

METROPOLITAN DOMINANCE AND DIFFUSION OF  
FAMILY PLANNING IN THE PHILIPPINES

by

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## CHAPTER I. STATEMENT OF THE PROBLEM

The theory of "metropolitan dominance" proposes that urban metropolitan centers exert an organizing influence on the economic and social structure of their hinterlands (22:141). However the influence of the metropolis is not uniform at all distances from the center. Its impact tends to diminish as the distance from the center increases due to the costs of time, effort and money of moving goods, ideas and people between the center and the hinterland (36:13). Empirically the phenomenon of varying degrees of metropolitan dominance has been measured by gradients. If the gradients are monotonically increasing or decreasing, the hypothesis of metropolitan dominance is considered supported (36:15).

The "metropolitan dominance" concept has been mostly employed to account for the economic influence of the metropolis and only a modicum of attention has been given to metropolitan normative dominance (22:143). In this study we are examining the spatial distribution of norms and values concerning family planning within the context of the metropolitan dominance conceptual framework.

The existence and form of metropolitan dominance has been studied far less in the developing than in the developed countries. Treadway (36:15) has argued that in the former villages or towns tend to be more self-sufficient socio-economically, and less influenced by metropolitan centers, given that the developing countries lack improved communication and transportation systems

which are largely responsible for the augmented interchange between the metropolitan center and the hinterland. However Abu-Lughod (2:488) contended that the recent proliferation of transportation and communication networks has brought about a radical expansion in the primate city's sphere of influence, manifested in the increased capacity of the city to affect economic conditions, aspirations and ways of life in an ever widening hinterland. It is, therefore, only lately that the concept of metropolitan dominance has been applied in the developing countries. Even in this respect, the emphasis is primarily on economic and demographic rather than normative phenomena. By focusing on the Philippines, a developing country, we attempt to add to the knowledge concerning the utility of the concept in the developing world.

Normative metropolitan dominance implies that an innovation -- an idea or practice which is perceived by the individual receiver -- will diffuse from the metropolitan core to its hinterland and that the rate by which an innovation diffuses is a function of distance from the metropolis.

In this study we are examining knowledge, approval and practice of family planning (a type of innovation) and we attempt to determine the utility of the concept of metropolitan dominance by examining the spatial distribution of knowledge, approval and practice of family planning in terms of distance from the metropolitan core.

To explain differentials in knowledge, approval and practice of family planning in the context of the theory of metropolitan dominance, we employ three conceptual dimensions derived from prior theory and research.

Our first conceptual dimension is "metropolitan dominance" and involves an examination of the relationship between metropolitan integration and the diffusion of norms and values pertaining to family planning.

However, although the theory of metropolitan dominance focuses primarily on the direct impact of major metropolitan centers on their hinterlands, one can also conceive of metropolitan centers impinging on the rural sectors of their hinterlands indirectly, i.e. through local sub-dominant centers. As such, these local centers serve as a medium through which information flows originating in the metropolitan centers may pass. This perspective has led us to the development of our second conceptual dimension "local subdominance" which examines the relationship between the size of a local urban center and the diffusion of norms and values concerning family planning. It can be argued that the larger these local centers the greater the integration into the metropolitan network and the lower the level of self containment.

In addition to the direct influence of metropolitan centers as well as the indirect impact through local centers on the diffusion of knowledge and norms respecting family planning, one can

also argue that at the micro level, distinctive characteristics of individuals will either abet or restrict the flow of knowledge as well as the receptivity and adoption itself of a particular innovation. More specifically, it can be contended that individuals whose reference point of orientation transcends the local village of residence would be more likely to have knowledge of family planning, have a favorable attitude towards family planning and actually implement its use than individuals whose reference point is confined to the village itself. Thus, at the individual level persons can be considered to be integrated into the metropolitan network given selected individual characteristics. This contention has led us to the development of our third conceptual dimension "individual cosmopolitanism" which attempts to assess the intervening role played by selected individual characteristics in the diffusion of norms and values which pertain to family planning from the metropolitan center.

It should be noted at this point that although throughout this study the unit of analysis is the individual, we assign both contextual and individual properties to these individuals. Contextual properties are characteristics of collectives applied to their members (23:509); therefore in our first two conceptual dimensions--metropolitan dominance and local sub-dominance-- we are dealing with such, since we differentiate our sample women according to a property of the context in which they are located -- i.e., in terms of metropolitan dominance, in the first conceptual dimension

and the terms of local subdominance in the second conceptual dimension. However in our third conceptual dimension, we differentiate our sample women according to an absolute property; i.e., individual cosmopolitanism. Moreover, our three dependent variables knowledge, approval and practice of family planning reflect individual properties.

The guiding assumption in this research is that variations in knowledge, approval and practice of family planning reflect variations 1) in the integration of sub-areas into the metropolitan network; and 2) in the mediating impact of both local subdominant centers and the social characteristics of individuals. The foregoing assumption respecting metropolitan dominance and the process of diffusion serves as the general organizing principle for this investigation. More specifically, the study focuses on the spatial diffusion of knowledge, social norms and practice concerning family planning in the Philippines.

Within the particular Philippine context Metropolitan Manila, the primate city and major center of industrialization, commercialization and social change in the Philippines, is the metropolitan referent. Poblaciones, the administrative and economic foci of Philippine municipalities, are treated as local subdominant centers under the general organizing rubric of the Spanish 'plaza complex' principle, to be discussed more fully at a later point. The terminal points in this schema are the barrios, local areas which are segments of Philippine municipalities, surrounding the poblacion, but highly rural and agricultural in character, where in our sample women reside.

## CHAPTER II. THE SETTING

This section consists of a discussion of the Philippine setting. More specifically, the section focuses on a delineation of the regions included in the analysis as well as a discussion of the administrative-political units encompassed within Philippine municipalities.

### A. Regions

The particular geography of the Philippines raises the question of whether the nation is comprised of a relatively homogeneous population or a distinctive set of regional groupings. Massive mountain ranges which straddle the middle of most islands has resulted historically in the isolation of various ethnolinguistic groups. In recent times, however, developments in transportation and communication networks have brought about a new cultural situation. On the other hand the whole lowland population appears to be in the same "cultural area" due to the Christianization and acculturation effected by the Spanish (8:5). Nevertheless, this cultural leveling did not affect language and language remains a major basis for regional differentiation, and often tends to conceal the cultural similarities which are shared by the inhabitants of the lowlands (07:49). It is, therefore, customary to speak of ethnolinguistic rather than cultural units when we deal with the inhabitants of the lowlands. The four regions included in this study belong to the lowland Christian culture and were deliberately

picked in such a way for the purpose of minimizing cultural variation. The four regions included in this analysis consist of Metropolitan Manila, Central Luzon, Southern Luzon and Bicol; all located on the island of Luzon (see Appendix C). More extended discussion of these regions follows. This section draws heavily on the delineation and depiction of Philippine regions presented in Wernstedt and Spencer (37).

The only true metropolitan center in the republic of the Philippines is Manila. The city forms a distinct regional entity apart from the central plain of Luzon in which it lies. Its population, including the surrounding suburban fringes, reaches two and a half million. Being the nation's economic, cultural, educational, industrial and governmental center, Manila provides many specialized central services for the entire nation. Manila is dominant in the life of its country, as Wernstedt and Spencer call it "the only principle city" (37:382).

The Zambales region, which occupies the westernmost part of the island of Luzon, is of distinctive topographical character due to its great mountain masses. The mountain slopes, which are steep and deeply ravined, provide limited arable land and, therefore, the area is sparsely settled. Ilocanos and Tagalogs, the two major ethnolinguistic groups, are engaged primarily in agriculture, the major economic activity. Although many of the towns in this region were founded at early dates, there has been little urban development and the area lacks sizeable settlements.

The provincial capital, Iba, which is also small in population, serves as an administrative and local market center for its adjacent areas. This isolated mountainous region is connected by only two transportation routes with the rest of Luzon. Limited arable land, sparse populations and poor communications all contribute to the lack of regional economic development.

On the other hand, the province of Bataan, which is located right across the bay from Metropolitan Manila, seems to be highly integrated into the Metropolitan area as exemplified by its heavy urban investment in farm land, presence of steel and shipbuilding industries and location of a large number of governmental buildings (37:366).

The central plain of Luzon includes the five provinces of Bulacan, Nueva Ecija, Pampanga, Pangasianan and Tarlac. This very fertile area is considered the economic heartland of the Philippines since it produces 1/3 of the country's rice crop. The area, however, is not characterized by economic prosperity as one would expect. Approximately 1/8 of the total Philippine population lives on the central plain. Rapid population expansion exerts high pressures upon the already crowded land and results in continuous land fragmentation and ever decreasing holdings. Other agricultural handicaps of central Luzon are the high rates of tenancy and the widespread use of primitive implements and farming techniques. On the other hand, since sugar cane cultivation, which is the second dominant crop, after rice, is concentrated on large land holdings requiring a sizeable seasonal labor force, the area is faced with

a serious problem of under- and unemployment. The settlement scene in the central plain is one of hundreds of little agricultural villages composed of farmers or farm laborers from the surrounding agricultural areas. In contrast with most other Philippine regions the central plain is well supplied with an adequate land transportation system with good inter- and intra-regional road connections. The numerous highways and feeder roads facilitate road transportation into virtually every Barrio. The proximity and relative accessibility of Manila has precluded the development of any dominant regional center, nevertheless many parts of central Luzon (especially Nueva Ecija and Tarlac) are more highly urbanized\* than most other Philippine regions. The population of the central plain is unevenly distributed with the highest population concentrations near the water basins of Lingayen Gulf and Manila Bay. Population concentrations tend to increase sharply with nearness to Manila. From the provinces of Bulacan and Pampanga which lie immediately north of Manila there is a constant migratory flow into the metropolitan area.

Southern and western Luzon, purely Tagalog country, is made up of the five provinces of Batangas, Cavite, Laguna, W. Guezon and some parts of Rizal. The inhabitants of this agricultural region are engaged in the cultivation of rice and coconut or in some sort of agricultural processing, as for instance, rice milling. Although primarily an agricultural region, southern and western

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\*U.N. definition of urban settlement (2,500 inhabitants or more).

Luzon (with the exception of Quezon) has derived many economic advantages due to its continuity to Metropolitan Manila. As industry has expanded outward from Manila the region's population has participated increasingly in secondary economic activities and, indeed, some of its inhabitants find employment within the urban complex itself. On the other hand, an increasing number of southern and western Luzon towns serve as dormitory settlements for the metropolis. As a consequence of its proximity to Metropolitan Manila the region has no major trade center. However, by the same token, the level and volume of its industrial operations is expected to steadily increase due to its location and good internal transportation facilities.

The peninsula of Bicol in the southeastern part of the island of Luzon is inhabited by the cultural linguistic group called 'Bicolano' and includes the five provinces of Albay, Camarines Sur, Camarines Norte<sup>\*1</sup>, Sorsogon and the island of Catanduanes<sup>\*2</sup>. The region is characterized by cultural and geographic homogeneity and, therefore, has a distinct identity. The strongest regional tie is supplied by the sharing of a similar dialect throughout the region. As Wernstedt and Spencer have noted, Bicolanos are very conscious of

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<sup>1</sup>Preliminary tabulation suggested that family planning data for Camarines Norte was suspect. Much higher levels were obtained for Camarines Norte, as opposed to all of its surrounding provinces, in all three of our family planning variables. This finding could not readily be explained and therefore respondents from Camarines Norte were excluded from this study.

<sup>2</sup>All islands. Excluded from this study.

their linguistic identity. In addition, a common Spanish heritage, similar agricultural crops and land use patterns and the particular topographic character of the region with its volcanic formations, all contribute to the delineation of a distinct Bicol region. Geographical isolation acts also as a regional unifying force. Transportation between Bicol and the rest of Luzon has always been difficult. Although there is an adequate road network in the region, the only means of crossing regional boundaries is by an all-day rail trip or by ferry over water. Due to its volcanic character, 68% of the total Bicol area is classed as arable and, since the region is one of the most populous in the Philippines, 90% of this potential farm land is utilized today. Bicolanos are agricultural village dwellers and the economy is based on subsistence-oriented farming. The Bicol area is characterized by high population densities and relatively high degrees of urbanization. Although there are few large cities in S.E. Luzon 17% of its population lives in settlements of 2,500 inhabitants and over. This homogeneous yet distinct character of the region's physical and cultural environments delineate Bicol as a separate region of Luzon island.

#### B. Municipality Administrative Units

The Philippine local government is divided into a large number of units called municipalities each of which consists of a poblacion or commercial/administrative center and surrounding rural barrios. There are about 13,000 municipalities and 20,000 barrios in the Philippines today. Although the barrio is the smallest administrative unit, it enjoys a certain amount of autonomy since it controls its

own taxation and elects its own officials. It does not, however, except in sporadic cases, represent a single village. Usually it is made up of a number of smaller divisions called the sitios which in turn are composed of from ten to a hundred houses. Although it has been noted that sitios have elements of an independent community (28) as for instance ethnocentric sentiments of superiority, patron saint, fiesta days, etc., Eggan claims that in the last few decades these hamlets have gradually become consolidated not physically but socially (8:22). Governmental services, for example schools, located in one of the central barrios and cross-sitio cooperation necessary for facing climatic calamities have acted as the main consolidating forces. Nevertheless, while the sitio is composed of small face to face groups which intermarry and are homogeneous, the barrio is in many cases an artificial unit that classes groups of people in a convenient way for administration and does not necessarily imply a unified community. To a certain degree, however, the barrio is homogeneous since "villagers are homogeneous with respect to place of birth, in having family connections within the village, and in performing similar economic activities" (20:29). As Eggan (8:24) has noted, 90% of the people in the barrio are born and marry within the barrio or at least in neighboring barrios, and that bonds of blood and marriage are reinforced by common residence. Likewise, most barrio residents are engaged in a common occupation, to wit, agriculture. The importance of the barrio, however, rests in the fact that it represents the basic agricultural, social and religious unit.

## CHAPTER III. THEORETICAL FRAMEWORK

### A. METROPOLITAN DOMINANCE

The foundations for the metropolitan dominance theory were laid by Bogue in 1949. Although Bogue's study was based on previous works, his is perhaps the most fundamental and thorough in the area. Bogue's main hypothesis was that:

. . . the metropolis, or modern large and complex city, exercises an organizing and integrative influence on the social and economic life of a broad expanse of territory far beyond the civil boundaries and thereby dominates all other communities within this area. The hypothesis of metropolitan dominance assumes that there is a system of interdependency among cities, and that there are considerable activities of individual cities. It maintains that the organizing agent, and one of the forces making for intercity differentiation, is the metropolis (6:5).

Although Bogue is credited with the major contributions to the metropolitan dominance theory there were others before him that recognized and made use of the concept. As early as 1906 F. C. Howe (14:11) recognized the phenomenon of metropolitanism when he spoke of the disintegration of rural civilization: "The rural civilization," Howe argued, ". . . whose making engaged mankind since the dawn of history, is passing away." In 1930 McKenzie (27) suggested that the 20th century city with its adjacent suburban areas ought to be viewed as a "new social and economic entity" since it comprised a whole, bound together in an economic network. Glaab and Brown supported these arguments

when they noted that the conception of the city as one entity and country as another could not be applied in American society as early as the turn of the century. The city had "enormously extended its spatial area and its influence . . . The country no longer represented an independent community, since it was affected in hundreds of economic and social ways by the city" (14:11). In his "urbanism as a way of life" concept in 1938, Wirth cautioned not to identify urbanism with the physical entity of the city. He claimed that the role of the cities had been accentuated due to developments in transportation and communications and that the urban mode of living went far beyond the confines of the city itself. Wirth inferred that:

rural life will bear the imprint of urbanism in the measure that through contact and communication it comes under the influence of the cities . . . while the locus of urbanism as a mode of life is, of course, to be found characteristically in places which fulfill the requirements we shall set up as a definition of the city, urbanism is not confined to such localities but is manifest in varying degrees wherever the influences of the city reach (38:49).

More recently Gist and Halbert have written that:

In its spatial aspects the metropolitan-region consists of the metropolis and its surrounding settlements; functionally the region is a complex web of economic, cultural, and political relationships that bind these settlements and the larger metropolis into a unit with a dominant center and subordinate parts . . . the metropolitan region as here conceived is essentially a cultural

phenomenon. It is the product to a great extent, of new methods of transportation and communication . . . By means of these technological facilities the subordinate settlements have become integrated with each other and with larger modern centers (13:216).

If Bogue is the major contributor to the theory of metropolitan dominance, Gras (15) is responsible for the concept itself. Gras arrived at his conception of metropolitan dominance from an economic integration viewpoint. He saw the metropolitan economy as the organization of producers and consumers bound by a mutual dependency for goods and services. Although Gras viewed the hinterland communities as existing in a state of economic subordination to the metropolis, he recognized that dominance alone did not supply a sufficient explanation and stressed the fact that not only the hinterland is dependent upon the city, but the city was also dependent on its surrounding areas. Currently, the social and economic organization that the modern metropolis imposes on its hinterland, is not viewed within the spectrum of mutual dependency. It is, rather, considered as a functional imperative for the integration of specialized parts into a whole. As Schnore notes (32:14), the metropolitan area should not be conceived as a simple two part arrangement of center and ring, but it should be viewed in organizational terms as a functional unity made up of a series of highly specialized subareas.

It has been indicated by the foregoing review of literature that a metropolis exercises an organizing influence on the social and economic structure of its hinterland communities. This phenomenon has been referred to as metropolitan dominance but it seems that a better term would be metropolitan integration. It should be obvious that this phenomenon of metropolitan integration involves social change. It implies that, as the change process in the hinterland's social system takes place, these modifications make the hinterland resemble the metropolis and, therefore, become integrated into the metropolitan social system. This change process is often referred to in the literature as specialization, adaptation, integration or development (29:11). Alternatively, it has been suggested in the literature that change at the social system level is often complemented by change at the individual level through such conceptual referents as diffusion, adoption, modernization, acculturation, learning or socialization (29:10). As such, metropolitan dominance or metropolitan integration can be viewed not only as a process of rural reorganization but also as a process of normative or value diffusion from the metropolis to individuals in the rural areas.

Although review of literature indicates that a metropolis is capable of integrating its hinterland, the question remains how far in terms of distance is this influence carried? According to Rogers and Shoemaker "perhaps all analyses of social change must ultimately center primary attention upon communication processes. In fact, all explanations of human behavior directly

stem from an examination of how individuals acquire and modify ideas through communications with others" (29:11). In addition, metropolitan integration literature suggests that a most important determinant is accessibility. In Anderson's words, the effectiveness of the relationship between a city and its surrounding area " . . . depends very much upon the ease and cheapness of contact or access. Obviously access between cities and between cities and hinterlands depends on various geographic conditions, but as important is distance and types of transportation" (3:109). Both bodies of theory, metropolitan dominance and diffusion, seem to lead us to assume that the spatial distribution of social behavior is a function of (1) distance from and (2) contact with metropolitan nuclei.

It follows, therefore, that metropolitan dominance, the first dimension in this study, can be considered an important explanatory concept in the diffusion of knowledge and norms respecting family planning. The theoretical justification for this dimension is that the level of individual knowledge and positive normative orientation concerning family planning diminishes with lowered degrees of metropolitan integration. Thus, metropolitan dominance is employed as a contextual property to differentiate the women in our sample.

#### B. LOCAL SUBDOMINANCE

Our second dimension, called "local subdominance," deals with localized normative diffusion from a particular poblacion to its surrounding barrios. The notion of subdominance implies that apart from the overall dominance enjoyed by the metropolis, each city

or town also enjoys relative degrees of dominance over its surrounding area, depending on its degree of urbanity. On the other hand, certain cities or towns belong to a major international network which is comprised of lines radiating from the metropolis. The towns which belong to this network are linked by strong information flows, and therefore theoretically the effect of physical distance is minimized. This phenomenon is known as "hierarchical diffusion" (1:392) and it implies that individuals in certain large size places get 'the news' first transmitting it later to other individuals further down the hierarchy. In effect, what is implied is that certain communities are integrated with the metropolis not as a result of their physical proximity to the metropolitan center but by virtue of their urban character. To simplify measurement of the urban character of a community, the delineation of subdominant centers was done according to the function and size criteria.

A review of Philippine literature on the "plaza complex" seems to indicate that in this particular research setting, exogenous communications are highly concentrated in the poblacion with its plaza complex. The 'plaza complex,' a term developed by Hart (18), refers to a particular morphology exhibited by towns built in the Spanish tradition. Structurally the term refers to the nucleization of services--church, school, market and municipio--around the central plaza of the poblacion. However, it is only when we look at the 'plaza complex' from the functional point of view that its relevance to our research problem becomes evident. Hart noted that "innovations

are often first introduced in the plaza and diffuse outward among the surrounding barrios. The spread of urban traits from the Philippines' few large cities does not occur through the plaza alone, but it seems to be a focal point in cultural change" (18:1). In a subsequent study, Guthrie argued that the poblacion ". . . is not isolated, especially from sources of information of importance. There is a constant flow of people to and from Manila bearing messages and seeking help or support. The radio and a few newspapers from Manila keep the citizens up to date on national and world affairs" (16:28). This particular pattern of diffusion is also supported by Hagerstrand's study of Swedish farming communities (17). Hagerstrand noted that innovations were first accepted by a few individuals in the innovation center where exogenous communications were concentrated.

Hagerstrand has claimed that highly developed transportation and communication tend to attenuate the relationships between residential location and innovation. In the Philippine setting Hart speculated that the importance of the plaza complex in cultural change will diminish with improvements in transportation and communications. Guthrie has suggested that whereas in previous decades all news passed through the poblacion (dominated by the plaza complex) to the barrios, more recently this network has been somewhat vitiated through the proliferation of transistor radios and television (16:28). Guthrie, however, concludes that although the influence of the plaza is indeed diminishing, it

is still important for local news and government agency information.

We have, therefore decided to use the "poblacion" for the delineation of subdominant centers, due to its particular function in the diffusion process. Since all poblaciones perform, more or less, the same function the taxonomy of these communities was based on the size criterion. Nevertheless, it should be borne in mind that the use of population size in determining the urban character of a community may be misleading if one does not consider the particular community in its respective culture. If we conceive of human settlements as occupying a place in a continuum ranging from folk-village to city (20), the rank ordering of communities on this continuum would definitely not be based on the size criterion. In other words, what may be considered as urban in Southeast Asia may not be so in the U.S., even if the latter has a higher degree of population concentration. To clarify our point let us mention that Kruegel (22), in his study of Kentucky, found that the concept of subdominance appeared to have limited usefulness in explaining the spatial distribution of fertility levels when applied to cities with relatively small populations. Areas containing a city of about ten to twenty-five thousand did not appear to have fertility patterns significantly different from the surrounding rural areas. Nonetheless, Sjoberg (33) suggests that local marketing centers are vital links between the peasantry

and the larger cities. In commenting on Lewis' "Tepoztlan"

Sjoberg writes:

Those who take Lewis' study . . . as an exposition of the peasant way of life, should stop to consider that this community, though rural in orientation, is nevertheless a market town and traditionally an administrative center for a number of surrounding considerably smaller communities that are evidently much more rural in character (33).

He concludes that cases like Tepoztlan must be counted as towns or small cities and criticizes sociologists who label as villages entities that stand between true peasant communities and larger cities. His argument is that city elements are present in these market towns as for instance in the case of Tepoztlan "upper class elements" that constitute an elite. Therefore, it is only when we are dealing with one particular culture that the criterion of size may be meaningful, especially when it applies to communities that more or less exhibit the same structural and functional components.

Local subdominance is, therefore, used as a 'contextual property' to differentiate women in our sample.

### C. INDIVIDUAL COSMOPOLITANISM

Our third dimension, individual cosmopolitanism, is developed from the literature covering differential rate of adoption of innovations in conjunction with selective individual characteristics. The contention is that each innovation has a differential receptivity potential dependent upon the type of societal orientation of each receptor.

According to Rogers and Shoemaker (29:189) "earlier adopters are more cosmopolite than later adopters" and these individuals have certain distinct characteristics, as for instance, more education, higher social status, higher change-agent contact, etc. It seems however that cosmopolitanism refers to a particular mode of orientation rather than to a constellation of individual characteristics, despite the fact that such characteristics are responsible for the cosmopolitan orientation. French (11:283) suggests that as the local populace becomes more aware of the outside world and eventually comes to identify with and participate in it, we observe the transition from provincial attitudes to increasing cosmopolitanism. Similarly, Rogers and Showmaker (29:189) note that cosmopolites tend to get involved in matters beyond the boundaries of their local system.

Merton (26:311) in referring to what he has termed local and cosmopolitan influentials, argues that the two tend to think within distinctively different frameworks due to their difference in basic orientation. Similarly, Freedman (10:225) conceives of the transition from local to cosmopolitan in terms of a continuum stretching from major dependence on small local units to an increasing interdependence on large social units. This continuum, he claims, represents the continuum from underdeveloped to developed societies. Whatever the approach may be, it is suggested by the literature that the cosmopolite's reference groups tend to be outside rather than within their social system.

Although cosmopolitanism is a multidimensional concept and the transition from local to cosmopolitan orientation would depend on a cluster of factors, Freedman's contention is that education and literacy play an important role in the shift from local to larger units of interdependence. Also, Ryder (31:34) sees the educational system, as a source of new normative orientations, and claims that education enhances the vision beyond the limited boundaries of the local community. It is a fact that in every country for which we have empirical evidence, the spread of family planning practices has been associated with a literate audience influenced by mass media and person to person communication through which messages transcend local boundaries. In an attempt to trace fertility declines in Europe a Princeton research group (10:224) found that the only index whose movement paralleled that of fertility measures was that of literacy. In each case illiteracy and fertility declined together. It is obvious then that literacy facilitates the dissemination of information concerning family limitation and promotes the individual's involvement with the ideas and institutions of a larger society.

Freedman (10:224) does not believe that education about family planning alone can be effective in changing fertility norms and behavior. High fertility norms are too deeply embedded in traditional institutions to be altered by such specialized education. Only general education can affect the linkage of the local population to the larger units in a way which will lead to a growing dependence on non-local and non-familial institutions. The potential of

general education is intensified with recent developments in mass media and communication networks since these are responsible for creating broad interactional systems which transcend local community boundaries. If the literate regard themselves as members of the larger society, then the presence of improved communication networks facilitates adoption of behavior appropriate to that society, which results in the individual being normatively integrated into the metropolis.

#### D. THE DIFFUSION OF FAMILY PLANNING INNOVATIONS

Although family planning studies are usually conducted by demographers, it should be noted that family planning and demographic research are of distinct character since the former is based on the diffusion approach. Bogue (30:75) defines family planning research as the systematic study of the processes by which the phenomenon of family planning diffuses throughout a social system and of the forces which either retard or facilitate its diffusion and adoption. It, therefore, seems imperative at this point to examine the basic concepts and propositions of diffusion theory.

The classical study of diffusion is Rogers' and Shoemaker's "Communication of Innovations." Their view is that diffusion comprises a special type of communication; it is the process by which innovations spread to the members of a social system. The crucial elements of diffusion according to Rogers and Shoemaker are four:

- (1) the innovation (2) which is communicated through certain channels (3) over time (4) among the members of a social system (22:18).

Hence their simplified model of diffusion (at a certain point in time) reads S-M-C-R, source-message-channel-receiver. There are five stages in the adoption process (1. awareness-knowledge, 2. interest, 3. evaluation, 4. trial, 5. adoption) the validity of which has been supported by subsequent studies (13). Overt behavior change will be observed only after the individual receiver has reached the final adoption stage. The fact, therefore, that we may not notice behavioral modifications among members of a particular social system, does not exclude the possibility that the diffusion process is operative. The variable responsible for this discrepancy is 'time' and it should be remembered that a considerable time lag exists from the introduction of a new idea to its adoption.

An innovation is an idea, practice or object perceived as new by the individual receiver. The channels through which an innovation travels are of two kinds, mass media and interpersonal. This distinction is crucial and there has been a considerable amount of research pointing to the differential functions of each. For instance, it has been argued that mass media channels perform the function of creating awareness-knowledge of a new idea, whereas interpersonal channels are more important in changing attitudes toward innovations. In addition, a series of research studies have shown that mass media channels are of greater importance in creating knowledge in more developed than in less developed countries while cosmopolitan interpersonal channels are more important in the developing countries (29:257).

Another distinction that has emerged is that cosmopolite channels are relatively more important at the knowledge function and localite channels are more important at the persuasion function (29:258). Two of the generalizations developed by Rogers and Shoemaker--"earlier knowers of an innovation have greater change agent contact than later knowers" (29:349) and "earlier knowers of an innovation are more cosmopolite than later knowers" (29:349)--point to the importance of urban contact in the diffusion process. In fact the so called "neighborhood effect" or the effect of distance upon the amount of contact between knowers of an innovation and others ignorant of it, is a central concept in spatial diffusion theory. The importance of the areal extent of neighborhood, known as the mean information field, has been stressed in diffusion studies (17). As Gist notes in his study, "Urbanism in India," (12:32):

. . . rural people who visit the city or who work there temporarily and return to their village homes do acquire some of the behavior patterns characteristic of urban life. But the distance of the village to the city, the frequency and character of the contacts with urban people and situations are significant variables. Villages located within a short distance of a city are likely to be influenced much more than communities further removed.

Finally, we should not fail to mention that although in this study we treat family planning as an innovation, the rigid application of the diffusion model might prove very misleading since family planning has unique characteristics which may operate as intervening

variables affecting knowledge, favorable attitudes and adoption of contraception (24:191).\*

#### E. DEPENDENT VARIABLES

In diffusion research the focus is usually on overt behavior change; i.e., the diffusion of patterns of normative dominance is traced through the observation of behavioral patterns instead of making direct inquiries concerning attitudes and values. Therefore the dependent variables usually employed are geared to measure adoption (or rejection) of new ideas instead of changes in knowledge and attitude. The reason for this is that we have very little evidence that attitude and behavior are always consistent. According to Rogers and Shoemaker (29:13) knowledge, change and persuasion do not always lead directly and immediately to behavior change. Therefore our third dependent variable attempts to measure adoption of an innovation. Nevertheless, innovation dissonance--the discrepancy between an individual's attitude toward an innovation and his decision to adopt or reject the innovation--is a type of cognitive dissonance; and according to Festinger's theory (9) is accompanied by a pressure in the direction of dissonance reduction. Although attitude toward an innovation is not a perfect predictor of the decision to adopt or reject the innovation in question, it has some predictive value. This argument justifies the selection of our second dependent variable. Finally, knowledge of an innovation,

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\* For an extended discussion of family planning as an innovation see Lin and Hingson (24).

our first dependent variable, is selected as an indicator of whether or not the diffusion process is in operation.

#### F. THE BASIC MODEL

In the previous discussion we have developed a series of theoretical statements oriented about metropolitan dominance, local subdominance, individual cosmopolitanism and the potential diffusion of knowledge and normative orientations respecting innovations of family planning. From this theoretical exposition we can draw the following conceptual propositions:

(1) Variations in an individual's knowledge, of normative orientations towards, and adoption of family planning are a function of variations in the degree of metropolitan dominance.

(2) Variations in knowledge of, normative orientations towards and adoption of family planning are a function of variations in the degree of local subdominance.

(3) Variations in an individual's knowledge of, normative orientations towards, and adoption of family planning are a function of variations in individual cosmopolitanism.

(4) The impact of metropolitan dominance on an individual's knowledge of, normative orientations towards, and adoption of family planning is conditioned by local subdominance.

(5) The impact of metropolitan dominance on an individual's knowledge of, normative orientations towards, and adoption of family planning is conditioned by individual cosmopolitanism.

(6) The impact of metropolitan dominance on an individual's knowledge of, normative orientations towards, and adoption of family planning is conditioned by local subdominance and individual cosmopolitanism controlled simultaneously.

It should be explicitly mentioned that this analysis focuses on different levels ranging from the metropolis to the local community level to the individuals residing in these communities. As such we attempt to integrate the micro components of community and individuals with broader macro considerations, i.e., metropolitanization, in the explanation of the receptivity to knowledge, normative orientation, and actual adoption of an innovation, namely, family planning.

#### CHAPTER IV. METHODS OF INVESTIGATION

The data for this investigation was gathered in the course of the Philippine Bureau of the Census survey conducted in May and June 1972. The survey was nationwide and involved 9234 ever-married Filipino women between the ages of 15 and 49. The interview schedule consisted of a set of standardized questions focusing on contraceptive knowledge, attitudes and practice. Interviews were conducted in the dialect of the respondent. The present research focuses on a sub-sample of 1,530 ever-married women all of whom reside in three geographical areas, namely Central Luzon, Southern Luzon and Bicol (see Setting section for an extended discussion of these three regions).

For the purpose of this study metropolitan dominance, which represents differential access to the metropolitan city of Manila, is operationalized by distance in kilometers over paved highways from Metropolitan Manila to each of the fifteen provincial capitals. (See Appendix D.) The variable is trichotomized as follows: (1) less than 50 km, (2) 50 to 125 km, (3) 125 km and over. The range of the variable is 11 to 579 km.\*

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\* It should be mentioned here that although Bataan, a central Luzon province, belongs to our second distance category (50-125) when distance from Metropolitan Manila is measured over paved highways, the literature suggests that Bataan is highly integrated into the metropolitan areas. Furthermore, Bataan falls within our first distance category if distance is measured by a straight line from the center of the metropolis, since it is located right across the bay from Metropolitan Manila. We therefore took the liberty to classify Bataan in our first distance category.

Local Subdominance, which represents variation in the degree of local urban impact, is operationalized by rank ordering of all municipal poblaciones covered in the study according to size.\*

This variable is trichotomized as follows: (1) 20,000 and over, (2) 5,000 to 19,999, (3) less than 5,000. The range of the variable is 544 to 107,785.

Individual Cosmopolitanism is indexed by the number of years of formal education a woman has had, extracted from the following question: "What is the highest grade or schooling you have completed?" This variable is dichotomized as follows: (1) less than 6 years of schooling, (2) 6 or more years of schooling.

Our three dependent variables were extracted from the following forced choice questions. Knowledge of birth control practice is derived from the following question, "Some couples do something to delay or prevent pregnancy so that they can have the number of children that they want and have them when they want them. Have you ever heard about this?" The possible responses were (1) heard, (2) not heard. Women who answered that they have heard were classified as having knowledge about birth control methods although the range of alternative methods known may be quite restricted.

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\* Size of poblacion figures were extracted from the Bureau of Census and Statistics Special Report #2, 1970.

Attitude toward birth control practice is drawn from the question, "In general would you say that you approve or disapprove of the practices of many couples to delay or prevent pregnancy? or practice family planning?" The response categories were: (1) approve, (2) disapprove, (3) indifferent.\* Women whose answer was "approve" were classified as approving of birth control practice.

Actual practice of birth control is derived from the following question, "Have you or your husband ever used any method to prevent or postpone a pregnancy or birth?" The response alternatives were: (1) yes, (2) no. Women whose answer to the above question was "yes" are classified as having adopted family planning.

In the previous section we outlined the basic model using our theoretical constructs. At this point we translate this model into empirical terminology. The following empirical hypotheses are evaluated.

1. Variations in an individual's knowledge, approval and practice of family planning are a function of distance from Metropolitan Manila.

2. Variations in an individual's knowledge, approval and practice of family planning are a function of variations in poblacion size.

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\*Women who answered "indifferent" were excluded from this study.

3. Variations in an individual's knowledge, approval and practice of family planning are a function of variations in the years of formal education of the individual.

4. The relationship between distance from Metropolitan Manila and an individual's knowledge, approval and practice of family planning is conditioned by the size of local poblacion.

5. The relationship between distance from Metropolitan Manila and an individual's knowledge, approval and practice of family planning is conditioned by the level of formal education of the individual.

6. The relationship between distance from Metropolitan Manila and an individual's knowledge, approval and practice of family planning is conditioned by the size of local poblacion and by the level of formal education of the individual controlled simultaneously.

The investigation consists mainly of crossclassifying the three dependent variables by distance from metropolitan Manila, size of poblacion and level of individual education. Within this framework a series of multivariate tables are likewise analyzed. To this end descriptive statistics, i.e. percentage distributions are employed. Chi-square is employed to statistically assess the presence of association while the gamma coefficient is used to evaluate the strength and linearity of the relationships.

## CHAPTER V. FINDINGS

In this section of the thesis are reported the findings of the investigation. Each hypothesis is assessed in turn. For this purpose, the hypotheses are stated in null form; i.e., hypothesizing the presence of no relationship. The existence of a relationship is determined by  $\chi^2$  and the strength of the association by gamma. Relationships are considered to be statistically significant if the level of  $\chi^2$  is at or beyond the .01 level of probability.

Hypothesis I - There is no relationship between distance from Metropolitan Manila and degree of an individual's knowledge, approval and practice of family planning

In table 1 are shown the proportions knowing about, approving and ever practicing family planning among respondents by distance from Metropolitan Manila. The number of cases on which each percentage is based is shown in parenthesis. Measures of relationship (chi square) and strength of relationship (gamma) are shown beneath the table.

As can be seen, the null hypothesis advanced above is rejected. For each dependent variable the relationship with proximity to Metropolitan Manila is statistically significant (see  $\chi^2$ 's). For knowledge the relationship is significant at the .01 level of probability and for both approval and practice the relationship is significant beyond the .001 level of probability. However, even though the relationships in each case are statistically significant we can note differences in the strength of the relationships. The gamma for proximity and knowledge (-.11) is only about one-half

that found for practice (-.22) and approval (-.24).

A look at the respective percentages provides an apparent explanation for the lower gamma found for the proximity-knowledge relationship as opposed to the relationships between proximity and approval and practice, respectively. Approval of family planning decreases monotonically from a high of about 68 percent among women residing close to Metropolitan Manila to 51 percent among women most remote from Metropolitan Manila. Similarly, (although at a lower absolute level), practice of family planning declines from a high of about 34 percent among women proximate to the metropolitan core area to 21 percent for those women farthest removed from the Metropolitan Manila complex. In each case, the greatest drop occurs between the second and third distance zone. On the other hand, the level of knowledge drops sharply from about 90 percent in the closest distance zone to 83 percent in the second distance zone and then upturns, albeit minimally, to 84 percent among women most remote from Metropolitan Manila.

Hypothesis II - Variations in an individual's knowledge, attitude and practice of family planning are not a function of variations in poblacion size.

Table 2 presents a comparison of proportions knowing, approving and ever practicing family planning by size of poblacion. We find that with respect to knowledge the percentage declines linearly from 87 percent for rural women residing within the orbit of poblacion sizes of 20,000 and over to about 84 percent for women living proximate to poblaciones of less than 5,000; however, the relationship is not

statistically significant. On the other hand, the relationship between poblacion size and approval as well as practice of family planning is statistically significant ( $\chi^2 = 12.43$  and  $11.15$  respectively;  $p < .01$ ). Nevertheless, the gammas are minimal -- -.04 for approval and -.01 for practice.

An inspection of the table percentages provides an explanation for the low values of gamma. For both approval and practice there is a sharp downturn as one proceeds from the highest to the medium poblacion size category followed by an upswing in the percentages approving and ever practicing in the lowest poblacion size classification. In summary, the relationship between poblacion size and approval of family planning as well as the relationship between poblacion size and practice of family planning are non-monotonic, i.e., there is no consistent increase or decrease in the percentage of women approving or ever practicing family planning with increases or decreases in poblacion size.

In conclusion, we can note that variations in knowledge of family planning are not a function of size of poblacion. In contrast, variations in approval and practice of family planning are a function of variations in poblacion size but cannot be described in terms of a linear function. In other words, a curvilinear function provides the best fit for these two variables. Nevertheless, it should be noted that the percentage of women knowing of, approving and practicing family planning is consistently highest among women residing close to large poblaciones of 20,000 and over.

Hypothesis III - Variations in an individual's knowledge, approval and practice of family planning are not a function of variations in the level of formal education of the individual.

Table 3 contains percentage distributions on knowledge, approval and practice of family planning by the woman's level of formal educational attainment. It is readily evident that level of formal educational attainment is significantly related to each of the dependent variables, i.e., as level of educational attainment increases the percentage of women knowing about, approving and practicing family planning likewise increases. Eighty-eight percent of women with high levels of educational attainment know about family planning compared to 82 percent of women with low levels of educational attainment. Similarly, the percentage approving ranges from 64 to 55 percent and ever practicing from about 33 to 24 percent for high and low educated women, respectively. The  $\chi^2$ 's for each relationship are statistically significant beyond the .001 level of probability and the gamma coefficients range from a low of +.18 for approval to +.22 for practice to +.25 for knowledge. In summary, the null hypothesis of no relationship can be rejected. For each of the dependent variables we find a consistent positive relationship with education which is statistically significant, i.e. increases in education are associated with increases in the percentage of women having knowledge of, approving and practicing family planning.

Hypothesis IV - The relationship between distance from Metropolitan Manila and an individual's knowledge, approval and practice of family planning is not conditioned by size of poblacion

The data for the assessment of this hypothesis are located in Table 4. As can be seen, the relationship between distance from Metropolitan Manila and knowledge, approval and practice of family planning is retained within certain categories of the control variable (size of poblacion) but not in others. More specifically, we find in the lowest Poblacion size category (less than 5,000) for each of dependent variables a retention of the inverse relationship between distance from Metropolitan Manila and the percentage of women knowing of, approving and practicing family planning. Each of the  $\chi^2$ 's is statistically significant beyond the .001 level of probability and the gamma coefficients range from -.32 for knowledge to -.30 for approval to -.28 for practice.

The patternings are not as clear cut for the other poblacion size categories, although it can be noted that in only one instance (poblacion size 5,000 to 19,999) is there a significant relationship with distance from Metropolitan Manila, and then only with respect to knowledge of family planning. It is especially revealing that among women residing within the local impact area of large size poblaciones the relationship between distance to Metropolitan Manila and knowledge, approval and practice of family planning is not statistically significant.

In conclusion, we can note that the relationship between distance from Metropolitan Manila and knowledge, approval and practice of family planning is conditioned by the size of the local poblacion. Among women residing in the vicinity of small size poblaciones the statistically significant inverse relationships are maintained whereas among women in the orbit of poblaciones of 20,000 and over these statistically significant relationships are not maintained. Since women residing in the vicinity of small size poblaciones comprise 47 percent of the women in the first distance zone, 44 percent of the women in the second distance zone and 36 percent of the women in the third distance zone (see Appendix A), the strong inverse relationship between distance and knowledge, attitude and practice of family planning found among these women accounts, in part, for the overall inverse relationship with no controls. Moreover, even though women in the medium size poblacion category account for 55 percent of the women in the zone furthest removed from Metropolitan Manila, there is virtually no difference in approval or practice of family planning between these women and women residing within the impact area of small size poblaciones of less than 5,000. This majority of women in the third distance zone residing in medium size poblaciones could, likewise, account for the slight upturn in overall knowledge in the farthest removed distance zone since the knowledge level is 89 percent among these women compared to 85 percent for women in the largest poblacion size category and 76 percent for the women in the lowest poblacion size category.

Hypothesis V - The relationship between distance from Metropolitan Manila and an individual's knowledge, approval and practice of family planning is not conditioned by the level of formal education of the individual.

Table 5 consists of the percentage of women knowing; approving and practicing family planning by distance from Metropolitan Manila controlling on the individual woman's level of formal educational attainment. From this table it can be gleaned that the distance impact is not vitiated for approval and practice. For approval we note that for both high and low educated women a statistically significant inverse relationship is obtained ( $\chi^2$  beyond .01 and .001 respectively) and the gammas are moderate (-.28 for women with high levels of educational attainment and -.22 for women with low levels of educational attainment). Similarly, for practice the  $\chi^2$  is statistically significant beyond the .01 level for high education women (gamma = -.19) and beyond the .001 level for low education women (gamma = -.27). In both instances, i.e., approval and practice the greatest drop occurs between the second and third distance zones.

Only on knowledge, and then only with respect to women with low levels of educational attainment, do we find a non-significant relationship with distance. Even here, the inverse relationship with distance is maintained although not significant. However, among women with high levels of educational attainment the  $\chi^2$  for knowledge is significant but the relationship is curvilinear, thus the low gamma of -.12.

Concluding the findings respecting this hypothesis, we can note that the relationship of our family planning variables with distance is not conditioned by the level of formal educational attainment of the women, with the lone exception of knowledge. In the latter instance the inverse trend, albeit insignificant, is evident among women with low levels of educational attainment but a curvilinear pattern emerges among women at the upper end of the educational ladder. Given the foregoing findings we cannot reject the null hypothesis which stipulated that the distance-family planning relationship is not conditioned by level of educational attainment of the woman.

Hypothesis VI - There is no relationship between distance from Metropolitan Manila and an individual's knowledge, approval and practice of family planning when size of poblacion and level of formal education of the individual are simultaneously controlled.

The data for evaluation of this hypothesis are contained in Tables 6 (knowledge), 7 (approval) and 8 (practice). Given the data contained in Tables 6, 7 and 8 we have no reason to reject the null hypothesis. Only in the case of women residing within the domain of small sized poblaciones and low levels of educational attainment do we find a statistically significant relationship between distance from Metropolitan Manila and knowledge of family planning ( $\chi^2$  significant beyond .01 level and gamma = -.30). In the latter instance, however, we find no difference between distance Zones I and II on the percentage approving (about 86 percent) and the major drop occurs between distance Zones II and III (86 to 70 percent).

Among, highly educated women residing in the vicinity of small size poblaciones an inverse relationship between distance and knowledge is apparent but the relationship is not significant.

When we consider approval (see Table 7) we note a statistically significant relationship with distance among women residing in the vicinity of the smallest size poblacion, irrespective of level of educational attainment. For women with high levels of educational attainment the  $\chi^2$  is statistically significant beyond the .001 level of probability and for women with low levels of educational attainment the  $\chi^2$  is statistically significant beyond the .01 level of probability. The respective gammas are -.29 for high education women and -.25 for low education women. In all of the other poblacion size-education categories the relationship between distance and percentage of women approving family planning is not statistically significant. As such, we can reject the null hypothesis of no relationship between distance and approval of family planning with simultaneous controls on poblacion size and education only for women residing within the impact area of the smallest poblaciones, irrespective of level of educational attainment.

The data for practice of family planning, the third component of this hypothesis, are contained in Table 8. Only among women residing in the vicinity of poblaciones of less than 5,000 and with less than six years of formal educational attainment is the statistically significant inverse gradient in evidence ( $\chi^2$  beyond .01 level of probability and gamma = -.27). Although an inverse pattern

is also noted for women with high levels of educational attainment in the same poblacion size category, the relationship is not statistically significant (A similar pattern is also evident among women with low educational attainment in the 5,000-19,999 poblacion size category). In summary, we have grounds for rejecting the null hypothesis only for women with low levels of educational attainment residing in the lowest poblacion size category.

## CHAPTER VI. SUMMARY AND CONCLUSIONS

The major findings of this investigation are: (1) knowledge, approval and practice of family planning decline monotonically with distance from Metropolitan Manila, and although the pattern is not as clear cut with knowledge as with approval and use; (2) variations in knowledge of family planning are not a function of variations in size of poblacion, however, variations in approval and practice are, but cannot be described in terms of a linear function. Nevertheless, knowledge, approval and practice of family planning is consistently highest among women residing in the vicinity of large size poblaciones; (3) increases in education are consistently accompanied by increases in knowledge, approval and practice of family planning; (4) the relationship between distance from Metropolitan Manila and the three family planning variables is conditioned by size of local poblacion with the inverse gradient apparent among women residing within the orbit of the smallest local poblaciones but not among women living in the vicinity of large size poblaciones; (5) the relationship between distance from Metropolitan Manila and the family planning variables is not conditioned by the individual's level of educational attainment with the sole exception of knowledge; and (6) when size of local poblacion and the woman's level of education are simultaneously controlled we note the presence of a statistically significant inverse gradient only among women with low levels of educational attainment residing proximate to small size poblaciones of 5,000 or less.

The bivariate relationships noted between metropolitan dominance and knowledge approval and practice of family planning leads us to conclude that the theory of Metropolitan integration has definite utility in explaining the spatial diffusion of knowledge norms, and adoption of family planning. It should be noted however that the relationships between proximity to Metropolitan Manila and approval and practice of family planning are stronger than the relationship between proximity to Metropolitan Manila and knowledge of family planning. This variation was expected since, as mentioned in the review of literature, knowledge of an innovation is diffused through mass media channels which can reach the most remote localities irrespective of distance, while, on the other hand, approval and practice of an innovation imply persuasion and, as such, this diffusion rests on interpersonal channels. Recent advances in communications, therefore, would alter metropolitan dominance gradients only at the "awareness-knowledge" stage in the innovation diffusion process.

When we examined the relationship between distance from Metropolitan Manila and knowledge, approval and practice of family planning controlling on size of local poblacion, an inverse gradient was evident only among women residing in the vicinity of small size poblaciones. This finding further reinforces some of the conclusions formulated earlier. In other words, once a threshold field point in the size of local sub-dominant centers

is reached, their surrounding hinterlands become absorbed into the metropolitan network and no sizeable differences in knowledge of normative orientations towards and adoption of family planning are readily apparent in terms of distance from the metropolitan center. In effect, the function of distance is vitiated.

Conversely, among rural women residing near small sized local sub-dominant centers only those quite proximate to the metropolitan core demonstrate patterns remotely approximating those found among women residing in the vicinity of local sub-dominant centers which have passed the threshold point.

Turning to education, we found a consistent inverse relationship with knowledge, approval and practice of family planning. Women with high levels of education had higher levels of knowledge, approval and practice of family planning than women with low levels of education. This finding suggests that individual cosmopolitanism has an independent effect on knowledge of, normative orientations toward, and actual adoption of family planning. Since women with high levels of education are no more likely to live close to Metropolitan Manila than women with low levels of education (see Appendix A), further support is given to the foregoing contention. In essence, to the extent that women become cosmopolitan; i.e., develop orientations that transcend the local community, they become cognizant of and imbued with alternative modes of orientation, one of which is the rationalization of reproductive behavior.

It was noted that no relationship was evident between size of poblacion and knowledge of family planning. Furthermore, approval and practice of family planning were curvilinearly related to size of the local poblacion. With respect to knowledge, the same argument as was presented above concerning the dissemination of family planning information via mass media could account for this patterning. The presence of transistor radios in even the remotest barrio would minimize the necessity of large size poblaciones as conveyors for the transmission of family planning knowledge. A possible explanation for the curvilinear pattern on approval and use of family planning is the fact that a greater proportion of our sample women living in the vicinity of the smallest size poblaciones were also residing closer to Metropolitan Manila than were women living near poblaciones of 5,000 to 19,999 (see Appendix A). As such, a greater proportion of the former women would be more integrated into the Metropolitan Manila network than would be the case with the latter group of women. Nonetheless, knowledge, approval and practice of family planning were consistently at the highest levels among women living within the impact area of large size poblaciones. This latter finding suggests that once a threshold level of local sub-dominance is reached the surrounding barrios become incorporated into the larger metropolitan configuration with knowledge of family planning norms, and actual contraceptive behavior approximating that concerning family planning of the metropolitan core.

Whereas we found the relationship between distance from

Metropolitan Manila and knowledge, approval and practice of family planning conditioned by the size of the local poblacion, the same cannot be said of the controlled variable education with the exception of knowledge. With respect to approval and practice, as distance from Metropolitan Manila increases the levels of approval and practice of family planning diminish monotonically, irrespective of the women's level of educational attainment. In terms of knowledge, the inverse gradient is also apparent for women with low levels of educational attainment but the relationship is not significant. Thus, although we suggested earlier that an augmentation of individual cosmopolitanism results in the knowledge and adoption of new modes of reproductive orientation, this effect is not so great as to foster a positive attitude and actual adoption of these orientations among women in the outlying hinterlands to that level which would be expected were they fully incorporated into the metropolitan network. Once again, this would not be the case with knowledge of family planning, since being merely informative in nature, the function of distance could be readily overcome through mass media channels. It seems important, at this point, therefore, to think of various levels of integration into the metropolitan network with incorporation in terms of the acquisition of knowledge of an innovation not necessarily implying incorporation in the sense of development of that mode of orientation that would facilitate its adoption.

The last segment of this analysis consisted of an analysis of the relationship between distance from Metropolitan Manila and knowledge, approval and practice of family planning with simultaneous controls on size of local poblacion and the individual's level of educational attainment. The major finding emanating from this final portion of the investigation was that a statistically significant inverse gradient pattern was in evidence for all three family planning variables only among women who resided in the vicinity of the smallest size poblaciones and who had low levels of educational attainment. In addition, the gradient pattern for approval was statistically significant for women with high levels of educational attainment and residing close to the smallest sized poblaciones. For the same categories of women, an inverse gradient is apparent for knowledge and practice but the relationships are not statistically significant. A similar pattern, on knowledge, approval and practice though once again not statistically significant, is evident in the medium sized poblacion category among women with low levels of educational attainment.

The foregoing findings suggest that large sized sub-dominant centers integrate women into the metropolitan network in terms of cognition development and implementation of new modes of reproductive orientation, irrespective of individual cosmopolitanism. On the other hand, this is not the case with respect to rural women residing near those local sub-dominant centers which, lying

remote from the metropolitan core, have not reached that critical threshold point wherein they have been fully integrated into the metropolitan network. Moreover, this pattern is reinforced when the level of individual cosmopolitanism of this group of women is low. Only when these rural women reside in close proximity to the metropolitan core itself, does cognition of the normative orientation of the core impinge on them, accompanied by normative reproduction reorientation as well as actual implementation of these new modes of orientation. In effect, for this latter group of women congruence in social space roughly parallels proximity in physical space. For women residing within the orbit of large sub-dominant centers one finds congruence in social space irrespective of degree of physical proximity.

One important caveat, however, needs to be acknowledged with respect to the prior formulations. There are differential rates of diffusion evident for knowledge, approval and practice of family planning irrespective of metropolitan dominance, local sub-dominance and individual cosmopolitanism. Levels of actual adoption are consistently lower than levels of approval and levels of approval are in turn consistently lower than levels of knowledge. This suggests a temporal model which we are unable to incorporate in this study, given the cross-sectional data available to us. Therefore, the point which we mentioned earlier cannot be overstressed; that is, that knowledge of new normative orientations, the development of favorable attitudes towards them

and their actual internalization and implementation differentially diffuse according to the type of integration into the metropolitan network. This does, of necessity, imply a temporal framework suggesting a time lag between integration in terms of information channels and integration in terms of a complete restructuring of social and personality systems thereby fastening actual internalization and effective implementation.

In conclusion it can be suggested that the entire notion of metropolitan dominance falls under the much broader theoretical framework of "contractualism."\* According to Henry Maine who initiated the theory, contractual societies are "distinguished by the gradual dissolution of family dependency and the growth of individual obligation in its place" (25:4). The primary goal of rural development, action programs and more generally of modernization in the developing countries, is the achievement of more efficient forms of social organization through the integration of 'non-contractual communities' into contractual communities. It is only then that the two types of communities would be able to cooperate on an equivalent basis (03:7).

If we accept Schnores' view (32:14) and conceive of metropolitan centers in organizational terms of sub-areas tied together into a functional unity, it is obvious that metropolises would tend to integrate these subunits for the purpose of achieving more efficient forms of social organization. However, integration into the metropolitan area presupposes change in the

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\*The author is indebted to Dr. G. A. Hillery for this suggestion.

social structure of the sub-unit. Therefore contractual frames of reference are being diffused from the metropolis to the communities to be integrated (21:8). It can be argued that this phenomenon is what we have referred to as metropolitan economic integration. Based on the assumption that social systems tend to maintain equilibrium, it follows that changes in the economic sphere would be followed by changes in the other components of a social system, for example, metropolitan normative integration. Norms and values then would tend to diffuse from the metropolitan center to the "integration targets" through the same channels that contractualism diffuses. Metropolitan integration is the process in which a "contractual system" determines a situation in which roles played in "non-contractual" systems" become integrated by means of diffusion. Normative metropolitan dominance can be considered a latent consequence of metropolitan economic integration.

In light of the foregoing statements, one might suggest that in the traditional peasant society provisions for individual security redound on such informal arrangements as exemplified by the landlord-tenant and extended family relationships. As such, the perception could exist that provisioning for additional children, either in terms of economic or child rearing support, as well as the welfare of the nuclear family itself could be readily absorbed by the traditional social structure. However, with the impingement of contractualism in such forms as absentee landownership, large scale rationalized farming enterprises

incorporating wage labor or land reform programs making farm owners of former tenants at least part of this traditional nexus for security is severed. Moreover, it provides new avenues for social mobility. Excessive childbearing then becomes an encumbrance both in terms of the restructuring of security arrangements as well as the restrictions it might impose on individual social mobility. Moreover, as peasant families become part of larger contractual systems and the potential for social mobility is enhanced, the rational - self interest mode of orientation could short circuit the flow of resources among extended family members. This represents a further weakening of traditional security arrangements. This does not mean to imply that the extended family network is obliterated but rather is modified both in terms of continuous day to day support as well as the breadth of membership for whom impositions for support are recognized as legitimate encumbrances.

Table 1. Knowledge, Approval and Practice of Family Planning by Physical Proximity to Metropolitan Manila

Knowledge, Approval and Practice of Family Planning	Physical Proximity		
	Less than 50 kilometers	50-124.9 kilometers	125 kilometers or more
<b>Knowledge</b>			
Yes	90.3	83.2	84.3
No	9.7	16.8	15.7
Total	100.0	100.0	100.0
<b>Approval</b>			
Yes	68.1	63.6	51.0
No	31.9	36.4	49.0
Total	100.0	100.0	100.0
<b>Practice*</b>			
Yes	33.8	31.7	20.8
No	66.2	68.3	79.2
Total	100.0	100.0	100.0
N	(320)	(624)	(586)

Note: Knowledge -  $\chi^2 = 8.98$ ; d.f. = 2;  $p < .01$ ; Gamma = -.11  
 Approval -  $\chi^2 = 31.77$ ; d.f. = 2;  $p < .001$ ; Gamma = -.24  
 Practice -  $\chi^2 = 24.56$ ; d.f. = 2;  $p < .001$ ; Gamma = -.22

\*Practice refers to ever practiced and not necessarily current practice.

Table 2. Knowledge, Approval and Practice of Family Planning by Size of Local Poblacion

Knowledge, Approval and Practice of Family Planning	Size of Local Poblacion		
	20,000 and over	5,000- 19,999	Less than 5,000
<b>Knowledge</b>			
Yes	87.0	85.5	83.8
No	13.0	14.5	16.2
Total	100.0	100.0	100.0
<b>Approval</b>			
Yes	67.5	55.2	60.4
No	32.5	44.8	39.6
Total	100.0	100.0	100.0
<b>Practice*</b>			
Yes	33.2	23.5	29.8
No	66.8	76.5	70.2
Total	100.0	100.0	100.0
N	292	601	637

Note: Knowledge - non-significant

Approval -  $\chi^2 = 12.43$ ; d.f. = 2;  $p < .01$ ; Gamma = -.04

Practice -  $\chi^2 = 11.15$ ; d.f. = 2;  $p < .01$ ; Gamma = -.01

\*Practice refers to ever practiced and not necessarily current practice.

Table 3. Knowledge, Approval and Practice of Family Planning by Women's Level of Educational Attainment

Knowledge, Approval and Practice of Family Planning	Level of Educational Attainment	
	Six Years & Over	Less Than Six Years
Knowledge		
Yes	88.4	82.1
No	11.6	17.9
Total	100.0	100.0
Approval		
Yes	64.4	55.5
No	35.6	44.5
Total	100.0	100.0
Practice*		
Yes	32.6	23.8
No	67.4	76.2
Total	100.0	100.0
N	727	803

Note: Knowledge -  $\chi^2 = 11.74$ ; d.f. = 1;  $p < .001$ ; Gamma = +.25  
 Approval -  $\chi^2 = 12.01$ ; d.f. = 1;  $p < .001$ ; Gamma = +.18  
 Practice -  $\chi^2 = 14.28$ ; d.f. = 1;  $p < .001$ ; Gamma = +.22

\* Practice refers to ever practiced and not necessarily current practice.

Table 4. Knowledge, Approval and Practice of Family Planning by Physical Proximity of Metropolitan Manila, Controlling on Size of Local Poblacion

Size of Local Poblacion	Physical Proximity			
	Less than 50 kilometers	50-124.9 kilometers	125 kilometers and over	
Percentage Knowing				
20,000 and over	89.7	85.6	84.9	non-significant
5,000-19,999	92.1	77.9	89.4	$\chi^2 = 16.32$ ; d.f. = 2; $p < 0.001$ ; $\gamma = -0.20$
Less than 5,000	90.0	86.2	76.4	$\chi^2 = 13.93$ ; d.f. = 2; $p < 0.001$ ; $\gamma = -0.32$
Percentage Approving				
20,000 and over	67.3	66.7	69.8	non-significant
5,000-19,999	65.1	59.4	50.5	non-significant
Less than 5,000	70.0	65.5	47.2	$\chi^2 = 24.23$ ; d.f. = 2; $p < 0.001$ ; $\gamma = -0.30$
Percentage Ever Practicing*				
20,000 and over	30.8	40.2	20.8	non-significant
5,000-19,999	25.4	26.3	21.2	non-significant
Less than 5,000	39.3	32.0	20.3	$\chi^2 = 16.32$ ; d.f. = 2; $p < 0.001$ ; $\gamma = -0.28$
Number of Cases				
20,000 and over	107	132	53	
5,000-19,999	63	217	321	
Less than 5,000	150	275	212	

\*Practice refers to ever practiced and not necessarily current practice.

Table 5. Knowledge, Approval and Practice of Family Planning by Physical Proximity to Metropolitan Manila, Controlling on Woman's Level of Educational Attainment

Level of Educational Attainment	Physical Proximity			
	Less than 50 kilometers	50-124.9 kilometers	125 kilometers and over	
Percentage Knowing				
6 years and over	95.8	84.5	88.6	$\chi^2 = 12.01$ ; d.f. = 2; $p < 0.01$ ; $\gamma = -0.11$ non-significant
less than 6 years	85.8	82.1	79.8	
Percentage Approving				
6 years and over	71.5	71.5	54.2	$\chi^2 = 23.01$ ; d.f. = 2; $p < 0.01$ ; $\gamma = -0.28$ $\chi^2 = 14.24$ ; d.f. = 2; $p < 0.001$ ; $\gamma = -0.22$
less than 6 years	65.3	57.1	47.7	
Percentage Ever Practicing*				
6 years and over	37.5	37.3	25.8	$\chi^2 = 10.83$ ; d.f. = 2; $p < 0.01$ ; $\gamma = -0.19$ $\chi^2 = 17.29$ ; d.f. = 2; $p < 0.001$ ; $\gamma = -0.27$
less than 6 ears	30.7	27.1	15.7	
Number of Cases				
6 years and over	144	284	299	
less than 6 years	176	340	287	

\* Practice refers to ever practiced and not necessarily current practice.

Table 6. Knowledge of Family Planning by Physical Proximity of Metropolitan Manila, Controlling on Size of Local Poblacion and Woman's Level of Educational Attainment

Size of Local Poblacion and Women's Level of Educational Attainment	Physical Proximity			
	Less than 50 kilometers	50-124.9 kilometers	125 kilometers and over	
Percentage Knowing				
20,000 and over				
six years and over	93.7 (63)	84.1 (82)	87.0 (23)	non-significant
less than six years	84.1 (44)	88.0 (50)	83.3 (30)	non-significant
5,000-19,999				
six years and over	96.4 (28)	81.9 (94)	92.0 (176)	non-significant
less than six years	88.6 (35)	74.8 (123)	86.2 (145)	non-significant
Less than 5,000				
six years and over	98.1 (53)	87.0 (108)	83.0 (100)	non-significant
less than six years	85.6 (97)	85.6 (167)	70.5 (112)	$\chi^2=11.66$ ; d.f.=2; $p<0.01$ ; $\gamma = -0.30$
TOTAL	90.3 (320)	83.2 (624)	84.3 (586)	

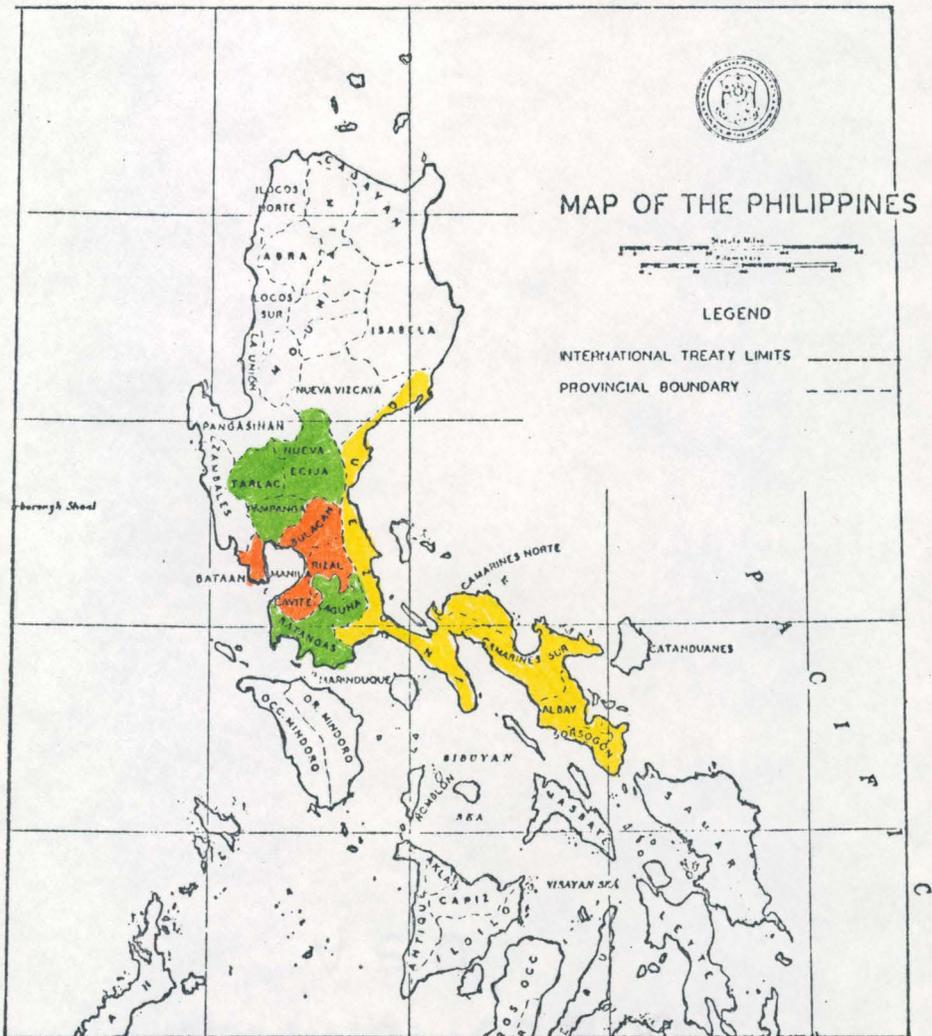
Table 7. Approval of Family Planning by Physical Proximity to Metropolitan Manila, Controlling on Size of Local Poblacion and Woman's Level of Educational Attainment

Size of Local Poblacion and Woman's Level of Educational Attainment	Physical Proximity			
	Less than 50 kilometers	50-124.9 kilometers	125 kilometers and over	
	Percentage Approving			
20,000 and over				
six years and over	71.4	68.3	69.6	non-significant
less than six years	61.4	64.0	70.0	non-significant
5,000-19,999				
six years and over	67.9	74.5	56.8	non-significant
less than six years	62.9	48.0	42.8	non-significant
less than 5,000				
six years and over	73.6	71.3	46.0	$\chi^2=17.85$ ; d.f.=2; $p<0.001$ ; $\gamma = -0.29$
less than six years	68.0	61.7	48.2	$\chi^2= 9.16$ ; d.f.=2; $p=0.01$ ; $\gamma = -0.25$
TOTAL	68.1	63.6	51.0	

Table 8. Practice of Family Planning by Physical Proximity to Metropolitan Manila, Controlling on Size of Local Poblacion and Woman's Level of Educational Attainment

Size of Local Poblacion and Woman's Level of Educational Attainment	Physical Proximity			
	Less than 50 kilometers	50-124.9 kilometers	125 kilometers and over	
	Percentave Ever Practicing*			
20,000 and over				
six years and over	38.1	42.7	26.1	non-significant
less than six years	20.5	36.0	16.7	non-significant
5,000-19,999				
six years and over	25.0	38.3	27.8	non-significant
less than six years	25.7	17.1	13.1	non-significant
Less than 5,000				
six years and over	43.4	32.4	22.4	non-significant
less than six years	37.1	31.7	18.8	$\chi^2=9.36$ ; d.f.=2; $p<0.01$ ; $\gamma = -.27$
TOTAL	33.8	31.7	20.8	

\*Practice refers to ever practiced and not necessarily current practice.



- Distance I (<50 km)
- Distance II (50-125 km)
- Distance III (>125 km)

Fig. 1 Selected Philippine Provinces according to distance zones.

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## APPENDICES

APPENDIX A

Table A1. Size of Local Poblacion, Woman's Level of Educational Attainment by Proximity to Metropolitan Manila

Size of Local Poblacion and Woman's Level of Educational Attainment	Proximity to Metropolitan Manila		
	Less than 50 kilometers	50-124.9 kilometers	125 kilometers or more
<b>Size of Local Poblacion</b>			
20,000 and over	33.4	21.2	9.0
5,000-19,999	19.7	34.8	54.8
Less than 5,000	46.9	44.0	36.2
Total	100.0	100.0	100.0
<b>Level of Educational Attainment</b>			
Six years and over	45.0	45.5	51.0
Less than six years	55.0	54.5	49.0
Total	100.0	100.0	100.0
N	320	624	586

APPENDIX B

Table B1. Number of Cases in Each Subclassification

Size of Local Poblacion and Woman's Level of Attainment	Physical Proximity			Total
	Less than 50 kilometers	50-124.9 kilometers	125 kilometers and over	
20,000 and Over	<u>107</u>	<u>132</u>	<u>53</u>	292
6 Years and Over	63	82	23	168
Less than 6 Years	44	50	30	124
5,000-19,999	<u>63</u>	<u>217</u>	<u>321</u>	601
6 Years and Over	28	94	176	298
Less than 6 Years	35	123	145	303
Less than 5,000	<u>150</u>	<u>275</u>	<u>212</u>	637
6 Years and Over	53	108	100	261
Less than 6 Years	97	167	112	376
Total	320	624	586	1530

Selective Philippine Provinces Presented by Region

Central Luzon	Southern Luzon	Bicol
Bulacan	Cavite	Albay
Pampanga	Laguna	Sorsogon
Bataan	Rizal	Camarines Norte <sup>*1</sup>
N. Ecija	Batangas	Camarines Sur
Tarlac	Quezon	
Zambales		
Pangasinan		

<sup>\*1</sup>Camarines Notre excluded from this study.

Selective Philippine Provinces  
Presented by Distance from Metropolitan Manila

Actual Distance from Metropolitan Manila	50 klm. or less	50 - 125 klm.	125 klm. or over
45 klm.	Bulacan		
82 klm.		Pampanga	
124 klm.	Bataan *1		
116 klm.		Nueva Ecija	
123 klm.		Tarlac	
202 klm.			Zambales
213 klm.			Pangasinan
32 klm.	Cavite		
84 klm.		Laguna	
11 klm.	Rizal		
110 klm.		Batangas	
136 klm.			Quezon
544 klm.			Albay
351 klm.			Camarines Sur
597 klm.			Sorsogon

\*1 Due to its high degree of integration to Metropolitan Manila, Bataan is treated as if it belongs to the 1st distance category.

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METROPOLITAN DOMINANCE  
AND DIFFUSION OF FAMILY PLANNING  
IN THE PHILIPPINES

by

Vasso Sugas-Telionis

ABSTRACT

The impact of metropolitan dominance on the diffusion of family planning in the Philippines was analyzed. Hypotheses based on the diminishing effect urban centers have on knowledge approval and practice of family planning as distance from the metropolitan core increases, size of the local urban center decreases and level of individual cosmopolitanism increases were tested by means of bivariate correlations. In addition the predictive value of these variables was assessed by chi-square and gamma coefficients. The findings indicate, 1) a decreasing linear relationship between metropolitan dominance and the diffusion of family planning variables; 2) a curvilinear relationship between size of local urban center and the diffusion of family planning; 3) a decreasing linear relationship between level of individual cosmopolitanism and the diffusion of family planning. Furthermore, the findings indicate that the distance from the metropolitan core effect is vitiated when the size of the local urban center exceeds the 20,000. However, the distance from the metropolitan core effect is not conditioned by the level of individual cosmopolitanism.