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INFLUENCES OF HOUSEHOLD STRUCTURE AND COMPOSITION ON BREAST-FEEDING

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Abstract

Lower breast-feeding levels observed in urban areas have been hypothesized to result partly from declining social support for mothers to breast-feed. We identify three assumptions of this explanation: 1) social support promoting breast-feeding, 2) greater social support in extended than in nuclear family structures, and 3) declining extended family structures with urbanization. We then evaluate each of these assumptions using evidence from past research and data from the Cebu Longitudinal Health and Nutrition Study. Our multivariate analyses show no support at all to the first assumption. Only horizontally-extended households significantly influence breast-feeding and even here the influence is opposite to the hypothesized relationship. Our detailed descriptive analysis, however, supports the second assumption: we find increasing infant care with increases in household size and extension of the household. The predicted decline of the extended family with urbanization, the third assumption, also is not supported by our data. The extended family appears to be stable in urban areas.

INTRODUCTION

Breastfeeding is important for infant health and development and has an important role in prolonging postpartum amenorrhea (Popkin et al., 1986). Widespread concern exists over reduced patterns of breast-feeding in urban areas (Popkin and Bisgrove, 1988). The insufficient milk syndrome and other biological and behavioral relationships linked to reduced social support and increased stress facing urban mothers have been among the major factors used to explain these differences (cf. Gussler and Briesemeister, 1980; Popkin et al., 1983). This paper explores the impact of the structure and composition of households and the broader concept of social support on the breast-feeding behavior of a sample of Filipino mothers.

Studies of breast-feeding determinants have suggested that observed low levels of breast-feeding in urban areas result partly from declining social support (Gussler and Briesemeister, 1980; Van Esterik, 1982). Broadly defined, social support refers to some actions or behaviors that have a positive effect on an individual's social psychological and physical well-being (O'Reilly, 1988). Examples of supportive actions relevant to breast-feeding are child care help to the mother, household maintenance activities provided by other household members, and even expressions of concurring opinion with respect to breast-feeding and of favorable attitude toward the practice.

The strength of the above explanation, however, rests on the validity of three inter-related assumptions. First is that the presence of social support enhances breast-feeding practice; second, that a greater amount of social support exists in extended family structures; and third, that extended family structures become less congenial with prevailing conditions as the level of urbanization rises.

Theoretically, social support may or may not affect breast-feeding; if it does, the effect could be either to increase or decrease breast-feeding. If the mother decides to use her "freed" time for outside employment, the result could be negative if it reduces her time with her baby or if the job increases her level of stress. The result could also be positive because increased income as well as derived satisfaction from the job itself may contribute directly to reducing maternal stress. On the other hand, child care or housekeeping help could reduce the mother's stress brought about by a perception of overly difficult housekeeping obligations; or it could make her time-use more flexible enabling her to accommo-

date breast-feeding. In view of these theoretical possibilities, one cannot assume on an *a priori* basis that social support will actually enhance breast-feeding.

That social support is greater in extended than in nuclear family households (the second assumption) derives in part from the common perception that the former have larger household sizes. This may not necessarily hold, especially in settings where fertility is high. In addition, the availability of social support may be more a function of household composition than of household size. Other researchers also hypothesize that extended households are more traditional in orientation, partly because of the presence of grandparents amd other older persons. Both the psychological support provided by their presence and their beliefs are felt to promote extended lactation.

In spite of the strong theoretical support for the last assumption (see Goode, 1963; Burgess and Locke, 1953; Davis, 1949), there is growing evidence that this may not be the case. The extended family's presence in urban areas of the past and among contemporary societies is clearly demonstrated in numerous research works (cf. Hareven, 1978; Levine, 1977; Cherlin and Chamrathrithirong, 1988; Morgan and Hiroshima, 1983; Roy, 1983; Podmore and Chaney, 1974; Chu, 1974; Litwak, 1969; Morada and Gregorio, 1983).

Referring back to the first two assumptions, we find existing empirical evidence still unclear. In a study of infant feeding practices of a patriarchal group of extended households in South Trinidad, for instance, Johnston (1977) showed that child care provided by in-laws resulted in reduced breast-feeding practice and increased bottle-feeding. It is not clear from the same study, however, whether breast-feeding also declined among nuclear households in this community.

Other related studies indirectly treated availability of social support not in terms of household structure but in terms of household components. Findings of this type are not consistent. For example, a study of Malaysian mothers showed that the presence of servants and other relatives in the household increased the probability of ever breast-feeding (Butz and Da Vanzo, 1981). Further, an analysis of World Fertility Survey data from eight developing countries found breast-feeding to be independent of parity (Jain and Bongaarts, 1981). This finding, in turn, could be attributed to the presence of children at various ages in the household. In higher parity cases a negative biological effect may be in operation whereby the nutritional status of the mother is greatly reduced (Hamilton et al., 1981). Also, with more young children needing close attention of adults, mothers find less time to breast-feed. On the other hand, presence of older children in the household may well affect breast-feeding positively. Older children can help to care for younger siblings, thereby enabling the mother to find time to breast-feed. These opposite directions, when operating simultaneously, may lead to substantial attenuation of the net effect of parity on breast-feeding.

Research looking at the effects of family composition on duration of breast-feeding is also not conclusive. Some studies found prolonged breast-feeding to be associated with presence of older children in the household (Popkin, 1978; Akin et al., 1981) while others found reduced breast-feeding with increasing availability of servants and other relatives in the household (Butz and Da Vanzo, 1981).

Based on current knowledge, it is not entirely clear whether declining social support for breast-feeding explains the less frequent utilization of this mode of infant feeding in urban areas. This uncertainty stems from the fact that past research has generally not examined the breast-feeding behavior of urban vis-a-vis rural mothers residing in different household types. Moreover, it remains to be seen whether or not extended family structures (as opposed to nuclear family structures) really provide greater social support.

Findings with regard to residential differences in household type cannot guarantee, however, that the expected breast-feeding behavior will occur. For instance, finding more extended households in urban than in rural areas would not necessarily mean higher breast-feeding levels in cities because breast-feeding may be independent of household structure. Higher breast-feeding levels in extended family structures can be expected, however, if the first two assumptions of the declining social support explanation hold: a) that household structure is an

acceptable proxy for availability of social support, and b) that social support enhances breast-feeding.

The expected relationship between household structure and breast-feeding should be stronger among rural than urban households because some characteristics of urban areas are less compatible with breast-feeding. In general, urban areas have higher population density, a more hectic life style, and greater opportunities for outside employment. These characteristics are hypothesized to be conducive to increasing maternal anxiety which is believed to suppress breast-milk production among nursing mothers (Gussler and Briesemeister, 1980; Greiner et al., 1981). Besides, demands made on the time of mothers employed in urban jobs constrain the latter's ability to initiate and sustain breast-feeding. Unlike the case of agricultural work, urban jobs provide less opportunity to breast-feed while at the work site. Further, urban areas offer easier access to commercial breast-milk substitutes (Popkin, 1983; Akin et al., 1981).

Household structure is a summary measure of available social support, and consequently, we cannot pinpoint exactly who in the household provides social support significant to breast-feeding. More specific measures can be developed by looking at the components of the household.

Given the theoretical possibilities earlier mentioned, the effect of available social support on breast-feeding could also be conditioned by social forces that are culture-specific. We take into consideration those that are relevant to our study of the social support and breast-feeding relationship in the Philippines.

We contend that the availability of child care help would affect breast-feeding negatively or positively depending on the substitute caregiver's sex, age and social position in the family hierarchy of authority.

As is the case in many other places, child care in Filipino society is regarded primarily as a female task. This leads us to expect that males will participate less in child care than will females. If men's presence in the household were to have an effect this would most likely occur by affecting other household chores that normally are regarded as the mother's responsibilities. Being less likely to be child care substitutes, men would have less impact on the mother's ability to engage in outside employment. In rural areas, where norms are expected to be strong, we expect a mother in such a situation to be more likely to stay at home and breast-feed. By contrast, norms are weaker in urban areas. Men in this situation might therefore be more likely to act as child care substitutes. This, together with the greater employment opportunities for the mother and the impersonal character of urban life could affect breast-feeding negatively. But since norms can never be totally ignored, men's presence among urban households should have a smaller net impact on breast-feeding.

One other strong Filipino norm related to raising a family is for the father to provide adequately for the economic needs of the members. At similar income and asset levels, it is more likely for the mother in households where the father is present to breast-feed since the need for her to go out and seek employment is less than when no husband is there to provide for the family's basic needs. This should hold true among both rural and urban households.

Because women still assume major responsibility in managing household chores including childbearing, female relatives may be expected to help in child care and in daily housekeeping activities such as cooking and washing. Such help allows the mother to get outside work. A number of studies have shown that available female relatives for child care facilitate the employment of mothers (Sweet, 1973; Morgan and Hiroshima, 1983; Floge, forthcoming). Certain issues need to be clarified here. In the first place, the influence on breast-feeding practice by these female relatives may be negative by allowing the mother to engage in outside work. Secondly, the kind of influence may also depend on one's hierarchical position in the family. Older relatives, particularly grandmothers, are likely to be influential and traditional and may therefore have a strong positive influence on lactation. Third, it is important to recognize that employment opportunities differ between urban and rural areas, as do the demands which jobs make on the working mother's time. In developing countries, industrial jobs seldom provide work-site nursery centers that would allow mothers to nurse their infants during breaks (Joekes, forthcoming). By contrast, predominantly agricul-

tural and less formalized rural jobs enable mothers to stay close to infants during work time.

To the extent that household members can provide child care help to mothers willing to work, the presence of female relatives in the household may adversely affect lactation. Such an effect may be stronger in urban areas where jobs are typically incompatible with breast-feeding than in rural communities.

DATA AND METHODS

For this study we use data from the Cebu Longitudinal Health and Nutrition Study. This data set consists of a variety of information centering on the mother and her infant. Data were obtained through a series of surveys. Baseline interviews were first made of 3327 women who were at their sixth or seventh month of pregnancy between May 1, 1983 and April 30, 1984. Twelve subsequent follow-up surveys were then made of the same women with two-month intervals from delivery date. Only the baseline and the first longitudinal survey (which took place within a two-month interval from the date of delivery and which will hereafter be referred to as L1) are used in this study since the onset of breast-feeding would have occurred, if ever, within the first two-month period from birth. There were 2,884 women still present by L1, of which 2,186 were residing in urban areas, while only 698 were living in rural areas.[1]

The study site covers the metropolitan Cebu area, some nearby rural barangays located along the coast, mountainous areas and some island villages. A stratified single-stage sampling procedure was used to select a random sample of 33 barangays for the final sample. Sixteen of the 33 barangays were rural and the other 17 were urban.

Socioeconomic and demographic data available from the survey include detailed information on household composition, the ages of members, and their current economic and home production activities. Of the latter, infant care provided by household members is singled out as a major part of the present analysis. Other variables created from the data set and relevant to this study are presented in the Appendix.

Our analysis involves first a detailed description of household members' participation in infant care. This is then followed by an analysis of a modelled relationship between household structure and breast-feeding.

Earlier modelling studies in fertility suffered from a methodological flaw of predicting an event that occurred earlier than the events represented by the independent variables used in the model (see Burch and Gendell, 1971; Morgan and Rindfuss, 1984). To avoid this problem, we take account of changes in household type and composition during the period from baseline to L1. By making this as the reference period for the variables representing household structure and household composition, we thereby delineate events as they actually occurred and place in proper sequence the timing of our model variables.

The unit of analysis is the individual mother. The very rare cases of two or more mothers co-residing in the same household are treated as separate units.

At this point, it should be obvious that we restrict our treatment of family structure to include only those persons co-residing with the mother. The family is a broader concept than is usually acknowledged and its boundaries need not be confined to the common residence of individuals related by blood or matrimony. We agree with the suggestion made by others that regularized interactions between related individuals residing in different places make up one element of the family influencing a member's behavior (Liu, 1977; Morgan and Rindfuss, 1984). The available data, however, prevent us from adopting such a broader definition. Alternatively, we use the household in which the mother lives in lieu of the broader family. We believe, as others have pointed out (Sweet, 1977; Kertzer, 1986;), that co-residence is one important social context that conditions one's socialization and experiences and that therefore, the household is a significant factor in shaping one's behavior.

THE MODELS

This study specifies two breast-feeding models[2]. The first relates the type of household in which the mothers live, while the second takes the components of the household as the core independent variables

influencing breast-feeding. In both models, the same socioeconomic and demographic variables are used as covariates (see the Appendix for a listing of these covariates). The two sets of household structure variables are introduced in separate models because of the high correlation between the compositional variables and household type.

A dichotomous variable, whether or not the mother is currently lactating two months after the birth of the baby, is used as the dependent variable in both models. Household type consists of four categories. The first represents the nuclear family household while the remaining three delineate distinct forms of extended family living arrangements. We define a nuclear family household as one consisting of at least two of the three elements of the core nuclear family (i.e., the sample mother, her husband, and at least one of their children). Non-relatives such as household helpers/servants may or may not be present[3]. In the model, household type is entered as a series of dummy variables with the nuclear family household serving as the reference category.

Our decision to disaggregate extended family households into three types is based on the belief that the kind of extension to the nuclear core of the household has much to do with the flow of resources and support between household members. In general, the Filipino family's hierarchy of authority is age-based (Javillonar, 1979). Older persons are respected simply on the basis of age, thereby giving them the authority to make demands on younger family members. Although this hierarchical positioning applies also to individuals close in age, the norm is much stronger when applied to persons belonging to different generations, where the age gap is larger. Recognizing the importance of intergenerational relations, we therefore categorize extended family living arrangements as either a) horizontally, or b) vertically, or c) both horizontally and vertically extended. Type of extension is assessed from the point of view of the sample mother.

Household composition is represented by a number of variables. We cross-classified all resident household members by age, sex and relationship to the mother (the survey respondent) in each of the surveys. Gender classification is made to reflect the typical sexual division of labor. Age-groupings are based on the ages at which children are supposed to be in school. The result is a set of variables which represent the number of members in a given category. Means and standard deviations of these variables are given separately in the Appendix for the urban and rural samples.

For reasons earlier mentioned, we account for change in household composition between the Baseline and L1 by subtracting the baseline value of each variable from its L1 value. Along with the covariates and the household composition variables at L1, all change variables were entered in the second model. Initial estimations, however, showed that none of the change variables was statistically significant for either the rural or the urban model, so in the final runs we excluded them.

Given the dichotomous nature of our dependent variable, we specified a probit model. Probit parameters are asymptotic which is not much of a problem in this study, since the sample size is sufficiently large in both our urban and rural settings. In addition, probit parameters are unbiased and efficient (Aldrich and Nelson, 1984).

The role of social support in mediating the relationship between household structure and breast-feeding has already been discussed. Difficulties involved in operationalizing this concept, however, constrain us in introducing it more specifically as an endogenous variable in the model. Each specified model is therefore in its reduced form.

Because of known differences between the characteristics of urban and rural areas, we classified households on the basis of whether the local community ("barangay") is urban or rural in nature.[4] Models were then estimated separately for urban and rural households. Insofar as some households may have moved from an urban to a rural area or vice versa during the reference period, we constrained the residence status of households to that identified at the baseline survey. The relatively short period of residence in the new area for these cases is unlikely to have resulted in a dramatic change of behavioral patterns on their part.

RESULTS

Table 1 presents the distribution of women by the type of household in which they were living two months after the delivery of their child. As shown therein, extended family households are more common in urban than in rural areas of Cebu. The difference is substantial (46.3 percent extended in the urban setting vs. only 27.5 percent among members of the rural sample).

Table 1. Percent Distribution of Type of Household by Residence

Type of Household	Urban	Rural	Total
Nuclear	53.7	72.5	58.2
Extended			
Horizontal	12.0	4.6	10.2
Vertical	9.9	8.7	9.6
Horizontal and Vertical	24.4	14.2	21.9
(N)	(2186)	(698)	(2884)

Potential child care help in our study areas is greater in extended than in nuclear family households. This is reflected in the larger average size of extended households over nuclear family households (see Table 2). From the same table, we also find this difference in average household size to be much larger in urban than in rural areas. In line with this, our data show greater help to the mother for infant care in extended than in nuclear family households for both urban and rural samples (Table 3). Findings from this same table also indicate that this type of help is more typically accorded in the urban setting.

In general, being in an extended household makes no significant difference to mothers with respect to the practice of breast-feeding. The one exception to this general pattern is even opposite to what is expected. In substantive terms, our findings tell us that a mother in a horizontally-extended urban household has a lower probability of breast-feeding her baby than the corresponding mother in a nuclear family household. These findings are shown in Table 4.

Measuring available social support within the household in terms of household structure fails to pinpoint who among the members affects breast-feeding. It is therefore important to extend the analysis to include the various household components, by first ascertaining the extent to which they help the mother in caring for the infant and then by looking at their effects on breast-feeding.

Table 2. Mean Household Size by Residence

	Nuclear	Extended		
		Horizontal	Vertical	Vertical and Horizontal
Urban	5.47	6.57	7.10	9.82
Rural	5.89	5.75	6.95	9.16

Table 3. Mean Number of Hours of Infant Care Given to Mother on Day Preceding Interview by Household Type and Residence.

Household Type	Urban	Rural
Nuclear	1.23	0.81
Extended:		
Horizontal	2.53	1.23
Vertical	2.90	1.98
Horiz. and Vertical	3.09	2.67

From past research, we know that in many developing countries household members are commonly used to take care of the young. Older children, for example, may watch their younger siblings (Joekes, forthcoming; Popkin, 1978; Weisner and Gallimore, 1977). Likewise, grandmothers help their daughters with child care, especially in more urbanized settings (Morgan and Hiroshima, 1983). At the same time, however, our data show that, regardless of household type, the mother is the usual care provider (Table 5). Indeed, mothers spend far more hours in this activity than does anyone in the household. The amount of help that she receives from co-resident persons varies depend-

ing on the type of household she is a part of. For example, mothers in nuclear family households get more infant care help from their spouses than do mothers in extended family households. Not only do more husbands in nuclear family households help the mother in providing infant care but these husbands also spend longer hours at it. Likewise, urban-rural residence of the household seems to affect husbands' level of support. Irrespective of household type, a larger proportion of husbands in the urban households contribute time for infant care.

Table 5 also shows that children are commonly utilized as child care substitutes for the mother, especially in nuclear family households and among female offspring. Level of support varies by age. While older children spend more hours taking care of infant siblings, this changes somewhat by age 13, after which point the proportion contributing to child care tends to decline. The youngest children (i.e., pre-schoolers) give only negligible contributions. Between household types, children are less utilized for infant care in extended family households.

Coming close to the level of support provided by children in nuclear family households is that found in fully-extended urban households. In contrast, however, the two less complex extended types show far less use of children's support. The presence of relatives in extended types, however, seems to compensate for the lower infant care input of children found therein. Among male relatives, at least two in every three present in the household provide infant care; and among females, the corresponding proportion is at least three-quarters.

Non-relatives, who tend to be female helpers or servants, contribute to various specialized housekeeping activities. In both nuclear and extended households, many non-relatives did not provide infant care on the day preceding the interview. Among those who did, many of them were females, living in urban households and spending far more hours taking care of the infant than anyone else except for the mother. Male nonrelatives were not a factor as far as infant care was concerned.

In specifying the second set of models, we use, as a basis for inclusion, some observations noted in the

Table 4. Probit Coefficients and t-Ratios for Effect of Household Type on Lactation Status of Mother, for Urban and Rural Samples.

Household Type*	RURAL coeff.	RURAL t-ratio	URBAN coeff.	URBAN t-ratio
Horizontal	-0.34	-0.98	-0.27	-2.64
Vertical	0.14	0.44	0.92	0.77
Horiz. and Vertical	-0.17	-0.67	-0.53	-0.58
-2 log(LO/L1)	46.66		246.01	
DF	8		14	

* Reference category is the nuclear family household
See Appendix for covariates used in the model.

preceding paragraphs. As far as the groupings of children are concerned, it is quite clear that the youngest seldom serve as child care substitutes. We, therefore, decided to exclude children aged 0-6 in the model estimation. On the other hand, help given by relatives, particularly females, appears quite substantial. But this should not hide the significant contributions also given by male relatives. To know more about members of this latter group, we further refined their categories using the age groupings adopted for children in the second breast-feeding model, at the same time keeping separate categories for grandparents. As for the groups of non-relatives, we added a separate category representing female helpers (known as "yayas") hired specifically to do child care. Since yayas can only be females, no male yayas are entered in the model.

In Table 6 we present the coefficients for the second breast-feeding model estimated separately for urban and rural households. Children, regardless of age and sex, make no difference with respect to the breast-feeding practice of mothers as indicated by their lack of statistical significance. Grandparents also do not seem to affect whether or not a mother breast-feeds.

We expect husbands to affect breast-feeding practice positively. This expectation is strongly supported in the urban model, less so in the rural. In

Table 5. Average Number of Hours Spent Caring for Infant on the Day Preceding Interview by a Household Member Belonging to a Specific Age and Sex Group, Mean Number of Household Members in Each Group and Proportion Providing Infant Care, by Household Type.

Household Component	Nuclear			Extended								
				Horizontal			Vertical			Horizontal/Vertical		
	Hours	Number	Prop	Hours	Number	Prop	Hours	Number	Prop	Hours	Number	Prop
RURAL HOUSEHOLDS												
Wife	8.22	1.00	0.99	7.84	1.00	1.00	7.33	1.00	0.97	7.52	0.99	0.91
Husband	0.36	0.99	0.16	0.22	0.97	0.10	0.31	1.00	0.13	0.46	0.78	0.14
Children:												
Male 0-6	0.01	1.41	0.01	0.04	0.91	0.04	0.00	1.02	0.00	0.00	0.75	0.00
Male 7-12	0.13	0.44	0.07	0.25	0.28	0.25	0.00	0.31	0.00	0.00	0.04	0.00
Male 13+	0.01	0.20	0.01	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.02	0.00
Female 0-6	0.04	1.29	0.01	0.00	1.12	0.00	0.01	1.26	0.01	0.00	0.85	0.00
Female 7-12	0.58	0.42	0.23	0.27	0.16	0.04	0.13	0.49	0.13	0.00	0.01	0.00
Female 13+	0.68	0.13	0.02	0.00	0.03	0.00	0.19	0.20	0.00	0.00	0.03	0.00
Relatives:												
Male	----	----	----	0.07	0.47	1.00	0.75	0.79	0.71	0.23	3.26	0.70
Female	----	----	----	1.18	0.81	1.00	0.89	1.06	0.78	0.53	3.45	0.71
Non-relatives:												
Male	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Female	2.75	0.01	0.50	0.00	0.00	0.00	0.00	0.02	0.00	1.73	0.07	0.27
URBAN HOUSEHOLDS												
Wife	8.19	1.00	0.99	7.58	1.00	0.98	7.42	0.99	0.96	7.71	0.99	0.97
Husband	0.60	0.98	0.28	0.52	0.97	0.19	0.44	0.95	0.19	0.50	0.84	0.25
Children:												
Male 0-6	0.02	1.29	0.01	0.00	1.18	0.00	0.00	1.37	0.00	0.00	0.92	0.00
Male 7-12	0.18	1.31	0.10	0.00	0.21	0.00	0.04	0.35	0.02	0.12	0.08	0.07
Male 13+	0.39	0.12	0.14	0.11	0.07	0.07	0.04	0.18	0.09	0.04	0.02	0.17
Female 0-6	0.03	1.23	0.01	0.00	1.15	0.00	0.00	0.97	0.00	0.00	0.80	0.00
Female 7-12	0.63	0.32	0.30	0.45	0.18	0.21	0.51	0.29	0.19	0.33	0.07	0.21
Female 13+	1.03	0.13	0.05	0.54	0.04	0.00	1.40	0.18	0.07	0.96	0.01	0.17
Relatives:												
Male	----	----	----	0.24	0.74	1.00	0.75	0.95	0.67	0.26	3.45	0.80
Female	----	----	----	1.53	0.77	1.00	1.19	1.15	0.76	0.62	3.35	0.78
Non-relatives:												
Male	0.09	0.02	0.12	0.00	0.04	0.00	0.03	0.04	0.17	0.00	0.06	0.00
Female	2.76	0.08	0.62	2.50	0.21	0.51	2.46	0.12	0.55	1.11	0.16	0.27

both cases, however, the effect is in the expected direction.

Urban mothers are significantly less likely to breast-feed when they have female helpers in the household. In the rural areas no such relationship is evident. This is perhaps the result of fewer cases in our rural model. Taking in household servants is not as common a practice in rural areas as it is in cities.

We have seen from Table 5 that most female relatives present in the household help with child

Table 6. Probit Coefficients and t-Ratios for Household Composition Effects on Lactation Status of Mother for Urban and Rural Samples.

Household Component	Rural		Urban	
	Coeff.	t-ratio	Coeff.	t-ratio
Number of:				
male children 7-12	-0.07	-0.52	0.01	0.10
male children 13+	-0.12	-0.67	-0.10	-1.11
female children 7-12	-0.02	-0.14	-0.75	-0.11
female children 13+	0.18	0.68	-0.30	-0.03
male relatives 7-12	-0.51	-2.04	0.06	0.54
male relatives 13+	-0.49	-2.78	0.02	0.40
female relatives 7-12	1.04	2.04	0.03	0.32
female relatives 13+	0.26	1.19	-0.13	-2.95
grandfathers	0.39	1.01	0.19	1.47
grandmothers	0.69	0.19	0.04	0.36
male servants	(ne)	(ne)	0.24	0.78
female servants	-0.80	-0.91	-0.46	-4.83
yayas	(ne)	(ne)	-1.37	-3.42
Husband present	0.49	1.21	0.35	2.49
-2 log (LO/L1)	68.18		252.66	
DF	17		19	

(ne) - not entered in model due to insufficient cases.
See Appendix for covariates used in the model.

care activites. The extent to which their contributions affect a mother's breast-feeding practice can be assessed with the results presented in Table 6. Note that in the urban model, mothers are less likely to breast-feed with an increasing number of older female relatives in the household. Younger female relatives (ages 7-12) as well as males, however, do not have a significant effect on breast-feeding. These findings suggest that, consistent with the norms earlier mentioned, older females are the preferred alternative child care provider. In the rural model, on the other hand, younger female relatives increase the likelihood of breast-feeding, whereas males have the opposite effect.

SUMMARY AND DISCUSSION

Breast-feeding practice has been observed to be generally lower in urban than in rural areas. One factor believed to have contributed to this is reduced social support for breast-feeding in urban areas. Looking closely at this explanation, we identified three of its assumptions: a) social support promoting breast-feeding, b) greater social support in extended as opposed to nuclear family structures, and c) declining extended family structures with urbanization. We then examined each of these assumptions on the basis of existing research and from our own test results.

Contrary to common belief, extended family structures continue to exist in urban areas. Available evidence indicates that extended family structures are likely to remain as prominent features of urban societies. From our own data, in fact, we found a larger proportion of extended family households in urban than in rural areas. This also demonstrates that Goode's convergence theory and the third assumption of the social support argument do not hold in our study areas.

With regard to the second assumption, we used infant care help extended to the mother by household members as an indicator of social support. A comparison across household types revealed increasing infant care help with increasing levels of extension of the household. Available social support, as indicated by average household size, also appeared to increase with increasing complexity of the household. We may, therefore, conclude that our data do show some support to the second assumption of the social support explanation.

Finally, we tested the remaining assumption using household structure as an indicator of available social support. Our test results did not confirm the expected increase in breast-feeding practice among extended family structures. In fact, mothers in horizontally-extended urban households had a lower probability of breast-feeding than mothers in nuclear family households. If family structure serves as a link between urbanization and declines in breast-feeding, then, this is only so for a combination of unexpected results, i.e. that extended household patterns are more common in urban areas and that these types of household structure can occasionally work to reduce breastfeeding.

Our findings also suggest that a high level of social support for mothers in extended households, as exemplified by greater infant care help, may work toward decreased breast-feeding by allowing the mother to engage in other activities that directly reduce her time with the infant. This issue is not directly addressed in the present study but it could well be the case for the mother in a horizontally-extended urban household. The negative coefficients found for yayas and female servants in the urban households also indicates a pattern of this type. Further investigation as to the effect of social support on time allocation of the mother, in particular on use of the mother's time for employment, is needed to verify this possibility.

If the support system of horizontally extended urban households functions to decrease breast-feeding, why then does it not apply to all extended household types? Seeking for possible answers, we examined how the various components of the household affect breast-feeding. From our test results, we found that only other adult female kin (who more likely belong to the generation of the mother) exert a negative influence on the breast-feeding practice of urban mothers. It is, not immediately apparent, though, why this finding holds only in urban and not in rural areas. It might also be asked why other kin, particularly grandmothers and younger females, have no significant influence on breast-feeding. One may speculate that in the case of grandmothers, it is entirely possible that they may be simultaneously influencing mothers in opposite directions. Grandmothers may convey traditional attitudes favorable to the practice of breast-feeding, at the same time helping enough on child care so as to give mothers the time to engage in activities that limit their ability to breast-feed. Clearly, these questions are worth following up in future investigations.

Our analysis also points to two other important consid-erations. The first concerns the more meaningful use of distinct types of extended households. Failure to split extended households into more refined categories would have masked the differential effects on breast-feeding which we found in this study.[5]

The second point concerns the implications which our findings bear on future breast-feeding trends both in rural and in urban areas. This study has shown that urban mothers are less likely to breast-feed with increasing number of females in the household. Female relatives, female servants and yayas all exert a negative influence on breast-feeding for urban households. This relationship, however, is not replicated in the rural sample. In that setting older female relatives and servants have no significant influence on breast-feeding, while the younger ones significantly increase the likelihood of rural mothers breast-feeding their infants.

We can think of two possible explanations for this difference. First, it is quite possible that these elementary-school-aged-girls spend much of their

day in school and consequently provide less child care assistance to the mother who therefore must spend more time with her infant. Data presented in Table 5 show fewer hours spent on infant care by these rural female relatives when compared with their urban counterparts. The difference, however, is not substantial. Second, although mothers still rely more on female relatives than on anyone else in the household, rural mothers may not be utilizing more of their "freed" time for outside work; or, if they do, the kind of work they engage in may not be incompatible with breast-feeding.

It may be, therefore, that it is not just the availability and actual provision of child care help that affect lactation negatively. Availability of work that prevents mothers from being with their infant during work time may also be a factor. The confluence of these two factors, as may be more typically found in urban areas, probably explains in part the lower breast-feeding levels in this setting. The extent to which urban-type jobs diffuse outward towards rural areas, a trend which has been noted for some Southeast Asian settings (Hackenberg, 1980; Jones, 1983), may therefore determine what lies ahead for breast-feeding in rural communities of the region.

One important unexpected finding has some implications for future rural breast-feeding levels. Our results show that mothers in rural households with male relatives are less likely to breast-feed. Since child care is strongly regarded as a female task, it seems implausible that males assume the role in the absence of any significant pressure to do so. What could possibly explain this pattern? It is possible that most of these female relatives were informally adopted mainly to serve as household helpers. Functionally therefore, they are servants although they may be distant kin to the householders. In the Philippines, kinship ties are highly valued and may extend easily to second and third degree relatives (Javillonar, 1979). One way of aiding poor relatives would be to take them into the household in order to raise them. In return, they provide various services, which may include child care. This could not be measured in the present instance, however, since respondents were asked kinship relations only. This manner of questioning must have masked any other form of special relationships existing among household members.

Whether or not male relatives in these rural households are, in functional terms, really servants, our observation that some male household members do contribute substantial child care help to the mother is suggestive of a weakening normative prescription that child care is an exclusive female responsibility in Philippine society. With this apparently nascent diffusion of child care responsibility penetrating the ranks of males, we may speculate that in the future more mothers, who otherwise are prevented from working outside of the home, would be taking outside employment. Such a trend would probably contribute further towards reducing the already low breast-feeding levels which are now found in urban areas of the country.

NOTES

1. The urban area was oversampled because it was assumed that infant and health care patterns, the major focus of the agencies doing the project, are more varied in urban than in rural areas.

2. Actually, there are a total of four estimated models. Each specified model is run twice, that is, separately for urban and rural households.

3. A person found in the household at survey time needs to meet a pre-determined residence rule to qualify as a household member. By survey definition, a person is a resident household member if he/she has lived in the household for at least six months prior to the survey. Persons not meeting this six-month requirement need to have the intent to stay in the household beyond this period to qualify as a resident member. Newborn babies are automatically considered household members.

4. Our initial runs for the models used a pooled sample. In both models, we found urban-rural residence to be highly significant.

5. In a separate analysis of the same data set used here but focusing primarily on the influences of the infant food industry on breast-feeding behavior, Popkin et al. (forthcoming) introduced a number of household variables in their models. Similar to our results, they find spouse's absence significantly decreasing the likelihood of breast-feeding intention (which they also found to be a highly significant predictor of actual breast-feeding) Unlike our findings, however, their results show number of servants and household type having no significant influence. Refining these measures by specifying the gender of servants and the type of household extension, as we did in our analysis, we find significant breast-feeding differentials with respect to gender and type of household extension. Our findings thus complement the results found in the Popkin et al. study.

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Appendix. Model Variables, Definitions, and Sample Statistics for Rural and Urban Samples

Variable	Definition	Rural Mean	Rural S.D.	Urban Mean	Urban S.D.
Dependent:					
LACT01	Dichotomous variable indicating lactation status at L1.	.938	.241	.816	.387
Independent:					
NUC	Nuclear family*	.725	.447	.537	.387
HORIZ	Horizontally extended*	.046	.209	.120	.325
VERT	Vertically extended*	.087	.283	.099	.298
FULEXT	Fully extended*	.142	.349	.244	.429
MC7-12	Number of male children aged 7-12 in household	.367	.719	.244	.544
MC13+	Number of male children aged 13+ in household	.168	.535	.097	.407
FC7-12	Number of female children aged 7-12 in household	.352	.689	.242	.574
FC13+	Number of female children aged 13+ in household	.119	.396	.084	.359
MR7-12	Number of male relatives aged 7-12 in household	.076	.305	.100	.370
MR13+	Number of male relatives aged 13+ in household	.182	.554	.486	.954
FR7-12	Number of female relatives aged 7-12 in household	.087	.355	.101	.376
FR13+	Number of female relatives aged 13+ in household	.202	.614	.472	.882

Appendix. Model Variables, Definitions, and Sample Statistics for Rural and Urban Samples

Variable	Definition	Rural Mean	Rural S.D.	Urban Mean	Urban S.D.
SPOUSE	Husband present in household	.960	.196	.944	.230
GRANMA	Number of grandmothers residing in household	.183	.387	.252	.434
GRANDPA	Number of grandfathers residing in household	.139	.346	.191	.393
SERVM	Number of male servants	----	----	.006	.095
SERVF	Number of female servants	.009	.131	.077	.333
YAYAF	Number of yayas	.001	.038	.008	.095
MOMAGE	Age of sample woman	27.1	6.42	26.3	5.85
YHHOTHER	Total monthly income of household excluding that of sample woman's (in Pesos)	147	162	238	325
MOTGRD	Sample woman's education in number of completed years of schooling	5.47	2.78	7.57	3.30
INCASSET	Total value in Pesos of household's assets	4892	18134	11324	50314
FIRSTP	Is this the respondent's first pregnancy? (1="yes", 0="no")	.188	.391	.224	.417

*All household type variables coded as "1" if the category in question was present; "0" if it was not.