the standard and cost of living are high. Also, as a result of greater employment of women in non-agricultural jobs, childbearing and work can become more and more incompatible. Furthermore, the common aspirations of urban parents for higher educational levels and a better future for their children, coupled with the high costs of education and upkeep, could compel them to have fewer children and to resort to more contraceptive use, especially if the government should finally adopt family planning as an official policy. Viewed from another angle, many marital disruptions in rural areas are attributed to infertility and it is reported that most of those infertile women end up in urban areas. This should help play down the fertility levels of such areas. Various studies have also reported a very high prevalence of venereal diseases in Cameroonian towns. In view of the positive relationship between these diseases and sterility, it could be concluded that the sterility rates in urban areas of Cameroon would increase as a result of rural-urban migration and therefore fertility would be reduced (Nasah et. al., 1974; Retel-Laurentin, 1974).[12]

There is also a likelihood that the fertility levels in the urban areas might actually not differ significantly from those of the rural areas. As shown in Tables 3.8, 3.9 and 3.10, the urban populations of most of the towns are fairly homogenous and consist of migrants from the same administrative unit in which they are found. The particular study of Y. Marguerat (1979) demonstrates that most urban populations are structurally no different from the rural populations in their neighborhoods, with two exceptions, the cities of Douala and Yaounde. Even in the latter case, the studies of Barbier et. al

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[12] Published in Adadeouh, Bk - Subfertility and Infertility in Africa, pp. 75-78, and pp. 69-80.

(1983) and Champaud (1983) described the elaborate system of associations existing in urban areas which facilitate the integration of migrants into urban life. Though this practice might not be quite distinct among all tribes, it is generally more convenient to move to an area where one's acquaintances are settled. Earlier urban settlements in urban areas were in ethnically homogeneous quarters and these quarters have retained those names until today. Furthermore, the various associations often have traditional dances and their organizational structures are such that they closely respect hometown traditional values. There is frequent contact of migrants with their areas of origin for funeral ceremonies, ancestral rights, sacrifices, installation of village or family heads or chiefs, medical treatment, to visit relatives, to construct a personal house or to seek traditional titles. Very much unlike what earlier theoretical studies had anticipated, extended family kinship ties are still reasonably strong. Consequently, the integration of new migrants is not likely to be so traumatic as to effect a significant change in fertility behavior. There could be a reduction in fertility during the period needed to settle down independently with a job, but it is most likely to be compensated for with time. The argument here, is that in Cameroon, the "social distance," as termed by Champaud (1983), between the rural-urban migrant and his place of origin is much shorter than the physical distance.

Other arguments even indicate higher fertility for the urban migrants than for the rural stayers. If it is true that the rural-urban migrants in Cameroon continue to share the same values as their rural stayers, then the very nature of the urban environment with the facilities it offers should guarantee higher fertility levels for the former. A recent analysis by Keuzeta (1984) demonstrates that over 80 percent of the health facilities and

related personnel are found in urban areas of Cameroon, with an marked concentration within the cities of Douala and Yaounde. Most rural health facilities lack basic equipment and trained personnel. There is greater availability for prenatal care (fewer pregnancy wastages) and post-natal care (less child growth retardation, lower infant and child mortality rate) and consequently less time wasted between births in urban areas. The availability of health facilities (especially antibiotics) is another guarantee against the rampant venereal disease prevalent in urban areas. There is also less risk of secondary infertility because of the more hygienic delivery conditions and better trained medical personnel.

Urban patterns of life, especially non-agricultural employment and the prevalence of Western values, could result in shorter periods of child spacing in the absence of any effective contraception. This is quite consistent with late marriages among those who were were retained longer within the educational system.

Another factor that could be instrumental in increasing urban fertility levels is the present government policy which is implicitly pronatalist and affects mainly the employees of the public sector who are settled mostly in urban areas. The current policies such as family allowance payments which are based on the number of children ages below 21 years of age; the allowance for the civil status marriage of up to four wives; the preferential tax rebates, government housing, and car and housing construction soft loan opportunities to married persons; the free primary schooling (only first 4 years for private schools) and children's transportation for workers of several government bodies are likely to encourage many couples to have larger families.

The intermediate character of most other urban areas of Cameroon between the rural areas and the cities of Douala and Yaounde from the point of view of

their population structure and composition and the available infrastructure go a long way in explaining the conflicting differences in their fertility related variables as shown in Table 3.13. This could be blamed partly on the relatively smaller sample size. The first impressions one has from this table is that movement towards the two cities of Douala and Yaounde might result in lower fertility performance, but this seems unlikely since the average desired family size for these cities (7.5 children) is still far above the actual average number of births (4.9). The yet higher expectations for the other urban areas would then also imply that the present government policy of encouraging interior urban growth poles is likely to lead to yet higher fertility levels.

3.8 Marriage Patterns in Cameroon

During the 1976 census, marriage was considered in its broadest sense to include persons in various types of conjugal cohabitation either sanctioned by traditional, civil status or religious legislation or merely in concensual unions. Conventionally, however, most legitimate marital unions in Cameroon are required to have gone through the traditional through the civil status and the religious wedding. The civil status and to some extent religious marriage legislations, require that the customary rights be fulfilled before they can be validated. To many pagan groups and the Muslim community, customary marriage alone suffices. To the Christian community a church wedding is obligatory. Most Cameroonians, and especially civil servants and most private sector employees, regard civil status marriage as not only an official validation of a conjugal union, but a possibility of access to more financial benefits through family allowances, tax rebates and other privileges. Concensual unions are common in urban areas but do exist in rural areas. Though illegal, they often are a first step to legal unions.

Table 3.13 Main World Fertility Survey Findings for Cameroon by Place of Residence

Place of Residence	Total Sample	Age at first marriage for married women aged 25+ years	% of women whose first union had been dissolved	% of women in polygamous unions	% of women aged 45-54 yrs with no live birth	No. of live births per women aged 45-54 yrs	Completed fertility	Desired family size (women aged 25-34 yrs)	% of women aged 25-34 yrs with knowledge of contraceptive method	% of women aged 25-34 practicing contraception	Duration of breast-feeding of last birth (in months)
Yaounde & Douala	1,487	18.5 years	18%	21%	10.2%	4.2	4.9	7.5	71.2%	31.1%	15.2
Other Urban	716	16.6 years	28%	47%	17.8%	4.8	5.8	8.8	41.9%	7.8%	18.9
Rural	6,016	16.9 years	22%	41%	19.8%	4.8	5.9	8.1	29.1%	9.0%	19.8

Source: Direction de la Statistique (Cameroon) - 1983 - Rapport Principal, Vol. 1.

In Cameroon most people below 15 years of age are single, though a slightly higher proportion of females are married. As shown in Table 3.14, at the ages over 15, marital status structure changes for both sexes. Looking at the last row of the table, 39.5 percent of the men are single as against 15.9 percent for the females; 55.8 percent of the men and 66.8 percent of the women are currently married and here we note that 23.8 percent of the currently married men are in polygamous unions. While only 2.1 percent of the men are widowed, 13.9 percent of the women fall in this category and a higher proportion of them are divorced or separated (3.4 percent) than men (2.6 percent). Age patterns reveal identical trends for both sexes. Examining the trends by ages, the rate of bachelorhood diminishes rapidly after the 15-19 age group with the decline being faster for women. On the other hand, the proportion of persons who are currently married increases rapidly up to 55 years of age for men and 35 years for women, and then drops as a result of marital disruption through divorce, separation or death of one of the spouses. This is confirmed by the increase in widowhood and divorced/separated persons from age 40 years for both sexes, though the proportions are much higher for the women (13.5 and 4.8 percent, respectively) than for the men (1.7 and 3.9 percent, respectively).

This general pattern conceals a wide regional variation that can be seen in Table 3.15. For men aged 15 years and above, the Northern and Eastern provinces have the lowest proportion single (28.7 and 32.5 percent, respectively) and the highest proportion of currently married persons (66.2 and 63 percent, respectively). This is reflected in their much younger ages at first marriage of 24.0 years and 24.7 years for men, respectively. Conversely, though the Littoral province has the highest proportion of single persons and the lowest proportion married, as a result of its large urban population (50.3 and 45.9

Table 3.14 Marital Status Proportions by Age and Sex (Cameroon, 1976)

Age Group	Males						Females			
		Currently Married								
	Single	Monogamous	Polygamous	% of Polygamous out of currently married men	Widowers	Divorced/ Separated	Single	Currently Married	Widows	Divorced/ Separated
Less than 15 years	99.96	0.02	0.0	0.0	0.01	0.01	99.15	0.82	0.01	0.02
15-19	97.1	2.4	0.2	7.7	0.1	0.2	54.4	44.5	0.2	0.9
20-24	76.4	21.0	1.7	7.5	0.2	0.7	19.8	77.6	0.7	1.9
25-29	41.8	49.9	6.2	11.1	0.3	1.8	9.2	86.3	1.7	2.8
30-34	22.2	61.7	12.5	19.5	0.7	2.9	6.1	86.4	3.9	3.6
35-39	15.7	61.8	18.1	22.7	1.1	3.3	5.1	82.8	7.9	4.2
40-44	12.6	60.1	21.7	26.5	1.7	3.9	4.6	77.1	13.5	4.8
45-49	11.0	57.8	24.6	29.9	2.5	4.1	4.3	68.7	22.2	4.8
50-54	9.3	56.9	25.5	30.9	3.6	4.7	4.5	58.6	31.3	5.6
55-59	8.6	54.9	27.0	33.0	5.0	4.5	4.2	48.5	42.8	4.5
60-64	7.9	55.7	24.9	30.9	6.6	4.9	5.4	37.0	51.5	6.1
65+	7.7	51.7	24.1	31.8	11.7	4.8	6.7	20.5	67.9	4.9
15+ Years	39.5	42.5	13.3	23.8	2.1	2.6	15.9	66.8	13.9	3.4

Source: Bureau Central du Recensement, (1978), Vol. II, Tome, 2, pp. 10-16, (Tableaux 1a, 16 & 3).

Table 3.15 Regional Variation in Marital Status by Sex (Population Age 15 Years and Above)

Province	Males							Females				
	Single	Currently Married		% of Polygamous out of Currently Married Men	Widowers	Divorced/ Separated	Age at 1st Marriage (yrs)	Single	Currently Married	Widows	Divorced/ Separated	Age at 1st Marriage (yrs)
		Monogamous	Polygamous									
Centre & South	42.3	44.1	8.1	15.5	2.7	2.8	27.4	22.7	57.2	17.3	2.8	21.4
Eastern	32.5	49.9	13.1	20.8	2.4	2.2	24.7	14.4	73.1	10.1	2.4	18.5
Littoral	50.3	39.4	6.5	14.2	1.9	1.9	28.1	23.8	56.6	15.8	3.8	20.2
Northern	28.7	48.8	17.4	26.3	2.0	3.1	24.0	6.4	78.4	10.8	4.4	15.7
North-West	48.1	34.2	14.9	30.3	1.5	1.5	28.3	24.9	61.7	10.4	3.0	20.5
Western	40.7	34.5	21.1	37.9	2.4	1.3	27.4	12.2	66.6	19.4	1.8	18.3
South-West	45.9	39.8	9.4	19.1	1.9	3.0	27.2	19.3	64.5	12.2	4.0	18.7
Cameroon	39.5	42.5	13.3	23.8	2.1	2.6	26.7	15.9	66.8	13.9	3.4	18.6

Source: Op. Cit., compiled from Tables 5a & b and Tables 18 and 24b.

percent), respectively, it is the North-West province which has the highest age at first marriage (28.3 years) for men. Among women, there is some reversal of positions among the provinces. The Northern and Western provinces have the lowest proportion single (6.4 and 12.2 percent, respectively) but it is the Eastern province which has the next highest proportion of currently married women (73.1 percent) to the Northern province (78.4 percent). This can be explained in part by the relatively high proportion of widowed women in the Western province. Among women as well, divorce and separation are most common in the Northern and South-West provinces (4.4 and 4.0 percent, respectively). The highest average age at first marriage (21.4 years) is in the Centre and South provinces and the lowest ages are in the Western and Northern provinces (18.3 and 15.7 years, respectively). It is also of interest to note that the provinces with the higher rates of polygamous unions among currently married men are the Western Province (37.9 percent), and the North-West Province (30.3 percent) and the Northern province (26.3 percent). The Northern province, with the youngest ages at first marriage for both sexes, also has the highest divorce rates and one of the highest sex differences in age at first marriage (8.3 years in favor of the men). The South-West province, with sex differences in age of 8.4 years, has the second highest divorce rates though the Western province with the widest differences (9.1 years) has the lowest divorce rates among women and the highest widowhood rates (19.4 percent). Most women, therefore, outlive their husbands but do not remarry.

Urban and rural residence also has an important impact on the patterns of marriage in Cameroon (See Table 3.16). This could be attributed to the differences in the structure and other characteristics of their population. Generally the urban areas have a younger population with higher levels of edu-

Table 3.16 Urban-Rural Variation in Marital Status by Age and Sex and by Province (Population Age 15 Years and above)

MEN

Province	Bachelors		Married: Monogamous		Married: Polygamous		Widowers		Divorced/ Separated		Age at 1st Marriage (yrs)	
	Urb	Rur	Urb	Rur	Urb	Rur	Urb	Rur	Urb	Rur	Urb	Rur
Centre & South	56.1	34.1	35.6	49.0	6.2	9.3	0.9	3.8	1.2	3.8	27.4	26.6
Eastern	40.5	30.4	44.5	51.3	11.7	13.3	1.5	2.6	1.8	2.4	25.1	24.3
Littoral	52.9	41.9	38.0	43.6	6.2	7.7	1.3	3.7	1.6	3.1	27.8	29.1
Northern	38.8	26.7	42.3	49.7	14.4	17.9	1.1	2.1	3.4	3.6	25.9	23.6
North-West	52.1	47.3	34.3	34.1	11.4	15.4	1.0	1.6	1.2	1.6	27.7	28.4
Western	52.4	36.1	32.2	35.4	13.3	24.2	1.3	2.8	0.8	1.5	27.0	27.4
South-West	49.0	44.3	40.8	39.2	6.8	10.8	1.3	2.2	2.1	3.5	27.1	27.5
Cameroon	50.7	34.3	37.8	44.8	8.6	15.3	1.1	2.5	1.8	3.1	27.4	25.9

WOMEN

Province	Singles		Married		Widows		Divorced/ Separated		Age at 1st Marriage (yrs)	
	Urb	Rur	Urb	Rur	Urb	Rur	Urb	Rur	Urb	Rur
Centre & South	34.1	18.2	54.6	58.3	7.9	20.9	3.4	2.6	21.6	20.9
Eastern	19.8	13.1	69.7	73.9	7.3	10.8	3.2	2.2	18.7	18.2
Littoral	26.6	16.8	57.3	54.8	12.1	25.1	4.0	3.3	20.1	19.9
Northern	9.7	5.9	73.5	79.2	8.2	11.2	8.6	3.7	15.9	16.7
North-West	28.4	24.3	59.4	62.1	8.3	10.7	3.9	3.9	20.6	20.4
Western	20.8	10.1	62.7	67.5	13.9	20.8	2.6	1.6	19.4	18.1
South-West	21.9	18.2	63.9	64.8	9.3	13.4	4.9	3.6	18.9	18.5
Cameroon	24.2	13.1	61.2	68.8	10.1	15.2	4.5	2.9	19.5	18.2

N.B. The urban and rural proportions refer to the total populations for each sex in the respective areas.

Source: Op. Cit., compiled from Tables 6a & b, 7a & b, 18 and 24b.

cation and relatively higher standards of living and greater proportions of the active population employed in non-agricultural activities. However, the peculiar patterns of each province are reflected to some extent in their urban populations. There are more married persons, polygamous unions, and widowed persons in the rural areas than there are in the urban areas. The rates are higher for females in both areas. In the particular case of divorce, many more divorced males are found in rural areas while the rates of divorce for women are higher in the urban areas. The average age at first marriage is generally higher in urban areas (19.5 years for women and 27.4 years for men) than in the rural areas (18.2 years for women and 25.9 years for men). In both areas, the average age difference between spouses is almost the same.

This general trend again varies from one province to another. The sex differences in age at first marriage is highest (10 years) for the urban areas of the Northern province while other provinces show higher sex differences instead in rural areas. In the Northern and Eastern provinces, where most urban areas have very little structural differences from the adjacent rural communities, the incidence of marrige and more specifically polygamous marriages does not differ significantly, though the rate of widowhood and to some extent divorce, do differ. On the other hand, the Western and North-West provinces have significant differences in their rates of polygamy, with higher rates for rural areas.

The level of education plays a significant role in marital status patterns in Cameroon especially among women as shown on Table 3.17. The most obvious effect is the later age at first marriage which occurs as many young people continue to progress within the educational system. This increase in age, however, is higher for males whose stay is longer within the educational system. Among females, there is generally a high dropout rate, especially

Table 3.17 Marital Status Variation by Level of Education and Sex
(Population aged 15 years and above)

Level of Education / Marital Status	MALES				FEMALES			
	Never been to school	Islamic education	Primary (including nursery)	Secondary and higher education	Never been to school	Islamic education	Primary (including nursery)	Secondary and higher education
Never Married	24.1	27.5	51.8	63.2	7.3	7.1	34.8	64.9
Married-monogamous	49.2	48.0	37.6	31.6	70.5	79.5	60.6	33.1
Married-polygamous	19.2	20.8	7.9	4.2	--	--	--	--
(Proportion of polygamous among married men)	(28.1)	(30.2)	(17.4)	(11.7)				
Widowed	3.7	0.9	0.8	0.3	18.5	7.5	2.1	0.7
(Proportion of the widowed among ever-married persons)	(4.9)	(1.2)	(1.7)	(0.8)	(20.0)	(8.1)	(3.2)	(2.0)
Divorced/Separated	3.8	2.8	1.9	0.7	3.7	5.9	2.5	1.3
(Proportion of the divorced/separated among ever-married persons)	(5.0)	(3.9)	(3.9)	(1.9)	(4.0)	(6.4)	(3.8)	(3.7)

Source: Op. Cit., compiled from Tables 8a & b, p. 26.

between the primary and secondary levels and between the secondary and higher levels. Also, there is a greater tendency for women to get married while pursuing their secondary and, especially, higher level studies. Often, they are married to men who are already working. The level of education, however, has a significant effect on the incidence of polygamy. While fewer educated men practice polygamy, many educated women (as from the secondary level) do not accept any form of polygamy. The rates of divorce and separation are far lower for men with higher levels of education (1.9 percent) than for those with none (5.0 percent). Whereas the rates of divorce and separation are only slightly lower for women with higher level of education (3.7 percent) than for those with no education (4.0 percent), the rates of the widowhood are substantially lower for women with higher level of education (2.0 percent) than for those with no education (20.0 percent). The marriages for persons with higher level of education are therefore more stable. As a result of their higher socioeconomic levels, both husband and wife survive longer, hence the low widowhood rates registered for this category.

Economic activity can only affect marital patterns when in the non-agricultural sector (mostly in urban areas). Its effect differs for men and women. While economically active urban women marry at later ages and higher proportions remain single, most men in this category tend to marry earlier. This is because for men, access to work often provides the security and funds to live independently and pay for the dowry or brideprice while for women, economic activity often requires a relatively longer retention within the school system and provides some amount of independence.

The high rate of polygamy in Cameroon, with 23.8 percent of married men aged 15 years and above in polygamous unions, deserves further mention. Table 3.18 indicates that three provinces -- the Western (37.9 percent), North-West

Table 3.18 Rates of Polygamy by Province and Urban/Rural Residence (Population aged 15+ years)

Province	Urban	Rural	Total	
			Rates	Average Number of Women
Centre & South	14.8	15.9	15.6	2.3
Eastern	20.8	20.6	20.7	2.3
Littoral	14.1	15.0	14.3	2.3
Northern	25.4	26.5	26.3	2.4
North-West	24.9	31.0	30.1	2.6
Western	29.1	40.6	37.9	2.7
South-West	14.4	21.6	19.2	2.4
Cameroon	18.6	25.4	23.8	2.5

N.B. Rates of polygamy represent the proportion of polygamous men among all married men.

Source: Op. Cit., compiled from Tables 13, 14, & 15a.

(30.1 percent) and Northern (26.3 percent) -- contribute significantly to this high rate. In effect, the Western and North-West provinces have traditional highly structured societies that live in scattered village settlements on the western high plateau areas of Cameroon. The traditional hierarchy consists of a series of titles at the summit of which is the chief or the fon (nfon). A typical requirement for access to many of the titled ranks is the ownership of property, a large family, and many wives. Also, among these societies, the notion of age is relative and depends more on achievement which in most cases is measured by the size of a man's family or the number of children ever born by a woman. Consequently, in the traditional setting, each man endeavours to develop a large family and each woman strives to achieve high levels of fertility in order to be respected. Access to a polygamous status usually comes with age. A man initially marries a first wife, then a second, and a third, and so on. Consequently, rates of polygamy increase with age (see Table 3.14). Rarely does a man take on two or more wives at the same time except, of course, when he is inheriting a position of highly titled parent or relative. In such cases, he inherits all the widows except his mother. He continues to bear children with the younger ones whose fertility performance would consequently not be hampered by the death of the first husband. However, as a result of the massive rural exodus, especially in the Western province, most heirs who had moved to urban areas hardly ever return or when they do, reject many of the older wives of their predecessors. Hence, the high rates of older widows in rural women. Western influences, mainly Christianity and education, which are more pronounced in the urban areas, have contributed much to the decline of polygamy in this region.

In the Northern province, the high rates of polygamy can be attributed mainly to the predominance of the Muslim faith which advocates polygamy. The

Foulbe ethnic group is the largest and most Islamised. Polygamous unions in this part of the country are notorious for their instability, with high divorce and remarriage rates. It is common to meet women who have remarried more than five times. The higher rates of polygamy for the Nothern, North-West, and Western provinces have been greatly enhanced by the low literacy rates among females.

In most of the provinces in the southern part of Cameroon, the rates of polygamy are rather low and have been increased by immigrants from the other provinces. The tradition of having many wives in these regions has been greatly disrupted by the increase in the educational levels of females (in both urban and rural areas) and the relatively higher dowry that is demanded today for marriage of educated females. The educated females are more likely to reject polygamy. In the southern provinces, widow inheritance or remarriage is rare.

The relationship between polygamous unions and fertility, therefore, is quite intricate. The Cameroon World Fertility Survey revealed that there was no difference between the fertility of women in polygamous unions and those in monogamous unions. As mentioned above, in the Western and North-West provinces, all women strive to achieve high fertility, and widow inheritance guarantees continuation of fertility performance. The desire by polygamous men to achieve large families results in a fertility outcome for each of their wives as a monogamous man would achieve with his one wife. The period of post-partum-abstinence is enjoyed by both monogamous and polygamous wives with one only difference that the polygamous husband is likely to continue sexual activity with his other wives. It is likely that the fertility of women in higher order polygamous unions (4-10 wives and above) would be lower than that of monogamous unions. Studies have not been made in this area.

Finally, it is noteworthy that the concept of family size is fairly different between polygamous and monogamous men. The polygamous man is more interested in the quantity than the quality of his offspring. The children of monogamous parents are most likely to achieve higher educational standards than those of polygamous parents whose upbringing is traditionally left to their mothers and senior relatives. The children of polygamous families are likely to stop attending school -- if they ever start -- and to begin independent living earlier than those of monogamous unions. If they succeed in life, then they often reach out to sponsor or provide other employment for their younger brothers, sisters, half-brothers, or half-sisters. With this weight of responsibility, they are less likely to succeed than they would be if they were from monogamous unions.

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Chapter 4

Descriptive Analysis of Migrant Characteristics and Fertility from the 1978 Cameroon World Fertility Survey (CWFS)

4.1 Introduction

The analysis in this chapter is based on the data contained in the 1978 Cameroon World Fertility Survey (CWFS). The 1978 Cameroon World Fertility Survey data were collected during the time interval of January 15 through September 15, 1978. The CWFS was composed of two questionnaires, namely, household and individual. The individual questionnaires included data for 8,219 women, aged 15-54. Included in the survey were the following items: migration history, full pregnancy history, knowledge and uses of contraceptives, maternal child care, history of marital status, employment history of respondent, background of the husband, and other demographic and socioeconomic characteristics.

The sample design for the survey was a self-weighting, nationally representative probability sample, using basically a two-stage design for the household survey, with a further sampling stage for the individual survey. The household survey was carried out in all the households found within the 267 sub-areas, which were selected to limit the size of the sample of households. A household questionnaire was assigned to each of 40,392 households. At the final stage, a number of households were selected within each sub-area, in which all women aged 15-54 would be interviewed. The sampling rate for this final stage was calculated for each sub-area so as to ensure a self-weighted sample of women in all the main strata. A total of 9,137 women aged 15-54 were identified for interview.

The 1978 CWFS permits the investigation of the migration histories of females. Pertinent information includes the year of movement, the duration of stay and the name of sub-division (arrondissenment or county) for each of a

maximum of six moves. The reason for leaving the previous residence was ascertained, but was not coded in the raw data tape.

4.2 Characteristics of Total Sample

Table 4.1 shows the distribution of the total sample of 8,219 women by age group and urban-rural residence. Of this sample, 6,016 women are rural residents and 2,203 women are urban residents.

Table 4.2 shows the distribution of the total sample by the urban-rural character of the birth community and community of current residence. The share of urban residents in our total sample, 26.8 percent, indicates that the level of urbanization is still low in Cameroon. The 1976 Cameroon Population census (with appropriate adjustment for the error of coverage) showed that 28.5 percent, or 2.19 million people out of the total population of 7.66 million, lived in urban areas. Similar tables were generated in our previous studies for Korea and Mexico (Lee et. al. 1981 and Lee et. al., 1983), using the 1974 Korean World Fertility Survey and the 1976 Mexican World Fertiity Survey. Tables 4.3 and 4.4, which were reproduced from Korean and Mexican reports, indicate that the shares of urban residents were 52.0 and 60.7 percent in Korea and Mexico, respectively. Table 4.2 shows that the number of rural-urban migrant women is 933, which is 11.4 percent of our Cameroon total sample. Tables 4.3 and 4.4 show that shares of rural-urban migrants in Korean and Mexican total samples were 34.7 and 18.5 percent, respectively.

Table 4.5 indicates that 55.5 and 45.0 percent of the total sample women in Yaounde and Douala, respectively, lived in rural areas during their childhood. Yaounde is the capital city in Cameroon and has a population of 314,000. Douala is the other major city in Cameroon and has a population of 459,000.[1]

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[1]The third largest city, Nkongsamba, has only a population of 66,000.

Table 4.1 Distribution of Cameroon Total Sample (in number of women) By Age Group and Size of Current Residence

Age Group	Yaounde	Douala	Other Urban Areas	Rural	Total
15-19	137	187	156	1,061	1,541
20-24	164	229	125	1,083	1,601
25-29	116	154	98	922	1,290
30-34	63	104	98	798	1,063
35-39	57	81	73	711	922
40-44	42	58	69	673	842
45-49	28	31	58	469	586
50-54	7	29	39	299	374
TOTAL	614	873	716	6,016	8,219

Table 4.2

Distribution of Cameroon Total Sample Women by Community of Childhood Residence and Community of Current Residence[a]

	Community of Current Residence		
Childhood Residence	Rural	Urban	Total
Rural	5,512 (67.1%)	933 (11.4%)	6,445 (78.4%)
Urban	371 (4.5%)	1,188 (14.5%)	1,559 (19.0%)
No Answer	133	82	215
Total	6,016 (73.2%)	2,203 (26.8%)	8,219 (100%)

[a]percent of grand total is in parentheses.

Table 4.3

Distribution of Korean Total Sample Women by Community of Birth and Community of Current Residence in the 1974 Korean World Fertility Survey

Community of Birth	Community of Residence R	U	Total
R	1,920 (44.6)[a]	1,497 (34.7)	3,417
U	166 (3.9)	726 (16.9)	892
Not Stated	92	139	231
TOTAL	2,178 (48.0)	2,362 (52.0)	4,540 (100.0)

[a]Percent of grand total is in parentheses.

Source: KWFS data tapes.

Table 4.4

Distribution of Mexican Total Sample
Women by Community of Birth and
Community of Current Residence
in the 1976 Mexican World Fertility Survey

Community of Birth	Community of Residence: Rural	Urban	Total
Rural	2,625 (35.9)[a]	1,355 (18.5)	3,980
Urban	251 (3.4)	3,079 (42.1)	3,330
Total	2,876 (39.3)	4,434 (60.7)	7,310 (100.0)

[a]percent of grant total is in parentheses

Source: MWFS data tapes

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Table 4.5

Distribution of Total Sample (in Percent) by Size of Community of Current Residence and Size of Childhood Community

Community of Childhood Residence	Community of Current Residence				Total	
	Yaounde	Douala	Other Urban	Rural	N	%
Rural	55.5	45.0	27.8	91.6	6,445	78.4
Urban	43.7	51.8	65.4	6.2	1,559	19.0
No Answer	0.8	3.2	6.8	2.2	215	2.6
Total	100.0 (614)	100.0 (873)	100.0 (716)	100.0 (6,016)	8,219	100.0

Tables in our previous studies indicated that 54.9 percent of total population in Seoul and 26.3 percent of total population in Mexico City were born in rural areas.

The above comparison of Cameroonian migration data with that of Korea and Mexico shows that the level of urbanization is highest in Mexico and lowest in Cameroon. However, the pace of urbanization in the capital city is much more rapid in Cameroon than in Mexico and is equal to that in Korea. Korea is widely recognized for its enormous rural-urban migration during the past two decades. The ratios of the shares of rural-urban migrants (11.4, 34.7, and 18.5 percent) to the shares of urban residents (26.8, 52.0 and 60.7 percent), 42.5, 66.7, and 30.5 percent, for Cameroon, Korea, and Mexico, respectively, indicate that the speed of rural-urban migration is most rapid in Korea and slowest in Mexico.

According to the 1976 Cameroon Population Census, the urban area is defined as all administrative headquarters (provincial, divisional, sub-divisional and district) regardless of their population sizes, as well as agglomerations with a population of at least 5,000 people, which have urban facilities such as hospitals, secondary schools and car park stations. It is important to recognize that some of the differences discussed above among Korea, Mexico, and Cameroon might be due to the different definitions of the urban areas in these three countries. In Korea urban is defined as an administrative unit with more than 50,000 people whereas in Mexico urban refers to localities of 2,500 or more inhabitants.

Table 4.6 shows the distribution of total sample by age group and marital status. The early marriage pattern for Cameroon is clear from this table especially when compared to the percentages for Mexican women shown in the same table. For the age group of 15-19, about 48.9 percent of the women

Table 4.6 Distribution of Cameroon Total Sample By Age Group nd Marital Status[a]

Age Group	Single	Currently Married	Widow	Divorced	Separated	Total
15-19	788 (51.1%)	735	3	7	8	1,541
20-24	216 (13.5%) (34.4%)[b]	1,331	9	17	28	1,601
25-29	58 (4.5%) (15.1%)	1,163	21	18	29	1,290
30-34	26 (2.4%) (8.8%)	945	31	25	36	1,063
35-39	12 (1.3%) (5.5%)	793	60	25	32	922
40-44	12 (1.4%) (6.1%)	706	72	23	29	842
45-49	13 (2.2%) (4.7%)	431	101	18	23	586
50-54	6 (1.6%)	266	75	10	17	374
TOTAL	1,131	6,370	372	143	202	8,219

[a] second percentage in parenthesis is for Mexico

[b] percentages for Mexico are derived from an analysis of 1976 Mexican World Fertility Survey data (see Lee et.al., 1983).

sampled have ever married and for the age group of 20-24 about 86.5 percent have ever married. In Mexico only 65.6 percent have ever married for the age group 20-24. This percentage for Cameroon increases sharply to 95.5 percent for the age group 25-29 and to 97.6 percent for the age group 30-34. After age 35 more than 98 percent of women are married. This is similar to the case of Korea where by age 30 almost 99 percent of Korean women are married, but quite different from the case of Mexico where even after age 35 more than 5 percent of Mexican women remain single.

Table 4.7 presents the Cameroon sample women cross-classified by age and the number of marriages. Excluding single persons, about 86 percent of the female population is currently in a first marriage. Not surprisingly, the percentage varies by age from a high of 98 percent at the ages 15 to 19 to a low of 69 percent at the ages 50 to 54. Comparing these results to those in Mexico, the second percentage in the table, it can be seen that while at younger ages Mexican and Cameroonian marriages are comparably stable, at older ages about 10 percent fewer women are still in their first marriage in Cameroon than in Mexico. While dissolution is relatively frequent in Cameroon, remarriage is common too. Sixty-five percent of the women whose first union ended in divorce remarried (International Statistical Institute, 1983:4).

Table 4.8 shows that only 0.5 percent of the total sample of women had completed secondary school or had progressed beyond that level. About 64 percent of women cannot read or had no schooling at all; and only 27.4 percent had completed primary school.

One can note from Table 4.8 that the percentage of illiterate women from the sample has declined substantially over the birth cohorts: from 96.5 percent for age group 50-54 to 33.7 percent for age group 20-24. The percentage

Table 4.7

Distribution of Cameroon Sample by Age and Number of Marriages[a]

Age Group	Number of Marriages								Total (Married Women)
	Single	1	2	3	4	5	6	7	8	
15-19	788	741 (98.4%) (99.2%)[b]	12	0	0	0	0	0	0	753
20-24	216	1,297 (93.6%) (96.2%)	82	6	0	0	0	0	0	1,385
25-29	58	1,080 (87.7%) (94.1%)	125	20	6	1	0	0	0	1,232
30-34	26	868 (83.7%) (92.2%)	135	25	6	3	0	0	0	1,037
35-39	12	731 (80.3%) (88.3%)	140	22	9	6	0	0	2	910
40-44	12	670 (80.7%) (89.7%)	126	23	9	2	0	0	0	830
45-49	13	447 (78.0%) (88.3%)	103	17	3	2	1	0	0	573
50-54	6	254 (69.0%) (NA)	86	18	5	4	0	1	0	368
Total	1,131	6,088 (85.9%) (92.5%)	809	131	38	18	1	1	2	7,088

[a] [b] second percentage in parenthesis is for Mexico
percentages for Mexico are derived from an analysis of 1976 Mexican World Fertility Survey data (see Lee et. al., 1983).

Table 4.8 Distribution (in percent) of Samples by Age Group and Education Level and Size of Current Residence

Age Group	Cannot Read or No Schooling	Primary School Not Completed But can Read	Primary School Completed	Secondary School Not Completed	Secondary School Completed	University	Total
15-19	33.7	14.4	27.3	24.5	.1	.0	100 (1,541)
20-24	41.6	11.3	28.9	16.9	0.9	.4	100 (1,601)*
25-29	58.6	10.0	19.6	10.9	.4	.3	100 (1,290)*
30-34	74.7	8.7	10.7	5.6	.2	.1	100 (1,063)*
35-39	85.9	5.6	5.3	2.8	.1	.2	100 (922)
40-44	93.2	3.3	2.0	1.0	.1	.4	100 (842)
45-49	95.7	2.1	1.0	.7	.2	.3	100 (586)
50-54	96.5	2.4	.5	.5	.0	.0	100 (374)
Total	63.7 (5,235)	8.8 (725)	16.1 (1,323)	10.8 (888)	.3 (25)	.2 (19)	100 (8,219)*
Yaounde	22.5	8.3	29.6	36.3	2.0	1.3	100 (614)
Douala	30.7	11.0	27.3	29.6	.8	.7	100 (873)
Other Urban Areas	58.9	8.8	18.7	13.0	.3	.0	100 (716)
Rural	73.3	8.6	12.8	5.2	.1	.1	100 (6,016)

* Include total of 4 women without answer on the specific education level but who can read

of women completing primary school or upper levels of schooling shows a consistent increase from one percent for age groups 50-54 to 2.2, 3.5, 8.4, 16.6, 31.2, 47.1 and 51.9 percent for age groups 45-49, 40-44, 35-39, 30-34, 25-29, 20-24 and 15-19, respectively. This evidence indicates that educational attainment of women has advanced substantially in Cameroon during the last three decades.

The lower part of Table 4.8 clearly indicates that urban residents are much better educated than rural residents. Only 22.5 and 30.7 percent of resident women in Yaounde and Douala, respectively, are illiterate as compared to 73.3 percent in rural areas. About 69 and 58 percent of resident women in Yaounde and Douala, respectively, completed at least primary schooling whereas only 18.2 percent of rural resident women reached the same level of education.

Table 4.9 reveals that almost 74 percent of the Cameroon female sample are Christians, 42 percent being Catholic and 32 percent Protestant. Muslems account for only 17 percent of the Cameroon women sample. However, the popularity of Islam varies widely between urban and rural areas. Only 2.6 and 4.7 percent of female residents in Yaounde and Douala are Muslems whereas 29.5 and 18.7 percent of residents in other urban areas and rural areas, respectively, are Muslems.[2] Approximately 96 percent of resident women in both Yaounde and Douala are Christians.

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[2]It should be noted that the share of Muslems in other urban and rural areas is actually overstated in the 1978 CWFS data because the survey sample was disproportionately heavily selected in Northern province where Muslems are predominant.

Table 4.9

Distribution (Percent) of Total Women Sample by Religion, Age Group and Size of Current Residence

Age Group or Size of Current Residence	Religion					
	Catholic	Protestant	Muslem	Other	No Answer	Total
15-19	46.3	33.0	14.0	6.4	0.3	100 (1,541)
20-24	45.2	31.6	14.9	8.1	0.2	100 (1,601)
25-29	41.6	30.4	18.01	9.6	0.3	100 (1,290)
30-34	36.0	33.1	18.7	11.7	0.5	100 (1,063)
35-39	36.1	32.7	18.7	11.7	0.5	100 (922)
40-44	40.1	32.0	19.0	8.8	0.1	100 (842)
45-49	44.9	30.9	16.2	7.7	0.3	100 (586)
50-54	45.2	27.5	20.6	6.7	0.0	100 (374)
Total	42.1 (3,460)	31.8 (2,612)	16.9 (1,391)	8.9 (734)	0.3 (22)	100 (8,219)
Yaounde	64.2	31.8	2.6	1.1	0.3	100 (614)
Douala	47.7	45.7	4.7	1.6	0.3	100 (873)
Other Urban Areas	30.9	37.7	29.5	1.8	0.1	100 (716)
Rural	40.4	29.1	18.7	11.6	0.3	100 (6,016)

4.3 Migration Patterns of Women Sample

Table 4.10 shows the distribution of the total sample by age group and migration status, including urban-rural-city residence status. However, it is important to warn that the migration status in all the tables in this chapter is based on the size of community for the childhood periods rather than the community size of birthplace or previous residence. As will be discussed in detail in chapter 5, the 1978 Cameroon World Fertility Survey did not identify whether birthplace and previous residence are rural or urban except the cases of Yaounde and Douala. In the regression analyses of chapter 5 migration status is based on the community size of birthplace or previous residence rather than the community size of childhood. The women who are rural-urban migrants to other urban areas excluding Yaounde and Douala and urban natives currently residing in other urban areas are excluded in the regression analyses of chapter 5.

Rural stayers include both rural nonmigrants and rural-rural migrants. Rural nonmigrants are rural residents who have never changed their communities of residence for more than a six month duration. Rural-rural migrants are those who changed their communities of residence within rural areas. Rural-urban migrants are those whose current residence is urban but whose birthplace was rural and who never returned to a rural area for more than a six month duration after they initially left a rural area.[3] Therefore, our definition of rural-urban migration includes the multistage migrants with a unidirectional pattern but excludes the multistage migrant who returned to a type of place similar to where he/she originated.

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[3]Again for tables in this chapter, rural-urban migrants are defined as urban residents whose childhood community was rural.

Table 4.10

Distribution of Total Sample by Age Group and Migration Status With the Size of Current Residence

Migration Status with the Size of Current Residence

Age Group	Rural Stayers N	%	Rural to Other Urban Migrant N	%	Rural to Douala Migrant N	%	Rural to Yaounde Migrant N	%	Urban Natives Residing in Other Urban N	%	Urban Natives Residing in Douala N	%	Urban Natives Residing in Yaounde N	%	Urban-Rural Migrant N	%	Total N	%	Not Known
15-19	965	64.2	34	2.3	61	4.1	65	4.3	114	7.6	119	7.9	70	4.7	76	5.1	1504	100	37
20-24	980	62.6	37	2.4	98	6.3	84	5.4	79	5.0	129	8.2	78	5.0	81	5.2	1566	100	35
25-29	825	66.3	39	3.1	80	6.4	70	5.6	50	4.0	64	5.1	45	3.6	71	5.7	1244	100	46
30-34	737	71.4	27	2.6	55	5.3	41	4.0	62	6.0	46	4.5	22	2.1	43	4.2	1033	100	30
35-39	656	72.8	16	1.8	38	4.2	38	4.2	51	5.7	41	4.6	19	2.1	42	4.7	901	100	21
40-44	633	77.2	19	2.3	29	3.5	26	3.2	44	3.4	27	3.3	16	2.0	26	3.2	820	100	22
45-49	435	76.3	16	2.8	14	2.5	14	2.5	40	7.0	15	2.6	14	2.5	22	3.9	570	100	16
Total*	5512	68.9	199	2.5	393	4.9	341	4.3	468	5.9	452	5.7	268	3.4	371	4.6	8004	100	215

*Total includes those from 50 and over Age Group, which are not included in this table.

Table 4.11 shows that only 19.4 and 14.3 percent of Yaounde and Douala total women residents are nonmigrants. The importance of migration for both major cities in Cameroon is very clear. Table 4.11 also shows that 56.8 and 48.8 percent of migrants in Yaounde and Douala, respectively, made one move, and 31.3 and 37.4 percent of migrants in both Yaounde and Douala made two or three movements. Compared to Yaounde, migration is more important in Douala and migrants in Douala made slightly more moves on the average than migrants in Yaounde. The comparison of the last two columns of Table 4.11 shows that currently married Mexican women are more frequent movers than women in the Cameroon sample including single women and widowed and divorced women. In Mexico 43.5 percent of women migrants made only one move and 44.2 percent of migrants made two or three moves; whereas in Cameroon 55.7 percent of women migrants made only one move and only 34 percent of migrants made two or three moves.

Table 4.12 is similar to Table 4.10 except that never-married women are excluded. Since this study is concerned about the fertility behavior of migrant women, our working sample is total ever-married women rather than total sample women which includes single women. Therefore, most tables in this chapter are for the sample of total ever-married women unless otherwise specified.

Table 4.12 clearly shows that, ignoring the youngest age group 15-19, increasingly smaller proportions of younger birth cohorts are rural stayers, shrinking from 77.0 and 77.8 percent for age groups of 45-49 and 40-44 to 67.4 and 67.6 percent for age groups of 25-29 and 20-24. This phenomenon could result from different causes. First, these percentages show that rural-urban migration is age selective in terms of young age groups. However, it is also true that there is an increasing magnitude of rural-urban migration over time. We feel that the latter cause is more dominant. The proportion of rural-urban

Table 4.11
Distribution of Total Sample Women by Size of Current Residence and Number of Movements

Number of Movements	Size of Current Residence: Yaounde	Douala	Other Urban Areas	Rural	Total	Total Mexican Data[a]
Nonmigrants	119 [19.4%][b]	125 [14.3%]	263 [36.7]	2,578 [42.9]	3,085 [37.5]	32.8%
Migrants	(495)	(748)	(453)	(3,438)	(5,134)	
1 movement	281 (56.8%)	365 (48.8)	233 (51.4)	1,979 (57.6)	2,858 (55.7)[c]	43.5%
2 movements	91 (18.4%)	182 (24.3)	118 (26.0)	749 (21.8)	1,140 (22.2)	29.8%
3 movements	64 (12.9%)	98 (13.1)	63 (13.9)	379 (11.0)	604 (11.8)	14.4
4 movements	39 (7.9%)	58 (7.8)	18 (4.0)	176 (5.1)	291 (5.7)	6.4
5 movements	18 (3.6%)	44 (5.9)	20 (4.4)	148 (4.3)	230 (4.5)	2.7
6 or more movements	2 (0.4%)	1 (0.1)	1 (0.2)	7 (0.2)	11 (0.2)	3.2
TOTAL	614	873	716	6,016	8,219	

a These values are percentage distributions of 5,527 Mexican currently married women sample by migration status. From Table 4.8 in Lee et. al. 1983.

b Numbers in brackets are percentages of nonmigrants out of total residents in each size of current residence.

c Numbers in parentheses are different numbers of movements as percentage of total number of migrants in each size of current residence.

Table 4.12
Distribution of Total Ever-married Women by Age Group and Migration Status With the Size of Current Residence

Migration Status with the Size of Current Residence

Age Group	Rural Stayers		Rural to Other Urban Migrant		Rural to Douala Migrant		Rural to Yaounde Migrant		Urban Natives Residing in Other Urban		Urban Natives Residing at Douala		Urban Natives Residing at Yaounde		Urban-Rural Migrant		Total		Not Known
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
15-19	536	72.8	15	2.0	28	3.8	24	3.3	32	4.4	28	3.8	21	2.9	52	7.1	736	100	17
20-24	914	67.6	31	2.3	80	5.9	53	3.9	63	4.7	89	6.6	48	3.6	74	5.5	1352	100	33
25-29	800	67.4	38	3.2	76	6.4	57	4.8	49	4.1	62	5.2	38	3.2	67	5.6	1187	100	44
30-34	726	72.1	27	2.7	53	5.3	35	3.5	58	5.8	43	4.3	22	2.2	43	4.3	1007	100	30
35-39	652	73.3	15	1.7	38	4.3	37	4.2	50	5.6	38	4.3	17	1.9	42	4.7	889	100	21
40-44	629	77.8	18	2.2	28	3.5	26	3.2	43	5.3	25	3.1	14	1.7	26	3.2	809	100	21
45-49	429	77.0	16	2.9	14	2.5	12	2.2	39	7.0	15	2.2	12	2.7	20	3.6	557	100	16
Total	4686	71.7	160	2.4	317	4.8	244	3.7	334	5.1	300	2.6	172	4.6	324	5.0	6537	100	182

migrants to both Yaounde and Douala increase over the younger cohorts. But the increasingly larger proportions of rural-urban migrants seem to lead over time in Douala which is a commercial city rather than in Yaounde which is the capital city. The proportion of rural-urban migrants destined to other cities except Yaounde and Douala hardly changes over time. The proportion of urban-rural migrants increases considerably over the time.

4.4 Socioeconomic Characteristics of the Sample by Migration Status

Table 4.13 shows the mean years of schooling of ever-married women of different age cohorts cross classified by migration status. In all age cohorts, women who spent more time in cities tend to be significantly better educated. The comparison of mean years of schooling between rural stayers with those of urban natives currently residing in Yaounde reveals that Yaounde resident women have 2.6 times as many years of schooling as rural stayers for age groups 20-24 and the ratios became much higher for older age groups --- 3.5, 5.9, 9.2, 10.3 and 20 for age groups 25-29, 30-34, 35-39, 40-44 and 45-49, respectively. This seems to indicate that the urban-rural differential in women's education has decreased substantially over time. As can be seen from the comparison with the data for Korean and Mexican women reproduced in Table 4.14, this phenomenon is much more significant in Cameroon than either in Korea and Mexico. For the age group 45-49, the educational level for rural stayer Cameroonian women, 0.1 year, is much lower than that for both rural stayer Korean and Mexican women, 1.2 years. However, for the age group 20-24, the education level for rural stayer Cameroonian women, 2.9 years, becomes close to that of Mexican women, 3.1 years, even though the Cameroonian education level is still lower than that for Korean women, 4.3 years. In spite of this phenomenon of a decreasing urban-rural differential in women's education

Table 4.13

Mean Year of Schooling of Ever-married Women by Age and Migration Status with Size of Destination

Migration Status with the Size of Current Residence

Age Group	Rural Stayers	Rural to Other Urban Migrant	Rural to Douala Migrant	Rural to Yaounde Migrant	Urban Natives Residing in Other Urban	Urban Natives Residing in Douala	Urban Natives Residing in Yaounde	Urban-Rural Migrant
15-19	2.7	3.9	5.2	6.1	4.2	5.8	7.7	3.2
20-24	2.9	4.4	5.8	6.3	4.0	6.7	7.6	4.4
25-29	1.9	3.1	5.0	6.0	3.4	6.3	6.6	3.1
30-34	1.0	2.0	3.0	4.9	1.4	4.7	5.9	2.2
35-39	0.5	1.5	0.8	4.3	0.5	4.2	4.6	1.7
40-44	0.3	0.2	0.9	1.6	0.0	4.2	3.1	1.7
45-49	0.1	0.1	0.1	1.5	0.5	2.5	2.0	1.4

the increase of women's education in Yaounde is quite impressive. For age group 45-49, the mean years of education for urban natives in Yaounde, 2.0 is much lower than those of Korean urban stayer women, 6.5 years, and Mexican urban nonmigrant women, 4.2 years. However, for the age group 20-24 the education level of urban natives in Yaounde, 7.6 years, is higher than that of Mexican urban nonmigrant women, 6.4 years, even though the educational level of Yaounde women is still lower than that of Korean urban stayer women, 8.8 years, for the age group 25-29.

Table 4.13 also shows that there are large variations in education levels among urban natives. For most age groups urban natives in Yaounde have the highest education levels. Douala's education levels are lower by 1.5 and 0.9 years than those of Yaounde for age groups 15-19 and 20-24, respectively. This seems to imply that many young migrants select Yaounde rather than Douala as the destination of their movements because of the greater educational opportunities available in Yaounde. Douala did not have any university level institutions until very recently. The education levels of urban native women in other cities except Yaounde and Douala, and those of urban-rural migrant women, are much lower than those of Yaounde and Douala. For all birth cohorts, education levels of rural-urban migrant women to Yaounde and Douala are substantially higher than those of rural stayers and a little lower than those of native women in Yaounde and Douala. This may be due to both the selection process in terms of education of rural-urban migration and the adaptation effect of urban residence on women's education. The phenomenon of urban-rural differentials in women's education levels and increasing education levels of women over time, is more clearly shown in Table 4.15, where the distribution of ever married women by education level, age group and migration status is presented. For rural stayer women over 35 years of age, the illi-

Table 4.14 Mean Years of Schooling for Korean and Mexican Women and Their Husbands by Women's Age and Migration Status

Age Group	Korean Sample						Mexican Sample					
	Once and Currently Married Women			Their Husbands			Currently Married Women			Their Husbands		
	Rural Stayers	Rural-Urban Migrants	Urban Stayers	Rural Stayers	Rural Urban Migrant	Urban Stayers	Rural Non-Migrant	Rural-Urban Migrant	Urban Non-Migrant	Rural Non-Migrant	Rural Urban Migrant	Urban Non-Migrant
15-19	-	-	-	-	-	-	2.8	3.9	5.7	3.2	5.2	7.0
20-24	4.3	5.6	7.8	6.3	7.9	10.1	3.1	4.1	6.4	3.1	5.2	7.9
25-29	4.2	5.7	8.8	6.5	8.8	10.4	2.4	4.2	6.3	2.5	5.5	7.1
30-34	3.4	5.1	8.4	6.5	8.7	10.6	2.1	3.3	5.2	2.2	4.5	6.1
35-39	2.4	4.7	7.1	6.2	9.0	10.5	1.7	3.3	5.0	2.2	4.5	5.7
40-44	2.1	4.4	6.9	5.8	8.7	10.4	1.3	2.8	3.6	1.5	4.0	4.5
45-49	1.2	3.2	6.5	5.5	7.9	9.5	1.2	2.2	4.2	1.6	3.3	5.8

Table 4.15 Distribution (in Percent) of Ever-married Women by Schooling and Migration Status With the Size of Current Residence According to Each Age Group

Age Group	Schooling	Migration Status With the Size of Current Residence							
		Rural Stayers	Rural to Other Urban Migrant	Rural to Douala Migrant	Rural to Yaounde Migrant	Urban Natives Residing in Other Urban	Urban Natives Residing in Douala	Urban Natives Residing in Yaounde	Urban-Rural Migrant
15-19	Cannot read or no schooling	44.2	23.5	11.5	9.2	20.2	6.7	4.3	39.5
	Primary school not completed	17.6	11.8	9.8	1.5	12.3	9.2	11.4	7.9
	Completed primary school or higher	38.2	64.7	78.7	89.2	67.5	84.0	84.3	52.6
20-24	Cannot read or no schooling	56.5	35.1	14.3	8.3	31.7	7.8	6.4	33.3
	Primary school not completed	11.9	16.2	11.2	10.7	13.9	7.0	2.6	14.8
	Completed primary school or higher	31.5	48.7	74.5	81.0	54.4	85.3	91.0	51.9
25-29	Cannot read or no schooling	72.6	51.3	25.0	15.7	52.0	20.3	11.1	53.5
	Primary school not completed	9.5	10.3	17.5	4.3	10.0	10.9	8.9	11.3
	Completed primary school or higher	17.9	38.5	57.5	80.0	38.0	68.8	80.0	35.2
30-34	Cannot read or no schooling	82.5	74.1	56.4	34.2	77.4	32.6	36.4	72.1
	Primary school not completed	7.5	3.7	10.9	17.1	8.1	15.2	9.1	4.7
	Completed primary school or higher	10.0	22.2	32.7	48.8	14.5	52.2	54.6	23.3
35-39	Cannot read or no schooling	92.5	75.0	81.6	44.7	94.1	46.3	42.1	76.2
	Primary school not completed	3.7	12.5	13.2	13.2	2.0	12.2	15.8	11.9
	Completed primary school or higher	3.8	12.5	5.3	42.1	3.9	41.5	42.1	11.9
40-44	Cannot read or no schooling	96.8	94.7	89.7	76.9	100.0	55.6	56.3	76.9
	Primary school not completed	2.2	5.3	10.3	7.7	0.0	14.8	6.3	11.5
	Completed primary school or higher	1.0	0.0	0.0	15.4	0.0	29.6	37.5	11.5
45-49	Cannot read or no schooling	98.9	93.8	100.0	78.6	92.5	80.0	71.4	72.7
	Primary school not completed	0.9	6.3	0.0	7.1	5.0	6.7	7.1	9.1
	Completed primary school or higher	0.2	0.0	0.0	14.3	2.5	13.3	21.4	18.2

teracy rate exceeds 90 percent and fewer than 4 percent complete primary school. For the youngest age group, 15-19, illiteracy rates of rural stayer women decrease substantially to 44.2 percent and 38.2 percent completing at least primary school. It is impressive to observe that only 4.3 percent of Yaounde resident women ages 15-19 are illiterate and 84.3 percent completed at least primary school. For all migration statuses there are major improvements in women's education levels between age group 30-34 and age group 25-29. Assuming that woman aged 29 in the survey year, 1978, made her schooling decision at the age of 10, the rapid increase of women's education seems to have started around 1960 when Cameroon became independent from the French and British trustship. After independence in 1960, many new schools opened in both urban and rural areas.

Tables 4.16 and 4.17 are similar to Tables 4.13 and 4.15, except that the latter tables contain mean school years and the distribution of education levels for women's husbands. For most age groups and migration statuses the husband's education level is substantially higher than that of women: by approximately 1 year in most cases. Among three countries studied, the educational difference between men and women is the largest in Korea and the smallest in Mexico, Cameroon being in the middle.

Table 4.18 shows the mean age at first marriage of Cameroonian ever married women by age and migration status. As expected, urban native women in Yaounde and Douala married at later ages by at least one year for most age groups than rural stayers. Unlike the case of education, there is no clear difference in mean age at marriage between Yaounde and Douala. This means that although Douala may be inferior to Yaounde in terms of educational facilities, the life styles of Douala are as conducive as those of Yaounde in encouraging late marriage. The ages at first marriage of rural-urban migrants

Table 4.16

Mean Year of Schooling for Husbands of Ever-married Women by Women's Age and Migration Status with Size of Destination

Migration Status with the Size of Current Residence

Age Group	Rural Stayers	Rural to Other Urban Migrant	Rural to Douala Migrant	Rural to Yaounde Migrant	Urban Natives Residing in Other Urban	Urban Natives Residing in Douala	Urban Natives Residing in Yaounde	Urban-Rural Migrant
15-19	3.7	3.8	6.9	8.0	4.8	7.4	8.5	4.8
20-24	3.9	5.0	7.1	7.9	5.0	8.6	9.6	5.8
25-29	3.0	3.7	6.5	7.8	4.5	8.5	7.6	4.3
30-34	2.2	3.1	5.9	7.2	2.3	6.7	9.0	3.6
35-39	1.8	3.5	3.7	7.6	1.7	6.6	7.4	3.6
40-44	1.6	1.0	3.4	4.5	1.5	6.7	5.8	3.6
45-49	1.2	1.9	0.8	4.5	1.8	6.5	3.8	2.6

Table 4.17

Distribution (in Percent) of Ever-married Women, in Terms of Husband's Schooling, by Women's Age Group and Migration Status with the Size of Current Residence

Age Group	Schooling	Migration Status With the Size of Current Residence							
		Rural Stayers	Rural to Other Urban Migrant	Rural to Douala Migrant	Rural to Yaounde Migrant	Urban Natives Residing at Other Urban	Urban Natives Residing at Douala	Urban Natives Residing at Yaounde	Urban-Rural Migrant
15-19	Cannot read or no schooling	47.6	33.3	7.1	8.3	46.9	7.1	4.8	30.8
	Primary school not completed	9.1	33.3	10.7	4.2	9.4	10.7	9.5	7.7
	Completed primary school or higher	43.3	33.3	82.1	87.5	43.8	82.1	85.7	61.5
20-24	Cannot read or no schooling	45.4	29.0	15.0	7.6	38.1	7.9	4.2	24.3
	Primary school not completed	9.3	12.9	5.0	9.4	1.6	3.4	6.3	8.1
	Completed primary school or higher	45.3	58.1	80.0	83.0	60.3	88.8	89.6	67.6
25-29	Cannot read or no schooling	55.8	52.6	19.7	10.5	38.8	11.3	18.4	43.3
	Primary school not completed	11.4	5.3	10.5	7.0	12.2	4.8	7.9	7.5
	Completed primary school or higher	32.9	42.1	69.7	82.5	49.0	83.9	73.7	49.3
30-34	Cannot read or no schooling	65.0	48.2	24.5	11.4	63.8	20.9	4.6	53.5
	Primary school not completed	12.3	18.5	7.6	14.3	19.0	7.0	18.2	2.3
	Completed primary school or higher	22.7	33.3	67.9	74.3	17.2	72.1	77.3	44.2
35-39	Cannot read or no schooling	71.0	46.7	34.2	13.5	72.0	18.4	11.8	47.6
	Primary school not completed	10.0	20.0	23.7	16.2	16.0	13.2	5.9	14.3
	Completed primary school or higher	19.0	33.3	42.1	70.3	12.0	68.4	82.4	38.1
40-44	Cannot read or no schooling	72.2	77.8	42.9	38.5	76.7	24.0	14.3	50.0
	Primary school not completed	11.0	5.6	17.9	23.1	4.7	12.0	14.3	11.5
	Completed primary school or higher	16.9	16.7	39.3	38.5	18.6	64.0	71.4	38.5
45-49	Cannot read or no schooling	79.5	62.5	85.7	33.3	71.8	26.7	41.7	65.0
	Primary school not completed	10.3	12.5	14.3	8.3	2.6	0.0	16.7	5.0
	Completed primary school or higher	10.3	25.0	0.0	58.3	25.6	73.3	41.7	30.0

Table 4.18

Mean Age at Marriage of Ever-married Women by Age and Migration Status with Size of Destination

Migration Status with the Size of Current Residence

Age Group	Rural Stayers	Rural to Other Urban Migrant	Rural to Douala Migrant	Rural to Yaounde Migrant	Urban Natives Residing in Other Urban	Urban Natives Residing in Douala	Urban Natives Residing in Yaounde	Urban-Rural Migrant
15-19	15.0	15.5	16.0	16.4	15.7	16.3	15.9	15.6
20-24	16.1	16.2	17.8	17.1	16.3	17.9	17.6	16.6
25-29	16.5	16.7	18.3	18.6	17.9	18.6	18.2	17.9
30-34	16.8	17.1	17.8	19.1	16.3	19.0	17.1	16.8
35-39	17.8	15.8	18.6	19.6	16.4	20.0	19.2	18.1
40-44	18.1	16.3	18.1	18.5	17.4	19.9	20.1	18.0
45-49	19.2	18.2	16.9	21.4	20.8	20.1	20.4	23.0

are substantially higher than those of rural stayers and are almost equal to those of urban natives. This does indicate the strong adaptation effect of urban residence on delaying the rural-urban migrant's marriage.

As shown in Table 4.19, relatively few women remain single by age 35-39.[4] Therefore, in all the analyses of Table 4.18 we consider the mean ages at the first marriage only for ever-married women older than 34. We should remember that mean age at marriage for younger age groups are an underestimate of the true mean age at marriage for the population because the younger age ever-married women sample selectivity excludes women who married at later ages.

Also of interest is the observation in Table 4.18 that age at first marriage for younger birth cohorts (for example, 35-39) has not increased significantly over that of older cohorts, regardless of migration status. This is in direct contrast to the observations based on Korean data but very similar to the results of our study of Mexico as shown in Tables 4.20 and 4.21. As Table 4.20 shows, ages at marriage of currently married Korean women have been increasing substantially over the recent birth cohorts: from 18.8 years for age group 45-49 to 23.2 years for age group 30-34. Table 4.21 shows that like the case of Cameroon, Mexican data do not provide any evidence of delaying marriage in the recent birth cohorts. Nevertheless, it is interesting to note that for all three countries urban residents marry at much later ages, namely, one year for both Cameroon and Mexico and two years for Korea than rural residents. The comparison of mean age at marriage for urban natives for the age group 35-39 for Cameroon and Mexico, and those for Seoul

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[4] Due to the small sample size some figures for age groups older than 30 years in Table 4.19 are less reliable.

Table 4.19 Percentage of Single Women out of Total Sample Women By Age Group and Migration Status with Size of Current Residence

Age Group	Migration Status With The Size Of Current Residence							
	Rural Stayers	Rural to Other Urban Migrant	Rural to Douala Migrant	Rural to Yaounde Migrant	Urban Natives Residing in Other Urban	Urban Natives Rersiding in Douala	Urban Natives Residing in Yaounde	Urban-Rural Migrant
15-19	44.5	55.9	54.1	63.1	71.9	76.5	70.0	31.6
20-24	6.7	16.2	18.4	36.9	20.3	31.0	38.5	8.6
25-29	2.9	2.6	5.0	18.6	2.0	3.1	15.6	5.6
30-34	1.5	0.0	3.6	14.6	6.5	6.5	0.0	0.0
35-39	.6	6.3	0.0	2.6	2.0	7.3	10.5	0.0
40-44	.6	5.3	3.5	0.0	2.3	7.4	12.5	0.0
45-49	1.4	0.0	0.0	14.3	2.5	0.0	14.3	9.1

Table 4.20 Mean Age at Marriage of Korean Currently Married Women by Age and Residence

Age Group	National Total	Seoul (Capital City)	Other Urban	Rural Areas
20-24	20.93	21.23	21.35	20.49
25-29	22.96	23.80	23.01	22.32
30-34	23.16	24.25	23.47	22.23
35-39	21.71	22.91	22.28	20.94
40-44	20.47	22.16	20.84	19.80
45-49	18.76	20.02	19.09	18.26

Source: Tables 3.2-3.5 in Lee and McElwain (1981). Based on the 1974 Korean World Fertility Survey Data.

Table 4.21 Mean Age at First Marriage of Mexican Currently Married Women by Age and Migration Status

Age Group	Rural (100) Nonmigrant	Urban(200) Nonmigrant	Rural-Rural Migrant (1)	Rural-Urban Migrant (2)	Urban-Urban Migrant (3)	Urban-Rural Migrant (4)	Rural-Urban Rural Migrant (5)
15-19 (1)	15.5	16.1	15.0	16.0	16.2	--	15.7
20-24 (2)	17.3	18.7	16.8	18.2	18.2	17.4	18.1
25-29 (3)	17.6	19.6	17.7	19.4	20.1	18.0	18.8
30-34 (4)	18.5	19.5	18.2	19.8	20.3	19.5	19.2
35-39 (5)	18.2	20.3	18.8	20.4	20.7	19.5	19.5
40-44 (6)	19.2	19.7	18.2	19.9	21.2	--	19.3
45-49 (7)	19.8	21.0	18.7	19.8	21.7	--	21.7

Source: Table 4.14 in Lee et. al. (1983). Based on the 1976 Mexican World Fertility Survey Data.

residents in Korea of age group 30-34, reveals that the mean age at first marriage of Cameroon, 19.2 and 20.0 years for Yaounde and Douala are very similar to that of Mexican urban nonmigrant women, 20.3 years, but are substantially lower (more than 4 years) than that of Seoul resident women, 24.3 years.

As can be observed in Table 4.22, dissolution, separation, and remarriage are more frequent in Cameroon, particularly in rural areas, than in most other less developed countries.[5] Mean number of marriages are 1.27 for rural stayers and 1.06 and 1.16 for urban natives in Yaounde and Douala for the age group 35-39. Mean number of marriages for rural-urban migrant women aged 35-39 are 1.08 and 1.16 for Yaounde and Douala, respectively. In Cameroon, marriage is least stable in rural areas and much more stable in urban areas. Rural-urban migration seems to increase the stability of marriages. In Mexico corresponding mean numbers of marriages are 1.10, 1.12 and 1.10 for rural non-migrant, rural-urban migrant and urban non-migrant women aged 35-39, respectively, as shown in Table 4.23. In Korea, the number of dissolutions, separations, and remarriages is still quite small. In Mexico, neither the type of residence nor migration status appears to influence the stability of marriages.

Palmore and Marzuki (1969) generated consistent results in their Malaysian data analysis. Rural women, Malay ethnic women, women with no formal education, and women whose husband farmed showed the highest proportion of women married more than once. These were the groups with the youngest age at first marriage. In Cameroon early marriages in rural areas might be also the

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[5]However, we should warn that the high instability of marriage in the 1978 CWFS data is a little overstated because as mentioned in chapter _ , the survey sample was disproportionately heavily sampled in the Northern province where the instability of marriage is extremely high.

Table 4.22

Mean Number of Marriages of Ever-married Women
by Age and Migration Status with Size of Destination

Migration Status with the Size of Current Residence

Age Group	Rural Stayers	Rural to Other Urban Migrant	Rural to Douala Migrant	Rural to Yaounde Migrant	Urban Natives Residing in Other Urban	Urban Natives Residing in Douala	Urban Natives Residing in Yaounde	Urban-Rural Migrant
15-19	1.02	1.00	1.04	1.00	1.00	1.00	1.00	1.00
20-24	1.08	1.13	1.05	1.00	1.11	1.01	1.00	1.04
25-29	1.18	1.24	1.04	1.02	1.22	1.02	1.00	1.15
30-34	1.23	1.26	1.08	1.03	1.19	1.14	1.05	1.37
35-39	1.27	1.93	1.16	1.08	1.46	1.16	1.06	1.36
40-44	1.27	1.56	1.04	1.08	1.33	1.04	1.07	1.23
45-49	1.29	1.13	1.21	1.25	1.21	1.07	1.00	1.45

Table 4.23 Mean Number of Marriages for Mexican Currently Married Women by Age and Migration Status

Migration Status / Age Group	Rural Nonmigrant (100	Urban Nonmigrant (200)	Rural-Rural Migrant (1)	Rural-Urban Migrant (2)	Urban-Urban Migrant (3)	Urban-Rural Migrant (4)	Rural-Urban-Rural Migrant (5)
(1) 15-19	1.00	1.00	1.03	1.00	1.00	1.11	1.00
(2) 20-24	1.01	1.04	1.03	1.05	1.03	1.05	1.03
(3) 25-29	1.05	1.04	1.07	1.02	1.07	1.08	1.13
(4) 30-34	1.05	1.06	1.06	1.11	1.07	1.07	1.08
(5) 35-39	1.10	1.10	1.16	1.12	1.08	1.19	1.23
(6) 40-44	1.04	1.10	1.12	1.12	1.09	1.23	1.15
(7) 45-49	1.08	1.18	1.18	1.18	1.14	1.29	1.06

Source: 4.17 in Lee et.al. (1983). Based on the 1976 Mexican World Fertility Survey Data.

main cause of the high instability of marriages in rural areas. The logic underlying the instability of early marriage in Cameroon is straightforward. In many tribes where marriages are prearranged by parents, and the partners have had little or no previous contact, their marriages tend to be more unstable. Frequently, there is a wide age differential for these partners. Overall, the prearranged nature and age difference between partners leads to greater marital dissatisfaction and subsequently high rates of divorce. On the other hand, the greater stability of rural-urban migrants to Yaounde and Douala and urban native marriages has two major contributing factors. Initially, there are the larger age-at-first-marriage figures for rural-urban migrant and urban stayer women that can be seen in Table 4.18. In addition, unemployment is higher for women in urban areas than in rural regions, rendering these women more dependent upon their husbands. It is likely that this factor, while not increasing marital satisfaction, contributes to greater marital stability, by simply making marital dissolution more difficult.

The instability of Cameroon marriages is more clearly shown by Table 4.24. This table shows that approximately 20 percent of ever-married women in rural areas have married more than once by the ages 35-39 whereas 6 and 13 percent of ever-married women in Yaounde and Douala have married more than once by the ages 35-39. Tables 4.22 and 4.24 show very high instability of marriages for all women of rural-urban migrants to other cities, urban natives in other cities and urban-rural migrants. This seems to indicate that the marriage pattern of these groups of women is not much different from that of rural stayers. The reason why the mean number of marriages for residents in other cities excluding Yaounde and Douala is even higher than that of rural stayers appears to be the sampling bias of the 1978 Cameroon World Fertility Survey in which other urban areas are sampled heavily from the Northern

Table 4.24 Once Married Women as a Percentage of Total Ever-Married Women by Age Group and Migration Status With Size of Current Residence

Migration Status With The Size Of Current Residence

Age Group	Rural Stayers	Rural to Other Urban Migrant	Rural to Douala Migrant	Rural to Yaounde Migrant	Urban Natives Residing in Other Urban	Urban Natives Residing in Douala	Urban Natives Residing in Yaounde	Urban-Rural Migrant
15-19	98.1	100.0	96.4	100.0	100.0	100.0	100.0	100.0
20-24	92.1	93.5	95.0	100.0	92.1	98.9	100.0	95.9
25-29	85.0	81.6	96.1	98.2	83.7	98.4	100.0	89.6
30-34	82.1	81.5	92.5	97.1	87.9	88.4	95.5	74.4
35-39	79.8	66.7	84.2	91.9	78.0	86.8	94.1	73.8
40-44	79.3	66.7	96.4	92.3	76.7	96.0	92.9	80.8
45-49	76.2	93.8	78.6	75.0	89.7	93.3	100.0	65.0

Province of Cameroon. The Northern Province has significantly high divorce and remarriage rates due to the dominance of the Moslem religion. The Northern Province has relatively large number of smaller cities (towns) because of recent restructuring of administrative units.

4.5 Fertility Patterns and Migration Status

Table 4.25 shows the mean number of children ever born to Cameroonian ever-married women by age and migration status. The mean number of children-ever-born to women aged 40-49 (i.e., the average value of age groups 40-44 and 45-49) was 5.3 for rural stayers and 4.7 and 4.9 for urban natives in Yaounde and Douala, respectively. The mean number of children-ever-born to rural-urban migrant women aged 40-49 were 5.8 and 5.6 in Yaounde and Douala, respectively. These mean number of children ever born were relatively low in Cameroon compared to those of Korea and Mexico. As shown in Tables 4.26 and 4.27 which were reproduced from our Korean and Mexican reports, the mean number of children-ever-born to rural stayers, rural-urban migrants and urban native women aged 45-49 were 7.0, 5.8, and 5.0 in Korea and 8.4, 7.3, and 6.7, in Mexico, respectively. Furthermore, unlike the cases of Korea and Mexico, neither the type of residence nor migration status appears to influence the mean number of children-ever-born to Cameroon women. This somewhat surprising result in Cameroonian women's fertility behavior may be explained by two factors: infertility is extremely high, specifically 15 percent of women aged 45-49 have never had a child, and marriages are relatively unstable in Cameroon. It seems reasonable to assume that a substantial proportion of women who have never had a live birth in many societies in which incomes are low, such as Cameroon, are childless because of infecundity and subfecundity, rather than by choice. In Cameroon, this supply constraint of births seems to

Table 4.25

Mean Number of Children-Ever-Born to Ever-Married Women
by Age and Migration Status with Size of Destination

Migration Status with the Size of Current Residence

Age Group	Rural Stayers	Rural to Other Urban Migrant	Rural to Douala Migrant	Rural to Yaounde Migrant	Urban Natives Residing in Other Urban	Urban Natives Residing in Douala	Urban Natives Residing in Yaounde	Urban-Rural Migrant
15-19	0.72	0.93	0.79	0.38	0.56	0.29	0.29	0.42
20-24	1.74	1.61	1.69	1.66	1.95	1.39	1.46	1.84
25-29	3.06	3.13	2.86	2.91	3.02	3.11	3.34	2.66
30-34	4.17	4.15	4.26	4.54	5.03	4.14	3.68	3.56
35-39	4.79	5.07	5.58	4.97	4.52	5.79	4.18	5.64
40-44	5.40	5.00	5.14	6.77	4.14	4.04	5.29	4.62
45-49	5.21	5.63	6.00	4.83	5.28	5.73	4.17	4.00

Table 4.26 Mean Number of Children Ever-Born of Once-Married Korean Women by Age and Lifetime Migration Status

Age	Migration Status[a]					
	R/R		R/U		U/U	
	N	MEAN	N	MEAN	N	MEAN
20-24	182	1.55	127	1.38	38	1.53
25-29	349	2.52	495	2.11	176	1.99
30-34	407	4.01	388	3.28	167	2.80
35-39	450	5.21	326	3.99	114	3.50
40-44	371	6.19	214	4.56	80	4.25
45-49	257	7.00	149	5.76	52	5.02

[a] R/R = rural childhood/rural current residence
R/U = rural childhood/urban current residence
U/U = urban childhood/urban current residence

Source: Table 4.30 in Lee et al. (1981).

Table 4.27 Mean Number of Children-Ever-Born to Currently Married Mexican Women by Age and Migration Status

Age Group	Rural Nonmigrant	Urban Nonmigrant	Rural-Rural Migrant	Rural-Urban Migrant	Urban-Urban Migrant	Urban-Rural Migrant	Rural-Urban Rural Migrant
15-19 (1)	1.0	1.05	1.1	.96	.91	--[a]	1.06
20-24 (2)	2.30	1.59	2.40	1.85	1.99	2.24	2.14
25-29 (3)	4.0	3.16	4.15	3.29	2.90	4.16	3.81
30-34 (4)	5.79	4.95	5.77	4.96	4.44	4.89	5.43
35-39 (5)	7.69	5.74	7.47	6.15	5.59	6.59	6.63
40-44 (6)	8.33	7.52	7.95	6.55	5.82	--[a]	7.77
45-49 (7)	8.36	6.74	7.90	7.31	6.23	--[a]	7.67

[a]Number of observations is too small (less than 20) to be reliable.

Source: Table 4.52 in Lee et al. (1983).

be more dominating than the demand aspect. It is not unreasonable to anticipate that the fertility level of urban natives or rural-urban migrants is equal to, or even higher than that of rural stayers, even if the desired fertility level of the former is significantly lower than that of the latter, as long as urban residence reduces the infertility and improves the stability of marriages. As will be shown later, the instability of marriage substantially reduces fertility rates in Cameroon.

Even though the fertility level of urban residents is not substantially lower than that of rural residents because supply constraints of births in urban areas are more pronatal than in rural areas, it is possible to infer that the demand for children by urban residents is significantly lower than that of rural residents. This inference can be verified by the data on knowledge and use of contraceptives. Table 4.28 shows that rural-urban migrants and urban natives are substantially more knowledgeable of, and more likely to use, contraceptives than rural stayers. However, knowledge and use of contraceptives is substantially lower in Cameroon than in Korea. For example, among Cameroonian women aged 25-29, 35.0, 67.1-82.5, and 69.4-89.5 percent of rural stayers, rural-urban migrants and urban natives, respectively, had some knowledge of any contraceptive method, including traditional methods; whereas more than 99 percent of Korean women aged 25-29 had some knowledge of any contraceptive method. Among Mexican women aged 25-29, 47.5, 82.5 and 82.9 percent of rural nonmigrant, rural-urban migrant, and urban non-migrant women, respectively, had some knowledge of any contraceptive method and these levels are not much different from those of Cameroonian women. In Cameroon 12.1, 18.4-36.8, and 33.9-50.0 percent of rural stayer,rural-urban migrant, and urban native women aged 25-29, respectively, had ever used any contraceptive method; whereas in Korea 54, 54 and 63 percent

Table 4.28 Contraceptive Knowledge and Usage Data as Proportion (In Percent) of Total Ever-Married Cameroonian Women by Age and Migration Status

Variables and migration status*	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Percentage of women who ever heard of any contraceptive method**							
R/R	31.0	40.2	35.0	32.4	31.9	31.2	33.3
R/D	53.6	66.3	67.1	56.6	50.0	46.4	28.6
R/Y	62.5	77.4	82.5	77.1	75.7	57.7	75.0
D/D	53.6	70.0	69.4	58.1	65.8	64.0	53.0
Y/Y	71.4	85.4	89.5	72.7	88.2	57.1	75.0
Percentage of women who ever used any contraceptive method							
R/R	8.6	16.4	12.1	10.7	8.9	11.8	12.8
R/D	7.1	22.5	18.4	22.6	10.5	10.7	0.0
R/Y	20.8	26.4	36.8	25.7	29.7	23.1	25.0
D/D	25.0	24.7	33.9	30.2	23.7	36.0	13.3
Y/Y	23.8	45.8	50.0	27.3	35.3	21.4	15.0

*R/R = Rural stayers (rural migrants and rural non-migrants); R/D = Rural-urban migrants moved to Douala; R/Y = Rural-urban migrants moved to Yaounde; D/D = Urban stayers at Douala; Y/Y = Urban stayers at Yaounde.

**Include traditional methods such as periodic abstinence, withdrawal, and douche.

of rural stayer, rural-urban migrant, and urban native women, respectively, aged 25-29, had ever used any contraceptive method. One bright aspect of Cameroon contraceptive knowledge and use, is that the younger age cohorts, ignoring the youngest age group 15-19, are significantly more knowledgeable of, and more likely to use, contraceptives than older cohorts.

Table 4.29 shows mean child death rates of Cameroon ever married women by age and migration status. The child death rate is the number of children dead divided by total number of children ever born to a women. As expected, urban native couples have significantly lower child death rates than rural stayer couples. Rural-urban migrants have substantially lower child death rates than rural stayers. The comparison of similar data for Mexico in Table 4.30 indicates that child death rates in Cameroon are substantially higher than Mexico.

Table 4.29

Mean Child Death Rate of Cameroon Ever-Married Women by Age and Migration Status with Size of Destination

Migration Status with the Size of Current Residence

Age Group	Rural Stayers	Rural to Other Urban Migrant	Rural to Douala Migrant	Rural to Yaounde Migrant	Urban Natives Residing in Other Urban	Urban Natives Residing in Douala	Urban Natives Residing in Yaounde	Urban-Rural Migrant
15-19	0.08	0.03	0.08	0.03	0.00	0.00	0.04	0.06
20-24	0.12	0.11	0.08	0.09	0.10	0.08	0.10	0.11
25-29	0.16	0.13	0.11	0.12	0.09	0.17	0.14	0.10
30-34	0.18	0.06	0.13	0.08	0.22	0.11	0.12	0.23
35-39	0.22	0.14	0.20	0.09	0.18	0.20	0.14	0.23
40-44	0.23	0.27	0.13	0.16	0.18	0.18	0.20	0.22
45-49	0.26	0.22	0.37	0.28	0.27	0.17	0.30	0.18

Table 4.30 Mean Child Death Rate of Mexican Currently Married Women by Age and Migration Status

Age Group	Rural (100) Nonmigrant	Urban (200) Nonmigrant	Rural-Rural Migrant (1)	Rural-Urban Migrant (2)	Urban-Urban Migrant (3)	Urban-Rural Migrant (4)	Rural-Urban Rural Migrant (5)
15-19 (1)	.0064	.0705	.0845	.0196	.0595	--	.0786
20-24 (2)	.0828	.0518	.0685	.0361	.0555	.0549	.0765
25-29 (3)	.0897	.0485	.1183	.0643	.0411	.0694	.0786
30-34 (4)	.1117	.0775	.1247	.0903	.0547	.1357	.0881
35-39 (5)	.1524	.0672	.1382	.0878	.0710	.1194	.1227
40-44 (6)	.1661	.1026	.1659	.1532	.0631	--	.1348
45-49 (7)	.1920	.1118	.1626	.1252	.1021	--	.1598

Chapter 5

The Influence of Rural-Urban Migration on Migrant's Fertility Behavior in Cameroon

5.1 Introduction

In our previous studies of Korea and Mexico, we developed and estimated an autoregressive fertility model in which prior fertility is a control for preference differences between migrant and non-migrant households. (For Korean analyses see Lee et. al. 1981; Farber and Lee, 1984; Lee and Farber, 1984, 1985; and for Mexican analyses see Lee et. al. 1983; Lee, 1985, and Lee and Pol, 1985). Controlling for prior fertility, socioeconomic, and biological factors, the difference in post-migration fertility behavior between rural-urban migrants and similar rural stayers was considered the adaptation effect. Applying this fertility model to the data on detailed personal migration and birth histories of the 1974 Korean World Fertility Survey and the 1976 Mexican World Fertility Survey, our studies provide evidence that rural-urban migration is an important influence in lowering national fertility levels for both Korea and Mexico. In addition, these studies suggest that an important factor in explaining the lower fertility of rural-urban migrants is the adaptation to urban constraints and fertility norms. However, the fertility adaptation effect of rural-urban migration is stronger in Korea than Mexico.

Our preliminary analysis of Cameroonian data suggests that the fertility level of rural-urban migrants is not significantly lower than that of rural stayers. In fact, it appears that the fertility level of the former is equal to, or slightly higher, than that of the latter in Cameroon. This is in direct contrast to the common observation in a number of previous studies

which uniformly reveal that the fertility level of rural-urban migrants is significantly lower than that of rural stayers. Therefore, in the present study we first test for the significance of the fertility adaptation effect. Then we attempt to identify the factors contributing to the insignificant fertility adaptation effect of rural-urban migration in Cameroon.

Our autoregressive fertility model, which had been applied to Korean and Mexican data, is further refined to a first difference form of an autoregressive model. The refined model is applied to the data on the detailed personal migration and pregnancy histories of 8,219 Cameroonian women aged 15-54 in the 1978 Cameroon World Fertility Survey (CWFS).

5.2 Data for Regression Analysis

This study is based on the data contained in the 1978 Cameroon World Fertility Survey (CWFS). Information on migration history, full pregnancy history, history of marital status, employment history, and other demographic and socioeconomic characteristics for 8,219 Cameroonian women, aged 15 to 54, is included in the data.

The total sample may be classified as: rural-nonmigrants; rural-rural migrants; rural-urban migrants; urban-urban migrants; urban non-migrants; and urban-rural migrants. Because the purpose of this study is to investigate the influence of rural-urban migration on migrant fertility, we are mainly interested in analyzing the data for rural nonmigrants, rural-rural migrants and rural-urban migrants. The last row of Table 5.1 shows that our total working sample of 5,177 ever-married women includes 4,656 rural stayers (of which 2,193 are rural non-migrants and 2,463 women are rural-rural migrants) and 521 rural-urban migrants.

Migration histories of women include information on the year of migration and the name of arrondissement (county) for each of a maximum of six move-

Table 5.1

Distribution of Sample Women by Migration Status, Education Levels, Infertility and Number of Marriages

	Rural Stayers		Rural-Urban Migrants		Total	
	N	%	N	%	N	%
Women with at least 6 years of education	572	12.3	253	48.6	825	15.9
Women who married more than 4 years but had no live births	476	10.2	31	6.0	507	9.8
Once and currently married women	3,602	77.4	422	81.0	4,024	77.7
Once married but currently unmarried women	352	7.6	73	14.0	425	8.2
Twice married women	584	12.5	26	5.0	610	11.8
Women married three times	84	1.8	0	0	84	1.6
Women married 4 or 5 times	33	.7	0	0	33	.6
TOTAL	4,656*	100	521	100	5,177*	100

* Includes one woman who married six times.

ments. We exclude from our sample those whose migration history is incomplete. Unfortunately, the data do not provide information on the size of the community for each of the movements. We were provided with information on the size of community (i.e., Yaounde, Douala, other urban areas, and rural areas) for the current residence and the place of childhood, but not for the place of birth and places of previous residence. This makes it impossible for us to determine whether the birthplace or the place of previous residence was a rural area or another urban area excluding Yaounde and Douala. The name of arrondissement identifies Yaounde and Douala. This is why the data used in the regression analysis which is to follow exclude the rural-urban migrants who moved to other urban areas excluding Yaounde and Douala. For women who currently reside in other urban areas but made at least one movement, we cannot distinguish whether they came from a rural area or from another urban area. Even for the women who currently reside in Yaounde or Douala, if they moved from areas other than Yaounde or Douala, we cannot determine whether they moved from a rural area or another urban area. Therefore, we assume that if the place of childhood was a rural area, the woman residing in either Yaounde or Douala migrated from a rural area. Therefore, her birthplace and previous residences are assumed to be rural areas. There is a possibility that some rural-urban migrants to Yaounde or Douala might have spent their childhoods in rural areas though their most recent previous residences were actually other urban areas. For these women, our duration of urban residence, which includes the period since the arrival at Yaounde or Douala, understates the actual duration of urban residence, which should include the whole period since the time they left the rural area of birth. We do not know how many women belong in this category.

Table 5.1 also shows the distribution of the sample women by migration status, education level, incidence of infertility, and number of marriages. Rural-urban migrants are substantially more likely to have an education of at least six years (48.6 percent) than the rural stayers (12.3 percent). Rural-urban migrants are less likely to have the infertility problem (6.0 percent) than rural stayers (10.2 percent). We assume that if a woman was married more than four years and had no live births, then she has an infertility problem.

None of rural-urban migrant women in our sample married more than twice; whereas 2.5 percent or 118 rural stayer women married more than twice. Rural-urban migrant women are less likely to experience divorce (19.0 percent) than of rural stayer women (22.6 percent). However, this observation is qualified in Table 5.2 where we decompose the sample according to education level. Once a first marriage is disrupted, rural-urban migrant women are substantially less likely to remarry than the rural stayer women. Among women whose first marriage was dissolved, 73.7 percent of the rural-urban migrant women (14% divided by 19%) never remarried whereas only 33.6 percent of rural stayer women (7.6% divided by 22.6%) never remarried by the year of the survey.

Table 5.2 further cross-classifies the distribution of sample women by migration status, number of marriages, and level of education. It shows that even among rural stayers, none of the women with at least 6 years of education married more than twice. Regardless of migration status, the first marriage of a women with at least 6 years of education is substantially less liklely to be dissolved (7.9 and 11.9 percent for rural stayers and rural-urban migrants, respectively) than that of a woman with less than 6 years of education (24.7 and 25.7 percent for rural stayers and rural-urban migrants, respectively). The stability of first marriage appears to deteriorate with rural-urban migra-

Table 5.2

Distribution of Sample Women by Migration Status, Year of Education and Number of Marriages

	Rural Stayers				Rural-Urban Migrants			
	Women with less than 6 years of education		Women with at least 6 years of education		Women with less than 6 years of education		Women with at least 6 years of education	
	N	%	N	%	N	%	N	%
Once and currently married women	3,075	75.3	527	92.1	199	74.3	223	88.1
Once married but currently unmarried women	328	8.0	24	4.2	50	18.7	23	9.1
Twice married women	563	13.8	21	3.7	19	7.1	7	2.8
Women married three times	84	2.1	0	0	0	0	0	0
Women married 4 or 5 times	33	.8	0	0	0	0	0	0
TOTAL	4,084[a]	100	572	100	268	100	253	100

[a]Includes one women who married six times

tion. For women with lower levels of education, the proportion of once and currently married women among rural-urban migrants, 74.3 percent, is slightly lower than that among rural stayers, 75.3 percent. For women with higher levels of education, the proportion of once and currently married women among rural-urban migrants, 88.1 percent, is lower than that among rural stayers, 92.1 percent. These data indicate that the observation from Table 5.1 -- higher stability of first marriages for rural-urban migrants when compared with rural stayers -should be interpreted with the care. The initial interpretation is modified by the fact that rural-urban migrants are highly educated and that first marriages of the highly educated women are significantly more stable. Rural-urban migration by itself seems to deteriorate rather than improve the stability of first marriage. Table 5.2, however, also shows that once a first marriage is dissolved, rural-urban migrants are much less likely to remarry than rural stayers regardless of the level of education. The proportions of the once married but currently unmarried women among the women whose first marriage was dissolved are 72.8 and 76.5 percent for rural-urban migrants, respectively, whereas the corresponding proportions for rural stayers are 32.4 and 53.2 percent, for women with lower level of education and with higher level of education, respectively. These proportions are derived in the following manner. For example, the value of 72.8 percent for rural-urban migrants with lower level of education is obtained by dividing 18.7% by 25.7%.

In summary, we can derive the following conclusions from Tables 5.1 and 5.2. First, rural-urban migrant women are substantially better educated than the rural stayer women. Second, rural-urban migrant women are less likely to have infertility problems. Third, first marriages of women with higher education levels are much less likely to be dissolved, and higher educated women

are much less likely to marry more than twice compared to women with lower education. Finally, first marriages of rural-urban migrant women are slightly more likely to be dissolved than those of rural stayers. However, migrant women are much less likely to remarry when the first marriage is dissolved than rural stayer women.

We now turn to some additional descriptive statistics from our sample. Table 5.3 shows the distribution of sample women according to age cohort, migration status, women's education level, and number of marriages. Tables 5.4 through 5.8 show mean years of women's education, mean age at first marriage, mean number of marriages, proportion of infertile women, and mean number of children-ever-born in the same format as seen in Table 5.3.

Table 5.4 reveals that women who married more than once had significantly less education than the once-married women. However, ignoring the youngest and the oldest age groups (15-19 and 45-49), the once but currently unmarried women had education levels at least equal to and frequently higher than the level for continuously married women. These results are consistent with our earlier observations in Table 5.2 that rural-urban migrants whose average education level is higher than rural stayers, are most likely to have the first marriage dissolved and are less likely to remarry than rural stayers.

Table 5.5 reveals that ignoring the two oldest age groups (40-44 and 45-49), rural-urban migrants marry at substantially later ages than rural stayers, and women with more education marry at later ages than women with less education. Women who married more than once married at substantially younger ages than the once married women. However, ignoring the youngest and oldest age groups, the once but currently unmarried women married at an age similar to that of the continuously married women.

Table 5.3

Distribution of Sample Women According to Age Group, Migration Status, Years of Education and Number of Marriages

	Age Group													
	15-19 (1)		20-24 (2)		25-29 (3)		30-34 (4)		35-39 (5)		40-44 (6)		45-49 (7)	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Migration Status														
Rural Stayers	500	91.6	852	88.0	748	85.7	680	89.5	612	90.8	578	91.6	422	94.8
Rural-Urban Migrants	46	8.4	116	12.0	125	14.3	80	10.5	62	9.2	53	8.4	23	5.2
Years of Women's Education														
Less than 6 yrs.	384	70.3	646	66.7	672	77.0	666	87.6	638	94.7	623	98.7	443	99.6
At least 6 yrs.	162	29.7	322	33.3	201	23.0	94	22.4	36	5.3	8	1.3	2	0.4
Number of Marriages														
Once and currently married women	521	95.4	870	89.9	722	82.7	589	77.5	480	71.2	439	69.6	263	59.1
Once but currently unmarried women	15	2.7	34	3.5	44	5.0	52	6.8	69	10.2	74	11.7	81	18.2
Women married twice	10	1.8	63	6.5	94	10.8	95	12.5	100	14.8	96	15.2	86	19.3
Women married three times	0	0	1	.1	8	.9	20	2.6	17	2.5	14	2.2	11	2.5
Women married 4 or 5 times	0	0	0	0	5	.6	4	.5	8	1.2	8	1.3	3	.7

Table 5.4

Mean Years of Women's Education According to Age Group, Migration Status and Number of Marriages

	Age Group						
	15-19 (1)	20-24 (2)	25-29 (3)	30-34 (4)	35-39 (5)	40-44 (6)	45-49 (7)
Migration Status							
Rural Stayers	2.78	2.84	1.87	1.01	.51	.22	.11
Rural-urban migrants	5.50	5.87	5.27	3.89	2.19	1.15	.78
Number of Marriages							
Once and currently married women	3.04	3.27	2.46	1.37	.67	.29	.19
Once but currently unmarried women	2.80	3.21	3.45	2.08	1.25	.30	.15
Women married twice	1.7	2.30	1.36	.82	.38	.32	.06
Women married three times	NA	a	0.5	.35	.12	.36	0.0
Women married 4 or 5 times	NA	NA	a	a	0.0	0.0	a

[a] Number of observation is 5 or less.

Table 5.5

Mean Age of Women at First Marriage According to Age Group, Migration Status, Years of Women's Education and Number of Marriages

	Age Group						
	15-19 (1)	20-24 (2)	25-29 (3)	30-34 (4)	35-39 (5)	40-44 (6)	45-49 (7)
Migration Status							
Rural Stayers	15.1	16.1	16.5	16.8	17.9	18.1	19.3
Rural-urban migrants	16.3	17.5	18.4	18.5	19.0	18.2	18.8
Years of Women's Education							
Less than 6 years	14.8	15.8	16.2	16.7	17.9	18.1	19.2
At least 6 years	16.1	17.3	19.0	19.2	20.2	b	b
Number of Marriages							
Once and currently married women	15.2	16.4	17.0	17.2	18.1	18.2	19.9
Once but currently unmarried women	14.9	16.5	17.0	17.9	18.6	18.0	18.4
Women married twice	13.8	14.5	15.5	15.8	17.5	18.4	18.7
Women married three times	NA	a	11.9	15.3	15.2	17.4	15.5
Women married 4 or 5 times	NA	NA	a	a	16.6	15.3	a

[a]Number of observations is 5 or less

[b]Number of observations is less than 10

Table 5.6 clearly indicates that rural stayers and women with lower education marry more frequently than rural-urban migrants and women with higher eduation, respectively.

Table 5.7 reveals that rural stayers and women with lower education have a substantially higher incidence of infertility than rural-urban migrants and women with higher education. This finding contradicts a previous study by Larsen (1985) where rapid urbanization was interpreted as leading to a higher incidence of gonorrhea in urban areas because of the breakdown of traditional barriers to sexual mobility and exogamy and prostitution. Gonorrhea is the single major cause of infertility in sub-Saharan Africa. Our findings indicate that urban growth could in fact decrease the incidence of infertility, due to the availability of better health facilities and, particularly, antibiotics in urban areas.

Table 5.7 also indicates that women who married more than twice have a substantially higher incidence of infertility than once married women. This evidence could imply that infertile women change husbands more frequently to overcome the infertility problem. Nevertheless, the direction of causility might be in the opposite direction. Women who marry more frequently have a greater probability of contracting gonorrhea because of the greater chance of exposure. Again, the once but currently unmarried women do not have a significantly higher incidence of infertility than the continuously married women. This seems to indicate that for these group of women infertility was not the main cause of the dissolution of their first marriage.

Overall, the results in Tables 5.1 through 5.7 consistently indicate that the once but currently unmarried women are quite different from women who remarry. The women who remarried have lower socio-economic characteristics than the continuously married women, whereas women who did not remarry after

Table 5.6

Mean Number of Marriages According to Age Group, Migration Status, and Years of Education

	Age Group						
	15-19 (1)	20-24 (2)	25-29 (3)	30-34 (4)	35-39 (5)	40-44 (6)	45-49 (7)
Migration Status							
Rural Stayers	1.02	1.07	1.16	1.21	1.25	1.25	1.28
Rural-urban migrants	1.02	1.03	1.03	1.04	1.08	1.08	1.17
Years of Women's Education							
Less than 6 years	1.03	1.08	1.17	1.22	1.25	1.24	1.28
At least 6 years	1.0	1.04	1.04	1.03	1.06	a	a

[a]Number of observations is less than 10

Table 5.7

Proportion Of Women Who Married More Than Four Years But Had No Live Birth According To Age Group, Migraiton Status, Years Of Women's Education And Number Of Marriages

	Age Group						
	15-19 (1)	20-24 (2)	25-29 (3)	30-34 (4)	35-39 (5)	40-44 (6)	45-49 (7)
Migration Status							
Rural Stayers	.02	.08	.09	.10	.10	.11	.14
Rural-urban migrants	.0	.04	.10	.05	.05	.08	.04
Years of Women's Education							
Less than 6 years	.03	.10	.10	.10	.10	.11	.14
At least 6 years	.01	.03	.07	.06	.06	b	b
Number of Marriages							
Once and currently married women	.02	.07	.09	.08	.08	.07	.11
Once but currently unmarried women	.0	.03	.11	.13	.07	.07	.07
Women married twice	.1	.17	.12	.16	.14	.26	.23
Women married three times	NA	a	.13	.20	.12	.21	.18
Women married 4 or 5 times	NA	NA	a	a	.50	.50	a

[a]Number of observations is 5 or less

[b]Number of observations is less than 10

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the breakdown of the first marriage have socio-economic characteristics equal or superior to those of the continuously married women. The rural-urban migrant women are less likely to belong to the remarried women group but are more likely to belong to the once but currently unmarried women category.

Table 5.8 reveals several surprising observations. Unlike the findings in other LDCs, particularly Korea and Mexico, the fertility level of rural-urban migrants in Cameroon is not lower than that of rural stayers for the age cohorts above 30. For the three younger age cohorts, the fertility level of rural-urban migrants is lower than that of rural stayers. However, the difference does not appear to be significant. In some older age groups the fertility level of rural-urban migrants is, in fact, higher than that of rural stayers. It is also striking to observe that the fertility level of women with higher education levels is not lower than that of women with lower levels. In some older age groups the fertility level of the highly educated women is higher than that of women with lower education.[1] Table 5.8 also reveals that women whose marriages were disrupted had substantially lower fertility levels than continuous married women. Overall, there is an inverse relationship between fertility levels and number of marriages. It is

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[1] In the table which was not reported we show that rural-urban migrants are substantially more knowledgeable of, and more likely to use, contraceptives than rural stayers. For example, 67.1 to 82.5 percent of rural-urban migrant women aged 25-29 has some knowledge of any contraceptive method, including traditional methods, whereas only 35 percent of rural-stayer women aged 25-29 had some knowledge of any contraceptive methods. Among the age group 25-29, 18.4 to 36.8 percent of rural-urban migrant women had ever used any contraceptive methods, whereas only 12.1 percent of rural stayer women had ever used any contraceptive method.

Higher education levels significantly increase the knowledge and use of contraceptive methods for all age groups and all sizes of current residence. Within the same levels of education, the size of current residence significantly influences contraceptive knowledge and use. Among the women with the least education, urban residence substantially increases contraceptive knowledge and use. However, among the women with the highest education levels, the influence of urban residence on contraceptive knowledge and uses is moderate.

Table 5.8

Mean Number of Children-Ever-Born According to Age Group, Migration Status, Years of Women' Education and Number of Marriages

	Age Group						
	15-19 (1)	20-24 (2)	25-29 (3)	30-34 (4)	35-39 (5)	40-44 (6)	45-49 (7)
Migration Status							
Rural Stayers	.69	1.75	3.05	4.20	4.83	5.46	5.28
Rural urban migrants	.50	1.63	2.86	4.30	5.35	5.75	5.22
Years of Women's Education							
Less than 6 years	.70	1.73	3.03	4.16	4.85	5.52	5.28
At least 6 years	.62	1.75	3.01	4.55	5.31	b	b
Number of Marriages							
Once and currently married women	.66	1.73	3.07	4.41	5.27	5.92	5.92
Once but currently unmarried women	1.07	1.82	2.45	3.58	4.75	5.45	5.33
Women married twice	.7	1.71	2.90	3.69	3.71	4.21	3.71
Women married three times	NA	a	2.38	2.65	2.53	3.43	3.64
Women married 4 or 5 times	NA	NA	a	a	2.0	.88	a

[a]Number of observations is 5 or less

[b]Number of observations is less than 10

Table 5.9

Mean Number of Children-Ever-Born for Rural Stayer and Rural-Urban Migrant Women According to Age Group, Migration Status, Years of Women's Education and Number of Marriages

	15-19 (1)		20-24 (2)		25-29 (3)		30-34 (4)		35-39 (5)		40-44 (6)		45-49 (7)	
	R-R	R-U	RR	RU	RR	RU	RR	RU	RR	RU	RR	RU	RR	RU
Years of Women's Education														
Less than 6 years	.70	.60	1.73	1.70	3.03	3.0	4.16	4.15	4.83	5.19	5.49	5.86	5.29	5.09
At least 6 years	.66	.47	1.80	1.60	3.16	2.78	4.58	4.50	4.90	5.87	a	a	a	a
Number of Marriages														
Once and currently married women	.68	.48	1.75	1.62	3.08	3.01	4.39	4.58	5.20	5.98	5.85	6.70	5.85	7.64
Once but currently unmarried women	1.07	a	1.83	a	2.83	1.64	3.68	3.29	4.91	3.91	5.68	4.25	5.60	2.88
Women married twice	.67	a	1.71	a	2.89	a	3.72	a	3.76	a	4.33	a	3.73	a
Women married three times	NA	NA	a	a	2.38	NA	2.65	NA	2.53	NA	3.43	NA	3.64	NA
Women married 4 or 5 times	NA	NA	NA	NA	a	NA	a	NA	2.0	NA	.88	NA	a	NA

RR = Rural Stayers: RU = Rural-Urban Migrants

[a]Number of observations is 5 or less

interesting to note that ignoring the two youngest age groups, fertility levels of the once married but currently unmarried women are substantially lower than those of continuously married women. Recalling Table 5.7 which showed that the incidence of infertility for the former women is not higher than that of the latter women, we could infer that the lower fertility level of the women whose first marriage was disrupted, compared to that of the continuously married women, is mainly due to lost reproductive time and the disruption effect of the multiple marriages rather than the infertility problem of the multiply married women.

The results in Table 5.8 are further investigated in Table 5.9 by cross-classifying the data according to the migration status. The results in Table 5.9 verify all the findings from Table 5.8. The fertility level of rural-urban migrant is not lower than that of rural stayers even when we control for the education level of women. The fertility level of women with higher education is not lower than that of women with lower education even when migration status is controlled.

5.3 The Basic Regression Model

The multivariate regression model which compares the fertility rate of rural-urban migrants with that of rural stayers (rural nonmigrants and rural-rural migrants) is

$$
\begin{aligned}
5.1)\quad Y_t - Y_{t-1} = {} & \beta_o(Y_{t-1} - Y_{t-2}) + a_1 DYR78 + a_2 DYR73 + a_3 DYR68 + a_4 DYR63 \\
& + a_5 DYR58 + a_6 DYR53 + a_7 DYR48 + a_8 A_t DYR78 + a_9 A_t^2 DYR78 \\
& + a_{10} A_t DYR73 + a_{11} A_t^2 DYR73 + a_{12} A_t DYR68 + a_{13} A_t^2 DYR68 \\
& + a_{14} A_t DYR63 + a_{15} A_t^2 DYR63 + a_{16} A_t DYR58 + a_{17} A_t^2 DYR58 \\
& + a_{18} A_t DYR53 + a_{19} A_t^2 DYR53 + a_{20} A_t DYR48 + a_{21} A_t^2 DYR48 \\
& + \gamma_6 DUB_{26-30} + \gamma_5 DUB_{21-25} + \gamma_4 DUB_{16-20} \\
& + \gamma_3 DUB_{11-15} + \gamma_2 DUB_{6-10} + \gamma_1 DUB_{1-5} + \alpha_1 DU_{0-4} \\
& + \alpha_2 DU_{5-9} + \alpha_3 DU_{10-14} + \alpha_4 DU_{15-19} + \alpha_5 DU_{20-24} \\
& + \alpha_6 DU_{25-29} + \alpha_7 DU_{30-34} + \varepsilon_t
\end{aligned}
$$

Where Y_t is children ever born to the woman by year t, A_t is age at time t, A_t^2 is the squared value of A_t. DYR78, DYR73, DYR68, DYR63, DYR58, DYR53 and DYR48 are dummy variables reflecting the calendar years of observation. For example, the value of DYR78 is 1 when the year of observation is 1978, otherwise zero.

The variable, $Y_{t-1} - Y_{t-2}$ is included in Equation (5.1) as an independent variable in order to control for the selectivity of the migrant. We assume that the individual's preference for the family size is reflected in the previous period's fertility rate of that person.

The calendar year of observations dummy variables, DYR78, DYR73..., capture the trends in general fertility behavior over the time. The interaction terms between age variables and the year of observation dummy variables capture the differences in the influence of age variables over the different time periods. The age variables control for four factors, namely, biological ability for pregnancy, life cycle pattern of deliberate birth control, birth cohort effect and the difference in age distributions between migrant and non-migrant samples. DU_{0-4}, DU_{5-9}, DU_{10-14}, DU_{15-19}, DU_{20-24}, DU_{25-29} and DU_{30-34} are dummy variables reflecting the duration of urban residence for migrants. For example, the value of DU_{0-4} is 1 when the woman has spent between 0 and 4 years, by the year of observation t, in urban areas since her migration, otherwise zero. The duration of urban residence dummy variables, DU's, are expected to capture the fertility adaptation effects of rural-urban migration.

Equation (5.1) also includes the dummy variables reflecting the periods before migration. DUB_{1-5}, DUB_{6-10}, DUB_{11-15}, DUB_{16-20}, DUB_{21-25} and DUB_{26-30} have the value of 1 when the observation is for the rural-urban migrant and for the year which is 1 to 5, 6 to 10, 11 to 15, 16 to 20, 21 to 25, or 26 to 30 years before her migration, respectively. In our analyses of

Korean and Mexican data, when we used the comparison group of rural stayers, we dropped these dummy variables reflecting the periods before migration because our preliminary results for Korean and Mexican data showed that the coefficients for all of these dummy variables were not significantly different from zero. In other words, when we controlled for the fertility rates in the period of 5 to 9 years ago, $Y_{t-1} - Y_{t-2}$, there was no significant difference in fertility rates, $Y_t - Y_{t-1}$, for the periods before migration between women who had never migrated until the survey year and women who had not migrated until the year of observation but migrated later before the survey year. In order to avoid the problem of perfect multicollinearity for the regression, we were forced to drop one of either the dummy variables reflecting the migration cohort effects or the dummy variables reflecting the periods before migration. In our previous studies of Korea and Mexico, we decided to retain the migration cohort effect dummy variables and drop the periods-before-migration dummy variables because of the above mentioned reason and our belief that in fast growing economies such as Korea and Mexico, the changes in the selectivity of rural-urban migrants over the different migration cohorts should be significant.

Our preliminary results for Cameroon data showed that the fertility rate of rural-urban migrant women was significantly lower than that of rural stayers during some periods before migration. These results suggest to us that we should not drop the dummy variables reflecting the periods before migration. Therefore, in order to avoid the perfect multicollinearity problem, we are forced to drop the dummy variables reflecting the migration cohort effects. We assume that the effect of the difference in the selectivity of rural-urban migrants among different migration cohorts on migrant's fertility has been successfully captured by the variable reflecting the fertility rates during the period of 5 to 9 years ago, $Y_{t-1} - Y_{t-2}$. This

simplifying assumption seems reasonable considering that economic growth in Cameroon has not been as rapid as that in Korea and Mexico.

The dependent variable in Equation (5.1) is the age specific fertility rate, $Y_t - Y_{t-1}$ instead of children ever born, Y_t. Since the years of observation are at the five year intervals, $Y_t - Y_{t-1}$ will be the additional fertility which occurred during the previous five year period. It is not unreasonable to assume that the increments to fertility levels $Y_t - Y_{t-1}$ are influenced more by current lifestyles, say in urban areas (reflecting the adaptation effect), and less affected by the age at marriage or education levels which occurred earlier in the life-cycle (reflecting the selectivity effect) than the fertility level by itself, Y_t. Equation (5.1) is the first difference form of the autoregressive fertility model which controls for the unobserved preference for family size by equalizing the fertility levels at the previous period (for example, five years ago) between rural-urban migrants and rural stayers. Due to the first difference form of Equation (5.1), we do not need to include an intercept term as well as the variables reflecting the socioeconomic characteristics obtained in the earlier life-cycle. The changes in socioeconomic characteristics which occurred after the migration should not be controlled in Equation (5.1) because fertility adaptation of the rural-urban migration works through the changes in these socioeconomic variables. For example, if we control for the changes in education level or the age at marriage after the migration, we would underestimate the total fertility effect of migration.

The fertility data of ever married women for the years prior to the survey year, 1978, were obtained from the individual woman's lifetime fertility history. In order to cover the entire period of a woman's lifetime fertility with a limited number of dummy variables, we chose seven observation years at five-year intervals, 1978, 1973, 1968, 1963, 1958, 1953, and 1948 rather than

consecutive years. Whenever a woman's age was younger than 11 years in a year of observation, this woman was omitted in the regression for that year of observation. In our previous study of Mexico (Lee, 1985), the fertility histories of women with marital disruption were treated as censored at the point of disruption, rather than at the time of the interview. The observation years coming after the last marital disruption of the currently unmarried woman were excluded from the regression. In the present study, we decided not to adopt this procedure. Dissolution of marriage and remarriage are frequent in Cameroon. Therefore, the decision on remarriage should be treated similarly to the decision on the first marriage. Suppose we agree that if a rural-urban migrant woman delayed her first marriage due to the influence of urban lifestyle discouraging early marriage, the effect of delayed marriage on fertility should be considered as the fertility depressing effect of rural-urban migration. Therefore, we should not control the duration of marriage in our regression analysis to capture the total fertility adaptation effect of rural-urban migration. Furthermore, we should equally agree that if a rural-urban migrant woman delayed her remarriage due to the influence of urban environment which is not favorable to remarriage, the effect of delayed remarriage on fertility should be considered as the fertility effect of rural-urban migration. And in our regression, we should not distinguish whether or not she is currently remarried. Therefore in this study, the fertility histories of women with marital disruption were not censored at the point of disruption. The observation years of the currently unmarried woman coming after marital disruption were not excluded from the regression.

Table 5.10 shows the distribution of total number of observations for ever-married women used in the estimation of Equation (5.1) by the year of observation, migration status and year at migration.

Table 5.10

Distribution of Total Number of Observations for Ever Married Women Used in the Estimation of Equation (1) by Year of Observation, Migration Status and Year at Migration

Year at Migration	Years of Observation							
	1948	1953	1958	1963	1968	1973	1978	Total
Rural-urban migrant	67	129	190	309	425	482	485	2,087
(1) 1974-78	4	9	17	32	80	126	129	397
(2) 1969-73	5	11	14	55	103	110	110	408
(3) 1964-68	2	12	31	75	87	89	89	385
(4) 1959-63	6	23	46	60	66	68	68	337
(5) 1954-58	19	33	39	44	46	46	46	273
(6) 1949-53	17	25	26	26	26	26	26	172
(7) 1944-48	14	16	17	17	17	17	17	115
Rural Stayers	1,030	1,717	2,266	3,081	3,891	4,617	4,656	21,258
Total	1,097	1,846	2,456	3,390	4,316	5,099	5,141	23,345

5.4 Regression Results

The first column of Table 5.11 shows ordinary least squares estimates of the coefficients for the dummy variables reflecting the periods before migration and the duration of urban residence in Equation (5.1).[2] All the regression results in this study were obtained using the rural stayers sample

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[2]The full regression result of Equation (5.1) is shown below:

$$
\begin{aligned}
Y_{t}-Y_{t-1} = {} & \underset{(50.36)}{.380}\,(Y_{t-1}-Y_{t-2}) + \underset{(6.07)}{.829}\,DYR78 \\
& - \underset{(-1.30)}{.191}\,DYR73 - \underset{(-6.44)}{1.212}\,DYR68 - \underset{(-8.18)}{2.045}\,DYR63 \\
& - \underset{(-6.32)}{2.556}\,DYR58 - \underset{(-6.10)}{3.825}\,DYR53 - \underset{(-1.99)}{2.444}\,DYR48 \\
& + \underset{(1.53)}{.013}\,A_t\,DYR78 - \underset{(-4.89)}{.001}\,A_t^2\,DYR78 + \underset{(8.95)}{.092}\,A_t\,DYR73 \\
& - \underset{(-11.29)}{.002}\,A_t^2\,DYR73 + \underset{(11.99)}{.168}\,A_t\,DYR68 - \underset{(-13.19)}{.003}\,A_t^2\,DYR68 \\
& + \underset{(12.03)}{.242}\,A_t\,DYR63 - \underset{(-12.72)}{.005}\,A_t^2\,DYR63 + \underset{(8.48)}{.299}\,A_t\,DYR58 \\
& - \underset{(-8.59)}{.006}\,A_t^2\,DYR58 + \underset{(7.03)}{.434}\,A_t\,DYR53 - \underset{(-6.76)}{.010}\,A_t^2\,DYR53 \\
& + \underset{(2.06)}{.279}\,A_t\,DYR48 - \underset{(-1.67)}{.006}\,A_t^2\,DYR48 - \underset{(-.69)}{.353}\,DUB_{26-30} \\
& - \underset{(-.25)}{.092}\,DUB_{21-25} - \underset{(-.60)}{.147}\,DUB_{16-20} + \underset{(.28)}{.046}\,DUB_{11-15} \\
& - \underset{(-.82)}{.098}\,DUB_{6-10} - \underset{(-.06)}{.006}\,DUB_{1-5} + \underset{(1.50)}{.069}\,DU_{0-4} \\
& + \underset{(2.53)}{.129}\,DU_{5-9} + \underset{(.64)}{.038}\,DU_{10-14} - \underset{(-.27)}{.020}\,DU_{15-19} \\
& - \underset{(-2.06)}{.197}\,DU_{20-24} - \underset{(-.32)}{.044}\,DU_{25-29} + \underset{(.65)}{.140}\,DU_{30-34}
\end{aligned}
$$

$R^2 = .5953$ No. of observations = 17,979

Adjusted $R^2 = .5945$

The numbers in parentheses under the coefficient estimates are the usual t-statistics.

153x

Table 5.11

Coefficient Estimates for the Dummy Variables in Equation (5.1) Reflecting the Periods Before Migration and the Duration of Urban Residence for Total Ever Married Women

Dummy independent variables reflecting periods before migration and duration of urban residence	Total Sample Women		Women With Education of Less Than 6 Years		Women With Education of at Least 6 Years	
	b	t	b	t	b	t
DUB_{26-30}	-.353	- .69	-.356	- .69	NA	NA
DUB_{21-25}	-.092	- .25	-.093	- .26	NA	NA
DUB_{16-20}	-.147	- .60	-.079	- .29	-.368	- .48
DUB_{11-15}	.046	.28	-.115	- .62	.621	1.55
DUB_{6-10}	-.098	- .82	-.203	-1.53	.180	.69
DUB_{1-5}	-.006	- .06	.058	.52	-.168	-1.23
DU_{0-4}	.069	1.50	.057	.93	-.045	- .64
DU_{5-9}	.123*	2.53	.125	1.90	-.033	- .41
DU_{10-14}	.038	.64	.026	.37	-.056	- .52
DU_{15-19}	-.020	- .27	.049	.60	-.308*	-2.10
DU_{20-24}	-.197*	-2.06	-.131	-1.26	-.650*	-2.74
DU_{25-29}	-.044	- .32	-.077	- .54	.647	1.30
DU_{30-34}	.140	.65	.132	.61	NA	NA
Adjusted R^2	.5945		.5896		.6672	
No. of observations	17,979		16,391		1,588	

* significant at the 5 percent level for the two-tailed tests

as the comparison group which includes both rural-rural migrants and rural nonmigrants.[3]

The results in the first column of Table 5.11 reveal that the fertility rate of the rural-urban migrant women is significantly higher than that of rural stayers during the period of 5 to 9 years after migration. This is the positive influence of rural-urban migration on the migrant's fertility rate. A significant fertility depressing effect of rural-urban migration appears only after migrants have spent at least 20 years in urban areas and disappears after migrants have spent at least 25 years in urban areas. The summation of the coefficient estimates for the post migration periods dummy variable indicates that the rural-urban migration in Cameroon reduces migrant's fertility by approximately .13 births as shown in the last column of Table 5.12. This is a very weak fertility adaptation effect of rural-urban migration. Rural-urban migration in Cameroon does not appear to reduce migrant's fertility rate. This result is in direct contrast to the results obtained from our previous studies of Korea and Mexico. As summarized in Table 5.12, Korean rural-urban migration decreased migrant's fertility by 2.6 births during the 34 years of urban residence and Mexican rural-urban migration decreased migrant's fertility by 1.5 births during their 40 years of urban residence.

As discussed in an earlier section, exposure to urban lifestyle does not seem to depress the fertility levels in Cameroon. The higher education level does not depress the fertility level. In an earlier section we also showed that the rural-urban migrants and women with higher education levels have a

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[3]Equation (5.1) was also estimated using only rural nonmigrants or rural-rural migrants as a comparison group. The values of the coefficients for the dummy variables, DUB's and DU's, were not much different between comparison groups of either rural nonmigrants or rural-rural migrants. This might be due to the fact that a substantial portion of rural-rural migrants actually moved within the same arrondissement (county) and are not much different from rural nonmigrants.

Table 5.12

Comparison of Coefficient Estimates for the Duration of Urban Residence Dummy Variables in Equation (5.1) for Cameroon data with those of the 1974 Korean World Fertility Survey and the 1976 Mexican World Fertility Survey

Duration of Urban Residence	Korea[a]		Mexico		Cameroon	
	b	t	b	t	b	t
0 - 4	-.172	NA	-.086	-1.47	.069	1.50
5 - 9	-.124	NA	-.008	- .13	.123	2.53
10 - 14	-.259	NA	.001	.01	.038	.64
15 - 19	-.466	NA	-.109	-1.24	-.020	- .27
20 - 24	-.533	NA	-.255	-2.52	-.197	-2.06
25 - 29	-.591	NA	-.342	-2.90	-.044	- .32
30 - 34	-.427	NA	-.409	-2.82	.140	.65
35 & up	NA	NA	-.240	-1.22	NA	NA
Sum of post-migration period values	-2.572		-1.45		-.131	

[a] For Korean data we used a regression model quite different from Equation (1). Therefore, we do not have the t-values for the specific coefficient estimates. However, most coefficients except that for the period of 30-34 years were statistically significant.

significantly lower incidence of infertility than the rural stayers and women with lower education. We also showed that the former group of women are much less likely to marry more than once compared to the latter group of women. In the following chapter we present regression results showing that Cameroonian women who were married more than once have significantly lower fertility than women who married once regardless of whether or not the once married women were currently married.

The lower fertility of the multiply married women can be explained by several factors.[4] First, the selection effect claims that women who have infertility problems are more likely to be divorced. Therefore, the multiply married women are a selected group in terms of lower fecundity. Second, the simultaneity effect claims that women who married frequently are likely to be women with lower fertility levels before the dissolution of the first marriage. Because they had lower fertility before the dissolution of their first marriage, they are more attractive for remarriage, and/or they remarry to make up for their own perceived deficit in fertility. Third, multiple marriages contribute to lower fertility rates in latter marriages in the following ways: 1) reproductive time that was lost; 2) women were more likely to be exposed to venereal diseases resulting in secondary infertility; and 3) the disruption effect of multiple marriages reduced the fertility rate of women.

Based on the above observations, we conjecture that even though rural-urban migration decreases the demand for children, this fertility depressing

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[4] In this study, we did not investigate the influence of polygamous unions on the fertility adaptation effect of rural-urban migration. Around 42 percent of women in unions belong to polygamous unions in Cameroon. Of these, 38 percent are first wives, 42 percent second wives, and 20 percent are of rank three or higher. However, the World Fertility Survey (1983) showed that the fertility differences between monogamous women and polygamous women did not appear to be significant nor did those differences relating to rank of polygamous wife.

effect is offset by the improved supply conditions such as reduced infertility and less frequent marriages which result from rural-urban migration. Therefore, we conclude that rural-urban migration in Cameroon does not significantly reduce the migrant's fertility rate.

In columns of 2 and 3 in Table 5.11 we present the coefficient estimates of the duration of urban residence dummy variables for the sample women with education of less than 6 years and the women with education of at least 6 years, respectively. These results indicate that rural-urban migration does not have any fertility depressing effect for women with lower education levels, though the rural-urban migration has a significant fertility depressing effect for women with higher education levels. This significant fertility adaptation effect appears after migrants have spent at least 15 years in urban areas and disappears after migrants have spent at least 25 years in urban areas. The summation of the post-migration period coefficient estimates reveals that the rural-urban migration of women with higher education reduces their fertility by 1.7 births during 30 years of urban residence. This interesting result might be explained as follows. Women with higher education have a lower incidence of infertility and a lower probability of multiple marriages whether they stay in rural or urban areas. Therefore it might be the case that for the highly educated women, rural-urban migration brings smaller improvement in the supply conditions of fertility than for the women with lower education. On the other hand, rural-urban migration causes a greater reduction in the demand for children for women with higher education levels than for women with lower education levels. It is not difficult to understand that the urban areas provide relatively more challenges and new oppportunities for the highly educated women than for their less well educated counterparts. The challenges and new opportunities in urban areas reduce the

demand for children. Therefore, for the highly educated women the fertility depressing effect of rural-urban migration dominates the fertility increasing effect of rural-urban migration due to the improvement of the supply condition of births.

5.5 Summary and Conclusions

In this chapter we have applied an autoregressive model to the 1978 Cameroon World Fertility Survey data to test our adaptation hypothesis. The advantage of the first difference form of the autoregressive model used in this chapter is that it partially controls for the selectivity of migration by comparing rural-urban migrant's incremental fertility within a given period to that of a comparable rural stayer with the same fertility rate during the immediately preceding period. In principle, the remaining differential in fertility between rural-urban migrants and rural stayers is a measure of the rural-urban migrant's sdaptation to urban norms and constraints. In technical terms, we have controlled the fertility rates during the previous five-year period and have assumed that this is a proxy for family size preferences.

The major conclusion of this study is that the fertility adaptation effect of rural-urban migration is very weak in Cameroon when compared with that of Korea and Mexico. At this stage of economic development, rural-urban migration does not appear to contribute significantly to a reduction in the national fertility level in Cameroon. We believe that this situation has resulted from the fertility-increasing effect of the improved supply conditions of births such as reduced infertility and the decreased incidence of multiple marriages resulting from rural-urban migration. These factors offset the fertility-depressing effect of decreased demand for children resulting from the migrant's adaptation to the urban environment which discourages larger family sizes.

It is also found that higher education levels do not significantly depress fertility rates in Cameroon. Higher education levels also appear to reduce the incidence of infertility and decrease the probability of multiple marriages.

The above observations seem to indicate that the standard three-stage demographic transition does not adequately describe the trend of Cameroon's demographic development. Between the second stage of low mortality and high fertility and the third stage of low mortality and low fertility, we need an intermediate stage for countries like Cameroon, in which the fertility rate is increasing rather than decreasing. For these types of countries, it might be difficult to anticipate rapid fertility reduction as long as economic development reduces infertility and the incidence of multiple marriages.

It is true that the increased rural-urban migration and the increase of women's education in Cameroon might bring the increase of fertility in the short run by reducing the incidence of infertility and the probability of multiple marriages. Nevertheless, in the long run, increased rural-urban migration and the increase in women's education levels should bring about a reduction in fertility rates. The reduction in infertility and the increased stability of marriages resulting from the increased rural-urban migration, for example, will provide Cameroonian women the confidence needed in controlling their own family size and therefore should increase the incentive to use contraceptives. Frank (1983) argues that infertility will present a major obstacle to Africa's fertility transition, because uncertainty in childbearing inhibits response to intrinsic and extrinsic pressures to reduce fertility goals. Early attention to infertility as a major health problem will likely result first in earlier acceleration of population growth, but subsequently it can bring forward the timing of response to socioeconomic and other signals to

limit childbearing. This argument concerning infertility should be equally applicable to the reduction of unstable marriages in Cameroon. The above conclusion is supported by our findings that the rural-urban migration does have a somewhat significant fertility depressing effect for the Cameroonian women with education of at least 6 years.

In the following chapter we discuss the influence of marital instability on the fertility behavior. As we discussed above, marital instability is an important factor in explaining the weak fertility adaptation effect of rural-urban migration in Cameroon.

Chapter 6

The Effect of Marital Dissolution on Fertility in Cameroon

6.1. Introduction

In Chapter 5 it was shown that the adaptation effect of rural-urban migration on fertility was relatively small in Cameroon. Compared with studies of Korea (Lee and Farber, 1985; Lee and Farber, 1984; Farber and Lee, 1984; Lee et al, 1981) and Mexico (Lee, 1985a; Lee and Pol, 1985; Lee et al, 1983), where the adaptation effect was calculated to be a reduction of 2.57 and 1.20 births, respectively, adaptation in the Cameroon resulted in a decline in only .13 births. The reasons cited for this smaller decrease in fertility centered on the pro-natal effect that rural-urban migration had through a reduction in infertility and the stabilization of marital relationships. These factors nearly offset the fertility depressing effects of rural-urban migration on the demand for children in Cameroon. In other words, rural-urban migration improved the supply conditions for births about as much as it reduced demand.

The purpose of Chapter 6 is to focus more closely on the relationship between marital instability and fertility. The results have potentially important policy implications. First, a further look at the cause-effect relationship between rural-urban migration and marital stability is needed. If the subsequent stabilization of marriages brought about by rural-urban migration as suggested in the previous chapter has a positive effect on fertility, then the net effect -- an overall reduction in fertility -- of this movement on the birth rate may be much smaller than was originally anticipated. However, if the resulting stabilization of marriage results in lowered fertility, as has been reported in studies of some Latin American countries

(i.e. Ram and Ebanks, 1973; Ebanks, George and Nobbe, 1974), then the net effect of migration on fertility reduction may be greater than hypothesized. In either instance, the indirect effect of rural-urban migration on fertility, through an increase in marital stability as well as other factors, needs better understanding, especially if government policies are to be in part based on these observations. Second, there is an interesting question concerning increases in marital stability over time resulting from economic development, urbanization, and/or governmental policy which in turn bring about an increase or decrease in fertility rates. If there is a positive relationship between marital instability and fertility rates, then an increase in marital stability will contribute to a reduction in population growth rates in countries such as Cameroon. If the opposite is true, then an increase in marital stability will bring about an increase in population growth rates. Of course, the variable relationships described in either of these scenerios could easily change with the passage of time. In the conclusion section of this chapter we conjecture that even in the latter case, an increase in marital stability over time will facilitate a feeling of greater confidence in a woman's ability to determine her own family size. As a result, there will be an increased reliance on contraceptives and an overall reduction in the level of fertility in the long run.

6.2. Literature Review

Results of studies focusing on the relationship between marital instability and fertility are mixed in that some studies show a fertility depressing effect of marital instability while others show a positive effect. Some of the variation in results is statistically and/or methodologically artifactual in that a range of operationalizations, controls and statistical procedures are represented in these works. How much of the variation is artifactual is

unknown. Nevertheless, the relationship between marital instability and fertility is a complex one confounded by a host of other factors such as age at first marriage, time spent between unions, present age, race, education, as well as the unobservable preference for family size, all of which qualify the original relationship. At the core of the complexity discussed in the literature are the two counter-acting forces identified by Downing and Yaukey (1979): the negative effect on fertility of the reproductive time lost while a woman is in between unions and the pro-natalist effect of establishing a new union. Even these forces are affected by some of the other factors listed above (e.g. age and race). However, there is a third factor, the negative effect of the number of marriages on fertility. This is the pure form of the disruptive effect of multiple marriages, when the length of reproductive time lost is controlled. In some African countries such as Cameroon, a fourth factor, which is physiological in nature, must be considered. To the extent that the number of marriages indicate exposure to an increasing number of sexual partners (both husbands and other partners), and thus an increased probability of exposure to sterilizing veneral diseases, marital instability indirectly contributes to lower fertility.

Furthermore, there is the issue of the net effect of marital stability on fertility versus the contribution of various components (e.g. time spent between unions) to the relationship. That is, much of the research focusing on the marital stability/fertility relationship has been directed in general toward identifying the contribution of a host of independent variables, including marital instability, on childbearing, for the most part in an attempt to decompose the instability effect into the two factors -time spent between unions and the desire to "cement" a new union - identified by Downing and Yaukey (1979). Nevertheless, if one is mainly interested in the net effect,

an increase or decrease in fertility, then the relative contribution of the two components is less important. And, little attention has been focused on the third and fourth factors, the disruption and physiological effects of multiple marriages.

In general, research on U.S. samples of women yield the result that marital instability reduces fertility, especially for women who do not remarry (c.f. Lauriat, 1969; Cohen and Sweet, 1974; Thornton, 1978; Gurak, 1978). For women who do not remarry, the finding is not surprising given the fact that even with the relatively recent increase in out-of-wedlock fertility in the U.S., four out of five births still occur to women who are married (Thornton and Freedman, 1983: 20-21). For women who remarry, the fertility effect is most influenced by the time spent between unions and the psychological desire to "cement" new marriages by having children. Lauriat (1969) found that holding age and age at first marriage constant, women in discontinuous marriages have only 79 percent of the children they would have had if they had (hypothetically) remained continuously married. Increasing the number of controls by including education, type of residence, whether or not the woman was premaritally pregnant, religion, race, as well as current age and age at first marriage, Cohen and Sweet (1974) generated the same basic finding. However, when total months in a married state -excluding periods of time between separation and remarriage - was added to their list of controls, the fertility difference was minimized. Thornton's (1978) results once again supported the general reduction in fertility finding. However, the pattern of fertility after remarriage showed marked differences by race. Controlling for time since first marriage, Thornton found that for white women the increased fertility following a remarriage was enough to offset the time spent outside marriage, though for black women this was not the case. Thornton's findings

were in general reproduced by Kalwat (1983), though it was found that white women who married early in life showed the highest fertility levels in second marriages. White women first-married later in life did not make up for their time lost between marriages. Finally, Gurak (1978), controlling for education, occupation, income (husband's), current age, and age at first marriage found that divorce and remarriage had a negative effect on completed fertility for six racial/ethnic groups in the U.S. The negative impact on completed fertility was greatest for Blacks and least for Cubans, with Anglos, Puerto Ricans, Mexican Americans and Japanese having intermediate effects.

Studies of women in less developed countries have yielded some supporting and some conflicting findings. Utilizing two different datasets, Swee-Hock (1967) and Palmore and Marzuki (1969) found that for Malaysia, divorce without remarriage and divorce followed by remarriage reduced levels of fertility below those of continuously married women. Controlling for age, age at marriage, place of current residence, race, and education, Palmore and Marzuki determined that the effect of being divorced and remarried lowered completed fertility .5 births when compared to continuously married women. Conversely, Ram and Ebanks (1973), Chen, Wishik and Scrimshaw (1974), Ebanks, George and Nobbe (1974) and Downing and Yaukey (1979) found that instability increased fertility in Barbados, Guayquil, Ecuador, Barbados, and five Latin American cities, respectively, though in two of these studies the results of the net effect of marital instability on fertility were not reported.

Ram and Ebanks (1973) cross-classified age adjusted fertility rates by the number of sexual unions (partners) and produced a positive relationship between the two variables. That is, as the number of partners increased so did fertility rates. Chen, Wishik and Scrimshaw (1974) standardized children ever born by years of reproductive time lost and determined that people with two unions

had fertility 14 percent higher than people with one union. A third union increased fertility an additional 15 percent over that of women in a second union. However, the authors did not present results looking at rates without controlling for time lost, so that conclusions about the net effect were not possible. In confirming the results of Ram and Ebanks (1973), Ebanks, George and Nobbe (1974) presented a series of tables cross-classifying number of partnerships (unions) by fertility, controlling for one or two factors at a time: age at first pregnancy, present age, age at first partnership, number of years spent in unions, and type of sexual union at first pregnancy. In each table, fertility increased as the number of partners increased. Downing and Yaukey (1979) showed that for Buenos Aires San Jose, Mexico City, Bogota and Caracas, mean live births per woman, standardized by the interval since first marriage and by the length of weighted reproductive time lost, increased as the number of marriages increased. However, when controlling for socioeconomic status (education), the pro-natalist effect was reduced. Women with higher levels of education who had been married more than once had lower levels of fertility than women with the same level of education but had been married only once. Nevertheless, the net effects - not controlling for reproductive time lost -were not presented.

Overall, it is not possible to make general cross-cultural statements about the relationship between marital instability and fertility. Of the nine studies which include the net effects reported here, two find a positive net effect of marital instability on fertility. More recent World Fertility Survey data show that for 29 developing countries fertility declines as the number of partners increases or the percentage of time in union since the first marriage decreases (Lightbourne, Singh and Green, 1982:28). Joint controls for factors appearing in the studies cited above, nevertheless, are

Table 6.1

Distribution of Sample by Age and Number of Marriages for Cameroon

Age Group	Single	Number of Marriages 1	2	3	4	5	6	7	8	Total (Married Women)
15-19	788	741 (98.4%)	12	0	0	0	0	0	0	753
20-24	216	1,297 (93.6%)	82	6	0	0	0	0	0	1,385
25-29	58	1,080 (87.7%)	125	20	6	1	0	0	0	1,232
30-34	26	868 (83.7%)	135	25	6	3	0	0	0	1,037
35-39	12	731 (80.3%)	140	22	9	6	0	0	2	910
40-44	12	670 (80.7%)	126	23	9	2	0	0	0	830
45-49	13	447 (78.0%)	103	17	3	2	1	0	0	573
50-54	6	254 (69.0%)	86	18	5	4	0	1	0	368
Total	1,131	6,088 (85.9%)	809	131	38	18	1	1	2	7,088

In Table 6.2 we present some descriptive statistics for Cameroonian ever-married women included in the Cameroon World Fertility Survey, classified by age and migration status. In all age cohorts, women who spent more time in cities tended to be significantly better educated. For example among women in the age group 20-24, rural stayers had only 2.9 years of schooling whereas urban natives currently residing in Yaounde and Douala had 7.6 and 6.7 years of schooling, respectively. Yaounde, the capital city in Cameroon, has a population of 314,000 and Douala, the other major city, has a population of 459,000 people.

For all but the oldest birth cohorts, education levels of rural-urban migrant women are substantially higher than those of rural stayers, but substantially lower than those of urban natives. This phenomenon may be due to both the selection process in terms of education of rural-urban migration and the adaptation effect of urban residence on women's education. These data also show that husband's education level is approximately one year higher than that of women when within age group and migration status comparisons are made.

By age 35-39, relatively few women remain single (1.3 percent) in Cameroon. We analyze the mean ages at the first marriage only for ever-married women older than 34 in order to avoid the sample selection bias inherent in the younger women (early marriage) subsample. As expected, urban native women married at later ages (19.2 - 20.0 years for the women aged 35-39) than rural stayer women (17.8 years). For most birth cohorts, the mean age at the first marriage for rural-urban migrant women (for example, 18.6 - 19.6 years for the age group 35-39) is substantially higher than that of rural stayer women, but is almost equal to that of urban natives. Also of interest is the observation that age at first marriage for younger birth cohorts has not increased significantly over that of older cohorts, regardless of migration status.

Dissolution, separation, and remarriage are more frequent in Cameroon, particularly in rural areas, than in most other less developed countries. Mean numbers of marriages are 1.27, 1.08 - 1.16, and 1.06 - 1.16 for rural stayers, rural-urban migrants, and urban native women aged 35-39 in Cameroon, respectively. Marriage is least stable in rural areas and much more stable in urban areas. Rural-urban migration seems to increase the stability of marriages. Palmore and Marzuki (1969) generated consistent results in their Malaysian data analysis. Rural women, Malay ethnic women, women with no formal education, and women whose husband farmed showed the highest proportion of being married more than once. These were the groups with the youngest age at first marriage. In Cameroon early marriages in rural areas might be also the main cause of the high instability of marriages in rural areas.

The logic underlying the instability of early marriage in Cameroon is straight forward. Many of these marriages are prearranged by parents, and the partners have had little or no previous contact. Frequently, there is a wide age differential for these partners. Overall, the prearranged nature and age difference between partners lead to greater marital dissatisfaction and subsequently high rates of divorce.

The contribution of the rural-urban migration to the greater stability of the rural-urban migrant marriages can be partially explained by the fact that the probability of being unemployed becomes greater for the rural-urban migrant women after the arrival in urban areas, rendering these women more dependent upon their husbands. It is likely that this factor, while not increasing marital satisfaction, contributes to greater marital stability by simply making marital dissolution more difficult.

The mean number of children-ever-born to women aged 45-49, 5.2, 4.8 - 6.0, and 4.2 - 5.7 for rural stayers, rural-urban migrants and urban natives,

respectively, are relatively low in Cameroon. This surprising result may be explained by two factors: infertility was extremely high, specifically 15 percent of women aged 45-49 have never had a child, and marriages are relatively unstable in Cameroon. It seems reasonable to assume that a substantial proportion of women who have never had a live birth in many societies in which incomes are low, such as Cameroon, are childless because of infecundity and subfecundity, rather than by choice. In Cameroon, the supply constraint of births seems to be more dominating than the demand aspect. It is not unreasonable to anticipate that the fertility level of urban natives or rural-urban migrants is equal to, or even higher than that of rural stayers, even if the desired fertility level of the former is significantly lower than that of the latter, as long as urban residence reduces infertility and improves the stability of marriages.

Table 6.3 presents descriptive data on major social and demographic characteristics cross-classified by the number of marriages. As can be seen, there is a strong inverse relationship between the number of marriages and schooling (wives and husbands), the fraction of years spent unmarried, and contraceptive use. Specifically, the decline in wives and husbands education is 1.89 and 2.83 years, a 92 and 85 percent reduction, respectively, between the once married/currently married husbands and wives and those married four or five times. The drop in contraceptive use is greater than 10 percent over the same number of marriages interval. While there is an increase between the once married/currently married and once married/currently unmarried categories, a general inverse relationship also exists between number of times married and mean age at first marriage and mean number of children-ever-born. The decline in the number of children-ever-born is 1.65 children and the

Table 6.3 Major Characteristics of Total Sample Women According to the Number of Marriages

Variables	Number of Marriages				
	Once married and currently married (0)	Once married but currently unmarried (1)	2	3	4 or 5
Current age	30.1	38.5	36.4	38.9	38.6
Mean years of women's schooling	2.06	1.33	.78	.20	.17
Mean years of husband's schooling	3.33	2.54	2.11	1.35	.50
Mean age at first marriage	17.3	18.0	17.2	15.9	14.5
Years since the year of first marriage	12.8	20.5	19.2	22.9	23.9
Years of marriage gaps	0.0	7.61	2.96	4.93	4.0
Fraction of disrupted marriage years	0.0	.376	.160	.215	.156
Mean number of children-ever-born	3.48	4.21	3.34	2.67	1.83
Percentage of women who ever used any contraceptive method	.133	.121	.126	.065	.028
Number of women	4,379	479	641	92	36

reduction in mean age at first marriage is 2.8 years, between the once married/currently married women and those married four or five times.

6.4. Major Hypotheses

Four major hypotheses concerning the influence of marital instability on fertility behavior are tested using the basic model presented in section 6.5:

> Hypothesis 1: The fertility of women with at least one disrupted marriage is significantly lower than the fertility of continuously married women, even before the dissolution of the first marriage.
>
> Hypothesis 2: When the number of marriages is controlled, the greater the reproductive time lost, the lower the fertility level.
>
> Hypothesis 3: When the length of the reproductive time lost is controlled, the greater the number of marriages, the more the fertility rate is reduced after the dissolution of the first marriage.
>
> Hypothesis 4: The fertility rate of women with disrupted marriages is significantly lower when compared to the fertility rate of the continuously married women due to the instability of marriage after the dissolution of the first marriage.

Hypothesis 1 concerns the selection effect of marital instability. There are several reasons why women with marital disruptions might show a lower fertility rate than the continuously married women even before the dissolution of the first marriage.

First, women with marital disruptions might be a negatively selected group in terms of fecundity. The lower fecundity of women might have led to the increase in marital disruptions because these women may be viewed as "less desirable" marriage partners. Given the overall cultural norm to have children, problems of subfecundity and infecundity are solved through divorce. In other words, high fertility favors marital stability while unsatisfactory (low) fertility leads to higher marital turnover resulting from successive attempts to turnaround inadequate childbearing. This selection effect will be assessed through the test of Hypothesis 1. In order to estimate the causal

effect of marital disruption on fertility rates, this selectivity effect should be controlled.

However, there are other reasons why women with marital disruptions might have lower fertility rates even before the dissolution of the first marriage. First, the anticipation of unstable marriages might have caused the lower fertility of the women with disrupted marriages even before the dissolution of first marriage. Second, women with more children may be less attractive marriage partners or may be more constrained in the search for a second husband, thus making remarriage selective of women with lower fertility.

These latter two phenomena, which together we call the 'simultaneity effect', are quite distinctive from the former phenomenon which we call the 'pure selectivity effect.' As discussed above, according to the pure selectivity effect the fact that women with marital disruptions have lower fertility rates even before the dissolution of the first marriage tells us that the observed lower fertility rates for the maritally disrupted women after the dissolution of first marriage exaggerate the causal effect of marital dissolution on fertility. On the other hand, according to the simultaneity effect the lower fertility rates of maritially disrupted women before the dissolution of first marriage does not imply that the observed lower fertility rates for the disrupted women after the dissolution of first marriage exaggerates the causal effect of marital disruption. This is because women who happened to have lower fertility rates by coincidence or due to the anticipation of the marriage breakdown would not necessarily maintain their lower fertility rates after the beginning of their second marriage. The above discussion implies that the testing of Hypothesis 1 for selection effect is very important, though caution in interpretation should be exercised because of the potential effect of simultaneity.

Hypothesis 2 was tested in most other research and not rejected in any study. A serious shortcoming of these previous works, however, is that they did not decompose the completed (or children-ever-born) fertility level into the fertility level before the dissolution of first marriage and the change in the level after the dissolution. Previous studies have simply investigated the relationship between the weighted reproductive time lost and the number of children-ever-born.[1] This approach can lead to erroneous conclusions for two reasons. First, the fertility levels before the dissolution of first marriage cannot be influenced by lost reproductive time which occurred later. Second, as discussed above, because of the pure selectivity effect, the entire differential in fertility rates even after the dissolution of first marriage between women who lost a great deal of reproductive time and those who lost little or none at all should not be considered as the causal effect of longer reproductive time lost.

Tests of Hypothesis 3 from previous studies have produced conflicting findings. Results for Latin American data by Downing and Yaukey (1979) and Chen et. al. (1974) showed that the greater the number of marriages, the greater the level of fertility. This result was explained by the incentive on the part of remarried women trying to "cement" their new marriage by having children. However, results for Malaysian data by Swee-Hock (1967) and Palmore and Marzuki (1969) showed that as the number of marriages increases, the number of births decreases. This finding can be explained by the disruption effect of unstable marriages on woman's fertility behavior. As mentioned earlier, in African countries such as Cameroon, we should consider an additional explanation for the fertility depressing effect of unstable marriages.

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[1] A weight was assigned to each five-year interval since first marriage based on the relative fertility rates occurring during that interval in the population to which the sample belongs (see Downing and Yaukey, 1979 and Chen et al, 1974).

Marital disruption tends to favor a high prevalence of venereal disease - and an increase in sterility - so that a fertility deficit is associated with a larger number of unions.

Hypothesis 4 pertains to the net effect of marital instability on fertility behavior. If Hypothesis 3 is not rejected, then Hypothesis 4 will not be rejected. However, if Hypothesis 3 is rejected as in the case for Latin American data, then the outcome for Hypothesis 4 cannot be predicted a priori. In many previous studies Hypothesis 4, which should have the most important bearing on the policy decision making, has been underemphasized.

6.5. The Basic Regression Model

The multivariate regression model, which compares the fertility rate of women with marital disruption with that of continuously married women, can be expressed as:

$$
\begin{aligned}
6.1)\quad Y_t - Y_{t-1} = {} & a_1 DYR78 + a_2 DYR73 + a_3 DYR68 + a_4 DYR63 \\
& + a_5 DYR58 + a_6 DYR53 + a_7 DYR48 + a_8 A_t DYR78 + a_9 A_t^2 DYR78 \\
& + a_{10} A_t DYR73 + a_{11} A_t^2 DYR73 + a_{12} A_t DYR68 + a_{13} A_t^2 DYR68 \\
& + a_{14} A_t DYR63 + a_{15} A_t^2 DYR63 + a_{16} A_t DYR58 + a_{17} A_t^2 DYR58 \\
& + a_{18} A_t DYR53 + a_{19} A_t^2 DYR53 + a_{20} A_t DYR48 + a_{21} A_t^2 DYR48 \\
& + \beta_1 S + \beta_2 S^2 + \beta_3 AGEFM \\
& + \alpha_{01} DGAP_o \cdot DNMR1 + \alpha_{11} DGAP_{1-5} \cdot DNMR1 \\
& + \alpha_{21} DGAP_{6-10} \cdot DNMR1 + \alpha_{31} DGAP_{11-15} \cdot DNMR1 \\
& + \alpha_{41} DGAP_{16-20} \cdot DNMR1 + \alpha_{51} DGAP_{21-25} \cdot DNMR1 \\
& + \alpha_{61} DGAP_{30} \cdot DNMR1 \\
& + \alpha_{02} DGAP_o \cdot DNMR2 + \text{---} + \alpha_{62} DGAP_{30} \cdot DNMR2 \\
& + \alpha_{03} DGAP_o \cdot DNMR3 + \text{---} + \alpha_{63} DGAP_{30} \cdot DNMR3 \\
& + \alpha_{04} DGAP_o \cdot DNMR4 + \text{---} + \alpha_{64} DGAP_{30} \cdot DNMR4 \\
& + \varepsilon_t
\end{aligned}
$$

The dependent variable in Equation (6.1) is the increase in fertility over the time interval in question, $Y_t - Y_{t-1}$ instead of children ever born. Because the years of observation are at the five year intervals, $Y_t - Y_{t-1}$ is the additional fertility which occurred during the previous five year period. It is not unreasonable to assume that the increments to fertility levels, $Y_t - Y_{t-1}$ are influenced more by current circumstances, say, during the new remarried life (reflecting the causal effect of marital disruptions), and less affected by the age at marriage or education levels which occurred earlier in the life-cycle (reflecting the selectivity effect) .

The fertility data for ever married women for the years prior to the survey year, 1978, were obtained from the individual woman's lifetime fertility history. In order to account for the entire period of a woman's lifetime fertility with a limited number of dummy variables, we chose seven observation years at five-year intervals, 1978, 1973, 1968, 1963, 1958, 1953 and 1948, rather than consecutive years. Whenever the woman had never married by the year of observation, t, this woman was omitted in the regression for that year of observation.

The independent variables are as follows. A_t is age at time t, and A_t^2 is the squared value of A_t. DYR78, DYR73, DYR68, DYR63, DYR58, DYR53, and DYR48 are dummy variables representing the calendar years of observation. For example, the value of DYR78 is 1 when the year of observation is 1978, otherwise it is zero.

The calendar year of observations dummy variables, DYR78, DYR73..., capture the trends in general fertility behavior over time. The interaction terms between age variables and the year of observation dummy variables reflect the differences in the influence of age variables over the different time periods. The age variables control for four factors, namely, the

biological ability to reproduce, life cycle pattern of deliberate birth control, birth cohort effect and the difference in age distribution between women with marital disruption and continuously married women. S is the women's years of schooling, S^2 is the squared value of S, and AGEFM is the women's age at first marriage. These three variables control for the (negative) selectivity of women with marital disruptions. Unlike the case of assessing the influence of rural-urban migration on migrant's fertility behavior as seen in Lee (1985), the woman's schooling and age at first marriage cannot be influenced by the disruption of woman's marriage. In most developing countries adult schooling is not prevalent. Therefore, the inclusion of these variables does not underestimate the causal effect of marital disruption on fertility behavior.

$DGAP_0$, $DGAP_{1-5}$, $DGAP_{6-10}$, $DGAP_{11-15}$, $DGAP_{16-20}$, $DGAP_{21-25}$, $DGAP_{30}$ are dummy variables and represent the years of reproductive time lost between marriages by year t, not the survey year 1978. For women who have been married but are currently unmarried, the years of reproductive time lost include the interval between the dissolution of the last marriage and the year t. The value of $DGAP_0$ is 1 when the observation is for the woman who dissolved her marriage though had not yet experienced marital disruption by the year t. Otherwise the value is zero. $DGAP_{1-5}$, $DGAP_{6-10}$, $DGAP_{11-15}$, $DGAP_{16-20}$, $DGAP_{21-25}$ and $DGAP_{30}$ have the value of 1 when the observation is for the woman who lost reproductive time of 1 to 5, 6 to 10, 11 to 15, 16 to 20, 21 to 25, and more than 25 years by the year t, respectively. The reproductive time lost, 1, 6, 11, 16 and 21 years include any values which are greater than 0, 5, 10, 15 and 20, and less than 1, 6, 11, 16 and 21, respectively. The years of reproductive time lost dummy variables, DGAP's, are expected to capture the causal effect of marital disruptions on the fertility rate.

DNMR1, DNMR2, DNMR3 and DNMR4 are dummy variables reflecting the number of marriages for the women with marital disruption by the survey year, 1978, not by the year t. DNMR1 is 1 when the woman's first marriage was dissolved, but she has never remarried. Otherwise the value is zero. DNMR2 and DNMR3 have the value of 1 when the woman married 2 and 3 times, respectively. DNMR4 has the value of 1 when the woman married either 4 or 5 times. As Table 2 shows, there are four women who married more than five times. We excluded these four women from our analysis. The number of marriages (for women with disruption) dummy variables, DNMR's, are expected to reflect the causal effect of the number of marriages on the fertility rate for women with marital disruptions. The interaction terms between the years of reproductive time lost dummy variables and the number of marriage dummy variables capture the differences in the influence of the years of reproductive time lost on fertility rates among the women with a different number of marriages. Specifically, the coefficients for $DGAP_o \cdot DNMR1$, $DGAP_o \cdot DNMR2$, $DGAP_o \cdot DNMR3$ and $DGAP_o \cdot DNMR4$ show how the fertility rates for women who married once but are currently unmarried, married twice, married three times, and married either 4 or 5 times, respectively, are different from the fertility rates of continuously married women (which is the comparison group) before the dissolution of the former women's first marriages.

Marital histories of women in the 1978 Cameroon World Fertiity Survey include information on the month and year of each marriage up to eight marriages, current status of these marriages, and the month and year of each dissolution of marriage. From this information we computed the cumulative years of the reproductive time lost up to each year of observations, 1948, 1953, 1958, 1963, 1968, 1973 and 1978.

Overall, the model is unique in two aspects. First, we use five-year fertility rates throughout the woman's lifetime history rather than the children-ever-born data at the survey year as the measure of fertility. Second, we compare the five-year fertility rates at different points in a woman's lifetime against the total reproductive time lost up to that point of time for the same woman.

6.6. Regression Results

Table 6.4 shows ordinary least squares estimates of the coefficients for the interaction terms between the number of marriages dummy variables and the years of reproductive time lost dummy variables from Equation (6.1). The regression results in Table 6.4 were obtained using the continuously married women as the comparison group.

The results in the first row of Table 6.4 reveal that the fertility rate of women who married more than once is significantly lower than that of continuously married women, even before the dissolution of their first marriage. This should be due to the selectivity (infecundity) and simultaneity effects of women of multiple marriages discussed in section 6.4. The finding indicates that we should not reject Hypothesis 1. However, it is important to note that the fertility rate of women whose first marriage was dissolved and did not remarry by the survey year, 1978, is not significantly lower than that of continuously married women during the period before the dissolution of their first marriage. In the context of this comparison, infecundity and subfecundity do not lead to a greater likelihood of divorce. The difference in the fertility rates between once-married (currently unmarried) and multiply married women seen in the table can be interpreted in two ways. First, women with a small number of children are more attractive for remarriage, and there-

Table 6.4. Coefficient Estimates for the Interaction Terms Between the Number of Marriages Dummy Variables and The Years of Reproductive Time Lost Dummy Variables in Equation (6.1)

Years of reproductive time lost between marriages (including years between the last dissolution and the year, t for currently unmarried women)	Number of Marriages			
	Once married but currently unmarried	2	3	4 or 5
0 years (before the first marriage dissolution) (0)	-.0008 (-.03)	-.224* (-8.72)	-.438* (-6.33)	-.571* (-5.97)
0 < gap < 5 (1)	-.301* (-6.69)	-.280* (-8.88)	-.476* (-6.91)	-.832* (-7.35)
5 < gap < 10 (2)	-.397* (-6.20)	-.456* (-6.98)	-.733* (-5.52)	-.441* (-2.00)
10 < gap < 15 (3)	-.440* (-5.25)	-.420* (-3.70)	-.547* (-2.86)	-.563 (-1.34)
15 < gap < 20 (4)	-.453* (-.395)	-.508* (-2.42)	-.323 (-.77)	-.631 (-.67)
20 < gap < 25 (5)	-.387* (-2.43)	-.518 (-1.46)	-.641* (-1.67)	NA NA
25 < gap (6)	-.265 (-1.26)	-.383 (-.58)	NA	NA
Sum of fertility differentials due to more than 25 years of reproductive time lost (sum of (1) through (6))	-2.243	-2.565	NA	NA
Sum of fertility differentials due to 25 years of reproductive time lost (sum of (1) through (5))	-1.978	-2.182	-2.720	NA
Sum of fertility differentials due to 20 years of reproductive time lost (sum of (1) through (4))	-1.591	-1.664	-2.079	-2.467
Sum of fertility differentials due to 15 years of reproductive time lost (sum of (1) through (3))	-1.138	-1.156	-1.756	-1.836

* significant at the 5 percent level for the one-tailed test. The figures in parenthesis are the usual t-values.

fore are more likely to remarry than those with a larger number of children. Secondly, this finding may indicate that once the first marriage is dissolved, women with large numbers of children are less likely to try successive attempts to turn around inadequate childbearing, because they are already closer to their desired family size. However, we do not know which of these two interpretations is predominant.

The rows 2 through 5 in Table 6.4 show that the coefficients for most interaction terms are significantly negative. This implies that the disruptions of marriages significantly reduce the fertility rates after the dissolution of first marriages, and gives us reason not to reject Hypothesis 2. For a given number of marriages, as reproductive time lost increases, the level of fertility decreases.

The last four rows of Table 6.4 show the sums of fertility differentials due to years of reproductive time lost of more than 25 years, 25 years, 20 years, and 15 years. Consistent with hypothesis 3, the comparison of these sums across different numbers of marriages clearly indicates that even though the length of the reproductive time lost is controlled, the greater the number of marriages, the lower the fertility rate of women. There is no significant difference in fertility differentials between once married, currently divorced and twice married women. Nevertheless, there is a substantial difference in fertility differentials between twice married and more than twice married women. When the number of marriages exceeds two, the frequency of marriage reduces the fertility rate of women with disrupted marriage even though the length of reproductive time lost does not increase. For example, looking at the row for a 20 year loss in reproductive time, the decrease from once married but not currently remarried to two marriages is small, -1.591 to -1.664 or 4.6 percent. However, comparing twice married women with women

married three times (-2.079) and four or five times (-2.467) yields declines of 24.9 and 48.3 percent, respectively. There is no indication for the positive relation between the number of marriages and the completed fertility levels as found by Ram and Ebanks (1973) and Downing and Yaukey (1979). The fact that we did not reject hypotheses 2 and 3 also means that we should not reject hypothesis 4. Overall, even when selectivity and simultaneity are controlled, the physiological and disruption effects reduce fertility more.[2]

Overall, the results for Table 6.4 show that fertility rates for women married more than once are significantly lower than those for continuously married women even before the dissolution of their first marriage. Furthermore, marital disruption significantly reduces the fertility rate after the dissolution of the first marriage. Lastly, even after length of reproductive time lost is controlled, there is an inverse relationship between the number of marriages and fertility.

6.7. Summary and Conclusions.

Preliminary descriptive analysis of Cameroon World Fertiity Survey data generated some interesting observations. Cameroonian marriages are relatively unstable, though remarriage rates are high. Among migration categories, urban native women marry later, have a higher level of education, have fewer marriages and have about the same number of children as rural stayers. With the exception of fertility, which is about the same for urban and rural stayers, rural-urban migrants have values intermediate to urban and rural stayers for these variables of interest. Comparisons across number of

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[2] The coefficient estimates - data not shown in Table 6.4 - for schooling variables, S and S^2 in Equation were .038 (4.66) and -.004 (-3.64), where the t-values are in parenthesis. There is a significant positive relationship between education level and fertility rates in Cameroon . The coefficient estimate for the age at first marriage variable, AGEFM, was -.0006(-.33) which shows an insignificant negative influence.

marriages groups show that as the number of marriages increase, education, age at first marriage, children-ever-born, and contraceptive use decrease.

Our regression model is unique in two aspects. We use five-year fertility rates throughout the woman's lifetime history rather than the children-ever-born data at the survey year as the measure of fertility. We compare the five-year fertility rates at different points in a woman's lifetime against the total reproductive time lost up to that point in time for the same women. Previous studies simply investigated the relationship between the weighted reproductive time lost and children-ever-born data for the survey year in question. The model utilized in the present paper allows for testing of the selectivity effect as well as the causal effect of marital instability on fertility.

The major findings from the regression analysis can be summarized as follows. Fertility rates for women married more than once are significantly lower than that for continuously married women, even before the dissolution of their first marriage. This is due to the selectivity and simultaneity effects of women in multiple marriages. Marital disruption significantly reduces fertility after the dissolution of the first marriage. Our results show that, for example, women who married once but are currently unmarried, and women married twice, would have 2.24 and 2.57 fewer children, respectively, due to a more than 25 year marriage gap than comparable continuously married women. Even after length of reproductive time lost is controlled, an increase in the number of marriages reduces fertility levels. Women who are: married once but are not currently married, married twice, married three times and married either four or five times would have 1.59, 1.66, 2.08 and 2.47 fewer children, respectively, due to a 20 year loss in reproductive time, than comparable continuously married women. As may be noted from Table 6.3, the mean years of marriage gap for women married more than once in our sample had a range of 3

to 4.9 years. Table 6.4, which is structured on the marriage gap found in Table 6.3, shows that the following reductions in fertility occur for women who lost zero to five years of reproductive time: two marriages - .28 children; three marriages - .48 children and four and five marriages - .83 children. Now we turn to why some of these relationships may exist as well as some of the implications of the results.

Rural residents are more likely to be divorced and remarried than urban residents in part because rural residents marry at earlier ages. Marital instability markedly reduces fertility levels of women with marital disruption because of the reproductive time lost, the physiological effect and the disruptive effect of multiple marriages. Rural-urban migration increases the age at first marriage and so improves the stability of marriages. The increased stability of marriage due to rural-urban migration increases the fertility level of rural-urban migrant women. Therefore, even though rural-urban migrants desire fewer children due to the effect of the adaptation to urban lifestyles which discourage large families, the increased supply of children due to improved stability of marriages offsets the demand effect producing the insignificant overall fertility effect of rural-urban migration in Cameroon.

This study also indicates that delayed marriage in Cameroon, which might be brought about by increased women's schooling and job opportunities in the future, would reduce the instability of marriages, and in turn could increase rather than decrease the supply of children, at least over the short run. Economic development, bringing increased education, urbanization, and women's job opportunities over the time, may not produce a short run significant fertility depressing effect in Cameroon as in the case of other LDC's.

However, we conjecture that in the long run marital stability will pro-

vide women with a greater level of confidence in a woman's ability to determine her own family size, provide an incentive to use contraceptives and eventually bring about a decline rather than an increase in fertility.

Chapter 7

Summary, Conclusions and Policy Implications

7.1 Introduction

In this study, which is a sequel to the two previous studies on Korea and Mexico, we have investigated the impact of migration from rural to urban areas on the fertility of women migrants in Cameroon. We find that the adaptation effect of rural-urban migration on fertility is relatively small in Cameroon. That is, the fertility level of rural-urban migrants in Cameroon is not significantly lower than that of rural stayers. In fact, it appears that the fertility level of the former is equal to, or slightly higher, than that of the latter. This is in direct contrast to the common observation in a number of previous studies which uniformly reveal that the fertility level of rural-urban migrants is significantly lower than that of rural stayers. Our previous studies of Korea (Lee, et. al, 1981) and Mexico (Lee, et. al, 1983) found that the adaptation effects resulted in a reduction of 2.57 and 1.20 births for Korean and Mexican migrants, respectively. The reasons cited for this smaller adaptation effect in Cameroon centered on the pro-natal effect that rural-urban migration had through a reduction in infertility and the stabilization of marital relationships. These factors nearly offset the fertility depressing effect of rural-urban migration on the demand for children in Cameroon. In other words, rural-urban migration improved the supply conditions for births about as much as it reduced demand.

In this chapter we shall draw together the conclusions derived from each of the preceding chapters. Then we point out the implications of those conclusions for certain policy areas as governments in developing countries move to make better lives possible for their citizens in the face of rapid urbanization resulting from high levels of natural population growth and rapid rural-urban migration.

The objective of this study, as was stated in Chapter 1, was to provide policy decision makers in LDCs with a functional model to accurately estimate the fertility adaptation effect of rural-urban migration.

The theoretical background and the literature on the influence of rural-urban migration on the fertility of migrants was reviewed in Chatper 2. In Chapter 2 we also reviewed a new rural-urban migration model recently developed by Cole and Sanders (1985), and the important study by Nag (1980) concerning the fertility increasing effect of modernization, urbanization, and wider spread of education.

Three alternative hypotheses were discussed concerning the relationship between rural-urban migration and fertility. The selection hypothesis suggests that lower fertility among rural-urban migrants can be accounted for primarily by the selectivity of the migration process: i.e., persons who migrate are a select group with different socio-economic and demographic characteristics such as education, occupational experience, age, and marital status, than those of the rural population as a whole. In addition, their preferences for family sizes are also different. Secondly, the disruption hypothesis maintains that in the period immediately before or following rural-urban migration, migrants show a particularly low level of fertility due to the disruptive factors associated with the migration process. In addition, women who are pregnant or have small children have a lower probability of migration. The purported drop in fertility attributable to disruption is expected to be only temporary, and to be made up at a later stage of the life cycle. Finally, the adaptation hypothesis suggests that rural-urban migrants face a new environment in their new place of residence, and that this environment provides distinctly different prices for a number of interrelated life-cycle consumption-investment choices. The incentives of this new environment

induce women to reduce their fertility from what it would have been had they not migrated.

In our previous studies of Korea and Mexico, we developed and estimated an autoregressive fertility model in which prior fertility is a control for preference differences between migrant and non-migrant households. Controlling for prior fertility, socioeconomic, and biological factors, the difference in post-migration fertility behavior between rural-urban migrants and similar rural stayers was considered the adaptation effect. Applying this fertility model to the data on detailed personal migration and birth histories of the 1974 Korean World Fertility Survey and the 1976 Mexican World Fertility Survey, our studies provided evidence that rural-urban migration is an important influence in lowering national fertility levels for both Korea and Mexico. In addition, these studies suggested that an important factor in explaining the lower fertility of rural-urban migrants is the adaptation to urban constraints and fertility norms. However, the fertility adaptation effect of rural-urban migration is stronger in Korea than Mexico. The adaptation effect was calculated to be a reduction of 2.57 and 1.20 births in Korea and Mexico, respectively.

To our knowledge, there are two other studies which have used both migration and pregnancy histories in assessing the influence of migration on migrants' fertility behaviors in addition to the two studies on Korea and Mexico discussed above. One is by Goldstein and Goldstein (1983) and uses both migration and fertility history data for Malaysian women in the analysis of the influence of rural-urban migration on migrants' fertility behavior. Major findings and limitations of this study were discussed in detail in our previous study on Mexico.

The second study, which uses migration and fertility history data from the 1971 Melbourne Family Formation Survey, was conducted by Carlson (1985) and analyzed the influences of immigration to Australia on immigrants' timing of marriage and births. In assessing the effect of immigration on the timing of marriage, Carlson used post-marital immigrants as the control group to further isolate the selection effect. He was interested in determining whether the effect of migration on the timing of marriage and births was a temporary, short-term or a pervasive, long-term impact.

As for the influence of migration on marriage timing, Carlson observed that female immigrants who came to Australia as young single adults (over age 15) and were not yet married, delayed their marriages by approximately three years--24.6 years for these women versus 21.6 for women whose marriages either occurred before their arrival in Australia or coincided with it. On the other hand, the age at marriage, 21.7 years, of immigrant women who arrived in Australia before they reached age 15 was not significantly different from that of post-marital immigrant women. From the above observations, Carlson concluded that there was no noticeable destination effect (the long-lasting disruption effect) on the timing of marriages for the immigrants who arrived as children. Nevertheless, he did conclude from the analysis that there was a migration (short run) effect on marriage timing. He reasoned that the migration effect which includes the disruptions following the "settling-in" process would be found most clearly among the people who immigrated after age 15 but before marriage.

Concerning the influence of migration on the timing of births, Carlson's results showed that for the first birth interval women who arrived after marriage but before a first birth, experienced dramatic delays in those first births, waiting more than an entire extra year on the average compared to

first birth intervals of native born women. Second births were delayed an additional four years for those families who arrived during the second birth interval. Third births were delayed four more years for those families arriving during the third birth interval. Fourth births occurred nearly half a decade later for families arriving during the fourth birth interval. Carlson concluded from these observations that immigration has a temporary short-term impact on the timing of the next birth, but had no effect on the timing of subsequent births. His overall conclusion was that only short-term disruptions in family formation could be attributed to the event of migration, and that there is no evidence of a more pervasive, longer-term destination effect of the social environment in which migrants found themselves in the years following their initial adjustments.

Carlson's study is a careful analysis and supports the contention that the disruptive effect of migration does not have a pervasive, long-term impact. However, Carlson's results should not be considered to imply that the adaptation effect of migration is not significant. First, because life styles in home countries such as Northern European nations are not significantly different from those in the destination of migration, Australia, his sample does not allow the test of the adaptation effect of migration. Second, in assessing the influence of immigration on the timing of marriages, he controlled for women's education levels and premarital work experience. This washes out the large part of the influence of immigration on child migrants' marriage timing because the influence of migration works through increasing education levels and premarital work experiences. Finally, one should not infer that there was an influence of migration on family size from the result of the influence on birth intervals. One should test the adaptation effect of migration directly looking at the data on family sizes, not the birth intervals.

The recent paper by Cole and Saunders (1985) highlights a crucial shortcoming of Todaro's rural-urban migration model. They argue that the Todaro approach is limited to explaining the movement of persons possessed of sufficient human capital to qualify them for urban modern (U-M) sector employment. They emphasize that the mass of relatively uneducated persons migrate and work in an urban subsistence (U-S) sector that cannot be explained by the structures of the Todaro model. They utilize the perspective of the urban subsistence sector to develop a new model that serves as a useful complement to that of Todaro. According to them, rural-urban migration is a dual phenomenon. Some migrants, those possessed of the requisite human capital, are bound for the U-M sector. Those who are less well endowed are intent on employment in the U-S sector. They point out that two distinguising characteristics of U-S sector employment are very low capital-labor ratio and few if any formal human capital requirements. Therefore, there are few barriers to entry into U-S sector employment. On the other hand, the U-M sector jobs carry education requirements that effectively exclude persons who have acquired little or no formal education.

Much like Todaro, Cole and Sanders develop their own migration model where the rural-urban migration bound U-M sector is governed by the difference between the discounted streams of expected U-M and rural subsistence (R-S) sector real incomes. But, the migration bound U-S sector is mainly influenced by the value of exports from the U-S sector to the U-M sector. They assume that the main export of the U-S sector is the menial labor services. Examples are domestic services, petty trades, and repair. They argue that the demand by the U-M sector for the U-S sector's export is influenced by the price of the U-S export, the income level of the U-M sector, the population size of the U-M sector, and the price of manufactured substitutes for the U-S export

(service labor). The price of the U-S export, which equals the wage level of the U-S service labor, is assumed to be equal to the rural subsistence (R-S) sector wage levels. They also assume that because no human capital is required in the U-S sector, the probability of employment at the existing U-S wage is unity for any given individual. They speculate that domestic service, for example, is price elastic, because domestic services are in the nature of luxury. Their model, therefore, implies that masses of unschooled and relatively unskilled persons migrate to urban areas when population pressure on fixed agricultural land reduces the rural-subsistence wages significantly below that of the U-S sector. The decrease of R-S wages reduces the price of U-S export and increases the value of U-S export, resulting in the increase of the rural-urban migration bound the U-S sector. They argue that while the Todaro model explains why those who possess human capital migrate, their model explains why masses of relatively uneducated persons migrate to the city.

Based on this model, they question the view that attempts to solve urban unemployment by creating new workplaces in the U-M sector. Cole and Sanders argue that much of the recent rural-urban migration appears desirable from society's perspective as well as from that of individual migrants. Because urban modern employment is likely for educated migrants, their movement contributes directly to economic growth. In turn, the growth of the U-M sector fuels demand for U-S sector exports. The growth of the demand imparts a tendency for wages to increase in the U-S sector which, pari passue, sparks urban-bound migration into that sector. That migration itself improves the overall productivity of the economy and enhances the welfare of both those who migrate to the urban subsistence sector as well as those who remain in the rural subsistance sector.

The major contribution of the Cole and Sanders paper is the demonstration that the employment in the U-S sector is not underemployment. It expands the Lewis' two sector surplus labor rural-urban migration model to the three sector surplus labor rural-urban migration model. In Lewis' model, the R-S sector supplied food and surplus labor to the U-M sector. In the Cole and Sanders model, the R-S sector exports food to U-M, but supplies surplus labor to the U-S sector rather than to the U-M sector. The U-S sector then exports service labor to the U-M sector. In both models, rural-urban migration is considered to be a desirable resource movement.

The Cole and Sanders model does not fully answer the following two questions: why do rural development projects fail to reduce but stimulate the rural-urban migration?; and, why does rapid rural-urban migration continue even when the rural populations decline? The above two questions cannot be completely answered either by the Cole and Sanders model or the Todaro model. According to those models, rural development programs or the decline of rural population raise the R-S sector wages, raise the price of the U-S exports, and then slow rural-urban migration.

An alternative model is developed by the senior author of this study using international trade theory about the prices of traded and nontraded goods. Instead of dividing rural and urban sectors into rural-modern, rural-subsistence, urban-modern, and urban-subsistence sectors, the author divides rural and urban sectors into rural-traded-good (R-T), rural-nontraded-good (R-N), urban-traded-good (U-T), and urban-nontraded-good (U-N) sectors. Examples of nontraded goods are the service sectors in both rural and urban areas. The urban traded good is, for example, a manufactured good and the rural-traded-good an agricultural product. According to the Balassa Effect

(see Balassa, 1964), even though productivities of U-N workers do not increase faster than productivities of R-N workers, prices of U-N, which are equal to wages of U-N workers, rise much more rapidly than prices of R-N if productivities of U-T workers rise more rapidly than productivities of R-T workers. In order to induce workers to stay in U-N sector jobs rather than move into the U-T sector high paying jobs, workers in U-N should be paid highly as long as the productivity in U-T rises rapidly and real wages in U-T workers increase rapidly. Therefore, workers in U-N are paid much more than workers in R-N, even though productivities of the former are quite similar to those of the latter. According to this model, rural development programs creating rural workplaces would not slow rural-urban migration as long as the productivity of R-T does not rise as rapidly as the productivity of U-T. Even though rural wage levels rise due to the decline of rural population, rapid rural-urban migration continues as long as the productivity of R-T is much lower than the productivity of U-T. Finally, until the productivity of R-T catches up the productivity of U-T the rural-urban migration bound to U-N sector continues. Therefore, the government should not waste its resources by discouraging this migration stream, and should concentrate it's efforts and resources on accommodating these migrants as well as funding family planning programs in cities.

We reviewed Nag's (1980) important paper on the positive effect of modernization on fertility. This effect explains the weak fertility adaptation effect of rural-urban migration in Cameroon. Nag suggests the following proximate variables which are influenced by modernization and are likely to affect fertility significantly in sub-Saharan Africa: 1) the decrease of breast-feeding; 2) the decrease of infertility due to venereal disease; 3) the decrease of voluntary (post partum) abstinence due to polygamy; 4) the decrease

of the incidence and the delay of widowhood due to high mortality rates; and, 5) the decrease of divorce/separation due to early marriage, large difference in the couple's ages, and marriages arranged by their parents rather than by the partners themselves.

It is obvious that, except for item No. 2, the decrease in infertility, modernization, rural-urban migration, and increased education levels altogether decrease the incidence of the above proximate variables. There is some debate concerning whether urbanization increases or decreases the incidence of infertility caused by venereal diseases. We argue that urbanization and increased educational levels render individuals more knowledgeable in the use of penicillin against gonorrhea, and residents in urban areas have better access to public health facilities. Therefore, urbanization is likely to reduce the incidence of infertility caused by venereal disease and thus increase fertility. Polygamous men are more likely to be infected by venereal diseases. Thus the decline of the practice of polygamy due to modernization, urbanization, and higher education levels, decreases the incidence of the infertility and therefore increases fertility.

Nag argues that the reduction in the duration or abandonment of breastfeeding reduces the birth interval in a society in which no birth control is practiced. If the average period of amenorrhea among lactating women in such a society was 17 months, then the abandonment of breastfeeding would cause the average birth interval to be reduced by 40 percent, and this would raise fertility by 64 percent. The decline of breastfeeding may increase fertility through three mechanisms. First, prolonged breast-feeding protects against pregnancy because it delays the return of ovulation and menstruation during the post partum period. Second, women in some societies practice post partum

abstinence only as long as they breast-feed; thus breast-feeding indirectly prevents pregnancy through abstinence. A decrease in the duration of breast-feeding may lead to a decline in post partum abstinence and hence increased fertility. Third, since breast milk is clean, nutritionally ideal and provides some immunity from disease, a shift from breast-feeding to bottle-feeding, in the absence of proper sanitary conditions and adequate substitute infant foods, leads to higher infant mortality. High infant mortality induces couples to increase their fertility. Nag presents substantial evidence showing that the reduction in the duration of breast-feeding is closely associated with increased urbanization and education.

Nag reports that one of the two factors (the other being sterility due to venereal disease) found to be significantly related to variation in fertility was the duration of post partum abstinence by women. In most societies, the period of breast-feeding traditionally exceeds that of abstinence, though in African countries the reverse seems to be more common. Many people in Africa seem to think that pregnancy too soon after a birth is harmful to the existing child, attributing the harm to the spoiled milk of the mother. The length of the period of post partum abstinence is inversely related to education level, urbanization, and being monogamously rather than polygamously married. Post partum abstinence is more strictly observed by polygamously married women, since her husband can cohabit with other wives during her period of abstinence. The practice of polygamy has been declining with modernization, urbanization, and higher education levels. This is likely to cause a decline in the practice of post partum abstinence and hence an increase in fertility.

Mortality decline may cause a rise in fertility by increasing the duration of married life of couples even when the fertility behavior of couples within marriage does not change. Everywhere, widowhood is a potential cause of

loss of fertility. The incidence of widowhood tends to decline with decline of mortality rate. Modernization, urbanization, and higher education reduces the mortality rate, and thus the incidence of widowhood, which in turn increases the duration of marriage and fertility.

It is unclear whether the disruptive effects of frequent divorce/separation increase or decrease fertility. As shown in Chapter 6, marital instability decreases fertility in Cameroon. We argue that there are three factors depressing the fertility of women with unstable marriages: first, the loss of reproductive periods caused by the marital disruption; second, the disruption effect of the unstable marriages; and, third, the physiological effect of unstable marriages. The last factor reflects the fact that the frequently married women are more likely to be exposed to venereal diseases.

Studies of Malaysia and Indonesia show that the divorce/separation rate is higher if the marriage was arranged by parents rather than by the partners themselves. For example, in Indonesia 30 percent of the first marriages arranged by parents ended in divorce/separation, while only 8 percent of self-arranged marriages. There is a strong evidence suggesting that the prevalence of early marriages, parent-arranged marriages, and the large age difference (average 8 years) between husbands and wives are responsible for the very high instability of marriages in Cameroon. Our analysis also shows that rural marriages are more unstable than urban marriages. Modernization, urbanization, and increased education level reduce the parent-arranged marriages, encourage late marriages, and reduce the age difference between husbands and wives. This reduces divorce and separation of marriages and thus increases fertility.

The above discussion of Nag's paper implies that in some societies, particularly sub-Saharan African countries, modernization, urbanization, and higher education might increase rather than decrease fertility. It is well known that the process of modernization generally reduces the demand for children which, in turn, delays age at marriage and increases the use of contraceptives. However, the above discussion indicates that in some socieities where the widespread use of modern contraceptives is absent, the fertility-increasing effects of modernization might more than offset the fertility-decreasing effect. Nag introduces a study suggesting that unless the prevalence of contraceptive use in a population reaches 30 percent, the fertility increasing effect of the declines in the practices of breastfeeding and post partum abstinence brought by urbanization and the spread of education more than offsets the fertility decreasing effect of these changes. The above results have a significant bearing on the major issue of this study, namely, the effect of rural-urban migration on migrant's fertility behavior in Cameroon. The adaptation to urban lifestyles by rural-urban migrants might reduce the desire for large families. However, rural-urban migration decreases the practice of breastfeeding, the incidence of venereal disease, polygamous marriages, the practice of early marriages and parent-arranged marriages, and the mortality rates. These changes bring the decline of post partum amenorrhea, infertility, post partum abstinence, and divorce/ separation and widowhood, respectively. These declines generate the fertility-increasing effect of rural-urban migration. Therefore, in some societies such as Cameroon where the practice of contraceptive use is not widespread, it is possible that the fertility depressing adaptation effect (demand for children) of rural-urban migration might be more than offset by the fertility increasing effect (supply condition of fertility). One could anticipate that rural-

urban migration may not cause the reduction of Cameroon's national fertility level, at least in the short run.

7.2 Migration, Fertility and Marriage Patterns

The general background on Cameroon migration, fertility and marriage patterns are reviewed in Chapter 3. The only complete and exhaustive documentation of the Cameroon population with its various characteristics was derived as the result of the General Census of the Population and Housing in Cameroon held in April 1976. The 1976 census revealed a population of 7.66 million inhabitants with an average density of 16.5 persons per square kilometer, and an annual population growth rate of about 2.4 percent. The bulk of the Cameroonian population is resident in the rural areas, with only 28.5 percent of the urban areas (towns) in 1976. Agriculture is the main occupation, employing over 73% of the active population most of whom are self-employed. The system of land cultivation is mostly traditional and extensive. Over half of the population is still illiterate. However, the high percentage of children aged 6-14 presently in school (67.5) indicates that literacy levels will increase markedly in the future. The wide variation in the regional or provincial characteristics of the population is further evidence of the diversity in sociocultural and socioeconomic patterns and demographic evolution.

With the opening of European plantations and the formation of urban agglomerations, migration was encouraged and later became spontaneous, especially after the 1930 economic crisis. With the beginning of World War II, migration was drastically reduced by the institution of the "Laissez Passer" over the whole territory, according to which every person was required to obtain a permit from administrative head of his place of residence before moving out. The lifting of this ban in 1946, as well as the end of forced

labor, significantly liberated the population and increased migratory streams toward plantation areas and to towns. The creation of new administrative units in the late 1950's and early 1960s also stimulated the growth of towns in the hinterland which attracted migrants from the neighboring rural areas. The political uprising of the early 1960's also contributed significantly to massive departures from the rural areas of parts of the Western, Littoral, and Centre provinces. The approach that was used to quell these riots was the forceful concentration of residents of these areas along the main road or into clusters or "regroupements" which could then easily be monitored and protected. The persistent insecurity, the absence of any community facilities, and the distance from farms and fertile land prompted many people to seek refuge elsewhere.

The core questionnaire of the 1976 Census of Population and Housing in Cameroon contained questions vital for the study of migration: place of birth, place of previous residence and place of present residence with duration of stay at present residence. The 1976 Census definition for urban areas was rather broad and covered all agglomerations with a population of 5,000 or more inhabitants with a minimum urban infrastructure such as schools for higher education (post-primary), police stations, hospitals, and car parks, as well as all headquarters of administrative units from the province down to the district irrespective of their sizes of their population. This second part of the definition evidently included very small hamlets in the urban category which in effect were not different from other adjacent village agglomerations. Urban ward migrants were considered to be persons who were counted in urban areas situationed outside the subdivision of their birth.

Analyses of urbanward migration in Cameroon revealed that the 39 towns with 10,000 or more inhabitants had received over 90 percent of the urbanward migrants.

The Western and Littoral provinces have sent the largest number of migrants to urban areas while the North-West, Eastern, and the Northern provinces sent relatively fewer urban migrants. In the Western province, five subdivisions have an urbanward migration quotient of over 20 percent of their native population, including the Bangangte subdivision with over 47 percent; Bana, 43.4 percent; Bangou, 40.2 percent; Bazou, 38.5 percent; and Tonga, 23.6 percent. These subdivisions are southern parts of this province and have a long history of migration. The urbanward migration quotient is the share of persons who moved out to urban areas from a subdivision out of total number of persons who were born in that subdivision irrespective of their present residence. Urbanward migration in the Littoral is focused on the main city of Douala. In fact, the only other subdivisions with urbanward migration quotients above 40 percent outside the Western province are found here. These include Yabassi with the highest quotient in the country (54.1 percent) along with Ngambe (40.9 percent), and Dibombari (40.1 percent). Many of other subdivisions also have fairly high quotients -- above 25 percent (Pouma, Ndom, Mbanga, Nkongsamba, and Edea).

In the Centre and South provinces, urbanward migration is quite moderate and almost uniform in all the subdivisions. In effect, apart from the subdivision of Eseka with a quotient of 29.3 percent, the majority of the subdivisions have quotients varying between 10-25 percent. The South-west province is next in importance as far as the urbanward migration quotient is concerned. The majority of subdivisions in this province sent less than 5 percent of their population into urban areas. The North-West, Eastern, and the Northern provinces have participated least in the growth of the urban population of Cameroon. Generally, the quotient falls below 5 percent.

Overall, the towns of Cameroon owe much of their rapid growth to rural-urban migration which is more proncunced in the southern parts of the country where over half of the populations of the towns are migrants. In effect, 20 out of the 39 towns with 10,000 or more inhabitants have a population which is over 50 percent migrant. Yaounde and Douala cities contain the highest migrant agglomerations with 66.3 percent and 61.8 percent migrant populations, respectively. One of the uniquenessess of the two cities Douala and Yaounde is that they both have a fairly wide catchment area of migration and a much longer history to go with their sizes (the only two agglomerations with over 100,000 inhabitants-314,000 for Yaounde and 459,000 for Douala). Douala city has a somewhat longer history of migration than Yaounde with 48.8 percent of its migrant population having been there for five or more years, as compared to 46.9 percent for Yaounde city.

The preceding comparative summary of the towns amply confirms the primacy of the cities of Douala (economic capital) and Yaounde (political capital). They are the only two agglomerations which fit a more rigorous definition of "urban" area. They have larger, more composite populations (from the point of view of origin and economic activity), a denser network of urban infrastructure (health, education, housing, sporting, cultural, and industrial) and a longer history of migration. These characteristics justify our contention that these two cities be recorded as the only urban agglomerations for the present study: a choice dictated by the limitations of base data from the Cameroon World Fertility Survey rendering the identification of other urban areas for the study of women's migration difficult.

In Cameroon, men have generally been more mobile than the women. During the colonial period, when migration was mainly to the plantations and public project sites, the migratory streams were almost entirely made up of men.

With time and as a result of acquisition of landed property and entry into non-agricultural professions as towns grew, women followed the men. Another crude indicator of the sex selectivity of urbanward migration in Cameroon is shown by the generally low sex ratio (male to female) for the rural areas especially in parts of the country reputed for outmigration.

The primary motivation for migration in Cameroon has always been economic - the search for jobs in the plantation areas or in the towns. These motives have continued to play an important part in urbanward migration today. Such motivation has been generated by the relative economic backwardness of the rural areas. The traditional agricultural sector predominant in the rural areas has undergone little change, and the revenue from agricultural production is low and often unpredictable. The prospect of an urban or a plantation job with a guaranteed monthly income, or some sort of activity within the now expanding informal sector in the urban areas, has been instrumental in the departure of most youth from the rural areas.

A number of researchers have blamed the exodus from rural areas on the low productivity of agricultural land, or conventionally, the population pressure on land. The idea of indivisibility of inherited property is also considered as the main cause of rural-urban movements. When out of a large family, only one son became the heir, other children had to move elsewhere.

Intergenerational conflicts have also been presented by a number of social scientists. Examples of these conflicts are the arbitrary authority and wrath of the chiefs and elders as custodians of the traditional religion against the converts who had to seek refuge in the more liberal urban areas. A more recent study takes the same view that traditional values prevalent in the rural areas are still exercising excessive pressure and constraints on an increasingly emancipated youth. On the other hand, the crumbling of the tra-

ditional society was also considered as the cause of exodus from rural areas. The traditional administration had become corrupt and its authority had been degraded under the influence of the colonial administration and Christian missions. As a consequence, the youth could no longer play the role they had been playing in the original society and felt forced to leave. Another point about intergenerational conflict which has often been mentioned but almost never substantiated is the practice of witchcraft, rampant among the rural communities in most of the southern parts of Cameroon. Youths have reportedly been scared away from their villages by the elderly generations who are purported to have magical powers.

It has often been argued that many people move urbanward in order to benefit from the facilities that towns offer -- health, better health care, schools, transportation, lighting, cleaner water, entertainment and other attractions. This impression, for the most part, is generated by the increase in the knowledge of urban conditions as a result of regular visits made by urban residents to their areas (rural) of origin. Schooling has also contributed immensely to the broadening of knowledge about the external world.

Another determinant in the choice of the urban area of destination, is the attitude of earlier migrants towards the new arrivals. The existence of family relations, friends or merely members of the same village in an urban area is generally a guarantee for board, lodging, and often assistance in obtaining employment. The existence of elaborate family, village, or divisional associations in the areas of immigration have contributed greatly to migration in Cameroon. These social structures help to integrate the new migrant into the urban environment while the money gathered through the traditional rotating credit schemes often constitute a solid financial boost to start a business. Interpersonal relations in such associations often guarantee job opportunities for the new migrants.

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The modern formal educational system in Cameroon is so far the greatest cause of urbanward migration. Most of the post-primary educational institutions are situated in urban areas. Therefore, many of the children (10-12 years old) who continue into post-primary schooling must move to urban areas. Since only few of these institutions offer boarding facilities, these young persons are exposed to all aspects of urban life while at school and become fully integrated by the time they graduate or drop out from the school system. Even if many boarding schools existed, the fact remains that young persons who continued within the school system up to university level automatically would be forced to move from small to medium-sized towns and finally to the capital city. The school curricula have very few agricultural or rural development components and therefore can hardly help the youth to develop any interest in rural environment. As a consequence, even those who drop out from school generally prefer to stay in urban areas. Education provides them with knowledge of the outside world and with rudimentary proficiency in the French and/or English languages, thus reducing the obstacles they might encounter in urban areas.

The government of Cameroon has become increasingly sensitive to both the consequences of past migration trends and the increase in the volume of urbanward migration, especially to the main cities of Douala and Yaounde.

A number of resettlement schemes have since been launched or supported to encourage migration into sparsely populated, relatively more fertile agricultural lands. One of these is the Yabassi-Bafang project to the north of Douala city in the Littoral province. This elaborate resettlement scheme was initiated to make up for massive drift of the population out of this region into the city of Douala during the early years of independence. Government resettlement projects have so far created very little impact on migration in Cameroon.

The other approaches have been geared towards the development of the rural milieu with the view to rendering it more economically viable and hospitable, and thereby reducing the propensity for rural dwellers to move to urban areas. In order to improve agricultural output, farm tools are made more available and such inputs as fertilizers and pesticides are provided at subsidized rates. Active research is being carried out on new seed species and methods. Farmers are being offered expert advice by trained farm demonstrators stationed in rural areas and through the cooperative societies which have recently been overhauled to render them more efficient. The greatest incentive, however, has been the constant increase in the prices of the main cash crops even though it is felt that these do not match market price increases. In addition, more encouragement is given to farmers to regenerate their plantations. Competitions such as the "best farm" competition from the level of administrative unit up to the national level, as well as the five yearly agricultural shows with handsome prizes, are designed to spur farmers to produce more and to attract younger persons to farming. Agricultural investment is also facilitated through the National Fund for Rural Development (FONADER) or the "farmer's bank." To ease evacuation and sale of agricultural produce, a dense network of roads is being constructed and maintained and the Mission for the Development of Foodcrop Production (MIDEVIV) was created to assist in the purchase of foodcrops in the rural areas for sale in the urban areas. Furthermore, ambitious projects are underway for the development of storage facilities for easily perishable agricultural products such as cereals, tomatoes, potatoes, cocoyams, and plantains.

In order to further attract the younger person into agriculture, the National Civic Service for Participation in Development was established to provide more intensive courses in tropical agriculture and rural development

with the use of adapted modern tools and methods. Graduates from this service are settled in rural areas and provided with the necessary tools and some funds. So far, the number of youths trained under this system has been small, and the number of defections has been on the increase. Recently rather timid efforts have been made to introduce agriculture into the curricula of the primary ar. secondary schools of the country with a "best school farm" competition.

Efforts aimed at making rural areas more attractive have included the provision of potable water (pipe borne or wells), electricity, more schools, health services (introduction of primary health care), rural mobile postal services, the development of rural markets, facilities for entertainment, better transportation, and communication networks.

Another measures have been taken to divert migration streams from the cities of Douala and Yaounde through the development of more interior growth poles mainly at the headquarters of the various provinces. To this end, the major towns have been provided with pipe borne water and electricity and there has been a gradual decentralization of the administrative and economic machinery so as to give more effective functions to the towns of the hinterland. The investment code provides adequate incentives for investment in smaller towns while the National Fund for the Development of Small and Mediuim-sized Enterprises (FOGAPE) has been created to assist young entrepreneurs. Furthermore, communication lines between urban areas have been greatly improved.

In order to coordinate, harmonize, and monitor the implementation of the various projects, regional integrated development bodies have been created. These include the ZAPI (Zones d'Action Prioritaires Integres) of the Eastern province, the North-west Development Authority (MIDENO), the Littoral and

Development Authority (MEAL) for the coastal regions of the South-west, Littoral, Southern provinces, the Western Plateau Project of the Western province, and the North-east Benoue Project in the North province. More of these types of bodies with a wide regional competence are being planned. The net effect of these various efforts of the government on migration in Cameroon shall definitely be measured during the forthcoming population census in 1986.

The existing literature and statistical evidence on the fertility behavior of migrants or on the relationship between the urbanization and fertility in many developing, especially African, countries has not identified any precise trends. Urban fertility studies have been quite fragmentary in Cameroon and the 1978 World Fertility Survey of Cameroon brought little clarification on this subject.

A possible drop in fertility could be attributed to the adaptation of the migrants to the urban environment. In this case the town is seen as the embodiment of western values which generally favor lower fertility. As a result of the mixture of several ethnic groups, an urban culture is born which advocates smaller families. The levels of education and the standard and cost of living are high. Also, as a result of greater employment of women in non-agricultural jobs, childbearing and work can become more and more incompatible. Furthermore, the common aspirations of urban parents for higher educational levels and a better future for their children, coupled with the high costs of education and upkeep, could compel them to have fewer children and to resort to more contraceptive use, especially if the government should finally adopt family planning as an official policy. Viewed from another perspective, many marital disruptions in rural areas are attributed to infertility and it is reported that most of those infertile women end up in urban areas. This should help play down the fertility levels of such areas. Various studies

have also reported a very high prevalence of venereal diseases in Cameroonian towns. In view of the positive relationship between these diseases and sterility, it could be concluded that the sterility rates in urban areas of Cameroon would increase as a result of rural-urban migration, and therefore fertility would be reduced.

There is also a likelihood that the fertility levels in the urban areas might actually not differ significantly from those of the rural areas. The urban populations of most of the towns are fairly homogenous and consist of migrants from the same administrative unit in which they are found. Most urban populations are structurally not very different from the rural populations in their neighborhoods, with two exceptions, the cities of Douala and Yaounde. Even in these cities, the elaborate system of associations exists in urban areas which facilitate the integration of migrants into urban life. The various associations often have traditional dances and their organizational structures are such that they closely respect hometown traditional values. There is frequent contact of migrants with their areas of origin for funeral ceremonies, ancestral rights, sacrifices, installation of village or family heads or chiefs, medical treatment, to visit relatives, to construct a personal, house or to seek traditional titles. Very much unlike what earlier theoretical studies had anticipated, extended family kinship ties are still reasonably strong. Consequently, the integration of new migrants is not likely to be so traumatic as to effect a significant change in fertility behavior. There could be a reduction in fertility during the period needed to settle down independently with a job, but it is most likely to be compensated for with time. The argument here is that in Cameroon, the "social distance" between the rural-urban migrant and his place of origin is much shorter than the physical distance.

Other arguments even indicate higher fertility for the urban migrants than for the rural stayers. If it is true that the rural-urban migrants in Cameroon continue to share the same values as their rural stayers, then the very nature of the urban environment with the facilities it offers should guarantee higher fertility levels for the former. Over 80 percent of the health facilities and related personnel are found in urban areas of Cameroon, with an marked concentration within the cities of Douala and Yaounde. Most rural health facilities lack basic equipment and trained personnel. There is greater availability for prenatal care (fewer pregnancy wastages) and post-natal care (less child growth retardation, lower infant and child mortality rate) and less time wasted between births in urban areas. The availability of health facilities (especially antibiotics) is another guarantee against the rampant venereal disease prevalent in urban areas. There is also less risk of secondary infertility because of the more hygienic delivery conditions and better trained medical personnel.

Urban patterns of life, especially non-agricultural employment and the prevalence of Western values, could result in shorter periods of child spacing in the absence of any effective contraception. This is quite consistent with late marriages among those who were retained longer within the educational system.

Another factor that could be instrumental in increasing urban fertility levels is the present government policy which is implicitly pronatalist and affects mainly the employees of the public sector who are settled mostly in urban areas. The current policies such as family allowance payments which are based on the number of children below age 21; an allowance for the civil status marriage of up to four wives; preferential tax rebates, government housing, and car and housing construction soft loan opportunities to married

persons; free primary schooling (only first 4 years for private schools); and children's transportation for workers of several government bodies, are likely to encourage many couples in urban areas to have larger families.

During the 1976 census, marriage was considered in its broadest sense to include persons in various types of conjugal cohabitation either sanctioned by traditional, civil status or religious legislation, or merely in concensual unions. Conventionally, however, most legitimate marital unions in Cameroon are required to have gone through the traditional to the civil status and the religious wedding. To many pagan groups and the Muslim community, customary marriage alone suffices. To the Christian community, a church wedding is obligatory. Most Cameroonians, especially civil servants and most private sector employees, regard civil status marriage as not only an official validation of a conjugal union, but a possibility of access to more financial benefits through family allowances, tax rebates and other privileges. Concensual unions are common in urban areas but do exist in rural areas. Though illegal, they often are a first step to legal unions.

In Cameroon most people below 15 years of age are single, though a slightly higher proportion of females are married. At the ages over 15, 39.5 percent of the men are single as against 15.9 percent for the females. In addition, 55.8 percent of the men and 66.8 percent of the women are currently married, and 23.5 percent of the currently married men are in polygamous unions. While only 2.1 percent of the men are widowed, 13.9 percent of the women fall in this category and a higher proportion of them are divorced or separated (3.4 percent) than men (2.6 percent).

This general pattern conceals a wide regional variation. For men aged 15 years and above, the Northern and Eastern provinces have the lowest proportion

single (28.7 and 32.5 percent, respectively) and the highest proportion of currently married persons (66.2 and 63 percent, respectively). This is reflected in their much younger ages at first marriage of 24.0 years and 24.7 years for men, respectively. Conversely, the Littoral province has the highest proportion of single persons and the lowest proportion married as a result of its large urban population (50.3 and 45.9 percent, respectively). On the other hand, the North-West province has the highest age at first marriage (28.3 years) for men. Among women, there is some reversal of positions among the provinces. The Northern and Western provinces have the lowest proportion single (6.4 and 12.2 percent, respectively) but it is the Eastern province which has the next highest proportion of currently married women (73.1 percent) when compared to the Northern province (78.4 percent). This can be explained in part by the relatively high proportion of widowed women in the Western province.

Among women as well, divorce and separation are most common in the Northern and South-West provinces (4.4 and 4.0 percent, respectively). The highest average age at first marriage (21.4 years) is in the Centre and South provinces and the lowest ages are in the Western and Northern provinces (18.3 and 15.7 years, respectively). The provinces with the higher rates of polygamous unions among currently married men are the Western Province (37.9 percent), the North-West Province (30.3 percent) and the Northern province (26.3 percent). The Northern province, with the youngest ages at first marriage for both sexes, also has the highest divorce rates and one of the highest sex differences in age at first marriage (8.3 years older in favor of the men). The South-West province, with sex differences in age of 8.4 years, has the second highest divorce rates, though the Western province with the widest difference (9.1 years) has the lowest divorce rates among women and the highest widowhood rates (19.4 percent).

Urban and rural residence also has an important impact on the patterns of marriage in Cameroon. This could be attributed to the differences in the structure and other characteristics of their population. Generally the urban areas have a younger population with higher levels of education and relatively higher standards of living and greater proportions of the active population employed in non-agricultural activities. There are more married persons, polygamous unions, and widowed persons in the rural areas than there are in the urban areas. The average age at first marriage is generally higher in urban areas (19.5 years for women and 27.4 years for men) than in the rural areas (18.2 years for women and 25.9 years for men). In both areas, the average age difference between spouses is almost the same.

The level of education plays a significant role in marital status patterns in Cameroon, especially among women. The most obvious effect is the later age at first marriage which occurs as many young people continue to progress within the educational system. This increase in age, however, is higher for males whose stay is longer within the educational system. The level of education has a significant effect on the incidence of polygamy. Fewer educated than non-educated men practice polygamy, though most educated women (from the secondary level and beyond) do not accept any form of polygamy. The rates of divorce and separation are far lower for men with higher levels of education (1.9 percent) than for those with none (5.0 percent). Whereas the rates of divorce and separation are only slightly lower for women with higher levels of education (3.7 percent) than for those with no education (4.0 percent), the rates of the widowhood are substantially lower for women with higher level of education (2.0 percent) than for those with no education (20.0 percent). Marriages for persons with higher levels of education are therefore more stable. As a result of their higher socioecono-

mic levels, both husband and wife survive longer, hence the low widowhood rates registered for this category.

Economic activity can only affect marital patterns when in the non-agricultural sector (mostly in urban areas). Its effect differs for men and women. While economically active urban women marry at later ages and higher proportions remain single, most men in this category tend to marry earlier. This is because for men access to work often provides the security and funds to live independently and pay for the dowry or brideprice, while for women economic activity often requires a relatively longer retention within the school system and provides some amount of independence.

The high rate of polygamy in Cameroon, with 23.8 percent of married men aged 15 years and above in polygamous unions, deserves further mention. Three provinces -- the Western (37.9 percent), North-West (30.1 percent) and Northern (26.3 percent) -- contribute significantly to this high rate. In effect, the Western and North-West provinces have traditional highly structured societies that live in scattered village settlements on the western high plateau areas of Cameroon. The traditional hierarchy consists of a series of titles at the summit of which is the chief or the fon (nfon). A typical requirement for access to many of the titled ranks is the ownership of property, a large family, and many wives. Also, among these societies, the notion of age is relative and depends more on achievement which in most cases is measured by the size of a man's family or the number of children ever born by a woman. Consequently, in the traditional setting, each man endeavours to develop a large family and each woman strives to achieve high levels of fertility in order to be respected. Access to a polygamous status usually comes with age. A man initially marries a first wife, then a second, and a third, and so on. Consequently, rates of polygamy increase with age. Rarely does a man take on two or more wives at the same time except, of course, when he is

inheriting a position of highly titled parent or relative. In such cases, he inherits all the widows except his mother. He continues to bear children with the younger ones whose fertility performance would consequently not be hampered by the death of the first husband. However, as a result of the massive rural exodus, especially in the Western province, most heirs who had moved to urban areas hardly ever return or when they do, reject many of the older wives of their predecessors. Hence, the high rates of older widows in rural women. Western influences, mainly Christianity and education which are more pronounced in the urban areas, have contributed much to the decline of polygamy in this region.

In the Northern province, the high rates of polygamy can be attributed mainly to the predominance of the Muslim faith which advocates polygamy. The Fouibe ethnic group is the largest and most Islamised. Polygamous unions in this part of the country are notorious for their instability, with high divorce and remarriage rates. It is common to meet women who have remarried more than five times. The higher rates of polygamy for the Nothern, North-West, and Western provinces have been greatly enhanced by the low literacy rates among females.

In most of the provinces in the southern part of Cameroon, the rates of polygamy are rather low but have been increased by immigrants from the other provinces. The tradition of having many wives in these regions has been greatly disrupted by the increase in the educational levels of females (in both urban and rural areas) and the relatively higher dowry that is demanded today for marriage of educated females. In the southern provinces, widow inheritance or remarriage is rare.

The relationship between polygamous unions and fertility is quite intricate. The Cameroon World Fertility Survey revealed that there was

no difference between the fertility of women in polygamous unions and those in monogamous unions. As mentioned above, in the Western and North-West provinces, all women strive to achieve high fertility, and widow inheritance guarantees continuation of fertility performance. The desire by polygamous men to achieve large families results in a fertility outcome for each of their wives as a monogamous man would achieve with his one wife. The period of post-partum abstinence is enjoyed by both monogamous and polygamous wives with the only difference that the polygamous husband is likely to continue sexual activity with his other wives. It is likely that the fertility of women in higher order polygamous unions (4-10 wives and above) would definitely be lower than that of monogamous unions. Studies have not been made in this area.

Finally, it is noteworthy that the concept of family size is fairly different between polygamous and monogamous men. The polygamous man is more interested in the quantity than the quality of his offspring. The children of monogamous parents are most likely to achieve higher educational standards than those of polygamous parents whose upbringing is traditionally left to their mothers and senior relatives. The children of polygamous families are likely to stop attending school -- if they ever start -- and to begin independent living earlier than those of monogamous unions. If they succeed in life, then they often reach out to sponsor or provide other employment for their younger brothers, sisters, half-brothers, or half-sisters. With this weight of responsibility, they are less likely to succeed than they would be if they were from monogamous unions.

7.3 Descriptive Characteristics from the 1978 Cameroon World Fertility Survey

The descriptive analyses of migrant characteristics and fertility for the sample women in the 1978 Cameroon World Fertility Survey were presented in

Chapter 4. This study is based on the data contained in the 1978 Cameroon World Fertility Survey (CWFS). The 1978 Cameroon World Fertility Survey data were collected during the time interval of January 15 through September 15, 1978. The CWFS was composed of two questionnaires, namely, household and individual. The individual questionnaires included data for 8,219 women, aged 15-54. Included in the survey were the following items: migration history, full pregnancy history, knowledge and uses of contraceptives, maternal child care, history of marital status, employment history of respondent, background of the husband, and other demographic and socioeconomic characteristics.

The 1978 CWFS permits the investigation of the migration histories of females. Pertinent information includes the year of movement, the duration of stay and the name of sub-division (arrondissenment or county) for each of a maximum of six moves. The reason for leaving the previous residence was ascertained, but was not coded in the raw data tape.

Of the total sample of 8,219 women 6,016 women are rural residents and 2,203 women are urban residents. The share of urban residents in our total sample 26.8 percent, indicates that the level of urbanization is still low in Cameroon. Similar information was generated in our previous studies for Korea and Mexico (Lee et. al. 1981 and Lee et. al., 1983), using the 1974 Korean World Fertility Survey and the 1976 Mexican World Fertility Survey. The shares of urban residents were 52.0 and 60.7 percent in Korea and Mexico, respectively. The number of rural-urban migrant women is 933, which is 11.4 percent of our Cameroon total sample. Shares of rural-urban migrants in Korean and Mexican total samples were 34.7 and 18.5 percent, respectively.

Approximately, 55.5 and 45.0 percent of the total sample women in Yaounde and Douala, respectively, lived in rural areas during their childhood. Tables in our previous studies indicated that 54.9 percent of total population in

Seoul and 26.3 percent of total population in Mexico City were born in rural areas.

The comparison of Cameroon migration data with that of Korea and Mexico shows that the level of urbanization is highest in Mexico and lowest in Cameroon. However, the pace of urbanization in the capital city is much more rapid in Cameroon than in Mexico and is about equal to that in Korea. Korea is widely recognized for its enormous rural-urban migration during the past two decades. The ratios of the shares of rural-urban migrants to the shares of urban residents for Cameroon, Korea, and Mexico, indicate that the speed of rural-urban migration is most rapid in Korea and slowest in Mexico. It is important to recognize that some of the differences discussed among Korea, Mexico and Cameroon might be due to the different definitions of the urban areas in these three countries. In Korea, urban is defined as an administrative unit with more than 50,000 people whereas in Mexico urban refers to localities of 2,500 or more inhabitants. According to the 1976 Cameroon Population Census, the urban area is defined as all administrative headquarters (provincial, divisional, sub-divisional and district) regardless of their population sizes, as well as agglomerations with a population of at least 5,000 people, which have urban facilities such as hospitals, secondary schools and car park stations.

The early marriage pattern for Cameroon is clear when compared to the marriage patterns for Korean and Mexican women. For the age group of 15-19, about 48.9 percent of the women sampled have ever married and for the age group of 20-24 about 86.5 percent have ever married in Cameroon. In Mexico only 65.6 percent have ever married for the age group 20-24. This percentage for Cameroon increases sharply to 95.5 percent for the age group 25-29 and to

97.6 percent for the age group 30-34. After age 35 more than 98 percent of women are married. This is similar to the case of Korea where by age 30 almost 99 percent of Korean women are married, but quite different from the case of Mexico where even after age 35 more than 5 percent of Mexican women remain single. Excluding single persons, about 86 percent of the female population is currently in a first marriage. Not surprisingly, the percentage varies by age from a high of 98 percent at the ages 15 to 19 to a low of 69 percent at the ages 50 to 54. Comparing these results to those in Mexico it can be seen that while at younger ages Mexican and Cameroonian marriages are comparably stable, at older ages about 10 percent fewer women are still in their first marriage in Cameroon than in Mexico. While dissolution is relatively frequent in Cameroon, remarriage is common too. Sixty-five percent of the women whose first union ended in divorce remarried.

Only 0.5 percent of the total Cameroonian sample of women had completed secondary school or had progressed beyond that level. About 64 percent of women could not read or had no schooling at all; and only 27.4 percent had completed primary school. The percentage of illiterate women from the sample declined substantially over the birth cohorts: from 96.5 percent for age group 50-54 to 33.7 percent for age group 20-24. The percentage of women who completed primary school or upper levels of schooling showed a consistent increase from one percent for age groups 50-54 to 2.2, 3.5, 8.4, 16.6, 31.2, 47.1 and 51.9 percent for age groups 45-49, 40-44, 35-39, 30-34, 25-29, 20-24 and 15-19, respectively. This evidence strongly indicates that educational attainment of women has advanced substantially in Cameroon during the last three decades. Urban residents are much better educated than rural residents. Only 22.5 and 30.7 percent of resident women in Yaounde and Douala, respectively, are illiterate as compared to 73.3 percent in rural areas.

About 69 and 58 percent of resident women in Yaounde and Douala, respectively, completed at least primary schooling, whereas only 18.2 percent of rural resident women reached the same level of education.

Almost 74 percent of the Cameroon female sample are Christians, while 42 percent are Catholic and 32 percent Protestant. Muslems account for only 17 percent of the Cameroon women sample. However, the popularity of Islam varies widely between urban and rural areas. Only 2.6 and 4.7 percent of female residents in Yaounde and Douala are Muslems whereas 29.5 and 18.7 percent of residents in other urban areas and rural areas, respectively, are Muslems. Approximately 95 percent of resident women in both Yaounde and Douala are Christians.

The migration status in all the tables in Chapter 4 is based on the size of community for the childhood periods rather than the community size of birthplace or previous residence. The 1978 Cameroon World Fertility Survey did not identify whether birthplace and previous residence are rural or urban except the cases of Yaounde and Douala. In the regression analyses of Chapter 5, migration status is based on the community size of birthplace or previous residence rather than the community size of childhood. The women who are rural-urban migrants to other urban areas excluding Yaounde and Douala, and urban natives currently residing in other urban areas, are excluded in the regression analyses of Chapter 5.

Rural stayers include both rural nonmigrants and rural-rural migrants. Rural nonmigrants are rural residents who have never changed their communities of residence for more than a six month duration. Rural-rural migrants are those who changed their communities of residence within rural areas. Rural-urban migrants are those whose current residence is urban but whose birthplace was rural and who never returned to a rural area for more than a six month

duration after they initially left a rural area. Therefore, our definition of rural-urban migration includes the multistage migrants with a unidirectional pattern but excludes the multistage migrant who returned to a type of place similar to where he/she originated.

Only 19.4 and 14.3 percent of the women of Yaounde and Douala are nonmigrants. The importance of migration for both major cities in Cameroon is very clear. Approximately 57 and 49 percent of the migrants in Yaounde and Douala, respectively, made one move, and 31.3 and 37.4 percent of the migrants in both Yaounde and Douala made two or three moves. Compared to Yaounde, migration is more important in Douala, and migrants in Douala made slightly more moves on the average than migrants in Yaounde. The comparison with the Mexican data shows that currently married Mexican women are more frequent movers than women in the Cameroon ever married women sample. In Mexico, 43.5 percent of the women migrants made only one move and 44.2 percent of migrants made two or three moves, whereas in Cameroon 55.7 percent of women migrants made only one move and only 34 percent of migrants made two or three moves.

In all age cohorts, women who spent more time in cities tend to be significantly better educated. The comparison of mean years of schooling between rural stayers with those of urban natives currently residing in Yaounde reveals that Yaounde resident women have 2.6 times as many years of schooling as rural stayers for the age group 20-24 and the ratios become much higher for older age groups ---3.5, 5.9, 9.2, 10.3 and 20 for age groups 25-29, 30-34, 35-39, 40-44 and 45-49, respectively. This seems to indicate that the urban-rural differential in women's education has decreased substantially over time. The comparison with the data for Korean and Mexican women reveals that this phenomenon is much more significant in Cameroon. For the age group 45-49, the educational level for rural stayer Cameroonian women, 0.1 year, is

much lower than that for both rural stayer Korean and Mexican women, 1.2 years. However, for the age group 20-24, the education level for rural stayer Cameroonian women, 2.9 years, is close to that of Mexican women, 3.1 years, even though it is still lower than that for Korean women, 4.3 years. In spite of this phenomenon of a decreasing urban-rural differential in women's education, the increase of women's education in Yaounde is quite impressive. For age group 45-49, the mean years of education for urban natives in Yaounde, 2.0 is much lower than those of Korean urban stayer women, 6.5 years, and Mexican urban nonmigrant women, 4.2 years. However, for the age group 20-24 the education level of urban natives in Yaounde, 7.6 years, is higher than that of Mexican urban nonmigrant women, 6.4 years, even though it is still lower than that of Korean urban stayer women, 8.8 years.

There are large variations in education levels among urban natives. For most age groups, urban natives in Yaounde have the highest education levels. Douala's education levels are lower by 1.5 and 0.9 years than those of Yaounde for age groups 15-19 and 20-24, respectively. This seems to imply that many young migrants select Yaounde rather than Douala as the destination of their movements because of the greater educational opportunities available in Yaounde. Douala did not have any university level institutions until very recently. The education levels of urban native women in other cities except Yaounde and Douala, and those of urban-rural migrant women, are much lower than those of Yaounde and Douala. For all birth cohorts, education levels of rural-urban migrant women to Yaounde and Douala are substantially higher than those of rural stayers and a little lower than those of native women in Yaounde and Douala. This may be due to both the selection process in terms of

education of rural-urban migration and the adaptation effect of urban residence on women's education.

For rural stayer women over 35 years of age, the illiteracy rate exceeds 90 percent and fewer than 4 percent complete primary school. For the youngest age group, 15-19, illiteracy rates of rural stayer women decrease substantially to 44.2 percent and 38.2 percent completing at least primary school. It is impressive to observe that only 4.3 percent of Yaounde resident women age 15-19 are illiterate and 84.3 percent completed at least primary school. For all migration statuses, there are major improvements in women's education levels between age groups 30-34 and 25-29. Assuming that woman aged 29 in the survey year, 1978, made her schooling decision at the age of 10, the rapid increase of women's education seems to have started around 1960 when Cameroon became independent from the French and British trustship. After independence in 1960, many new schools opened in both urban and rural areas.

For most age groups and migration statuses the husband's education level is substantially higher than that of women: by approximately 1 year in most cases. Among three countries studied, the educational difference between men and women is the largest in Korea and the smallest in Mexico.

As expected, urban native women in Yaounde and Douala married at later ages, by at least one year for most age groups, than rural stayers. Unlike the case of education, there is no clear difference in mean age at marriage between Yaounde and Douala. This means that although Douala may be inferior to Yaounde in terms of educational facilities, the lifestyles of Douala are as conducive as those of Yaounde in encouraging late marriage. The ages at first marriage of rural-urban migrants are substantially higher than those of rural stayers and are almost equal to those of urban natives. This does indicate

the strong adaptation effect of urban residence on delaying the rural-urban migrant's marriage.

The age at first marriage for younger birth cohorts (for example, 35-39) has not increased significantly over that of older cohorts, regardless of migration status. This is in direct contrast to the observations based on Korean data but very similar to the results of our study of Mexico. Ages at marriage of currently married Korean women have been increasing substantially over the recent birth cohorts: from 18.8 years for age group 45-49 to 23.2 years for age group 30-34. Like the case of Cameroon, Mexican data do not provide any evidence of delaying marriage in the recent birth cohorts. Nevertheless, it is interesting to note that for all three countries urban residents marry at much later ages, namely, one year for both Cameroon and Mexico and two years for Korea than rural residents. The comparison of mean age at marriage for urban natives for the age group 35-39 for Cameroon and Mexico, and those for Seoul residents in Korea of age group 30-34, reveals that the mean age at first marriage of Cameroon, 19.2 and 20.0 years for Yaounde and Douala, respectively, are very similar to that of Mexican urban nonmigrant women, 20.3 years, and substantially lower (more than 4 years) than that of Seoul resident women, 24.3 years.

Dissolution, separation, and remarriage are more frequent in Cameroon, particularly in rural areas, than in most other less developed countries. Mean number of marriages are 1.27 for rural stayers and 1.06 and 1.16 for urban natives in Yaounde and Douala for the age group 35-39. Mean number of marriages for rural-urban migrant women aged 35-39 are 1.08 and 1.16 for Yaounde and Douala, respectively. In Cameroon, marriage is least stable in rural areas and much more stable in urban areas. Rural-urban migration seems to increase the stability of marriages. In Mexico corresponding mean numbers

of marriages are 1.10, 1.12 and 1.10 for rural non-migrant, rural-urban migrant and urban non-migrant women aged 35-39, respectively. In Korea, the number of dissolutions, separations, and remarriages is still quite small. In Mexico, neither the type of residence nor migration status appears to influence the stability of marriages.

In Cameroon early marriages in rural areas appear to be the main cause of the high instability of marriages in rural areas. The logic underlying the instability of early marriage in Cameroon is straightforward. In many tribes, where marriages are prearranged by parents and the partners have had little or no previous contact, their marriages tend to be more unstable. Frequently, there is a wide age differential for these partners. Overall, the prearranged nature and age difference between partners leads to greater marital dissatisfaction and subsequently high rates of divorce. On the other hand, the greater stability of rural-urban migrants to Yaounde and Douala and urban native marriages has two major contributing factors. Initially, there are the larger age-at-first-marriage figures for rural-urban migrant and urban stayer women. In addition, unemployment is higher for women in urban areas than in rural regions, rendering these women more dependent upon their husbands. It is likely that this factor, while not increasing marital satisfaction, contributes to greater marital stability, by simply making marital dissolution more difficult.

The mean number of children-ever-born to women aged 40-49 was 5.3 for rural stayers and 4.7 and 4.9 for urban natives in Yaounde and Douala, respectively. The mean number of children ever born to rural-urban migrant women aged 40-49 was 5.8 and 5.6 in Yaounde and Douala, respectively. These mean number of children ever born were relatively low in Cameroon compared to those of Korea and Mexico. The mean numbers of children-ever-born to rural

stayers, rural-urban migrants and urban native women aged 45-49 were 7.0, 5.8, and 5.0 in Korea, and 8.4, 7.3, and 6.7 in Mexico. Furthermore, unlike the cases of Korea and Mexico, neither the type of residence nor migration status appears to influence the mean number of children-ever-born to Cameroonian women. This somewhat surprising result in Cameroonian women's fertility behavior may be explained by two factors: infertility is extremely high; specifically 15 percent of women aged 45-49 have never had a child, and marriages are relatively unstable in Cameroon. It seems reasonable to assume that a substantial proportion of women who have never had a live birth in many societies in which incomes are low, such as Cameroon, are childless because of infecundity and subfecundity, rather than by choice. In Cameroon, this supply constraint of births seems to be more dominating than the demand aspect. It is not unreasonable to anticipate that the fertility level of urban natives or rural-urban migrants is equal to, or even higher than that of rural stayers, even if the desired fertility level of the former is significantly lower than that of the latter, as long as urban residence reduces infertility and improves the stability of marriages. The instability of marriage substantially reduces fertility rates in Cameroon.

Even though the fertility level of urban residents is not substantially lower than that of rural residents because supply constraints of births in urban areas are more pronatal than in rural areas, it is possible to infer that the demand for children by urban residents is significantly lower than that of rural residents. This inference can be verified by the data on knowledge and use of contraceptives. Rural-urban migrants and urban natives are substantially more knowledgeable of, and more likely to use, contraceptives than rural stayers. However, knowledge and use of contraceptives is substantially lower in Cameroon than in Korea. For example, among Cameroonian

women aged 25-29, 35.0, 67.1-82.5, and 69.4-89.5 percent of rural stayers, rural-urban migrants, and urban natives, respectively, had some knowledge of any contraceptive method, including traditional methods. On the other hand, more than 99 percent of Korean women aged 25-29 had some knowledge of any contraceptive method. Among Mexican women aged 25-29, 47.5, 82.5 and 82.9 percent of rural nonmigrant, rural-urban migrant, and urban non-migrant women, respectively, had some knowledge of any contraceptive method and these levels are not much different from those of Cameroonian women. In Cameroon 12.1, 18.4-36.8, and 33.9-50.0 percent of rural stayer,rural-urban migrant, and urban native women aged 25-29, respectively, had ever used any contraceptive method. In Korea 54, 54 and 63 percent of rural stayer, rural-urban migrant, and urban native women, respectively, aged 25-29, had ever used any contraceptive method. One bright aspect of Cameroon contraceptive knowledge and use, is that the younger age cohorts, ignoring the youngest age group 15-19, are significantly more knowledgeable of, and more likely to use, contraceptives than older cohorts.

As expected, urban native couples have significantly lower child death rates than rural stayer couples. Rural-urban migrants have substantially lower child death rates than rural stayers. The comparison of similar data for Mexico indicates that child death rates in Cameroon are substantially higher than Mexico.

7.4 Regression Analysis for the Fertility Adaptation Effect of Rural-Urban Migration

The main regression analysis results on the influence of rural-urban migration on migrant's fertility behavior in Cameroon are presented in Chapter 5. In our previous studies of Korea and Mexico, we developed and estimated an autoregressive fertility model in which prior fertility is a control for preference differences between migrant and non-migrant households.

Controlling for prior fertility, socioeconomic, and biological factors, the difference in post-migration fertility behavior between rural-urban migrants and similar rural stayers was considered the adaptation effect. Applying this fertility model to the data on detailed personal migration and birth histories of the 1974 Korean World Fertility Survey and the 1976 Mexican World Fertility Survey, our studies provide evidence that rural-urban migration is an important influence in lowering national fertility levels for both Korea and Mexico. In addition, these studies suggest that an important factor in explaining the lower fertility of rural-urban migrants is the adaptation to urban constraints and fertility norms.

Our preliminary analysis of Cameroonian data suggests that the fertility level of rural-urban migrants is not significantly lower than that of rural stayers. In fact, it appears that the fertility level of the former is equal to, or slightly higher, than that of the latter in Cameroon. This is in direct contrast to the observation in a number of previous studies which reveal that the fertility level of rural-urban migrants is significantly lower than that of rural stayers. Therefore, in the present study we first test for the significance of the fertility adaptation effect. Then we attempt to identify the determinants of fertility adaptation in the context of rural-urban migration in Cameroon.

The regression analysis is based on the data contained in the 1978 Cameroon World Fertility Survey (CWFS). Information on migration history, full pregnancy history, history of marital status, employment history, and other demographic and socioeconomic characteristics for 8,219 Cameroonian women, aged 15 to 54, is included in the data.

The total sample may be classified as: rural-nonmigrants; rural-rural migrants; rural-urban migrants; urban-urban migrants; urban non-migrants; and

urban-rural migrants. Because the purpose of this study is to investigate the influence of rural-urban migration on migrant fertility, we are mainly interested in analyzing the data for rural nonmigrants, rural-rural migrants and rural-urban migrants. Our total working sample of 5,177 ever-married women includes 4,656 rural stayers (of which 2,193 are rural non-migrants and 2,463 women are rural-rural migrants) and 521 rural-urban migrants.

Migration histories of women include information on the year of migration and the name of arrondissement (county) for each of a maximum of six movements. We exclude from our sample those whose migration history is incomplete. Unfortunately, the data do not provide information on the size of the community for each of the movements. We were provided with information on the size of community (i.e., Yaounde, Douala, other urban areas, and rural areas) for the current residence and the place of childhood, but not for the place of birth and places of previous residence. This makes it impossible for us to determine whether the birthplace or the place of previous residence was a rural area or another urban area excluding Yaounde and Douala. The name of arrondissement identifies Yaounde and Douala. This is why the data used in the regression analysis excludes the rural-urban migrants who moved to other urban areas excluding Yaounde and Douala. Even for the women who currently reside in Yaounde or Douala, if they moved from areas other than Yaounde or Douala, we cannot determine whether they moved from a rural area or another urban area. Therefore, we assume that if the place of childhood was a rural area, the woman residing in either Yaounde or Douala migrated from a rural area. Therefore, her birthplace and previous residences are assumed to be rural areas.

Rural-urban migrants are substantially more likely to have an education of at least six years (48.6 percent) than the rural stayers (12.3 percent).

Rural-urban migrants are less likely to have the infertility problem (6.0 percent) than rural stayers (10.2 percent). We assume that if a woman was married more than four years and had no live births, then she has an infertility problem.

None of rural-urban migrant women in our sample married more than twice whereas 2.5 percent or 118 rural stayer women married more than twice. Rural-urban migrant women are less likely to experience divorce (19.0 percent) than rural stayer women (22.6 percent). Once the first marriage is disrupted, rural-urban migrant women are substantially less likely to remarry than rural stayer women. Among women whose first marriage was dissolved, 73.7 percent of the rural-urban migrant women never remarried, whereas only 33.6 percent of rural stayer women never remarried by the year of the survey.

Even among rural stayers, none of the women with at least 6 years of education married more than twice. Regardless of migration status, the first marriage of a women with at least 6 years of education is substantially less liklely to be dissolved (7.9 and 11.9 percent for rural stayers and rural-urban migrants, respectively) than that of a woman with less than 6 years of education (24.7 and 25.7 percent for rural stayers and rural-urban migrants, respectively). The stability of first marriage appears to deteriorate with rural-urban migration. For women with lower levels of education, the proportion of once and currently married women among rural-urban migrants, 74.3 percent, is slightly lower than that of rural stayers, 75.3 percent. For women with higher levels of education, the proportion of once and currently married women among rural-urban migrants, 88.1 percent, is lower than that of rural stayers, 92.1 percent. Rural-urban migration by itself seems to deteriorate rather than improve the stability of first marriage. Once a first marriage is dissolved, rural-urban migrants are much less likely to remarry

than rural stayers regardless of the level of education. The proportion of once married but currently unmarried women among the women whose first marriage was dissolved are 72.8 and 76.5 percent for rural-urban migrants, respectively, whereas the corresponding proportions for rural stayers are 32.4 and 53.2 percent, for women with lower levels of education and with higher levels of education, respectively.

In summary, we can derive the following conclusions. First, rural-urban migrant women are substantially better educated than the rural stayer women. Second, rural-urban migrant women are less likely to have infertility problems. Third, first marriages of women with higher education levels are much less likely to be dissolved, and higher educated women are much less likely to marry more than twice compared to women with less education. Finally, first marriages of rural-urban migrant women are slightly more likely to be dissolved than those of rural stayers. However, migrant women are much less likely to remarry when the first marriage is dissolved than rural stayer women.

Women who married more than once had significantly less education than the once-married women. However, the once but currently unmarried women had education levels at least equal to and frequently higher than the level for continuously married women.

Rural-urban migrants marry at substantially later ages than rural stayers, and women with more education marry at later ages than women with less education. Women who married more than once married at substantially younger ages than the once married women. However, the once but currently unmarried women married at an age similar to that of the continuously married women. Rural stayers and women with less education marry more frequently than rural-urban migrants and women with higher eduation, respectively.

Rural stayers and women with less education have a substantially higher incidence of infertility than rural-urban migrants and women with higher education. This finding contradicts a previous study by Larsen (1985) where rapid urbanization was interpreted as leading to a higher incidence of gonorrhea in urban areas because of the breakdown of traditional barriers to sexual mobility and exogamy and prostitution. Gonorrhea is the single major cause of infertility in sub-Saharan Africa. Our findings indicate that urban growth could in fact decrease the incidence of infertility, due to the availability of better health facilities and, particularly, antibiotics in urban areas.

Women who married more than twice have a substantially higher incidence of infertility than once married women. This evidence could imply that infertile women change husbands more frequently to overcome the infertility problem. Nevertheless, the direction of causility might be in the opposite direction. Women who marry more frequently have a greater probability of contracting gonorrhea because of the greater chance of exposure. Again, the once but currently unmarried women do not have a significantly higher incidence of infertility than the continuously married women. This seems to indicate that for these group of women infertility was not the main cause of the dissolution of their first marriage.

The women who remarried have lower socio-economic characteristics than the continuously married women, whereas women who did not remarry after the breakdown of the first marriage have socio-economic characteristics equal or superior to those of the continuously married women. The rural-urban migrant women are less likely to belong to the remarried women group but are more likely to belong to the once but currently unmarried women category.

Unlike the findings in other LDCs, particularly Korea and Mexico, the fertility level of rural-urban migrants in Cameroon is not lower than that of rural stayers for the age cohorts above 30. For the three younger age cohorts, the fertility level of rural-urban migrants is lower than that of rural stayers. However, the difference does not appear to be significant. In some older age groups, the fertility level of rural-urban migrants is, in fact, higher than that of rural stayers. It is also striking to observe that the fertility level of women with higher education levels is not lower than that of women with lower levels. In some older age groups the fertility level of the highly educated women is higher than that of women with lower education. Women whose marriages were disrupted had substantially lower fertility levels than continuous married women. Overall, there is an inverse relationship between fertility levels and number of marriages.

The regression results reveal that the fertility rate of rural-urban migrant women is significantly higher than that of rural stayers during the period 5 to 9 years after migration. This is the positive influence of rural-urban migration on the migrant's fertility rate. A significant fertility depressing effect of rural-urban migration appears only after migrants have spent at least 20 years in urban areas and disappears after migrants have spent at least 25 years in urban areas. The summation of the coefficient estimates for the post migration periods dummy variable indicates that rural-urban migration in Cameroon reduces migrant's fertility by approximately .13 births. This is a very weak fertility adaptation effect of rural-urban migration. Rural-urban migration in Cameroon does not appear to reduce migrant's fertility rate. This result is in direct contrast to the results obtained from our previous studies of Korea and Mexico. Korean rural-urban migration decreased migrant's fertility by 2.6 births during the 34 years of

urban residence and Mexican rural-urban migration decreased migrant's fertility by 1.5 births during their 40 years of urban residence.

Exposure to urban lifestyle does not seem to depress fertility levels in Cameroon. Higher education levels do not depress the fertility levels. The rural-urban migrants and women with higher education levels have a significantly lower incidence of infertility than the rural stayers and women with less education. The former group of women are much less likely to marry more than once compared to the latter group of women. Women who were married more than once have significantly lower fertility than women who married once, regardless of whether or not the once married women were currently married.

Based on the above observations, we conjecture that even though rural-urban migration decreases the demand for children, this fertility depressing effect is offset by the improved supply conditions such as reduced infertility and less frequent marriages which result from rural-urban migration. Therefore, we conclude that rural-urban migration in Cameroon does not significantly reduce the migrant's fertility rate.

The coefficient estimates of the duration of urban residence dummy variables for the two separate samples of women - with education of less than 6 years and women with education of at least 6 years - indicate that rural-urban migration does not have any fertility depressing effect for women with lower education levels, though rural-urban migration has a significant fertility depressing effect for women with higher education levels. This significant fertility adaptation effect appears after migrants have spent at least 15 years in urban areas and disappears after migrants have spent at least 25 years in urban areas. The summation of the post-migration period coefficient estimates reveals that the rural-urban migration of women with higher education reduces their fertility by 1.7 births during 30 years of

urban residence. This interesting result might be explained as follows. Women with higher education have a lower incidence of infertility and a lower probability of multiple marriages whether they stay in rural or urban areas. Therefore it might be the case that for the highly educated women, rural-urban migration brings smaller improvement in the supply conditions of fertility than for the women with lower education. On the other hand, rural-urban migration causes a greater reduction in the demand for children for women with higher education levels than for women with lower education levels. It is not difficult to understand that the urban areas provide relatively more challenges and new oppportunities for the highly educated women than for their less well educated counterparts. The challenges and new opportunities in urban areas reduce the demand for children. Therefore, for the highly educated women, the fertility depressing effect of rural-urban migration dominates the fertility increasing effect of rural-urban migration due to the improvement of the supply condition of births.

The major conclusion of the regression analysis is that the fertility adaptation effect of rural-urban migration is very weak in Cameroon when compared with that of Korea and Mexico. At this stage of economic development, rural-urban migration does not appear to contribute significantly to a reduction in the national fertility level in Cameroon. We believe that this situation has resulted from the fertility-increasing effect of the improved supply conditions of births such as reduced infertility and the decreased incidence of multiple marriages resulting from rural-urban migration. These factors offset the fertility-depressing effect of decreased demand for children resulting from the migrant's adaptation to the urban environment which discourages larger family sizes.

It is also found that higher education levels do not significantly depress fertility rates in Cameroon. Higher education levels also appear to reduce the incidence of infertility and decrease the probability of multiple marriages.

7.5 The Effect of Marital Dissolution on Fertility in Cameroon

In Chapter 5 it was shown that the adaptation effect of rural-urban migration on fertility was relatively small in Cameroon. The reasons cited for this smaller decrease in fertility centered on the pro-natal effect that rural-urban migration had through a reduction in infertility and the stabilization of marital relationships. These factors nearly offset the fertility depressing effects of rural-urban migration on the demand for children in Cameroon.

In Chapter 6 we investigated more closely the relationship between marital instability and fertility. The results have potentially important policy implications. First, a further look at the cause-effect relationship between rural-urban migration and marital stability is needed. If the subsequent stabilization of marriages brought about by rural-urban migration as suggested in Chapter 5 has a positive effect on fertility, then the net effect -- an overall reduction in fertility -- of this movement on the birth rate may be much smaller than was originally anticipated. However, if the resulting stabilization of marriage results in lowered fertility as has been reported in studies of some Latin American countries, then the net effect of migration on fertility reduction may be greater than hypothesized. In either instance, the indirect effect of rural-urban migration on fertility through an increase in marital stability as well as other factors needs better understanding, especially if government policies are to be in part based on these observations. Second, there is an interesting question concerning increases in marital sta-

bility over time resulting from economic development, urbanization, and/or governmental policy which in turn bring about an increase or decrease in fertility rates. If there is a positive relationship between marital instability and fertility rates, then an increase in marital stability will contribute to a reduction in population growth rates in countries such as Cameroon. If the opposite is true, then an increase in marital stability will bring about the increase of population growth rates.

Results of studies focusing on the relationship between marital instability and fertility are mixed in that some studies show a fertility depressing effect of marital instability while others show a positive effect. Some of the variation in results is statistically and/or methodologically artifactual in that a range of operationalizations, controls and statistical procedures are represented in these works. How much of the variation is artifactual is unknown. At the core of the complexity discussed in the literature are the two counter-acting forces identified by Downing and Yaukey (1979): the negative effect on fertility of the reproductive time lost while a woman is in between unions and the pro-natalist effect of establishing a new union. However, there is a third factor, the negative effect of the number of marriages on fertility. This is the pure form of the disruptive effect of multiple marriages, when the length of reproductive time lost is controlled. In some African countries such as Cameroon, a fourth factor, which is physiological in nature, must be considered. To the extent that the number of marriages indicate exposure to an increasing number of sexual partners (both husbands and other partners) and thus an increased probability of exposure to sterilizing venereal diseases, marital instability indirectly contributes to lower fertility.

Studies of women in less developed countries have yielded some supporting and some conflicting findings for the hypothesis that marital instability

reduces fertility. Utilizing two different datasets, Swee-Hock (1967) and Palmore and Marzuki (1969) found that for Malaysia, divorce without remarriage and divorce followed by remarriage reduced levels of fertility below those of continuously married women. Controlling for age, age at marriage, place of current residence, race and education, Palmore and Marzuki determined that the effect of being divorced and remarried lowered completed fertility .5 births when compared to continuously married women. Conversely, Ram and Ebanks (1973), Chen, Wishik and Scrimshaw (1974), Ebanks, George and Nobbe (1974) and Downing and Yaukey (1979) found that instability increased fertility in Barbados, Guayquil, Ecuador, Barbados, and five Latin American cities, respectively, though in two of these studies the results of the net effect of marital instability on fertility are not reported.

Ram and Ebanks (1973) cross-classified age adjusted fertility rates by the number of sexual unions (partners) and produced a positive relationship between the two variables. That is, as the number of partners increased so did fertility rates. Chen, Wishik and Scrimshaw (1974) standardized children ever born by years of reproductive time lost and determined that people with two unions had fertility 14 percent higher than people with one union. A third union increased fertility an additional 15 percent over that of women in a second union. However, the authors did not present results looking at rates without controlling for time lost so that conclusions about the net effect were not possible. In confirming the results of Ram and Ebanks (1973), Ebanks, George and Nobbe (1974) presented a series of tables cross-classifying number of partnerships (unions) by fertility, controlling for one or two factors at a time: age at first pregnancy, present age, age at first partnership, number of years spent in unions, and type of sexual union at first pregnancy. In each table, fertility increased as the number of partners increased. Downing and Yaukey (1979) showed that for Buenos Aires, San Jose, Mexico City, Bogota

and Caracas, mean live births per woman, standardized by the interval since first marriage and by the length of weighted reproductive time lost, increased as the number of marriages increased. However, when controlling for socioeconomic status (education), the pro-natalist effect was reduced. Women with higher levels of education who had been married more than once had lower levels of fertility than women with the same level of education but had been married only once. Nevertheless, the net effects - not controlling for reproductive time lost -were not presented.

Overall, it is not possible to make general cross-cultural statements about the relationship between marital instability and fertility. Of the nine studies which include the net effects, two find a positive net effect of marital instability on fertility. More recent World Fertility Survey data show that for 29 developing countries fertility declines as the number of partners increases or the percentage of time in union since the first marriage decreases (Lightbourne, Singh and Green, 1982:28). The results may be weighted toward Latin American countries where "marital" dissolution has always been common and fertility is now lower than in other countries. Therefore, the relationship between marital dissolution and fertility cannot be specified.

Four major hypotheses concerning the influence of marital instability on fertility behavior were tested using the basic regression model.

Hypothesis 1: The fertility of women with at least one disrupted marriage is significantly lower than the fertility of continuously married women, even before the dissolution of the first marriage.

Hypothesis 2: When the number of marriages is controlled, the greater the reproductive time lost, the lower the fertility level.

Hypothesis 3: When the length of the reproductive time lost is controlled, the greater the number of marriages, the more the fertility rate is reduced after the dissolution of the first marriage.

Hypothesis 4: The fertility rate of women with disrupted marriages is significantly lower when compared to the fertility rate of the continuously married women due to the instability of marriage after the dissolution of the first marriage.

Hypothesis 1 concerns the selection effect of marital instability. There are several reasons why women with marital disruptions might show a lower fertility rate than the continuously married women even before the dissolution of the first marriage.

First, women with marital disruptions might be a negatively selected group in terms of fecundity. The lower fecundity of women might have led to the increase in marital disruptions because these women may be viewed as "less desirable" marriage partners. Given the overall cultural norm to have children, problems of subfecundity and infedundity are solved through divorce. In other words, high fertility favors marital stability while unsatisfactory (low) fertility leads to higher marital turnover resulting from successive attempts to turnaround inadequate childbearing. In order to estimate the causal effect of marital disruption on fertility rates, this selectivity effect should be controlled.

However, there are other reasons why women with marital disruptions might have lower fertility rates even before the dissolution of the first marriage. First, the anticipation of unstable marriages might have caused the lower fertility of the women with disrupted marriages even before the dissolution of first marriage. Second, women with more children may be less attractive marriage partners or may be more constrained in the search for a second husband, thus making remarriage selective of women with lower fertility.

These latter two phenomena which together we call the 'simultaneity effect' are quite distinctive from the former phenomenon which we call the 'pure selectivity effect.' According to the pure selectivity effect the fact that women with marital disruptions have lower fertility rates even before the

dissolution of the first marriage tells us that the observed lower fertility rates for the maritally disrupted women after the dissolution of first marriage exaggerate the causal effect of marital dissolution on fertility. On the other hand, according to the simultaneity effect the lower fertility rates of maritially disrupted women before the dissolution of first marriage does not imply that the observed lower fertility rates for the disrupted women after the dissolution of first marriage exaggerates the causal effect of marital disruption. This is because women who happened to have lower fertility rates by coincidence or due to the anticipation of the marriage breakdown would not necessarily maintain their lower fertility rates after the beginning of their second marriage. The above discussion implies that the testing of Hypothesis 1 for selection effect is very important, though caution in interpretation should be exercised because of the potential effect of simultaneity.

Hypothesis 2 was tested in most other research and not rejected in any study. A serious shortcoming of these previous works, however, is that they did not decompose the completed (or children-ever-born) fertility level into the fertility level before the dissolution of first marriage and the change in the level after the dissolution. Previous studies have simply investigated the relationship between the weighted reproductive time lost and the number of children-ever-born. This approach can lead to erroneous conclusions for two reasons. First, the fertility levels before the dissolution of first marriage cannot be influenced by lost reproductive time which occurred later. Second, as discussed above, because of the pure selectivity effect, the entire differential in fertility rates even after the dissolution of first marriage between women who lost a great deal of reproductive time and those who lost little or none at all should not be considered as the causal effect of longer reproductive time lost.

Tests of Hypothesis 3 from previous studies have produced conflicting findings. Results for Latin American data by Downing and Yaukey (1979) and Chen et. al. (1974) showed that the greater the number of marriages, the greater the level of fertility. This result was explained by the incentive on the part of remarried women trying to "cement" their new marriage by having children. However, results for Malaysian data by Swee-Hock (1967) and Palmore and Marzuki (1969) showed that as the number of marriages increases, the number of births decreases. This finding can be explained by the disruption effect of unstable marriages on woman's fertility behavior. As mentioned earlier, in African countries such as Cameroon, we should consider an additional explanation for the fertility depressing effect of unstable marriages. Marital disruption tends to favor a high prevalence of venereal disease - and an increase in sterility - so that a fertility deficit is associated with a larger number of unions.

Hypothesis 4 pertains to the net effect of marital instability on fertility behavior. If Hypothesis 3 is not rejected, then Hypothesis 4 will not be rejected. However, if Hypothesis 3 is rejected as in the case for Latin American data, then the outcome for Hypothesis 4 cannot be predicted a priori. In many previous studies Hypothesis 4, which should have the most important bearing on the policy decision making, has been underemphasized.

The multivariate regression model which compares the fertility rate of women with marital disruption with that of continuously married women, was applied to our sample.

Marital histories of women in the 1978 Cameroon World Fertiity Survey include information on the month and year of each marriage up to eight marriages, current status of these marriages, and the month and year of each dissolution of marriage. From this information we computed the cumulative

years of the reproductive time lost up to each year of observations, 1948, 1953, 1958, 1963, 1968, 1973 and 1978.

Our regression model is unique in two aspects. First, we use five-year fertility rates throughout the woman's lifetime history rather than the children-ever-born data at the survey year as the measure of fertility. Secondly, we compare the five-year fertility rates at different points in a woman's lifetime against the total reproductive time lost up to that point in time for the same women. Previous studies simply investigated the relationship between the weighted reproductive time lost and children-ever-born data for the survey year in question. The model utilized in the present paper allows for testing of the selectivity effect as well as the causal effect of marital instability on fertility.

The major findings from the regression analysis can be summarized as follows. Fertility rates for women married more than once are significantly lower than that for continuously married women, even before the dissolution of their first marriage. This is due to the selectivity and simultaneity effects of women in multiple marriages. Marital disruption significantly reduces fertility after the dissolution of the first marriage. Our results show that, for example, women who married once but are currently unmarried, and women married twice, would have 2.24 and 2.57 fewer children, respectively, due to a more than 25 year marriage gap than comparable continuously married women. Even after length of reproductive time lost is controlled, an increase in the number of marriages reduces fertility levels. Women who are: married once but are not currently married, married twice, married three times and married either four or five times would have 1.59, 1.66, 2.08 and 2.47 fewer children, respectively, due to a 20 year loss in reproductive time, than comparable continuously married women. The mean years of marriage gap for women married more than once in our sample had a range of 3 to 4.9 years. Based on this

marriage gap the following reductions in fertility occur for women who lost zero to five years of reproductive time: two marriages - .28 children; three marriages - .48 children and four and five marriages - .83 children.

Rural residents are more likely to be divorced and remarried than urban residents in part because rural residents marry at earlier ages. Marital instability markedly reduces fertility levels of women with marital disruption because of the reproductive time lost, the physiological effect and the disruptive effect of multiple marriages. Rural-urban migration increases the age at first marriage and so improves the stability of marriages. The increased stability of marriage due to rural-urban migration increases the fertility level of rural-urban migrant women. Therefore, even though rural-urban migrants desire fewer children due to the effect of the adaptation to urban lifestyles which discourage large families, the increased supply of children due to improved stability of marriages offsets the demand effect producing the insignificant overall fertility effect of rural-urban migration in Cameroon.

This study also indicates that delayed marriage in Cameroon, which might be brought about by increased women's schooling and job opportunities in the future, would reduce the instability of marriages, and in turn could increase rather than decrease the supply of children, at least over the short run. Economic development, bringing increased education, urbanization, and women's job opportunities over the time, may not produce a short run significant fertility depressing effect in Cameroon as in the case of other LDC's.

However, we conjecture that in the long run marital stability will provide women with a greater level of confidence in a woman's ability to determine her own family size, provide an incentive to use contraceptives and eventually bring about a decline rather than an increase in fertility.

7.6 Comparisons to Results from Other Research and Policy Implications

The above observations seem to indicate that the standard three-stage demographic transition does not adequately describe the trend of Cameroon's demographic development. Between the second stage of low mortality and high fertility and the third stage of low mortality and low fertility, we need an intermediate stage for countries like Cameroon, in which the fertility rate is increasing rather than decreasing. For these types of countries, it might be difficult to anticipate rapid fertility reduction as long as economic development reduces infertility and the incidence of multiple marriages.

It is true that increased rural-urban migration and the rise in women's education in Cameroon might bring on increases of fertility in the short run by reducing the incidence of infertility and the probability of multiple marriages. Nevertheless, in the long run, increased rural-urban migration and the increase in women's education levels should bring about a reduction in fertility rates. The reduction in infertility and the increased stability of marriages resulting from the increased rural-urban migration, for example, should provide Cameroonian women the confidence needed in controlling their own family size and therefore should increase the incentive to use contraceptives. Frank (1983) argues that infertility will present a major obstacle to Africa's fertility transition, because uncertainty in childbearing inhibits response to intrinsic and extrinsic pressures to reduce fertility goals. Early attention to infertility as a major health problem will likely result first in earlier acceleration of population growth, but subsequently it can bring forward the timing of response to socioeconomic and other signals to limit childbearing. This argument concerning infertility should be equally applicable to the reduction of unstable marriages in Cameroon. The above

conclusion is supported by our findings that the rural-urban migration does have a somewhat significant fertility depressing effect for the Cameroonian women with education of at least 6 years.

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