URBANISM AND SELECTED CORRELATES IN PHILIPPINE CITIES IN THE 1980s

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Patterns of urbanism are delineated for the 60 chartered cities using principal components analysis with varimax rotation to orthogonal factors on 16 population and settlement characteristics drawn from the Census of 1980. Four factors—labelled economic complexity, household stability, ethnic diversity and cultural complexity—are computed and interpreted. A profile of the cities' scores on these factors is provided. The factors are correlated with 10 variables conceptualized as denoting social welfare. Comparisons between the four factors on the one hand, and previous local findings on the modernity of cities and on the urban hierarchy on the other, are made. Implications of the analysis and suggestions for further research are discussed.

During the past few decades some interesting analyses of the Philippine cities from a comparative perspective have been undertaken. Ullman (1960) looked at the country's "nodal centers and tributary areas" and classified them into five types of trade centers, using mainly population size and commercial function indicators. Doeppers (1972) looked back into the development of the country's cities before 1900 and arrived at a three-tier classification based on the cities' political, military and ecclesiastical functions. Fujimoto (1968) asked a fundamental question, "How do communities develop?" and classified a subset of current chartered cities according to Guttman scales of their commercial, recreational and public articulation functions. Magdalena (1977) substituted modernization for development in the question asked, and provided on elegant analysis of the modernization of the Philippine cities using 1960 and 1970 census data. Some government agencies have developed classifications of their own (e.g., Ministry of Human Settlements 1976, National Economic Development Authority 1978) as part of the planning process for selecting and developing centers that would induce growth in the surrounding regions. More recently Pernia (1983) and Soliman and Paderanga (1983) used 1975 census and related data to derive variables under the rubrics of economic infrastructure and social infrastructure to place a subset of chartered cities in a hierarchical classification.

The present exploratory study attempts to extend the above analyses in a somewhat different direction, using a later set of census data. Its conceptualization is influenced in part by the school of thought articulated by Louis Wirth (1957) in 1938, and the subsequent formulations that it provoked. Wirth provides a "minimal (sociological) definition" of the city as a "relatively large, dense and permanent settlement of socially heterogeneous individuals" (1957:50). Urbanism is seen as affecting individuals and primary groups directly but negatively, largely through a decline in the importance of primary groups and in the personal quality of social interaction and relations. Herbert Gans (1962, 1967,1982), on the other hand, sees individuals and primary groups as continuing to maintain their independence even in an urban setting; hence urbanism has no direct effect on them. Fischer (1976:35-38) sees urbanism as having a direct and positive effect on urbanites in that it induces and makes feasible new groupings and subcultures among individuals with common characteristics (e.g., occupation, ethnic identity) or interest (e.g., ballet dancing).

But it is not the broad theoretical thrusts that are of direct relevance to this study; it is rather the more specific variables that the scholars in this problem area have identified as more or less important in producing specific outcomes in urban life. Wirth's early formulation presents hypothesized consequences of population size, density and heterogeneity; segregation; and the population's age, sex, marital status, income, occupation, ethnic origins, places of origin, and spoken languages. Gans stresses the effects of income, age, ethnicity and occupation. Fischer would go back to Wirth's minimal settlement-cum-population variables. Many of these variables are susceptible to further analyses for Philippine cities using census data. The present study, which adopts a basically eclectic approach, uses them as the primary set of variables.

Table 1. *Urbanism Variables, by Category, Variable Name, Identification, Means and Standard Deviations: 1980*

Category/ Variable Name	*Identification*	*Mean*	*S.D.*
Population			
Population	Total city population (in thousands)	169.7	259.8
Density	Population per square kilometer of land area	2,305.9	6,188.5
Urban residents	Percent of population residing in urban part of the city	55.2	36.0
Household			
Household size	Mean household size	5.7	0.3
Age, Sex and Marital Status			
Median age	Median age of total population	19.2	1.2
Male-female ratio	Number male per 100 female	98.1	5.6
Ever married	Percent of population 10 years or older who are married, widows/widowers, divorced/separated	53.6	3.0
Education			
Literate	Percent of private household population 10 years old and over able to read and write	86.9	7.0
Educated	Percent of private household population 7 years old and over who completed 4th year high school or higher	34.4	11.9
Occupational characteristics			
Occupational diversity	Index (see text): gainful workers 15 years old and over of private households by major occupation groups	0.7	0.1
Primary workers	Percent of gainful workers in agriculture, animal husbandry, forestry, fishing, hunting	34.5	22.7
White collar	Percent of gainful workers classified as sales workers or higher by NCSO	26.1	10.7
Language			
Tagalog	Percent of private household population 6 years old and over able to speak tagalog	78.7	17.3
English	Percent of private household population 6 years old and over able to speak Engish	69.3	11.9
Ethnolinguistic characteristics			
Language diversity	Index (see text): language/dialect generally generally spoken in private households	0.1	0.2
Migrants	Number in private household population 5 years old and over who resided in another province and/or foreign land on May 1, 1975, per 1000 who were residents in the city on same date	4.1	3.4

Table 2. *Welfare Variables, by Category, Variable Name, Identification, Mean and Standard Deviation: 1980*

Category/ Variable Name	*Identification*	*Mean*	*S.D.*
Economic			
Employed	Percent population 15 years and older classified as gainful workers	50.3	3.7
Dependency ratio	Number in population 15-64 years old per 100 in all other ages	77.7	9.0
Mortality			
General mortality	Deaths per 1,000 population	70.6	6.6
Infant mortality	Infant deaths per 1,000 live births	16.8	11.8
Community facilities			
Electricity	Percentage of households using electricity for lighting	86.9	7.0
Water	Percentage of household drawing drinking water from community systems	34.7	11.9
Housing			
Dwelling	Percentage of households living in permanent housing structures	48.0	24.8
Toilet	Percentage of households using flush/water-sealed toilets	44.1	25.1
Household amenities			
Radio	Percentage of households with radios	97.2	2.5
Ref/freezer	Percentage of households with refrigerators/ freezers	51.2	24.3

emerge before the eigenvalues begin to level off. In due course, a four-factor solution, accounting for over 75 percent of the variance was computed.[3] The results are presented in Table 4.

Four Patterns of Urbanism

The first factor (explaining about one-third of the variance) seems to consist of two major components. One is the population component represented by Density and by Urban Residents (that portion of the population residing in the urban part of the city, by census definition) but not, incidentally, by the absolute Population Size. The other component has to do with occupations. White Collar loads high on this factor as does Occupational Diversity. Not surprisingly, the Primary Workers variable loads high but negatively; it has long been observed that an important characteristic of an urbanized settlement is the low percentage of workers involved in farming and other extractive industries. Educated is also a high loading variable, probably because it is a prerequisite to the type of occupational structure that exists. Male-female Ratio has high negative loading. This result would be consistent with the observation (McGee 1975, cited in Fischer 1976:71) that cities in industrializing countries favor the inflow of young male laborers; it is consistent with the trend observed for the Philippines, in particular by Eviota and Smith (1979), and on the 1980 Census data themselves by Feranil (1983).[4] This combination of a large number of people concentrated in the center of a settlement and the existence of a diverse occupational structure that is characteristically ori-

Table 3. *Rank Correlation Matrix of 16 Urbanism Variables**

Variables	Variable Nos. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Population	1.00															
2. Density	.41	1.00														
3. Urban residents	.38	.73	1.00													
4. Household size	-.33	-.25	-.12	1.00												
5. Median age	.14	.52	.44	-.37	1.00											
6. Male-female ratio	-.14	-.58	-.62	.11	-.46	1.00										
7. Ever married	-.05	-.28	-.34	-.25	-.24	.27	1.00									
8. Literate	.39	.61	.66	-.25	-.59	-.54	-.33	1.00								
9. Educated	.33	.70	.75	-.22	.62	-.61	-.44	.80	1.00							
10. Occupational diversity	.37	.56	.63	-.08	.33	-.53	-.31	.52	.70	1.00						
11. Primary workers	-.58	-.84	-.81	.28	-.56	.59	.28	-.71	-.82	-.76	1.00					
12. White collar	.42	.72	.77	-.12	.42	-.62	-.30	.62	.83	.85	-.86	1.00				
13. Tagalog	.31	.42	.39	-.10	.54	-.31	-.19	.58	.56	.33	-.50	.41	1.00			
14. English	.46	.60	.56	-.24	.61	-.44	-.29	.81	.73	.50	-.70	.62	.71	1.00		
15. Language diversity	.23	.01	.36	-.10	-.08	-.28	-.02	.28	.31	.15	-.24	.28	.08	.13	1.00	
16. Migrants	.46	.36	.49	-.23	.36	-.35	-.21	.57	.62	.44	-.66	.48	.45	.48	.50	1.00

**Critical values (p=0.05): 1-tail = + or - 0.21; 2-tail = + or -0.25.*

Table 4. *Rotated Factor Loadings of 16 Urbanism Variables*

Variable	Factors 1	2	3	4
White collar	.886	.009	.200	.233
Occupational diversity	.836	-.031	.127	.141
Primary workers	-.823	-.190	-.217	-.404
Density	.800	.160	-.097	.355
Urban residents	.796	-.031	.266	.272
Educated	.695	-.052	.254	.564
Male-female ratio	-.694	.102	-.111	-.225
Household size	-.092	-.821	-.021	.241
Ever married	-.319	.651	-.035	-.315
Language diversity	.125	-.000	.903	-.054
Migrants	.312	.104	.667	.432
Tagalog	.154	-.010	.148	.820
English	.425	.083	.137	.774
Median age	.327	.135	-.193	.765
Literacy	.489	.029	.276	.684
Population	.349	.478	.384	.197
Eigenvalues	5.294	1.440	1.824	3.518

ented away from extractive industries has been at the core of definitions of industrial cities. *Economic complexity* will be used as a label for this first factor.

The second factor has two high loading variables: Household Size (negative) and Ever Married. The trend indicated by this dimension of urbanism is towards a decline in the average number of household members together with an increase in the number of ever married individuals. The first trend is consistent with those observed in other parts of the world while the second is not (Fischer 1976:72). Eslao, in her focused study of Malate households (1966), found that the maintenance of a nuclear family household continues to be an ideal, even though allowance is made for temporary extensions to married relatives of household members in need of shelter in an expensive urban setting. Adults who have not formed families of their own have more alternative life styles to choose from, and to this extent are less stable than their married counterparts. Thus the combination of the two high-loading variables in the second factor may be seen as defining a dimension of urbanism which emphasizes a nuclear family-centered household and the stability of that household. Hence this dimension will be called *household stability.*

On an intuitive basis and on the basis of the results of the statistical analysis, there is reason to assume a priori that a positive relationship exists between the rate of migration to an urban community and that community's score in Language Diversity, or that the two variables could belong to the same dimension. Indeed the results show that the rank order correlation coefficient between them is a clearly significant 0.50, and the two are the highest loading variables in the third factor. Further, one of the initial hypotheses in the Costello et al. study, "A positive relationship should be found to exist between community levels of in-migration (X) and changes over time in ethnic diversity (Y)," seems to parallel the relationship seen here. But the result of their test, using 1970 and 1975 data, failed to reach a statistically significant level, and their review of the previous relevant empirical studies showed this hypothesized relationship to be ambiguous.

Having noted the difficulties and having pointed out (*cf.* footnote 2) that the concept and measurement of Language Diversity in this study is not identical to Costello et al.'s ethnic diversity, the pattern delineated here will nonetheless be accepted as it stands, and the factor will be labelled *ethnic diversity.*

Tagalog, English, and Literacy load high on the fourth factor; the clustering of these variables plus the moderate loading of Educated point to a dimension that will be called *cultural complexity.* Those cities scoring high on this variable will tend to be cultural and educational centers, with the larger portion of the population able to speak an international language, English. The high loading of the median age variable on this factor may at first appear to introduce some complication to the interpretation. On the other hand, it is not inconsistent with a moderate trend towards higher median ages in the more urbanized regions of the country as a whole (*cf.* Feranil 1983: Table 2.7 and Meila-Raymundo 1983: Table 4.7). The nexus between the more evident cluster of indicators of cultural complexity on the one hand and higher median age on the other may be provided by a larger percentage of higher socioeconomic status families expected to be found in the cultural centers; this status is usually associated with fewer number of children per family and longer life spans, thus resulting in an age structure that is less skewed towards the young.[5]

It is worth noting that this factor accounts for nearly 22 percent of the total variance, or more than the combined variances of the previous two factors, and is the least orthogonal to the economic complexity factor.

City Profiles on the Patterns of Urbanism

How do the 60 chartered cities stand on the four urbanism patterns that have been delineated? To answer this question a chart was drawn which reduced the different ranks of the cities in terms of standardized factor scores to only four levels based on each score's deviation form the mean. With zero as the mean score, the two higher levels are occupied by cities whose factor scores are over +1 (Level I) and within +1 (Level II) standard deviation above the mean; and the two lower levels are occupied by cities whose factor scores are within -1 (Level III) and over -1 (Level IV) standard deviation below the mean. Figure 1 presents

four charts, corresponding to the economic complexity, household stability, ethnic diversity, and cultural complexity patterns that were previously delineated. Each chart shows the four levels mentioned above and lists the 60 chartered cities in the appropriate levels.

To answer the likely immediate questions, the Metro Manila cities (Caloocan, Manila, Pasay and Quezon) score on the upper levels but not consistently at Level 1 in each factor; further, Manila and Quezon go together while Caloocan and Pasay constitute a different pair. The Manila-Quezon tandem are on Level I in the economic complexity and cultural complexity patterns; they are on level II in the household stability and ethnic diversity patterns. Caloocan and Pasay are on Level II in the economic complexity pattern, and Level I in the household stability pattern; they join Manila-Quezon in Level II of the ethnic diversity pattern and Level I of the cultural complexity pattern.

The recognized regional centers, Cebu in the Visayas and Davao in Mindanao, also follow different paths in terms of their standing in the four patterns. Cebu is in Level I in economic complexity, II in household stability, III in ethnic diversity and II in cultural complexity. Davao, on the other hand, scores thus: III-economic complexity, II-household stability, I-ethnic diversity, and III-cultural complexity.

What may be worth noting is the intrusion of other cities into the highest levels, especially on the principal factors that would otherwise be reserved for the known centers. (The cities listed at the lowest levels present intuitively consistent contrasts; the lists do not invite further comments.) Thus, the inclusion of Cebu, Bacolod, Dagupan, Dumaguete and Iloilo in Level I of the economic complexity factor is not surprising. But Marawi, Naga, Tacloban, Tagbilaran would be newcomers in terms of off-hand expectations.

Also to be considered in reading the profile of the cities is the high loading of the variable Tagalog, reported earlier, on the fourth factor. While Tagalog is the basis for the national language it is also a regional language; cities in Tagalog-speaking regions will thus have inflated scores on this factor and the reverse will be true of cities in non-Tagalog areas. Thus, it should not be surprising that, of the 11 Level I cities on this factor, 10 are located in the Tagalog region. Thus, also, the otherwise strange inclusion of the predominantly Tagalog-speak-

Figure 1. *City Profiles on the Economic Complexity, Household Stability, Ethnic Diversity, and Cultural Complexity Patterns of 60 Chartered Cities: 1980*

Level	Standard Deviation	Cities
	Over +1	
I		Bac, Ceb, Dag, Dum, Ilo, Mani, Mar, Nag, Que, Tac, Tagb
	+1	
II		Ang, Bagu, Cab, Cag, Calo Cav, Cot, Lao, LapL, Leg Luc, Mand, Olo, Oza, Pas, Rox, SPa
	(Mean) 0	
III		Bago, Bat, But, Dan, Dav, Dip, GSa, Ili, Iri, LCa, Lip, Orm, Oro, Pag, Ppr, Sil, SCN, SCP, Sur, Tol, Zam
	-1	
IV		Bai, Cad, Calb, Can, Dap Gin, Pal, SJo, Taga, Tan, TrM
	Over-1	

Economic Complexity Pattern

Level	Standard Deviation	Cities
	Over +1	
I		Bat, Calo, Calb, Cav, Dan, Luc, Mand, Olo, Orm, Pas, SCN, SPa, Tol
	+1	
II		Ang, Bai, Cab, Ceb, Dav, GSa, Gin, Lao, LapL, Mani, Pag, Que, SJo, SCP, Zam
	(Mean) 0	
III		Bago, Bagu, Bai, But, Cad, Cag, Can, Cot, Dag, Dap, Dip, Dum, Ili, Ilo, Leg, Lip, Mar, Oro, Oza, Rox, Sur, Tac, Tan, Taga
	-1	
IV		Bac, Iri, LCa, Nag Pal, PPr, Sil, Tag, TrM
	Over -1	

Household Stability Pattern

Level	Standard deviation	Cities
	Over +1	
I		Ang, Bagu, But, Cag, Cot, Dav, GSa, Ili, Pal, PPr, Sur, Zam
	+1	
II		Cab, Calb, alo, Can, Leg, Mand, Mani, Nag Olo, Pag, Pas, Que, Tac, SJo
	(Mean) 0	
III		Bac, Bago, Bai, Cad, Cav, Ceb, Dag, Dap, Dip, Dum, Gin, Ilo, LapL, Mar, Orm, Oro Oza, SCN, SCP, Sil, Taga, Tagb, Tol, TrM
	-1	
		Bat, Dan, Iri, LCa, Lao, Luc, Lip, Rox, SPa, Tan
	Over -1	

Ethnic Diversity Pattern

Level	Standard Deviation	Cities
	Over +1	
I		Bagu, Bat, Calo, Cav, Lip, Mani, Olo, Pas, Que, Taga, TrM
	+1	
II		Ang, Bac, Cab, Cag, Ceb, Dag, Dip, Gin, Ilo, Iri, Lao, LCa, Luc, Oro Pal, PPr, SJo, SPa, Tac, Tag, Tan
	(Mean) 0	
III		Bago, But, Cad, Dan, Dap, Dav, GSa, Ili, Leg, Mand, Nag, Oza, Rox, SCP, Sil, Sur
	-1	
		Bai, Calb, Can, Cot, Dum, LapL Mar, Orm, Pag, SCN, Tol, Zam
	Over -1	

Cultural Complexity Pattern

Legend: Ang = Angeles; Bac = Bacolod; Bago = Bago; Bagu = Baguio; Bai = Bais; Bat = Batangas; But = Butuan' Cab = Canabatuan; Cad = Cadiz; Cag = Cagayan de Oro; Calb = Calbayog; Calo = Caloocan; Can = Canlaon; Cav = Cavite; Ceb = Cebu; Cot = Cotabato; Dag = Dagupan; Dan = Danao; Dap = Dapitan; Dav = Davao; Dip = Dipolog; Dum = Dumaguete; GSa = General Santos; Gin = Gingoog; Ili = Iligan; Ilo = Iloilo; Iri = Iriga; LCa = La Carlota; Lao = Laoag; LapL= Lapu-Lapu; Leg = Legaspi; Lip = Lipa; Luc = Lucena; Mand = Mandaue; Mani = Manila; Mar = Marawi; Nag = Naga; Olo = Olongapo; Orm = Ormoc; Oro Oroquieta; Oza = Ozamis; Pag = Pagadian; Pal = Palawan; Pas = Pasay; PPr = Puerto Princesa; Que = Quezon; Rox = Roxas; SCN = San Carlos (Negros Oriental); SCP = San Carlos (Pangasinan); SJo = San Jose; SPa = San Pablo; Sil = Silay; Sur = Surigao; Tac = Tacloban; Taga = Tagaytay; Tagb = Tagbilaran; Tan = Tangub; Tol = Toledo; TrM = Trece Martires; Zam = Zamboanga.

Standard scores: Economic complexity, -1.779 to +2.435; Household stability, -2.510 to +1.736; Ethnic Diversity, -2.181 to +2.228; Cultural complexity, -2.997 to +1.776.

ing Tagaytay and Trece Martires Cities in Level I, while such cities as Davao and Cebu fail to reach the same level.

Urbanism Patterns and Welfare Variables

Testing the relationship between the four urbanism factors and the welfare variables is a worthwhile exercise for at least two reasons. Substantively, the findings should have their own merits; the welfare variables are very common indicators of social well-being. Methodologically, the test should provide some verification of the validity of the factor analysis results.

Table 5 shows the rank correlations of the four urbanism factors and the 10 welfare variables. The first factor correlates significantly with eight of the welfare variables, the second factor with five, the third with six and the fourth with nine. The correlation coefficients in the case of the first and the fourth factors are also much higher than those in the case of the middle factors. Hence, the factors which, by the percentage of the variance that they account for and the number of the variables loading high on them, are the stronger and more comprehensive also show the stronger and more comprehensive correlations with the welfare variables.

For the economic complexity factor the combination of significant correlates include

Table 5. *Rank Correlations of Urbanism Factors with Welfare Variables**

Welfare Variables	Factors			
	Economic Complexity	Household Stability	Ethnic Diversity	Cultural Complexity
1. Employed	.10	.39	-.21	-.23
2. Dependency ratio	-.41	-.05	-.20	-.70
3. General mortality	.31	-.28	-.09	.17
4. Infant mortality	.20	-.23	-.08	-.21
5. Electricity	.68	.16	.24	.60
6. Water	.48	.21	.25	.40
7. Dwelling	-.33	-.18	-.37	-.50
8. Toilets	.46	.05	.29	.45
9. Radios	.52	.05	.08	.51
10. Ref/freezers	.63	.29	.30	.66

**Critical values (p=0.05): 1-tail = + or -0.21; 2-tail = + or -.025.*

Electricity, Ref/freezer, Radio, Water, Toilet, Dependency Ratio (negative), Dwelling (negative) and General Mortality. Most of the variables are classified under community, housing and household facilities, where the effects of urban development in the economic dimension has been largely salutary. But the negative correlation with Dwelling underscores the prevailing shelter problem (see Ramos-Jimenez et al. 1986:48 for a recent concise statement on this problem); and the trend in the mortality measures points up another area where vital community services are lacking. The non-significant relationship with the crude measure of Employment might be cited as a concluding part of the list here that the Ramos-Jimenez et al. study (1986:1) would call "negative indicators of urban growth" and reflected with greater or lesser severity in each of the urbanism factors.

The significant correlates of the household stability factor are Employed, Ref/freezer, General Mortality (negative), Infant Mortality (negative) and Water. While there is less of the household and community amenities accompanying this factor, it seems to be unique in its being able to influence in the desired direction employment and mortality rates. It may be worth noting, although no interpretation is offered, that the household stability factor is the only one among the four where the negative correlation with Dwelling does not reach significance level.

Ethnic diversity is significantly correlated with Dwelling (negative), Ref/freezer, Toilet, Water, Electricity and Employed (negative). These correlates have to do mainly with community, housing and household facilities. In contrast with the previous factor, Employment is negative correlate, perhaps an indication of the swamping effect of high in-migration rates.

Cultural complexity correlates significantly with all of the welfare measures, except General Mortality. The high negative correlation with Dependency Ratio (as in the principal factor) is in the expected direction, and so with Infant Mortality. The Dwelling variable completes the consistent negative correlation (non-significant in only one factor) with all the four dimensions of urbanism.

Reading the correlations in Table 4 by rows instead of columns and using the minimum significance level as a norm, one notes that the variables Employed and Radio and the mortality measures show the most variations in their relationship with the four urbanism factors. Because the implications of these variations are rather complex no comments in addition to those offered above will be given. Measures of community facilities- Electricity and Water - show the least variation, reflecting improve-

ments in this regard at least in the urban areas that are reported in government statistics (*cf.* Ramos-Jimenez et al. 1986:32, 36). In housing, the correlations with the factors also show little variations and follow expected directions. In household amenities, Ref/freezer contrasts with the seemingly ubiquitous Radio as universal correlate of the patterned characteristics of urbanism, probably because only a few affluent families can afford these appliances and the higher the score of a city is on any urbanism characteristic, the more such families that city has.

Urbanism, Modernity, and Hierarchical Ranking of Philippine Cities

Magdalena's modernity scale of Philippine cities (derived through multidimensional scalogram analysis) and Soliman and Paderanga's urban hierarchy classification (derived through discriminant analysis) were undertaken with earlier Census data; to this extent, at least, their studies and the present one are not comparable. On the other hand, the time gap that separates the data are not so great as to completely erode any comparability in the results. Further, there are some substantive questions in this regard that are worth exploring. For instance, should not the economic complexity factor overlap with some of the measures of modernity and parallel the urban hierarchy construct? Further, the two previous studies found modernization or urbanization (processes) and their end result (level/structure) following an essentially unidimensional pattern; the present study finds urbanism (structure) multidimensional. To explore the continuities and divergences among the three studies some tests of relationships among the different findings by using the intermediate results of the data analyses were undertaken.

The procedure that was followed should indicate the limitations (aside form the differences in data set) of this part of the analysis. Magdalena's sample consists of 57 cities, Soliman and Paderanga's 48; the present study takes all 60 current chartered cities. After eliminating cities not included in at least one of the studies the remaining cases were reduced to 46. Then Soliman and Paderanga's six-point scale (based on the discriminant functions that emerged form the analysis of the combined economic and social infrastructure indicators) was collapsed to three and the six-level classification used in this study to profile cities was similarly reduced in order to make them comparable with Magdalena's three-point urban modernity scale. The cases and data thus prepared were subjected to Gamma tests. The results are presented in Table 6.

A number of coefficients reach moderately high levels and are worth discussing for that reason. The first of these is the relationship between the modernity and the hierarchy scales. Even higher coefficients, however, are computed for the relationship between the scales derived from the two previous studies and the present study's economic complexity and ethnic diversity patterns, and between modernity and cultural complexity. The two previous scales have low correlations with the household stability factor, and the urban hierarchy scale has low correlation with the cultural complexity factor. It is thus evident that some

Table 6. *Matrix of Gamma Coefficients of the Urban Modernity and Urban Hierarchy Scales, and the Economic Complexity, Household Stability, Ethnic Diversity and Cultural Complexity Factors*

Scales/ Factors	Variable Nos.					
	1	2	3	4	5	6
1. Urban modernity	1.00					
2. Urban hierarchy	.51	1.00				
3. Economic complexity	.58	.51	1.00			
4. Household stability	.05	.29	-.16	1.00		
5. Ethnic diversity	.61	.59	.08	.23	1.00	
6. Cultural complexity	.65	.42	.14	.34	.29	1.00

of the major dimensions found in the present study are distinct but related to the constructs used in the two previous studies. What this finding means is taken up again below.

Discussion

At this point the broader implications of the analysis and findings may be discussed.

Urbanism and Welfare

The four dimensions of urbanism - economic complexity, household stability, ethnic diversity, and cultural complexity - that were delineated through principal components analysis may be viewed in two related ways. The first is as patterned characteristics of the 60 cities, subsuming clusters of even more concrete characteristics. Some of these dimensions are stronger and more comprehensive than others in that they subsume more lower level variables and account for a larger percentage of the total variance; thus, economic complexity and cultural complexity would rank higher than household stability and ethnic diversity. Another view of these patterns is as major functions or roles that the cities perform for the society. The importance of these functions would be assessed in the same way the patterned characteristics are weighed.

The strong combination of two major functions, the economic and the cultural, in a city like Manila or Quezon calls to mind some long-surviving constructs of cities that were arrived at through Weberian ideal-type analysis. Redfield and Singer wrote of orthogenetic and heterogenetic cities; the first was the "city of the moral order", the second the "city of the technical order" (1980:190). Hoselitz wrote typologies of the industrial city and the central city in the West and lamented that "there are hardly any genuine industrial cities in underdeveloped countries"; most cities there combine industrial and central city functions (1957:543ff). No precise correspondence between the two dimensions found in the study and any of these constructs is suggested, but the overlaps should be evident. A more recent discussion relevant to the ethnic diversity dimension may be found in the previously cited work by Costello et al. The household stability factor has entered into previous discussions mainly in connection with housing (see, e.g., Mitchell 1976).

If the findings are accepted, then cities have more than one dimension in terms of their underlying regularities in characteristics or functions. The specific number delineated here is four. There could presumably be more. For instance, Philippine chartered cities are, by definition, centers of political administration. This administrative functions is in itself an important dimension. It may have emerged explicitly as such in the analysis if the cases had been free to vary in this regard and adequate relevant measures had been included. Further, the importance of each dimension relative to others can be estimated with greater precision than, say, in the ideal-type analyses mentioned previously. By the same token, a city's placement in each of these dimensions can be compared with the placements of other cities. Thus, a review of the city profiles shows that Manila generally scores high in all dimensions, but not uniformly so. Silay City generally scores low in all dimensions but not uniformly so either. Naga City scores high is some dimensions and low in others.

The correlation tests between the urbanism dimensions and the welfare variables were admittedly a secondary task, and the welfare variables could have been conceptualized and selected more precisely. For all this, the correlation tests do provide some independent support for the urbanism patterns as delineated and add some depth to the understanding of these patterns. They also reflect some well-known problems (e.g., unemployment, inadequate housing), and the gains being made by such programs as electrification and the provision of potable water supply.

The moderately high gamma correlations between more than one of the four (orthogonal) factors on the one hand and the unidimensional measures of urban modernity and hierarchy on the other require some comment. First, each study can derive some support from the continuities that were found. Secondly, however, the comparison of the findings does put in question the finding in the present study that urbanism in this country is multidimensional. One reconciling explanation is that unidimensional measure based on a fairly wide range of variables is bound to overlap and correlate with

each more limited cluster of characteristics of the same phenomenon being measured. The issue then becomes one of determining whether the unidimensional or multidimensional conception serves theoretical (or other) ends better. That issue will not be settled here; hence it need not be argued here either.

Limitations and Possible Extensions of the Research

The analysis reported here was intended to be exploratory, not comprehensive or definitive; hence only the limitations that could lead to further direct extensions will be mentioned.

Almost anyone who has worked with census data has cautioned readers about inaccuracies in the data; the same caution will be repeated here without elaboration. The data used are true for one census year only. To this extent, it cannot be assumed that the findings will remain stable over time; only repeated verifications can make the confirmation. Further, the data used for the delineation of the urbanism patterns consisted largely of population characteristics. (Even so, other important variables such as income could not be included.) More refined research should integrate a careful selection of these characteristics with other variables from other domains such as the institutional and ecological.

The cases used in the study consisted of the chartered cities only. A charter does constitute an important criterion variable. But, as Tapales and Maling (1970) point out, there is much to criticize about the way Congress has exercised its powers for defining, and granting charters to, cities. Hence, further systematic analyses of Philippine cities should probably begin with a reconsideration of the criterion variables and then the application of the criteria more rigorously in the selection of the cities for study. The resulting selection might well include chartered cities and other urban centers without charters; on the other hand, some of the chartered cities might be excluded. Finally, a more systematic delineation of urbanism patterns should show that these patterns either are not found in rural settlements and/or that there is a systematic variation between urban and rural settlements in this regard. The analysis would thus call for the inclusion not only of an urban sample but of a rural sample also.

The discussion in this section has focused on more immediate issues provoked by the present cross-city study. It is not only out of a sense of balance but out of conviction as well that the continuation of case, in-depth, and problem-focused studies, whether quantitative or qualitative, is mentioned as a concluding suggestion for further research in urban areas.

Notes

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[1]The term urbanism goes back at least to Wirth's essay. Its status as a formal concept has been reaffirmed by subsequent writers. McGee (1979:181) defines it as "the way of life said to be characteristic of urban places."

[2]Costello et al. (1982) constructed an ethnic diversity index from data on "mother tongue" speakers in the 1970 and 1975 censuses. The 1980 Census measured "language/dialect generally spoken in private households." To insure that the two indices are not as identical (how much overlap there is between the two measures remains a matter to be sorted out), the concept language diversity is used in the present study.

[3]The initial computation generated a seven-factor solution where the eigenvalues failed to show any levelling off. They were, successively, 3.294, 1.345, 1.569, 3.053, 1.349, 1.210, and 2.302, suggesting that even more factors could have been generated and not a very parsimonious solution arrived at. On the other hand, the first four factors had at least surface conventionally. The fifth had one variable loading high, and the sixth showed a similar pattern. The

seventh had a three-fold mix of high loaders: two that also loaded high in the first factor, and a new variable. The unrotated factor loadings and eigenvalues also suggested a four-factor solution. Hence a new computation for four factors was made.

[4]This interpretation assumed significant in-migration, to begin with, and high male selectivity. A review of relevant studies by Abad (1981) indicated that gender selection in migration to cities is not as clear cut as suggested here.

[5]Cabigon (1983:132) suggests that such socioeconomic variables as education and occupation have a more direct effect in controlling fertility. Using Mejia-Raymundo's classification of the country's thirteen regions into Metro Manila, more urbanized, less urbanized, and rural (1983: Table 4.7) and matching Zablan's life expectancy estimates (1983:Table 5.13) for these regions, one notes a trend towards longer life expectancy among regions located higher in the urbanized scale.

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