

The Metropolitan Circulation of Labor in the Philippines: 1980-1990

Lysander A. Padilla

I Introduction and Significance of the Study

This paper seeks to highlight the less documented phenomenon of circulation as a form of spatial mobility. Although elaborate theoretical discourses on circulation are not new (see subsequent section), few of these support their assertions with data.

In this work, which focuses on the circular movement toward and away from the National Capital Region (NCR), also known as Metropolitan Manila, spatial mobility is presented as a symptom of development, along the system of ideas proposed by Zelinsky a third of a century ago (1971). Considered thus, circular mobility properly belongs to the long established tradition of migration studies, but diverges from the main stream by highlighting its continuous shifts, specifically, one that both starts and ends in the area of origin, and its regular repetition, describing a recurrent circular pattern.

First, the theoretical foundation is laid down, and shows that the concept is not new. Subsequently, the paper moves to empirical measurement of circulation, by a population segment (i.e., the working population), and ends with some determinants of circulation, using census data from the Republic of the Philippines.

The significance of metropolitan circulation, especially for development planning and urban management, remains unappreciated. This is odd, considering that the pressing problems of a growing metropolis in a developing country like the Philippines, is determined to a large extent by the balancing of urban resources with its population. When this population is not equivalent to its permanent residents, but nonetheless consumes resources and generates pollution, outlays to cope with the increased demand becomes the more difficult to ascertain. Thus, the importance of estimating the circulating population within the growing metropolitan region becomes critical.

II The Concept of Circulation Distinguished from Migration

The construction of mobility as a spatio-temporal process has varied from that of a singular movement across migration-defining boundaries, considered as a permanent or semipermanent, i.e., long lasting, change of residence (Lee, 1966) to that of frequent and repeated (or multiple) movements (Goldstein, 1958) also described as chronic migration (Morrison, 1971), to that of pendulum movements or circulation (Zelinsky, 1971). In this paper, it is the circulation of labor in continuously alternating points of origin and destination that concerns us.

Zelinsky (1971: 226) defines circulation as "a great variety of movements, usually short-term, repetitive, or cyclic in nature, but all having in common the lack of any declared intention of a permanent or long lasting change in residence". Zelinsky further claims

that as a social system modernizes, circulation in that society will increase relative to migration.

The basic principle of circulation is the territorial separation between the obligations, activities and goods of individuals. These separations in space result in movements from the home to one or more locations where other activities, such as employment, take place. Such movements ultimately conclude in the place of origin, making for a circular or reciprocal flow (Prothero and Chapman, 1985).

Circulation has been conceptualized as a response to development processes in the Third world (see review by Goldstein, 1978). In this view, circulation is incited by the colonial penetration by European powers into former subsistence systems and other social formations in Africa, which are imperfectly integrated into the predominant order. Since the colonization of Africa was driven by capitalist enterprise, a reproduction of the structural inequalities in the metropolitan country is forced upon the colony. The resultant inequalities of resource allocation in the national and regional spatial economies that characterize colonial capitalist development spur permanent and circular movements into the modernized sectors.

III. Spatial Inequalities: The Philippines

As a result of historical developments, large differences in wages, and in other indices of socioeconomic development obtained between the Philippine metropolitan center and the rest of the country (Padilla, 1989), spurring great waves of population movement into Metro Manila; the in-movers hoping to avail of employment opportunities located there. However, as the metropolitan density continues to increase, unemployment and other forms of social disorganization have mounted rapidly. The result has been an increase of outward movement from the metropolis, and a slowing down of in-migration. These shifts in population movement toward, and from Metro Manila to the peripheral regions (Region 4 - Southern Tagalog, and Region 3 - Central Luzon) along with other interregional flows, have been documented by Raymundo, *et al.* (1988).

It is still the case, however, that most employment in the modern sector in the island of Luzon (and, for that matter, in the entire country) is concentrated in what they called the Central Industrial Regions [Metro Manila and periphery] (Pernia and Paderanga, 1983; Hermoso, 1983). This accordingly continues to exert a strong pull for labor from the rural areas. However, the increased demand from the burgeoning population in the center has pushed the costs (including social disorganization, e.g., crime) of living beyond the income (or gain) of migrant labor. This may have discouraged residential movement into the center, but has not dampened its recruitment of labor from the peripheral areas.

III.A. The Spatial Circulation of Labor

Thus, a system of circulating labor employed in the capital region, but residing

elsewhere, has been generated by developmental imbalance in the island of Luzon. An estimation of the extent of this labor circulation, and some of its determinants, using data from the 1980 Census, has been presented by Padilla (1993).

Circular migration therefore represents an ingenious way of maximizing urban wages by maintaining only rural costs (see Elkan, 1959, 1967; Hugo, 1975, 1978; Fan and Stretton, n.d.). At the same time, the security and other support systems of migrant labor are still located in these peripheral regions, so that a return there represents also a minimization of risk (see Rosenzweig, 1989; Hugo, 1982). Rural labor thus remains in the center only for the duration of work and returns to the hinterlands thereafter. In Marxist formulations, a system of moving labor is generated which is characterized by physical separation, and institutional differentiation, of the processes of renewal and maintenance (Burawoy, 1976).

III.B. Hypotheses and Method of Analysis

Following Zelinsky, the Philippines as a developing country should exhibit an increase of circular movements as a symptom of its rapid modernization. A previous study has at least shown the reality of such a circular mobility within the metropolitan regions of the country. It has been established that the number of workers and students residing in Central Luzon and Southern Tagalog, but working or studying in Metro Manila is substantial (Padilla, 1993). Since 1980, which was the year of data for that study, considerable socio-economic developments have transpired in these regions, and thus theoretically, to have increased circular mobility there. In addition, the spread of metropolitan urbanization has been unabated, and we may likewise hypothesize that circular mobility has extended to the rest of Luzon, if not to the rest of the country.

The present paper therefore intends to assess the trend of circular mobility of labor within the country, particularly in its more developed industrial regions, the core of which is Metro Manila, from 1980 to 1990. Aside from being a basic research undertaking, such a study can throw light on the nature of Philippine urbanization and migration, and thus point to possible policy interventions in order to minimize the deleterious effects of modernization. Specifically, the study can assist the formulation of effective urbanization and population redistribution policies, and inform program efforts to manage these developmental processes.

The 1980 and 1990 Censuses furnish the sources of data for the study. A one-percent sample of the responses from the Census blocks of the same questions for both years was made available by the National Statistics Office (NSO).

The level of analysis is initially set at the provincial level (the National Capital Region or Metro Manila is considered both a province and a region). The province is also considered a level big enough to differentiate local moves from interprovincial circulation, while at the same time sufficiently small to provide areal variations of interregional movements.

To explain circular mobility, a multivariate prediction equation will be modeled. The

study will adopt a multilevel strategy of explanation, which has been called "contextual analysis" by Boyd and Iversen (1979). This is to say that the predictors of circular mobility will include both individual characteristics and areal effects in a single equation. An example of an individual predictor is sex, and an example of a contextual effect is membership in an ethnolinguistic group. Therefore, the independent variables are (in decreasing levels of aggregation) the regional location, which together with the province, indexes the distance to and from Metro Manila, and the individual's ethnolinguistic identification; the provincial indicator for overseas employment, which measures the outward orientation and to an extent, the socioeconomic development of the province; and sex and educational level. The respondents are also limited to that segment of the population defined as the labor force (in this paper the ages 10-74).

IV. RESULTS AND DISCUSSION

A. Regional Patterns

There has been a general increase of labor circulation to Metro Manila during the decade. All regions, except the newly constituted Cordillera Autonomous Region (CAR) registered increases, some of which are substantial. These substantial increases were posted by Eastern Visayas, Western Visayas, Bicol, Ilocos, and expectedly, the regions of Central Luzon and Southern Tagalog, which are contiguous to Metro Manila. This seems to indicate that the integration of a national space economy with Metro Manila as its center is proceeding, rather than retreating.

This position is strengthened by the fact that even the regions in Mindanao show increases in labor exportation to the National Capital area. Expectedly, greater intensity of attraction to the metropolitan space economy is occurring in the island of Luzon, where Southern Tagalog, Central Luzon, Ilocos and Bicol have indexes of labor circulation higher than or equal to the national average (in Table 1).

Table 1. The Circulation of Regional Labor, 1980-1990

To Metro Manila	1980	1990
ILOCOS	0.012	0.029
Ilocos Norte	0.004	0.013
Ilocos Sur	0.018	0.007

La Union	0.027	0.019	
Pangasinan	0.008	0.043	
CORDILLERA	0.008	0.006	
Abra	0.026	0.020	
Benguet	0.003	0.005	
Ifugao	0.002	0.002	
Kalinga-Apayao	0.010	0.003	
Mt. Province	0.000	0.000	
CAGAYAN VALLEY	0.011	0.017	
Batanes	0.000	0.050	
Cagayan	0.008	0.022	
Isabela	0.014	0.016	
Nueva Vizcaya	0.014	0.009	
Quirino	0.007	0.000	
CENTRAL LUZON	0.061	0.079	
Bataan	0.039	0.028	
Bulacan	0.129	0.163	
Nueva Ecija	0.024	0.044	
Pampanga	0.063	0.079	
Tarlac	0.033	0.042	
Zambales	0.023	0.015	
SOUTHERN TAGALOG		0.071	0.095
Batangas	0.060	0.076	
Cavite	0.158	0.195	
Laguna	0.071	0.113	
Marinduque	0.015	0.067	
Occidental Mindoro	0.015	0.067	

Oriental Mindoro	0.019	0.021
Palawan	0.008	0.011
Quezon	0.028	0.029
Rizal	0.188	0.206
Romblon	0.022	0.041
Aurora	0.000	0.000
BICOL	0.010	0.023
Albay	0.012	0.027
Camarines Norte	0.017	0.035
Camarines Sur	0.010	0.023
Catanduanes	0.013	0.033
Masbate	0.008	0.009
Sorsogon	0.006	0.018
WESTERN VISAYAS	0.007	0.019
Aklan	0.029	0.050
Antique	0.007	0.031
Capiz	0.005	0.011
Iloilo	0.006	0.022
Negros Occidental	0.044	0.012
CENTRAL VISAYAS	0.002	0.007
Bohol	0.005	0.018
Cebu	0.002	0.005
Negros Oriental	0.001	0.004
Siquijor	0.000	0.003
EASTERN VISAYAS	0.004	0.015
Eastern Samar	0.013	0.024
Leyte	0.007	0.013

Northern Samar	0.005	0.019
Western Samar	0.007	0.010
Southern Leyte	0.008	0.020
WESTERN MINDANAO	0.001	0.001
Basilan	0.000	0.000
Sulu	0.001	0.000
Tawi-Tawi	0.000	0.000
Zamboanga del Norte	0.001	0.002
Zamboanga del Sur	0.001	0.001
NORTHERN MINDANAO	0.002	0.004
Agusan del Norte	0.002	0.003
Agusan del Sur	0.001	0.001
Bukidnon	0.002	0.001
Camiguin	0.000	0.000
Misamis Occidental	0.005	0.011
Misamis Oriental	0.001	0.003
Surigao del Norte	0.003	0.012
CENTRAL MINDANAO	0.000	0.001
Lanao del Norte	0.004	0.003
Lanao del Sur	0.001	0.003
Maguindao	0.001	0.000
North Cotabato	0.000	0.000
Sultan Kudarat	0.000	0.003
SOUTHERN MINDANAO	0.001	0.001
Davao del Norte	0.000	0.002
Davao del Sur	0.001	0.001
Davao Oriental	0.001	0.000

South Cotabato	0.001	0.001
Surigao del Sur	0.003	0.003

For the areas relatively far from Metro Manila, such as those in Mindanao and the Visayas, especially where continuous land travel is not possible, and also where daily air travel is not available, a strong conclusion is that longer cycles other than daily commuting is the mode of circulation. In any case, the Mindanao regions (and provinces), being more distant from Manila than other regions, exhibit lower indexes of circular mobility toward Manila.

An interesting exemption from the general pattern is shown by Central Visayas, which deviates strongly from the other two Visayan regions in displaying relatively low circular mobility toward Metro Manila. This fact provides some support to the speculation that the circulation occurring there would be oriented rather toward Metro Cebu, which can be an alternate magnetic pole to Metro Manila. Partial support for such an assumption can be gleaned from Flieger (1994), who finds that although Central Visayas as a whole is an out-migration area, Metro Cebu, on the contrary, is not.

B. Provincial Patterns

Echoing the patterns in 1980, the provinces nearest to Metro Manila continued to export large portions of their workers there. Rizal leads with more than 20 percent, followed by Cavite with 20 percent. Bulacan sends 16 percent and Laguna 11 percent. Somewhat farther, but still relatively near, Pampanga exports around 8 percent, and so does Batangas.

Among the surprisingly high positions were taken by the island provinces of Marinduque (7 percent), Aklan and Batanes (both 5 percent), exceeding the nearer provinces of Nueva Ecija (4.4 percent) and Pangasinan (4.3 percent). Only a little less surprising were the positions of Romblon (over 4 percent), and the Visayan provinces of Antique (more than 3 percent) and Eastern Samar (over 2 percent). All of these registered on or above the average of 2.4 percent, and placed higher than say, La Union, which sent only less than 2 percent of its labor to Metro Manila.

Some of these provinces had very rapid rates of increase of circulation. In the Ilocos, Pangasinan showed an astounding rate of increase in circulation of 448 percent while Marinduque had a rate of 357 percent and Antique grew at 313 percent.

C. Areal Determinants of Circulation, 1990

To explain these prevalence rates an analysis of covariance (a combination of

regression analysis and analysis of variance) at the combined provincial and regional level was attempted. The measure of circulation in 1990 was "regressed" on measures of the change of circulation from 1980 to 1990 at the provincial level, the provincial index of international circulation which measures the proportion of labor working abroad; and the region of residence, indicating distance from Metro Manila. One can also argue that region to an extent, indicates, albeit imperfectly, ethnicity.

The coefficient of multiple determination shows that the model as a whole is good (60 percent). The significant numerical predictor was the provincial level of international circulation. A unit increase in the percent of provincial labor working abroad brings about 1.6 unit increase in circulation to Metro Manila, indicating that the two modes of circulation are related, and that an increase in one tends to increase the other (Table 2a).

The region of residence is significant as a categorical predictor, the nearer regions having higher scores of circulation, as expected. The aggregate contribution of the variable is 38 percent (Table 2b).

Table 2a. ANALYSIS OF COVARIANCE

FOR CIRCULATION IN 1990

BY REGION OF RESIDENCE WITH PROPORTION WORKERS ABROAD, AND DECADAL CHANGE IN CIRCULATION

Source of Variation	Mean Square	F
Main Effects		
REGION	4.636	.000

Covariates	15.640	.000	
ABROAD	30.483	.000	
DECHANGE	1.690	.199	
Explained		6.208	.000
Residual	.001		
Total	.002		

Covariate	Raw Regression Coefficient
ABROAD	1.602
DECHANGE	.000

Table 2b. MULTIPLE CLASSIFICATION

FOR CIRCULATION IN 1990

BY REGION OF RESIDENCE WITH PROPORTION WORKERS ABROAD DECADAL CHANGE IN CIRCULATION

Grand Mean = .024

Adjusted for Independents

Unadjusted and Covariates

Variable Category

REGION

1 ILOCOS	.00	-.07
2 CAGAYAN VALLEY	-.01	-.02
3 CENTRAL LUZON	.04	-.01
4 SOUTHERN TAGALOG	.05	.03
5 BICOL	.00	.01

6 WESTERN VISAYAS	.00	.00
7 CENTRAL VISAYAS	-.02	.00
8 EASTERN VISAYAS	-.01	.01
9 WESTERN MINDANAO	-.02	.00
10 NORTHERN MINDANAO	-.02	.00
11 SOUTHERN MINDANAO	-.02	.00
12 CENTRAL MINDANAO	-.02	.00
13 CORDILLERA	-.02	-.02
FACTOR BETA	.38	
MULTIPLE R SQUARED	.60	

D. Individual and Areal Predictors of Circulation, 1980 and 1990

Since the circulating unit is an individual, it is readily assumed that predictors should be at the individual level. However, areal variables such as regional identity, which can proxy for both ethnicity and distance, and a measure of provincial development such as its number of overseas workers, were also thought to be influences on circulation to the National Capital Region. At the same time, a prediction equation in which both individual and areal determinants were included would be able to indicate how much the partial effect of each predictor was.

A logistic regression of the predictors of circulation to the metropolitan region in 1980 in which both individual level and areal characteristics were used showed that being a male increases the odds of working in Metro Manila by 20 percent. Similarly, education is directly related to the increase of odds of working in Metro Manila for all regions of the country: relative to a college education lower levels of education decreases the odds from around 77 percent for high school to as much as 98 percent for no education at all.

Areally, Southern Tagalog is preeminent in sending its workers to Metro Manila. It is followed by Central Luzon. These two regions are, of course, the nearest to Metro Manila. Expectedly, the more distant regions send fewer of their workers to the central region. See Table 3.

Table 3. Logit Regression of Circulation on 1980 Predictors

PREDICTORS	B	Significance
Category		
SEX1(1)		
Male	.18	.0000
EDUC1		.0000
None	-3.87	.0000
Primary	-3.39	.0000
Intermediate	-2.21	.0000
High School	-1.45	.0000
RREGION2		.0000
Ilocos	-1.22	.0000
Cagayan	-1.96	.0000
Central Luzon	-.20	.0000
Bicol	-1.90	.0000
Western Visayas	-2.46	.0000
Central Visayas	-3.42	.0000
Eastern Visayas	-2.17	.0000
Western Mindanao	-4.38	.0000
Northern Mindanao	-3.59	.0000
Southern Mindanao	-4.21	.0000
Central Mindanao	-4.03	.0000

In 1990, all but one of the predictors for 1980 are maintained. All regions were secondary to Southern Tagalog, which by this year has consolidated its link to Metro Manila by increasing the circulation of its workers by a difference of 24 percentage points. Education still shows a generally direct relationship, until graduation from college, when the tendency to circulate is reduced. See Table 4.

Table 4. Logit Regression of Circulation on 1990 Predictors

PREDICTORS	B	Significance
Category		
SEX1(1)		
Male	-.08	.0000
RREGION2		
Cordillera	-2.49	.0000
Ilocos	-1.70	.0000
Cagayan	-1.07	.0000
Central Luzon	-.23	.0000
Bicol	-1.02	.0000
Western Visayas	-1.44	.0000
Central Visayas	-1.94	.0000
Eastern Visayas	-1.02	.0000
West Mindanao	-3.24	.0000
North Mindanao	-2.39	.0000
South Mindanao	-3.20	.0000
Central Mindanao	-3.10	.0000
EDUC1		
None	-3.76	.0000
Pre-School	-5.89	.0000

Grade 1-4	-2.63	.0000
Grade 5-7	-1.76	.0000
Undergrad High	-1.49	.0000
Grad High	-.71	.0000
Undergrad Post	-.50	.0000
Grad Post	-.16	.0000
College Undergrad	.16	.0000
OVERSEAS	20.69	.0000

Two interesting shifts occur in this year, reflecting broad global developments, and their impact on Philippine society.

First, in the sex of the circular streams: in 1990, it became more probable for females to circulate to the central region than for males, reversing the trend that was established a decade before (with reference to females, it was 8 percent less probable for males to circulate). This corresponds to the increasing feminization of longer lasting mobility streams the world over, such as long-term migration, where young women predominate over other socio-demographic groups. This development has not been predicted by Zelinsky's theory.

Second, is the extremely powerful relationship of overseas migration with national circulation: individuals residing in local areas with high proportion of overseas workers tend to circulate more than those living in areas with few overseas workers. This covariant increase in both types of mobility - migration and circulation - is a fundamental theorem of Zelinsky (loc. cit.), who posited it as a symptom of socioeconomic progress.

BIBLIOGRAPHY

Boyd, Lawrence Jr. Gudmund Iversen. 1979. Contextual Analysis: Concepts and Statistical Techniques. Wadsworth.

Burawoy, Michael. 1976. "The Functions and Reproduction in Migrant Labor", American Journal of Sociology, 81, 5.

Burley, T. 1973. The Philippines: An Economic and Social Geography. London: G. Bell and Sons.

Eldridge, Hope. 1965. "Primary, Secondary, and Return Migration in the United States,

1955-60," *Demography*, 2: 4. 44-455.

Fan, Yiu-Dwan and Alan Stretton. n.d. *Circular Migration in South East Asia: Some Theoretical Explanations*. Department of Economics, University of Southern California.

Goldstein, Sidney. 1958. *Patterns of Mobility, 1910-1950*. University of Pennsylvania.

Goldstein, Sidney. 1978. *Circulation in the Context of Total Mobility in Southeast Asia*. Papers of the East-West Population Institute, no. 53.

Gould, W. T. S. and R. Mansell Prothero. 1974. "Space and Time in African Population Mobility" in Kosinski. Prothero (eds.).

Hermoso, Victorina. 1983. "The Development of the Philippine Space-Economy," in Pernia, et al. (eds.).

Hugo, Graeme. 1982. "Circular Migration in Indonesia," *Population and Development Review*, 8, 1: 59-84.

Jackson, John. 1969. "Migration - Editorial Introduction" in Jackson (ed.).

Jackson, John (ed.). 1969. *Migration*. Cambridge University.

Kosinski, Leszek & R. Mansell Prothero (eds.). 1975. *People on the Move*. London: Methuen.

Lee, Everett. 1966. "A Theory of Migration". *Demography*, 3: 47-57.

Mitchell, J. Clyde. 1969. "Structural Plurality, Urbanization and Labour Circulation," in Jackson (ed.).

Morrison, Peter. 1971. "Chronic Movers and the Future Redistribution of Population: A Longitudinal Analysis," *Demography*, 8, 2.

Padilla, Lysander. 1989. "Metropolization as a Development Problem", *Philippine Geographical Journal*, 33, 1.

Padilla, Lysander. 1993. *Circular Mobility in the National Capital Region*. Population Institute, University of the Philippines.

Pernia, Ernesto and Cayetano Paderanga. 1983. "The Spatial and Urban Dimensions of Development" in Pernia, Paderanga and Hermoso (eds.).

Pernia, Ernesto. Cayetano Paderanga. Victorina Hermoso. 1983. *The Spatial and Urban Dimensions of Development in the Philippines*. Philippine Institute for Development Studies.

Prothero, R. Mansell and Murray Chapman (eds.). 1985. *Circulation in Third World Countries*. London: Routledge & Kegan Paul.

Pryor, Robin. 1974. "Migration and the Process of Modernization" in Kosinski and Prothero (eds.).

Pryor, Robin. 1979. "Internal Migration in South-East Asia: Patterns, Problems and Policies" in Pryor (ed.).

Pryor, Robin. 1979a. "South-East Asia: Migration and Development" in Pryor (ed.).

Pryor, Robin (ed.). 1979b. Migration and Development in South-East Asia. Oxford University.

Pursell, Donald. 1972. "Determinants of Male Labor Mobility," Demography 9, 2: 257-262.

Raymundo, Corazon. Aurora Perez. Grace Trinidad. Josefina Natividad. 1988. Population Mobility and Development Issues: Philippines. Metro Manila, Philippines: Demographic Research and Development Foundation.

Roseman, Curtis. 1971. "Migration as a Spatial and Temporal Process," Annals of the Association of American Geographers 61, 3: 589-598.

Shryock, Henry. Jacob Siegel and Associates. 1973. The Methods and Materials of Demography. Volume 2. United States Bureau of the Census.

Todaro, Michael. 1976a. Internal Migration in Developing Countries. International Labour Organisation.

Todaro, Michael. 1976b. "Urban Job Expansion, Induced Migration and Rising Unemployment," Journal of Development Economics, 3: 211-225.

Zelinsky, Wilbur. 1971. "The Hypothesis of the Mobility Transition". Geographical Review, 61: 219-249.