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THE VALIDITY OF FAMILY SIZE PREFERENCE MEASUREMENTS IN RURAL LATIN AMERICA*

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ABSTRACT

Proponents of modernization theories of fertility as well as structural history theorists, explicitly or implicitly tend to assume that all adults have well defined family size preferences. Seeking to demonstrate that this assumption may not necessarily be true, at least in rural areas where fertility is at or near natural levels, the meaningfulness of family size preferences to respondents and the validity of preference measurements were analyzed in terms of two components: existence and veracity. The first involves the respondent's ability to count, whether she/he has the concept of family size and if so, whether she has the family size preference concept, and if that exists, whether she has a well defined preference or range of preferences. For those having well defined preferences, one then can attempt to determine the degree of veracity of the response, taken here as the extent to which the stated preference is consistent with other related attitudinal variables.

Using data from 1968-69 national samples (PECFAL-Rural Fertility surveys) of currently mated women with at least one living child, in rural areas or places of less than 20,000 population in Colombia, Costa Rica, Mexico and Peru, it was found that most women apparently had the underlying concepts of family size and family size preference, but only between 45 and 63 percent (depending on the country) of the least educated women and 89 to 94 percent of the best educated probably have a well defined preference as measured by an ideal family size question. The relationships to education as well as internal consistency and other checks supported the findings. With respect to veracity, it was found that between 55 and 77 percent of those with defined preferences showed at least partial consistency with other related variables. Summing up, of all currently mated women with at least one live child, only between 29 to 47 percent depending on the country, appeared to be giving valid responses to the family size preference question and even lower percentages were found among the least educated.

Given the theoretical importance of the existence and veracity components of family size preferences particularly in rural populations which may be just beginning to control their fertility, future surveys should not force

numerical replies or do so only after recording the original response and should utilize additional questions to better assess the existence and veracity components. Particular emphasis should be placed on studies using anthropological approaches that provide more direct information both on preferences as well as on their relation to the contexts in which the families live.

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INTRODUCTION

In the effort to explain fertility levels and change much emphasis has been placed on family size preferences. Among researchers working in what might be termed a modernization theory approach, the interest has been quite explicit while among those utilizing an alternative approach, generally termed structural history (estructuralismo histórico) the importance of family size preferences would seem to be implicit.

Within the modernization approach, studies of the value of children (e.g., the articles in Fawcett, 1972; 1973) and the development of economic theories of fertility (e.g., Easterlin, 1973; Namboodiri, 1974, Freedman and Mueller, 1974) have led to more sophisticated measures (Coombs, 1973; Terhune, 1972) of preferences and greater theoretical specification. Most of these studies seem to take for granted that the respondents studied always have preferences. Terhune and Kaufman (1973, p. 599) state: "By this time in the study of population we know well that people formulate preferences for completed family size and these preferences begin to develop well in advance of reaching the aspired family size". This contention may be generally true for the United States, the only country for which they cite studies, but there is reason to suspect that many respondents in the developing countries, particularly those in rural areas with little or no education and not deliberately controlling fertility, have not formed preferences and may lack the necessary concepts, or they have very ambivalent attitudes on the matter.

Researchers working in the structural history framework, particularly in Latin America, while not explicitly focusing on family size preferences, would seem in many cases to presume that families choose to have the size family that appears most suitable given the economic context in which they live. For example, Duque and Pastrana (1973) have hypothesized that children are seen in the lower class as not simply increasing the costs to the family but as a potential assistance in the home economy; entering the labor market at an early age, they therefore have a role in the family survival strategy. Since the role varies to the family's insertion in the economy, the number of children is expected to vary with the role in the economy. More explicitly, de Janvry (personal communication) has suggested that one must begin with the premise that "most couples, however primitive, are individually rational in adjusting the number of children they have to the economic, political, legal and ideological conditions under which they live". He notes that the economic structure

ultimately tends to be the major determinant of behavior especially at low levels individual economic rationality, in turn, is conditioned by the social position of the household relative to productive resources and the social division of labor. Hence, structural history proponents explaining fertility levels and change implicitly seem to accept, as do modernization theorists more explicitly, that family size preferences exist.

Most fertility surveys include questions on ideal family size, desired family size or other variations of what will be called here generically "family size preferences". In the past, there has been occasional criticism of the concepts and questions (e.g., Mauldin, 1965; Hauser, 1967) and some analysis of the quality of the data (e.g., Hill, Stycos and Back, 1959, p. 74-92) but little concern whether the questions were "meaningful" to the respondents and the answers valid. A recent paper by Knodel and Prachuabmoh (1973) is one of the first in the present decade to empirically evaluate whether family size questions are meaningful to respondents. They concluded that "in Thailand, at least, responses to family size preferences need to be interpreted with caution but nevertheless can be of use to the population analyst" (p. 619). Since findings are likely to be culture dependent, and this topic has been little studied in Latin America, we shall present a secondary analysis of data from that region. The major source of the data presented are large scale comparative fertility surveys conducted in the rural and small urban areas of four Latin American countries in 1968-1969.

Before presenting our analysis of the data we shall try to clarify and systematically define the rather vague notion of meaningfulness. The framework developed then will be employed in the empirical analysis to estimate the proportion of all respondents to whom the preference questions are likely to be meaningful and to evaluate the overall validity of our measurements. Since the data employed were not collected explicitly for these purposes, our estimations will be rather crude. Our aim is not to provide a definitive statement for the populations studied but to sow doubts that should lead to more careful use of existing data. We also hope to demonstrate the need for specialized research on the validity of family size preference measurements especially in populations at natural fertility levels just beginning to control their fertility.

DEFINING MEANINGFULNESS AND VALIDITY

One convenient way of deciding when family size preference questions are meaningful to respondents, is to determine if the respondents were able to give numerical answers; did not give answers which were rationalizations of their present family size; and showed some consistency with questions on the number of additional children desired and on the use of birth control (Knodel and Prachuabmoh, 1973, p. 621). But the convenience and simplicity of the definition leads to serious problems. "Rationalization" of one's own family size is only one example of the many forms of eluding or misunderstanding the questions. Furthermore, since the relationship between attitudes and behavior is complex and affected by other factors, consistency with the use of birth control is a research matter that should only be asked after determining that the preference questions are meaningful to the respondent. A person spacing could use contraception without having a family size preference.

Finally and most important, the above definition implicitly changes its point of reference from the meaningfulness of the questions to the respondent to the meaningfulness of the answers to the researcher. If a given respondent has a conceptual void in this area of content, the questions will not be meaningful to her, however well designed the questions; hence, if a numerical response is obtained, the measurement is invalid. If the questions are meaningful to her, but she lies about the answer, the measurement again will be invalid.

From the above discussion it appears that overall we should be concerned with the validity of our preference measurements, one aspect of which is the meaningfulness of the questions to the respondents. For analytical purposes and to systematize the presentation we shall consider two major components of the validity of family size preference measurements, existence and veracity. The existence component will be further subdivided into a number of subcomponents. The presence of the existence subcomponents are required for preference questions to be meaningful to the respondent, while the veracity component takes the observer as the reference. The components and subcomponents are shown in Figure 1.

Figure 1 about here

Since we believe that our approach is equally suitable for the many variations of family size preferences that are studied the generic term "family size preference" will be employed throughout. This is not to say that the empirical findings will not be different when different variations are studied or when different wordings are used in questions -- obviously there will be differences -- but rather to say that the approach to the analysis should be essentially the same.

The Existence Component and its Subcomponents

A precondition that must be present even to begin to consider the topic under discussion, is that the respondent be able to count. In the absence of this, any question calling for a numerical answer would be meaningless to the respondent. It is assumed throughout the following discussion that this ability, the first subcomponent, exists for all respondents.

A respondent must have the second subcomponent, the concept of family size, in order to have a family size preference, since it is difficult to conceive of her wanting a given number (or range) of children when she does not or can not think of families in terms of numerical size.

It is probable that persons who lack the concept of family size are relatively frequent in certain situations in Latin America. Using a projective test in rural Haiti, Stycos (1964) found that a majority of respondents did not mention family size when asked to note any differences among pairs of photographs. Employing a more sophisticated version of the same technique, Simmons (1971:346-347) found that about 13 percent of lower class wives in Bogota did not mention size at all. On the other hand, the higher status women in his sample all noted size at least once. While the results are suggestive, the procedure may be partially responsible for the results. Brislin (1973, p. 115;116) cites various authors who suggest that picture and model tests are the most difficult to use in cross-cultural analysis because of the different frames of reference that may exist among cultures and the unfamiliarity of respondents with the "reading" of pictures.

Supposing that the concept of family size exists for a respondent, one must next ask whether she understands what a family size preference is and recognizes that it is possible to have a preference. Even though it will be

convenient to think of this third subcomponent in terms of a dichotomy -- having or not having the concept of a preference -- a more detailed analysis would accept that different persons may have achieved different levels of understanding of the concept.

Given that the respondent has the concept of family size preference does not necessarily imply that the person has, in fact, the fourth subcomponent, a well defined family size preference or range of preferences. That this is possible is evident from a consideration of examples from other areas of content. For example, one may have the necessary concepts to give an opinion on who should be president of a country and one may be acquainted with all possible candidates. Yet having the necessary concepts does not mean that one is able to choose for whom to vote. Returning to family size preferences, Simmons (1973) states that considerable proportions of rural Latin American respondents are ambivalent about preferences seeing advantages both in small and large families. Under such circumstances they may be unable to give a particular preference. Any response that might be forced from them would be an invalid measurement. It is also possible that some persons classified as ambivalent may not have any preference and therefore, easily see advantages to both large and small families and have difficulty deciding whether they prefer large or small families. Ware (1974) in a paper that tries to argue that ideal family size questions are almost universally meaningful suggests that responses can be obtained from the most reluctant respondents by asking "If you could choose how many children God would send, how many would you choose?" (p. 56). The author felt that doubting readers would perceive a clear logic to the simple distributions of ideal family size for hypothetical situations varying from poverty to wealth (p. 6-20). But it is difficult to be fully convinced by single variable distributions and one must be sceptical whether the identical numerical answer has the same meaning to a person who knows her own preference and one who must be forced to say what she would do if she could play God. From our point of view, the latter does not have a clearly defined preference.

We have presented the four subcomponents and show them in Figure 1 as though each is a precondition of the next. In terms of an analytical framework this seems correct, but the sequence should not be taken to represent the way in which family size preferences come to be formulated in the minds of

persons. Everyone has experienced situations in which a concept which was well understood suddenly becomes confused in the mind only to be gained again perhaps at a higher level of understanding. The path is not monotonically upwards even though the situation at any given moment may be represented adequately by the analytical model presented here.

Veracity Component

The existence component refers to the meaningfulness of our questions to the respondent and hence affect her ability to answer. But even in situations where the existence component is fully present, we still may make an invalid measurement because the verbal answer does not correspond to the "real" preference. We shall call this aspect of validity the veracity component.

Both the response that one receives in answer to a question that is meaningful to a respondent as well as how we interpret and use that response should depend on the importance or salience of the matter to the person. Unimportant attitudes are likely to have less effect on behavior than highly salient ones. However, since most fertility surveys, including those used in this paper, do not contain information on the importance of preferences to the respondent, we shall not empirically consider the matter here.

We shall consider that the veracity of a reply may fall into one of three categories: (a). careless, (b). rationalization or (c). "true". The careless reply, while perhaps not random in the statistical sense, is off-handed perhaps because the subject is of little importance to the respondent and might be any number within a reasonable range. Rationalization includes the situation in which the respondent gives her own family size presumably to avoid acknowledging the difference between actual family size and her preference and, more generally, includes giving any answer other than the "true" family size preference, in order to meet some expectation during the interview. One would expect that if the matter is unimportant to the respondent the response is more likely to be careless than rationalized, while if highly important, a rationalization is more likely than a careless response.

How should the "true" value be defined? While somewhat a problem of semantics, the word "true" tends to imply that there is a relatively permanent preference, perhaps changing only from parity to parity or after major events like the death of a child. Yet given the complexity of factors that no doubt determine the value at any given moment and accepting that in many cases the preference exists as a range of values, the idea of the "true" value ceases to be very useful. Furthermore, the value stated may be more or less consistent with other related attitudes because of ambiguities or uncertainties on the part of the respondent.

It is convenient both theoretically and operationally to substitute the notion of "consistency" for that of "true" value. The stated family size preference will be consistent or inconsistent with a series of other attitudinal variables such as additional children wanted, the choice of a large or small family, etc. The advantage of this orientation is that it also allows us to speak of degrees of consistency as compared to the dichotomy of "true" vs the "false", an advantage since the behavioral effect of the family size preference at a given level of importance surely is likely to depend on the degree of consistency with other related variables. Another advantage of this approach is that it lends itself to empirical analysis and does not require an act of faith to connect the theoretical concept with its operalization.

Both the operalization of the veracity component as well as the subcomponents of existence will be developed in the course of the analysis.

DATA AND THE MEASUREMENT OF THE FAMILY SIZE PREFERENCES

Source of Data

The analysis is based almost entirely on data from a series of comparative fertility surveys, known as Pecfal-Rural conducted in 1968-1969 in the rural and small urban areas (less than 20,000 population) of Colombia, Costa Rica, Mexico and Peru, using a representative sample of women in all marital statuses, 15 to 49 years old. For our purposes, unless otherwise mentioned, we have utilized only data on women in legal or consensual unions and with at least one live birth or subsets of these women. More details on the surveys and the questionnaire is given by Conning (1972;1973).

To make comparisons of our results with information from other countries more fruitful, the relative levels of living and development in the rural areas of the four countries are presented in Table 1; the information refers to all women in unions. It will be seen that on most of these indicators the rural areas of Costa Rica had the highest rank and Peru the lowest; the differences between the intermediate countries was slight. Relatively few women were using contraception in any of the countries except Costa Rica and in all fertility was very high.

Table 1 about here

Data from a 1964-65 series of comparable surveys conducted in the metropolitan areas of seven Latin American capital cities is also presented when relevant. These surveys, known as Pecfal-Urban, sampled women of all marital statuses between ages of 20 and 50 in the different cities. Further information is given in Miro and Rath (1965).

The Measurement of Family Size Preferences

In the Pecfal-Rural surveys there is only one explicit question that measures family size preference: "What is the best number of children for a woman to have?" See Appendix A for Spanish and English versions of this and other relevant questions. This question is our central concern. We want to know for which respondents is the measurement valid?

According to the survey manuals the question was intended to measure a generalized ideal without any specific reference. Hence, the context of the question is different from that used, for instance, in Thailand (Knodel and Prachuabmoh, 1973) where the women were asked to give their personal ideals by considering the number of children they would have if they could live their lives over. The latter question is more specific but requires a capacity to abstract one's situation, a task which many rural women with little education may find rather difficult. Since our concern is with the existence of general concepts related to family size preferences rather than with the comparison of specific numerical preferences, differences in the questions are of second order importance and our conclusions should apply

in varying degree to most forms of the questions.

The percentage distribution of the numerical ideal family size of women in unions in each country is shown by the solid line in Figure 2. Women with very low education (not shown) have diffuse patterns with clearer sawtooth structures in each country than for all women in contrast with the other educational extreme (primary complete or over) which has pronounced concentrations with little sawtoothing. This suggests that the least educated women may have less well formed family size preferences than the most educated.

Figure 2 about here

A series of questions on additional children wanted, refers more specifically to the respondent herself: "Do you want any additional children or not, or is it the same to you?", and in the affirmative case, "How many?" The distributions in the four countries are shown in Table 2. Between around 15 and 25 percent did not give a numerical answer or did not respond even though the interviewer was instructed to insist on a numerical response (see below).

Table 2 around here

Three other questions refer indirectly to family size preferences. Two asked the respondent to define the sizes of large and small families and the third asked for the respondent's preference between these: "Which do you like better, a small family, a large family or is it the same to you?" Figure 2 shows the percentage distribution of the definitions of large and small families. Not unexpectedly small families are more clearly defined (there is a natural lower boundary, zero) than large families. On the latter there are sawteeth at the even numbers; the peak at 15 children may indicate that some respondents simply choose a large, not totally unreasonable number with the usual preference for the digit "5". The apparent difficulty of some respondents to define large families might account in part, for the greater preference for small families when the women were asked to indicate

their preference between large and small families (see Table 2).

Implicit Assumptions

For our purposes the implicit assumptions in the questionnaire are of major concern. The assumptions are common to many KAP-- fertility questionnaires such as the model recommended by the United Nations (1970) and the IUSSP (1967), that of the Population Council (1970), as well as that of Rogue (1971) and to some extent that proposed for the World Fertility Survey (1974). The KAP-fertility surveys have been employed many times and with frequency has come a certain acceptance of many questions that has led researchers to take their validity for granted. Simmons (1971, p. 340) in an article which seeks to examine some of the major assumptions of ideal family size questions, states these to be that the concept of family size preference exists in the minds of the respondents, that the respondents have such preferences and that the preferences are numerical and single numbers rather than ranges within which any number is acceptable.

The Pecfal-Rural questionnaire has a printed instruction stating:

> Insist that the respondent gives a specific number. If the woman replies, "those sent by God" or those that come", ask "How many children is it best that God send ? (our underlining)

Only if the woman continued to give a non-numerical answer after these probes was the interviewer to accept the non-numerical code. The questionnaire also contains similar instructions concerning the questions about additional children desired and the sizes of large and small families. The original response was not recorded before insisting on the numerical answer.

There was an attempt to reduce non-response to a minimum. The level of non-response on most questions is very low in all the Pecfal surveys except Peru. The average non-response on a test set of socio-economic and behavioral questions was between 1 and 3 percent. On a test set of attitudinal questions excluding family size preferences, Costa Rica, Colombia and Mexico had around 3 percent non-response and Peru around 12 percent.

We excluded questionnaires in which no response was given on 7 or more of the combined set of 12 socio-economic, behavioral and attitudinal test questions since such questionnaires would seem to be incorrectly applied.

Seven cases each in Costa Rica and Colombia, 11 in Mexico and 16 in Peru were left out of the analysis.

Peru is the only country in which languages other than Spanish were used: three types of Quechua and a simultaneous translation from Spanish to Aymará. One would expect that a greater percentage of non-response would be found in these non-Spanish interviews both because of the difficulties of translation as well as because of the very low levels of living and education of the respondents (approximately 95 percent of the non-Spanish speaking respondents lived in houses without electric light and/or running water, compared to 76 percent of the entire Peruvian sample). Yet, on all three test sets of questions the Aymará speaking respondents in the most rural areas showed suspiciously low levels of non-response; with a number of exceptions the three Quechua groups have relatively high percentages of non-response particularly on attitudinal questions compared to those conducted with Spanish speaking respondents (Table 3).

Table 3 about here

It must be noted that there is a difficulty in interpreting the question on the additional number of children wanted. For pregnant women it was never made clear how they should consider their yet unborn babies (De Jong, 1973). The questionnaire has no explicit instruction and the Interviewer Manual simply says that in such cases, the questions should be put "Not considering the present pregnancy". The same problem is present in the UN-IUSSP questionnaire (United Nations, 1970, p. 42) and the variations based on it. Hence, analyses which consider individual numerical responses must exclude the pregnant women to avoid ambiguity. Since we shall not use the specific numerical responses in most analyses but rather shall compare women who give numerical responses to those who did not, we normally do not have to eliminate pregnant women to avoid ambiguity.

Analysis Procedures

Our aim is to determine to what proportion of respondents the ideal family size question is meaningful and to distinguish which of these respondents are likely to be giving valid responses. Our empirical analysis will follow the stepwise procedure diagrammed in Figure 1 in which only repondents passing the previous stage will be considered at the next stage.

The operational definition of each subcomponent will be represented during the analysis itself.

It is important to reiterate that the procedure serves an analytical purpose and we make no claim that family size concepts are formed in this manner.

The Sub-sample Analyzed

We limited our data set to women in unions with at least one live child. The latter condition is necessary since we employ the variable "additional children wanted" at some points in our stepwise procedure and that variable was only collected for women with at least one live child. This eliminates about 5 to 7 percent of each country's sample of women in unions; since some of the women without live children are likely to be subfecund, confusing the issue of family size preferences, there are theoretical as well as practical reasons for this elimination.

As a means of determining the reasonableness of our assignments of women in each subcomponent of the existence component, we compared the results for extremes of education in each country. We assumed that women with the lowest level of education would be less likely to find the preference questions meaningful than those with highest level of education. When this is found to be true, it can be taken as circumstantial evidence of the correctness of our procedure. In each country the lowest education ("low") category consists of persons without a functional education (from no formal education up to and including 2 years of primary education) while the highest education ("high") category includes persons with primary education complete or over. It should be noted that category of "all" respondents in the tables is not the sum of the two education levels given since the intermediate levels are not shown.

AN ANALYSIS OF PREFERENCE RESPONSES IN RURAL LATIN AMERICA

In the presentation of our findings in this section we followed the stepwise procedure of Figure 1, eliminating cases as we moved successively to more specific contents of family size preferences. More attention will be paid to the existence than to the veracity component since the information relevant to the former topic is somewhat more adequate in the Pecfal-Rural data.

The Existence Component

The Concept of Family Size

For the concept of family size to exist, the respondents must not only be able to count, which probably all could do, but also must think about families numerically. A very low level of consciousness of family size might be represented by the case of a respondent who, asked for her number of living children, lists the names of her children and counts them on her fingers. Presumably if asked to state her family size preference or to define the sizes of large and small families, she will be unable to give numerical answers unless "taught" how to think in these terms by the interviewer. The projective test evidence for Haiti (Stycos, 1964) and Bogota (Simmons, 1971) given in the previous section suggests that some women may not have this concept or may lack the facility to utilize it.

The only variables in our data that appear to separate out respondents without the concept of family size are those referring to the definitions of large and small families. Sophisticated respondents might have found the questions vague -- is a "large" family defined in terms of what is physically possible or is it the minimum number of children that the respondent considers too many?; is a small family the smallest possible that implies having a family, i.e., one, or is it the maximum that the respondent considers too few?, etc. Examination of the percentages by extremes of education show that higher percentages of non-numerical answers and no response occur among the least educated (Table 4, Panel A) who were less likely to be troubled by the vagueness in the questions. Those who could not respond to one or both size definition questions or who gave inconsistent replies (small family defined as larger than the large family) have been classified as not having a sufficiently developed conception of family size to be able to consider family size preferences.

Relatively few women were unable to define large and small families indicating that for the vast majority the concept of family size exists, at least in some rudimentary form. Although the percentages are small, for our purposes it is important to note that the contrast between the education categories is as expected, with the lowest education group having somewhat more difficulty with the concept.

Table 4 about here

To verify that persons who have been classified as lacking the concept of family size, have general difficulties handling numbers we compared women in this category with women who gave numerical and consistent answers on both family size definition questions, to see whether the former were more likely to give unreasonable numerical answers to questions on ideal age at marriage, ideal marriage to first birth interval and ideal interbirth interval. The small number of persons having difficulty in defining small and large families in each of the countries were far more likely to have difficulties with time and numbers (table not shown).

As another general check on the ability to utilize and manipulate numerical information in the rural areas, we considered (not shown) the percentages of all women in unions for whom birthdate had to be estimated on the basis of age because they were unable to state the date. Except for Costa Rica, with a very low percentage requiring estimation, around quarter of all women in unions were unable to give birth date information. It was also found that save again for Costa Rica, twice as many women without the family size concept (36,56 and 47 percent in Colombia, Mexico and Peru, respectively) cannot give their birthdate as compared to the women with the concept. From this we have further evidence that for many of the women without the family size concept the difficulty to express themselves in numbers is rather general.

The Concept of Family Size Preference

Since we wanted to distinguish those who have the concept of family size preference from those who not only have the concept but who also have a defined preference, we first partitioned the women with the basic concept of family size into those able to give a numerical answer to the ideal family size question and those giving either a non-numerical answer or no response. The percentages in the two latter categories are shown in Table 4, Panel B. The persons unable to respond presumably were those to whom the idea was completely foreign, while those who gave non-numerical answers such as "as many as God sends" might be interpreted as having some notion of a preference but not one specified in numerical terms. The insistence on a numerical response probably has produced an over estimation of respondents who have this subcomponent.

As a check on the partition made between those with and without the concept of family size preferences, we considered the abilities of each group to answer other numerical questions. In Table 5, we see that the persons without the preference concept are more likely to give extreme answers on the

latter variables than is the group with the concept. The difficulties are particularly pronounced among Peruvian women and only somewhat less so among the Mexicans.

Table 5 about here

Jean and Alan Simmons, in a 1973 pilot study in Santiago, Chile, of 59 women and 75 men using a series of questions on whether the respondent would be satisfied with different numbers of children found that about 13 percent of each sex gave non-specific answers (personal communication, 1974). This study used specially trained interviewers to investigate value of children questions. It should be noted that the type of question used may have been easier for respondents to answer than the ideal family size question being analyzed here.

In principle it may be possible to have the concept of family size preference without recognizing that it is possible to avoid having children. However, one would expect that recognition that family size is subject to control is normally necessary for one to have the idea that one can prefer a family size different from that which "God sends". While generally it was found (not shown) that women with knowledge of how to avoid pregnancy were somewhat more likely to have the concept of family size preferences than those without that knowledge, 90 percent or more of the latter had the preference concept. Since this seems unlikely it strongly suggests that in many cases we may be assuming that the concept exists when it does not (or the usual techniques to measure contraceptive knowledge are misclassifying many persons as lacking all knowledge when, in fact, they do have some).

The Existence of a Defined Family Size Preference

Excluding those persons who gave a non-numerical answer or no response to the ideal family size question left the women who appeared to have a family size preference since they gave a numerical response (line 7 of Table 4).

That persons who give numerical responses may not always be very clear on the matter is illustrated by findings in Jamaica and Puerto Rico. Stycos and Back (1964) found in Jamaica that only 37 percent of the respondents gave consistent answers to two opposed questions; they were asked whether it was better to have many children and later in the same questionnaire they were

asked whether it was better to have few children. In the Puerto Rico study, between 14.8 and 33.1 percent of the respondents were inconsistent on four pairs of family size questions presented as opposites (Hill, Stycos and Back, 1959:76). The interpretation of Hill, Stycos and Back (1959, p. 80-81) is that the inconsistency reflects the ambivalence of the respondents. However, their evidence showing that inconsistents tend to have family size preferences intermediate between those who consistently preferred large and small families, can be explained by the lack of specific preferences and their having to choose a "reasonable" number that reflects the families they see around them.

Hence, there may be women who even if they have some notion of being able to prefer some size families over others, do not have a specific number or range of acceptable family sizes. While this matter is somewhat related to the level of importance of a family size preference (Terhune, 1972) we attempted to identify those who are unlikely to have a specific preference whatever the level of importance. It should be noted that we are not concerned with the numerical value, per se, but only that some value (or range) did exist.

As a first indication, we assumed that persons to whom it makes no difference whether they have a large or small family (as defined numerically by them) are less likely to have a specific preference. These percentages are shown in Table 4, Panel C (line 8). As opposed to our results for the concepts of family size and preference which seemed to exist for the vast majority of women, rather large percentages of rural women seem to be willing to accept either a large or a small family: between 22.3 percent in Mexico and 32.8 percent in Costa Rica of all women with the preference concept could not or would not choose between a small and a large family defined by them. In each of the countries, as expected, the least educated rural respondents had more difficulty than the most educated category.

Although we accept that a person who wants a family size intermediate between the large and small family might give a no response, the answer "it makes no difference between a small and large family" seems to indicate that an unbelievably broad range is acceptable. Persons with inbetween preferences logically should have given no response rather than "it makes no difference". Simmons (1973) using the same data, found that the average ideal family size of those in this category in fact fell inbetween the average ideal family size of those preferring large and those preferring small families;

but this may have been due to the respondent's ambiguous family size preferences or the effect of the pressure on respondents to select a "reasonable" number when they have no clearly defined ideal family size.

The second indicator that a woman was unlikely to have a clear preference was a non-numerical or non-response to the question on the number of additional children wanted. If a person has a preference one would expect her to be able to indicate whether or not she wants more children. Saying "it makes no difference" is not a plausible answer in such a case. Note that we are not concerned here with numerical inconsistencies between the stated preference (here the ideal) and the additional number wanted given the actual family size. We are only concerned with whether she can give an answer or not. We have no way of separating those without any preference and those with a range of preferences.

The percentages for this indicator are given in Table 4, Panel C (line 9). Between 15.8 percent in Peru and 23.8 percent in Costa Rica of the women who gave a numerical ideal family size did not give a numerical number of additional children wanted (including zero additional children wanted). Differences between educational categories are also clear; the women with the highest education gave non-numerical answers to a lesser extent.

If the assumptions behind the use of the two indicators are correct one would expect that the women who have the ability to express a preference between large and small families will be less likely to give a non-numerical answer to the question on additional children wanted. In Table 6 we compare those expressing a preference between large and small families with those who did not. In each of the countries, only around 10 percent of the high education category with a preference for a small or a large family did not give a numerical answer to the number of additional children wanted. For those indifferent to large or small families, the proportions of women in either of the educational categories who gave non-numerical answers to the additional children question fluctuate among the countries, but are nearly all twice as high or higher.

Table 6 about here

Two summary percentages are given in Panel C, of Table 4. The first, based on failure to pass at least one item, gives an estimate of the maximum percentage of persons unlikely to have a defined family size preference (of those who have the concept of preference). The second percentage gives an estimate of the minimum percentage without a defined preference since it required that women fail both items.

A large proportion of all women (from 31.3 percent in Mexico to 43.8 percent in Costa Rica) failed both items (line 10 of Table 4). Although these percentages for all women are much lower than in the least educated category of each country, the percentages in the best educated groups are still rather high. This would mean that in both extreme educational groups substantial proportions of women may not have a specific family size preference. One should remember that women deemed to be lacking the basic concepts already have been excluded.

Calculating the proportions of all women studied (i.e., those in line 1 of Table 4) who are likely to have a defined preference taking into account all the subcomponents of existence, only 51 to 66 percent (line 12) of all women in each of the four countries are left: 69 to 75 percent of the high education women, versus 45 to 63 percent of the low education women. These results can be considered as minimum estimates of the women with relatively clear ideas of family size preferences; they understand family size preferences, have a preference either for a small or a large family and also give a number of additional children wanted.

When we use the data to make a maximum estimate of all women likely to have a specific family size preference (see lines 11 and 13 of Table 4), we find that a range between 80 percent in Costa Rica and 88.5 percent in Mexico may have family size preferences. The least educated women have an estimated maximum percentage that fluctuates between 75.6 and 86.6 percent. Since these are maximum estimates for the educational category into which a very large proportion of all rural Latin American women fall, they should cause concern among investigators who wish to accept stated preferences as valid without further checks.

In order to have the maximum clarity in further analyses of the subset of women who were classified as being likely to have a defined preference, we took these to be women who passed <u>both</u> items. That is, we used the women represented by the percentage given in line 12 of Table 4.

A very good test of our partition of the respondents would be to examine whether respondents have thought previously about family size preferences. Those who had not thought about the subject previously, of course, should be much less likely to be classified as having a specific preference. Unfortunately, this check question was not included in the rural questionnaires. However, the information is available in the 1964-65 Pecfal-Urban studies (see Hartford, 1971 for a detailed analysis of this variable). The percentages of all women in unions who never thought about ideal family size before being interviewed are shown in Table 7 for the seven metropolitan areas. In the capital cities of the countries of the rural surveys (no urban study was conducted in Lima), the percentages range from 39.9 percentage in San Jose (Costa Rica) to 54.5 percent in Bogota (Colombia).

Table 7 about here

Although the rural studies were conducted about 5 years after the urban, it is unlikely that the situation changed significantly in the rural areas. Consequently, it is reasonable to suppose that the percentages would have been even higher in the rural areas if they had been measured. This suposition is supported by the findings of Stycos (1965) in Peru. He found that the percentage of persons who had never thought about ideal family size was 27 percent in the most upper of four social classes and very high (65 percent) in the lowest class. In the predominantly Indian population of Huaylas, Peru, these proportions went from 78 percent to 84 percent, respectively, even though here, as in the Pecfal-Urban studies the majority of the women gave numerical answers to the ideal family size question.

While the percentage who never spoke with their spouse, a variable measured in the rural studies, gives only a minimum estimation of the proportions never having thought about the matter previously, it is seen in the last column of Table 7, that the percentages for the rural women are always higher than in the metropolitan area of the respective country. (This table used all women for purposes of comparison with the urban data). In a tabulation not shown, between 84 percent of those without defined ideals in Peru and Colombia had never spoken with their spouses compared to a still

relatively high 51 and 59 percent, respectively for women with defined preferences. Hence, it is likely that high percentages of women had not thought about the matter in both groups.

Evaluation of the Stepwise Procedure

As a result of our procedure we have assigned respondents into two broad classes, those who are: a) likely to have a defined family size preference; and b) a residual class of those who are not likely to have a defined preference. The residual class is made up of those who were removed at each step in the procedure and, hence, includes some persons who did not have the concept of family size and/or that of family size preferences.

We may have eliminated some respondents who failed an early question but answered "more complex" questions further along in the procedure. The question, therefore, arises, How good is our classification? Although we have no criterion variable to demonstrate the overall adequacy of the procedure, it is possible to examine the internal consistency of the results.

First, as noted previously, much smaller percentages of the least educated women than the best educated women were classified as being likely to have a defined family size preference, a result that would seem to be in accordance with expectation. Second we checked the extent to which women, removed early in the procedure, would have passed the final requirement for being classified as having a defined preference. This is shown in Table 8 for women with the least education for all four countries together. It is not shown for high education women because there were insufficient cases of those lacking one or more of the concepts. Table 8 lists the four possible combinations of having ("YES") or not having ("NO") the concepts of family size and family size preference. For each of the four combinations, the percentage likely to have a specific preference is given. While 62.2 percent of women with both antecedent concepts (YES-YES) were likely to have a defined preference, at the other extreme, only 17.5 percent of those lacking both concepts (NO-NO) would have been classified as likely to have a defined preference. These 17.5 percent were not included as clearly having a defined preference in Table 4 since only the YES-YES category who passed both items were so classified. Most of the 17.5 percent presumably are persons who were forced to give a numerical answer or who simply complied without understanding the question's content. The other two inbetween categories (NO-YES and YES-NO) have percentages intermediate between the extremes. This result further

strengthens our confidence that the theoretical framework and our operationalization of it has given us reasonable, although far from perfect results.

Table 7 about here

Veracity Component

Through the stepwise procedure we arrived at a subset of respondents who not only gave numerical answers to the question on ideal family size but who were likely to have a defined family size preference. Up to now we have not been concerned with the specific numerical value of the preference held by these women. But now when we consider the veracity of our measurements we must be concerned with the extent to which the observed value matches the "true" value.

We shall first examine veracity from the point of view of rationalization and then from the point of view of consistency with additional children wanted. Unfortunately with the information available we cannot separate careless from rationalized or "true" responses. Throughout the discussion it must be remembered that we are concerned only with those respondents who were found likely to have a defined family size preference. The base populations for our tabulations are those in line 12 of Table 4.

The amount of rationalization is probably affected by the content of the question. A person might be more likely to rationalize to her own family size if the question refers to the desired than to the ideal family size, since the former avoids defining any living children as unwanted. This may help to explain the fact that in our rural data (not shown) the proportion of respondents giving their own family size as their ideal, decreases as actual family size increases a finding contrary to expectation. An objection to using the proportion of respondents giving their own family size as ideal as a measure of rationalization is that some may in fact, be stating the truth. Knodel and Prachuabmoh (1973) introduce a measure based only on the ideal and real family size that attempts to separate out the rationalized and "true" components at each family size. Our analysis of the Knodel and Prachuabmoh measure (see Appendix B) led us to the conclusion that the use of their measure could be very misleading. Consequently we have not included

a table although we found that, as in Thailand, the maximum "rationalization" appears to occur where it is least expected -- in the medium size families of 3 to 5 children. A serious limitation is that the above approach ignores all rationalization except to own family size. Also likely is rationalization to a value which the respondent believes the interviewer wants to hear. And in the case of a woman with a very large family who has a much lower preference, she may select an intermediate number in order to avoid rejecting too many of her children while also not appearing too foolish to the interviewer for having had many more children than her preference.

On reflection, we wonder whether a measure based only on the matrix of actual family size by family size preference can tell us anything very definitive about the level of rationalization. Additional pieces of information are necessary to establish what is occuring. One possibility is to obtain the respondent's suggested family size for a surrogate person like her daughter. If the latter is assumed to be less subject to rationalization, comparing the respondent's preference with that for her daughter gives an estimate of rationalization (assuming she takes her daughter's situation as equivalent to her own). In Peru, Stycos (1965) found that respondents gave higher desired family sizes for themselves than for their daughters suggesting that rationzalization may have been occurring.

Since we have no information on the suggested preference for a surrogate, an alternative approach to studying the veracity of replies is to utilize the consistency definition of veracity and study the agreement of preference responses with the number of additional children wanted. The results can only be considered suggestive since the content of the two questions is different, the ideal referring to other persons, and the additional children wanted referring to the respondent herself. Hence, when we compare the excess (positive or negative) of actual family over the ideal with the number of additional children wanted as done in Table 9, discrepancies may not represent inconsistencies. It also should be noted, as explained in the section on data, we had to eliminate pregnant women to avoid ambiguity on whether the specific number of additional children wanted includes or not the pregnancy.

Table 9 shows that there is general consistency for each educational level within each country in the sense that the percentage of persons wanting additional children decreases as the excess of actual over ideal children increases. Yet among those with an ideal of three or more above actual, large proportions of low education women say that they do not want additional children; this proportion is considerably less for the best educated. When actual family size exceed the ideal, higher proportions are consistent in wanting no more children.

While there is a general consistency, the fact that the content of the two questions is different makes us hesitate to define criteria to permit us to distinguish among consistent and inconsistent individuals or to estimate what percentage are consistent. Nonetheless, we did make a crude estimate of the level of consistency, accepting as permissible an inconsistent reply to the additional children question by persons within plus or minus one child of their ideal. Considering all other inconsistencies we arrive at the figures shown at the bottom of Table 9. Approximately 25 percent of all women with defined preferences, are inconsistent except in Peru where almost half are inconsistent. Unlike the existence component, veracity is likely to depend in part on the questions, their context, the interviewer training and other technical matters. Hence, the findings here are less significant than those involving the existence component.

V. SUMMARY AND CONCLUSIONS

On the basis of the theoretical framework and the operational procedures developed we have attempted to establish aspects of the validity of our family size preference measurements in the rural and small urban areas of Latin America. A priori we expected the most poorly educated women to be less likely to have the concepts involved and less likely to have a defined family size preference than the better educated. Generally this expectation was supported by the data. While few women of any educational level seemed to lack the concept of family size, those that did tended to be much more concentrated in the low educational group than in the high, with the maximum difference found in Peru with 7.8 percent among the poorest educated against 1.0 for the best educated. While the figures might have been a little higher if respondents had not been forced to express a numerical response to the item used to

ascertain this subcomponent of existence, the overwhelming presence of this very basic concept of family size seems reasonable.

The next subcomponent of existence involving the concept of family size preference would appear to be somewhat less prevalent particularly among the least educated. Again, although the percentages involved are not very large, in all but Mexico, the percentage of respondents lacking the concept of a family size preference varied from 6.3 to 10.3 percent among the least educated compared to 0.8 to 2 percent for the best educated. Only in Mexico for unknown reasons do both groups have about 3 percent of their members without the concept.

We then eliminated respondents who in principle could not have a defined family size preference since the underlying concepts were lacking even though in the interview a numerical reply may have been obtained. Approximately 97 percent or more in each country of well educated women appeared to have the concepts necessary to make the family size questior meaningful to them and able to give a preference, if they had one. Among the less educated the percentages were lower, ranging from around 86 to 94 percent.

When we examined whether the women who apparently had the basic concepts were likely to have formed family size preferences, specific numbers or a range, relatively high percentages did not appear likely to have a defined family size preference, although others may have had a vague notion. Between 45 and 63 percent of the least educated women in the four countries probably had a preference while the percentages were around 89 to 94 percent of the best educated. If one accepts our operationalization of the subcomponents of existence, the high proportion of the least educated women who were unlikely to have a clear preference is a significant fact since they form a large percentage of women of all educational levels. The percentages are large enough to distort substantive analyses of family size preferences which take for granted that the preferences exist and try to explain them or use them to predict other variables.

The attempt to ascertain the veracity of the responses of women who were likely to have a preference proved to be very difficult since the data set had few variables that could be utilized to determine whether the women were rationalizing their responses either to their own family sizes or to other numbers or were giving careless responses. Determining veracity by ascertaining the consistency of ideal and actual family size with the number of additional children was only of limited value; persons who do have internally consistent

preferences could have appeared inconsistent since ideal family size and additional children wanted have different points of reference. Roughly overcoming this difficulty be accepting limited inconsistency, we found that between 55 and 77 percent of respondents of all educational levels with a defined preference were consistent in each of the four countries. In general then, of all women in unions with at least one live child, only 20 to 47 percent appeared to be giving valid responses. Among the least educated, these percentages were even lower. This calculation assumes that pregnant women have the same consistency of responses as the non-pregnant.

While the theoretical framework should apply to other preference questions, we accept that the ideal family size question in the Pecfal-Rural questionnaire might give results somewhat different from a question more focused on the personal family size desires of the respondent. Nevertheless, since we suspect that many women, particularly those poorly educated, cannot abstract from their own situation and therefore may reference the ideal size question to themselves, we expect that an analysis of a desired family size question would have revealed roughly similar levels of women giving valid results.

Furthermore, although acknowledging that the Pecfal-Rural organizers were more explicit in trying to obtain numerical answers than in some other surveys, the results may be indicative of what would be found elsewhere in high fertility rural situations; the details will depend on cultural factors. It is difficult to prove that our results are not unique since few authors have explicitly treated the topic. Indeed, even those who clearly see the difficulties associated with preference measurements, have tended to ignore the problem in practice. For instance, Mauldin (1965) in a review article recognized the problems asking "do people in the developing countries want "as many children as God provides?" but then presented tables that do not give the percentages of persons who so answered. However, returning to some of the original reports we found that various surveys that do give the percentages of non-numerical answers to family size preference questions report that these percentages run from a few percent up to thirty percent. This wide range probably reflects differences in interviewing as well as cultural diversity.

A study by Pool (1967) in Ghana designed especially to establish non-response levels, a procedure that might give somewhat exaggerated results, found that when the interviewer did not insist, 45 percent of the women living in villages and 36 percent of those in cities did not respond to family size preference questions. While making no statement about likely levels elsewhere this study is particularly indicative since more conventional studies done around the same time in Ghana gave results in accord with the more usual lower levels of non-response.

Of course, our results can be interpreted in a different manner. Ignoring the question of veracity, one could say that somewhat more than a majority of all respondents in the rural areas of the four Latin American countries appear to be likely to have defined family size preferences and that almost all seem to have the very basic concepts. This point of view based primarily on African data is taken by Ware (1974). But for the reasons given concerning the administration of the questionnaires our estimations may be low, particularly for important subgroups of the population. And more importantly, given the lack of success in explaining the mechanisms involved in fertility change, it is important to question underlying assumptions. Our findings should create sufficient doubts to cause workers in this field to investigate more carefully the validity of the responses.

Suggestions for future research

Although the study of the validity of family size preferences merits further study wherever such information is collected, it is particularly important to give the topic more attention in situations in which one might theoretically expect family size preferences to be poorly articulated or non-existent. High fertility, high mortality populations, with apparently little deliberate control of fertility within unions as the rural populations in Colombia, Mexico and Peru or those, beginning to control fertility as in Costa Rica, are of particular interest. Such investigations are only in part methodological, since the focus can easily be shifted toward the study of the formation of family size preferences during early stages of the adoption of deliberate control.

We shall make three suggestions for future work in this field, the first two of which refer to survey research. First, and most simple, the initial response to family size preference questions should be recorded by well trained interviewers who only then, if the investigator deems it desireable,

should attempt to force the respondent to give numerical answers. This procedure will make the assessing of validity much simpler and will permit more adequate classification of the respondents. Range answers should also be fully recorded before forcing a single response. Second, in surveys in which preferences are of some importance, additional cross-check questions should be included in order to have some external means of assessing the existence and veracity components. At the very minimum, each family size preference question should be followed up by a question on whether the respondent has thought about the matter previously. In addition, the importance of the preference to the person should be determined. When possible, variations on the same questions should be asked at different places in the questionnaire to determine the reliability of the responses.

The third suggestion attacks the problem at a more basic level. Almost all the reported studies of preferences employ the sample survey method. While some of the studies may have begun with preliminary field studies to design questions, most do not. Yet field studies are not only necessary to design the wording of the questions but to determine what questions are relevant. Indeed, we would go further and suggest that studies employing relatively unstructured interviews, participant observation and other anthropological techniques must be conducted among populations with high fertility to obtain a better understanding of what is being studied. Such investigations, in carefully selected contrasting situations of stability and social change should be conceived not as a prelude to a survey, but as a contribution in their own right; this will permit the development of more adequate theory on where and when preferences exist, how they are formed, and how they come to affect behavior (see Conning, 1974). Ordinary surveys which of necessity begin with preconceived ideas are incapable of providing this type of information when little is known about a subject, since they do not easily permit an interaction between the ideas of the investigator and the data source. The more anthropological approach allows the researcher to make multiple returns to the field to verify and reformulate ideas and to take advantage of serendipity. Such studies might begin with a small conventional survey to be able to compare results and interpretations of family size preference questions via the two methods.

Until information from field studies is able to provide more specific information on the validity of preference questions, the survey data must be utilized with extreme caution. As stated by Hill, Stycos and Back as early as 1959 (p. 107) "... it should be clear that simple statements of family size preferences, while not meaningless, are deceptive in a context where attitudes may be uncrystallized or ambivalent". Our results suggest that one might even go further than this largely ignored early warning and accept that for relatively large proportions of respondents in such contexts the statements may, in fact, be meaningless.

APPENDIX A

The Spanish and English versions of the Pecfal-Rural survey questions discussed in the text are given below (the wording was identical in the four surveys):

Spanish	English
1. ¿Cuántos hijos es bueno (es mejor) (está bien) que una mujer tenga? INSISTA EN QUE LA ENTREVISTADA LE DIGA UN NUMERO ESPECIFICO. SI LA MUJER CONTESTA "LOS QUE DIOS MANDE", "LOS QUE VENGAN", PREGUNTE: ¿Cuántos hijos es bueno (es mejor) (está bien) que Dios mande (que vengan)?	1. What is a good (the best) number of children for a woman to have? INSIST THAT THE INTERVIEWEE GIVE A SPECIFIC NUMBER. IF THE WOMAN ANSWERS "THOSE WHICH GOD SENDS", "THOSE THAT COME" ASK: What is a good (the best) number for God to send (that come)?
2. ¿Quiere tener más hijos o no, o le da lo mismo? ¿Cuántos hijos más quiere tener? (LA MISMA INSTRUCCION PARA LA ENTREVISTADORA QUE LA PREGUNTA ANTERIOR)	2. Do you want any additional children or not, or is it the same to you? How many additional children do you want? (SAME INTERVIEWER INSTRUCTION AS ABOVE)
3. Hay familias grandes (numerosas) y familias pequeñas (¿verdad?) ¿Con cuántos hijos una familia es grande (numerosa)? INSISTIR EN QUE LA ENTREVISTADA LE DIGA UN NUMERO ESPECIFICO.	There are big and small families (isn't that so?) With how many children a family is big? INSIST THAT THE INTERVIEWEE GIVE A SPECIFIC NUMBER.
4. ¿Con cuántos hijos una familia es pequeña? (MISMA INSTRUCCION)	4. With how many children a family is small? (SAME INSTRUCTION)
5. ¿Qué le gusta más a usted, una familia pequeña, una familia grande o le da lo mismo?	5. Which do you like better, a small family, a large family or is it the same to you?

6. ¿Ha conversado usted con su marido (esposo)(compañero) muchas veces, alguna vez o nunca sobre el número de hijos que quiere tener?

6. Have you and your husband (spouse) talked many times, sometimes or never about the number of children you want to have?

APPENDIX D

DISCUSSION OF A METHOD TO ESTIMATE THE PROPORTION OF PERSONS RATIONALIZING

As an initial approximation to the true proportion ER_x of persons who rationalize to their own family size x, one may use the proportion, P_x of respondents who state their own family size as ideal. But an objection to this approximation is that P_x is made up both of the proportion of those persons giving their "true" ideal T_x and the proportion P_x who are rationalizing. If the proportions change with different x, our interpretations may be erroneous. Knodel and Prachuabmoh (1973:627-629) suggest that one can estimate the R_x value by subtracting from P_x, an estimate of the proportion giving the "true" value, T_x. This estimate which we shall denote ET_x, is obtained by ascertaining the popularity of x as an ideal family size among persons whose actual family size is other than x. Expressed in words, the formula for ET_x is:

$$ET_x \doteq \frac{\text{Number of women of family size other than x who give x as ideal}}{\text{Total number of women of family size other than x}}$$

This is an underestimate of ET_x since some of these persons will rationalize to their own family size. Taking the difference between P_x and ET_x gives us an estimate ER_x, of the proportion of persons of actual family size x rationalizing their ideal to their own family size.

$$ER_x \doteq (R_x + T_x) - ET_x \text{ given assumption: } T_x \doteq ET_x$$

Since ET_x is an underestimate, Knodel and Prachuabmoh point out that the estimate of the proportion rationalizing, ER_x, is an upper limit.

Unfortunately, for this estimate of R_x to be valid we must assume that the pattern of rationalization is the same at each family size x. But it is not at all impossible that for a given actual family size x, more or less of the women than expected are rationalizing. If many persons of family size x are controlling their fertility, it is possible some will have reached their preference and stopped; in such a case a very high proportion will give their own family size as their preference. At another family size x, the proportion of controllers may be different. This may explain why in our data (not shown)

the most educated women are more likely to give their own family size than the least educated who are less likely to use contraceptives. If contraception begins with the younger, lower parity women, then the proportion of persons giving their own family size as their preference will vary with actual family size $\underline{x}$, invalidating a basic assumption of the above method. Furthermore, in this case comparisons among different populations can be misleading since the percentage distribution of actual family sizes will be different resulting in different ET_x even though all else is the same among the populations.

Hence, the Knodel and Prachuabmoh measure had difficulties that would seemingly not be overcome without the addition of more information (see main text).

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FIGURE 1

COMPONENTS OF THE VALIDITY OF FAMILY SIZE PREFERENCES: THE ANALYSIS PROCEDURE

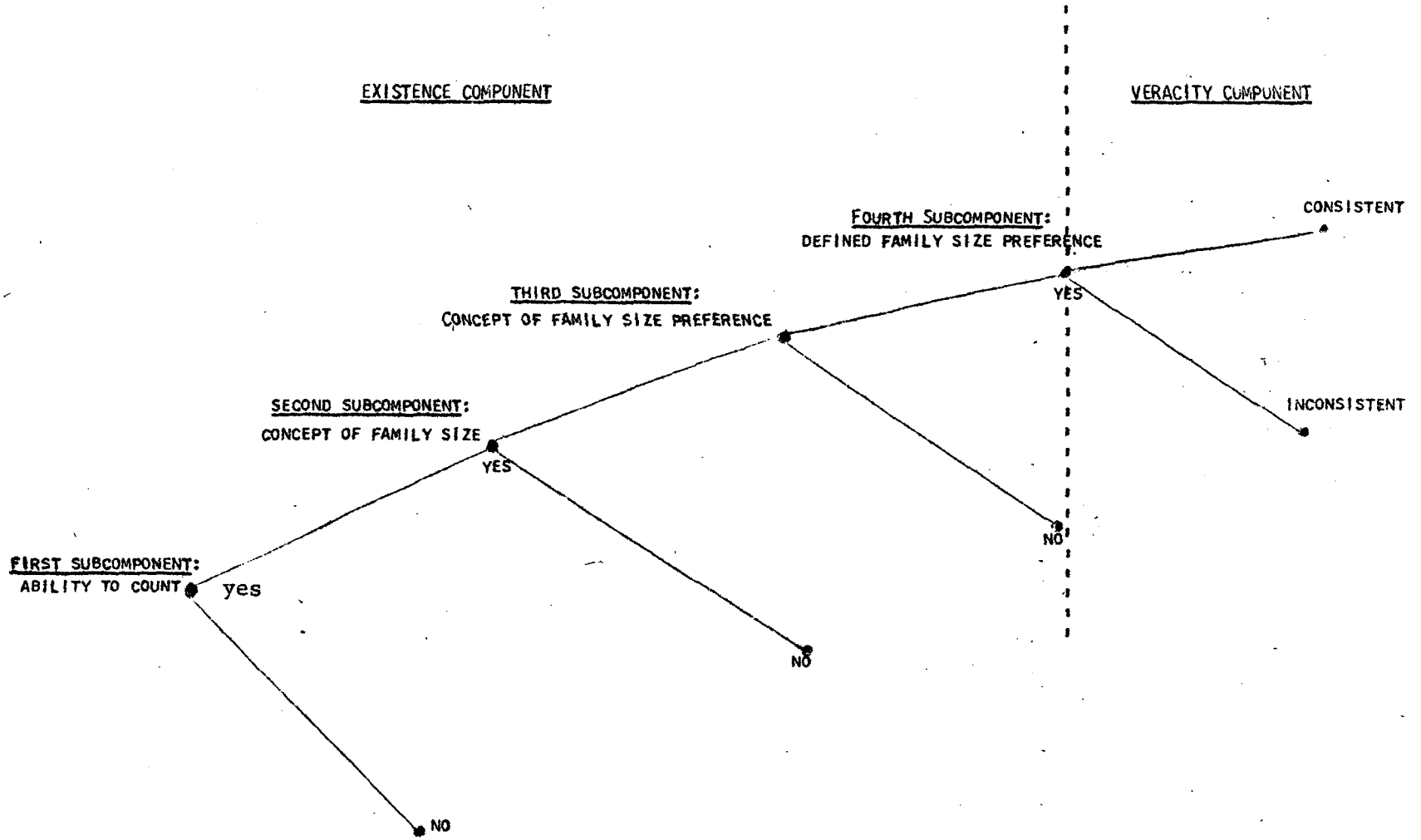
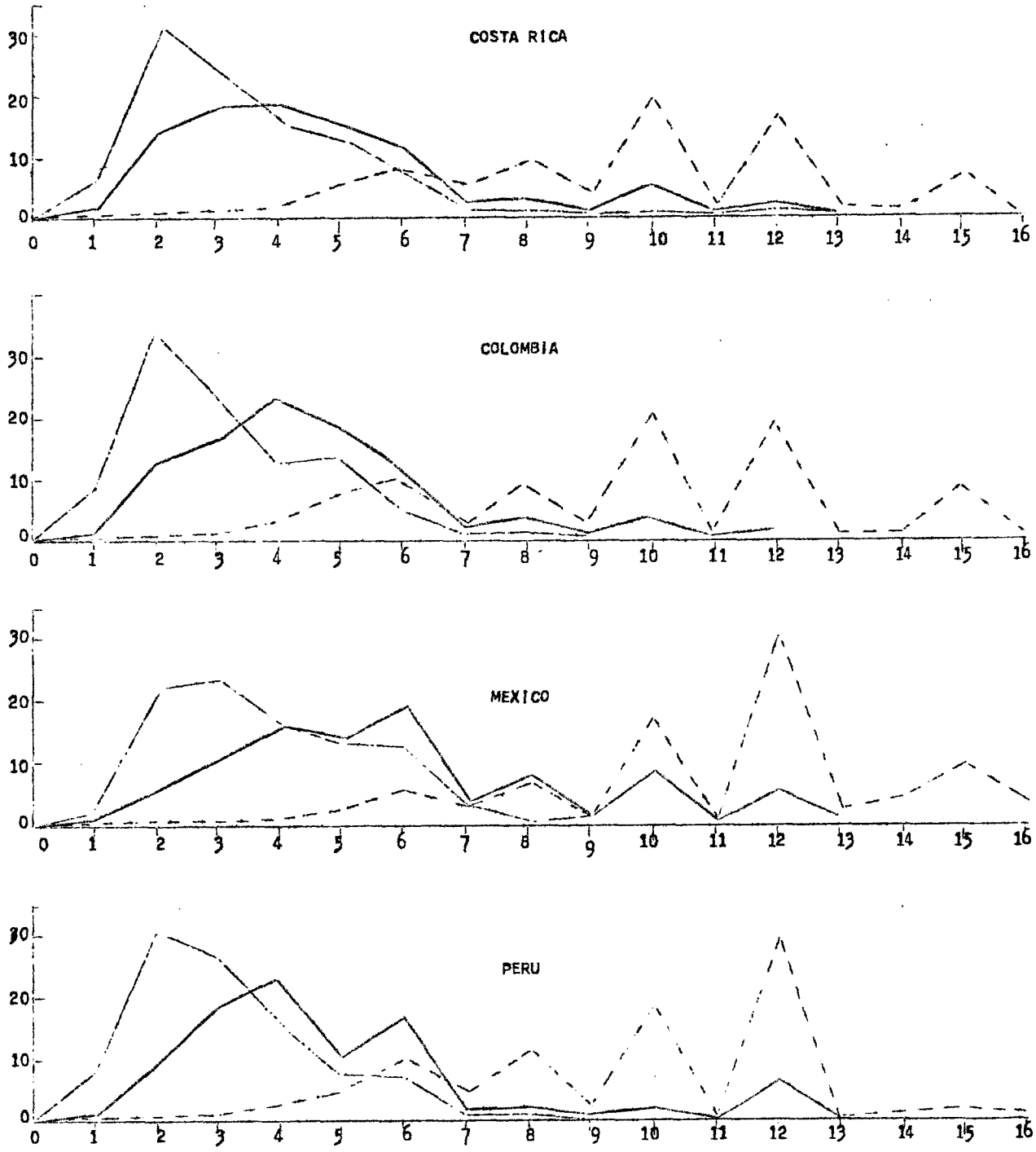


FIGURE 2

PERCENTAGE DISTRIBUTIONS OF IDEAL FAMILY SIZE AND DEFINITIONS OF "SMALL" AND "LARGE" FAMILIES
(WOMEN IN UNIONS IN RURAL AND SMALL URBAN AREAS OF FOUR LATIN AMERICAN COUNTRIES)



SOURCE: PECFAL-RURAL, 1968-69.

Table 1

PERCENTAGE DISTRIBUTIONS OF THE SOCIAL-ECONOMIC CHARACTERISTICS OF WOMEN IN UNIONS IN THE RURAL AND SMALL URBAN AREAS OF FOUR LATIN AMERICAN COUNTRIES

Socio-economic characteristics	Costa Rica	Colombia	Mexico	Peru
Education of respondent:				
None through 2nd year primary	40	56	62	66
2nd year primary through primary incomplete	42	27	29	15
Primary complete or more	18	17	9	19
Light and running water in house:				
Neither	35	56	52	76
Electric light only	6	7	23	11
Running water only	24	11	4	2
Both	35	26	21	11
Possession of a radio:	79	67	77	41
Ever used contraception				
Children ever born to age group				
25-29				
45-49				

Source: Pecfal-Rural surveys 1968-69

Table 2

PERCENTAGE DISTRIBUTION OF ADDITIONAL CHILDREN WANTED AND THE PREFERENCE FOR A LARGE OR SMALL FAMILY (Women in unions with at least one living child in rural and small urban areas of four Latin American countries)

	Costa Rica	Colombia	Mexico	Peru
Additional children wanted				
Numerical answer (including zero additional)	74.8	82.3	84.7	80.2
It makes no difference	20.6	13.9	12.5	13.1
As many as God sends, etc.	4.3	2.7	1.4	3.7
No response	0.3	1.1	1.4	3.0
	100.0	100.0	100.0	100.0
Preference for large and small family				
Preference for small	55.9	57.2	55.7	55.1
It makes no difference	33.2	27.4	22.7	24.9
Preference for large	10.4	13.8	21.0	17.7
No response	0.5	1.6	0.6	2.3
	100.0	100.0	100.0	100.0
Number of cases	(1228)	(1578)	(1839)	(1629)

Source: Pecfal-Rural surveys 1968-69.

Table 3

PERU: PERCENTAGE OF WOMEN WITH "NO RESPONSE" TO ONE OR MORE QUESTIONS IN TEST SETS OF SELECTED SOCIO-ECONOMIC, BEHAVIORAL OR ATTITUDINAL VARIABLES, BY LANGUAGE OF QUESTIONNAIRE (All women in Peruvian areas of less than 2 500 pop).

	Spanish	Types of Quechua A	B	C	Aymará: simultaneous translation into Spanish
4 socio-economic	2.7	0.6	0.7	6.1	0.0
5 behavioral variables	3.9	6.7	2.6	8.7	1.4
4 attitudinal variables	10.6	24.0	18.8	17.6	7.2
Total (13 variables)	13.3	28.0	19.8	23.9	8.7
Number of cases	(1024)	(110)	(286)	(120)	(44)

Source: Pecfal-Rural Peru Survey 1969.

TABLE 4

THE EXISTENCE COMPONENT OF FAMILY SIZE PREFERENCES: PERCENTAGE OF RESPONDENTS AT A GIVEN LEVEL WHO HAVE NOT ATTAINED THE NEXT LEVEL BY EXTREMES OF EDUCATION AND FOR ALL RESPONDENTS (WOMEN IN UNIONS WITH AT LEAST ONE LIVE CHILD IN THE RURAL AND SMALL URBAN AREAS OF FOUR LATIN AMERICAN COUNTRIES)

		COSTA RICA			COLOMBIA			MEXICO			PERU		
		LOW EDUC A/	HIGH EDUC B/	ALL C/	LOW EDUC A/	HIGH EDUC B/	ALL C/	LOW EDUC A/	HIGH EDUC B/	ALL C/	LOW EDUC A/	HIGH EDUC B/	ALL C/
1	TOTAL NUMBER OF CASES	(496)	(204)	(1 228)	(885)	(268)	(1 578)	(1 158)	(152)	(1 839)	(1 090)	(299)	(1 629)
	A. NO CONCEPT OF FAMILY SIZE												
	BASE: ALL WOMEN (LINE 1).												
2	A) % WITH AT LEAST ONE NO-RESPONSE TO THE DEFINITION OF LARGE AND SMALL FAMILIES; OR THE SIZE ARE EQUAL; OR THE LARGE SMALLER THAN THE SMALL	2.8	0.0	1.2	2.6	0.3	1.9	2.8	0.0	2.0	7.8	1.0	6.4
	B. NO CONCEPT OF FAMILY SIZE PREFERENCE												
	BASE: WOMEN WITH CONCEPT OF FAM.SIZE.												
3	PERCENTAGE OF TOTAL (LINE 1)	(97.2)	(100)	(98.8)	(97.4)	(99.7)	(98.1)	(97.2)	(100)	(98.0)	(92.2)	(99.0)	(93.6)
4	A) % NO RESPONSE ON IDEAL FAM.SIZE	4.3	0.5	2.8	0.7	0.0	0.5	0.6	2.0	0.6	5.4	1.1	4.3
5	B) % "GOD SENDS" ON IDEAL FAM.SIZE	6.0	1.5	4.8	4.5	0.8	3.5	2.2	1.3	1.8	0.9	0.0	0.7
6	C) SUMMARY: % WITH NON-NUMERICAL OR NO RESPONSE ON IDEAL FAM.SIZE	10.3	2.0	7.6	5.2	0.8	4.0	2.8	3.3	2.4	6.3	1.1	5.0
	C. UNLIKELY TO HAVE DEFINED FAMILY SIZE PREFERENCE												
	BASE: WOMEN WITH CONCEPT OF FAMILY SIZE PREFERENCE												
7	PERCENTAGE OF TOTAL (LINE 1)	(87.5)	(98.0)	(91.3)	(92.3)	(98.9)	(94.1)	(94.5)	(96.7)	(95.7)	(86.4)	(98.0)	(89.0)
8	A) % NO PREFERENCE BETWEEN LARGE OR SMALL FAMILY	37.9	22.7	32.8	30.9	22.1	29.0	22.7	13.1	22.3	24.4	19.3	25.2
9	B) % NON-NUMERICAL OR NO RESPONSE TO N° OF ADDITIONAL CHILDREN WANTED	24.6	17.5	23.8	19.0	13.3	16.8	17.8	11.7	16.0	16.3	12.8	15.8
10	C) SUMMARY: % WITH AT LEAST ONE INDICATED RESPONSE TO A AND B	48.4	30.0	43.8	41.6	30.6	38.6	33.1	22.4	31.3	38.4	27.8	37.6
11	D) SUMMARY: % WITH BOTH INDICATED RESPONSES	13.6	9.5	12.4	9.5	4.9	7.9	8.3	2.7	7.6	8.3	6.4	8.0
	D. PERCENTAGE OF TOTAL (LINE 1) WITH DEFINED FAMILY SIZE PREFERENCE												
12	MINIMUM ESTIMATE(CRITERIA LINE 10)	(45.0)	(68.6)	(51.3)	(53.9)	(68.7)	(57.7)	(63.2)	(75.0)	(65.8)	(55.3)	(70.9)	(55.4)
13	MAXIMUM ESTIMATE(CRITERIA LINE 11)	(75.6)	(88.7)	(80.0)	(83.4)	(94.0)	(86.6)	(86.6)	(94.1)	(88.5)	(79.3)	(92.0)	(81.8)

SOURCE: PECFAL-RURAL SURVEYS, 1968-69.

A/ SECOND YEAR OF PRIMARY OR LESS. B/ PRIMARY COMPLETE OR HIGHER. C/ WOMEN OF ALL EDUCATION LEVELS INCLUDING THE INTERMEDIATE RANGE NOT SHOWN.

Table 5

PERCENTAGE WITH EXTREME ANSWERS TO QUESTIONS REQUIRING THE ABILITY TO THINK IN TERMS OF, OR USE, NUMBERS FOR WOMEN WITH AND WITHOUT THE CONCEPT OF FAMILY SIZE PREFERENCE

(Women in unions with at least one live child, in the rural and small urban areas of four Latin American countries, who have the concept of family size. Some base as Panel B of Table 4)

Country	Existence of family size pref. concept	Percentage with extreme answers to: Best age at marriage a/	Ideal interval from marriage to first birth b/	Ideal interval between births b/	Percent with estim. birth date	Number of cases
Costa Rica	YES	3.7	9.7	1.1	3.1	1 121
	NO	10.9	28.3	9.8	4.1	92
Colombia	YES	4.0	7.3	0.9	11.8	1 486
	NO	17.7	17.3	3.2	21.0	62
Mexico	YES	4.3	20.1	1.7	25.9	1 760
	NO	6.9	46.5	14.0	37.2	43
Peru	YES	8.9	13.5	5.2	23.5	1 449
	NO	39.5	56.6	18.4	40.8	76

Source: Pecfal-Rural surveys, 1968-69.

a/ Extremes considered to be 15 years or lower, 30 or over, or no response.

b/ Extremes considered less than one year or no response.

Table 6

PERCENTAGE WITHOUT NUMERICAL RESPONSE TO ADDITIONAL CHILDREN WANTED[a] BY WHETHER HAVE PREFERENCES BETWEEN LARGE AND SMALL FAMILY OR NOT FOR EDUCATIONAL CATEGORIES[c]

(Women in unions with at least one live child in the rural and small urban areas of four Latin American countries who have the concept of family size preferences. Same base as Panel C of Table 4)

Preference for small or large family	Percentage without numerical response to additional children wanted[a]											
	Costa Rica			Colombia			Mexico			Peru		
Educ:	Low	High	All	Low	High	All	Low	High	All	Low	High	All
Have a preference for large or small families	16.8	10.0	16.4	14.4	10.7	12.7	12.9	10.1	11.0	14.7	9.4	13.4
"It makes no difference" or no response	37.6	43.2	41.9	29.8	22.0	26.7	34.7	(22.3)[b]	33.4	20.9	28.3	23.0

Source: Pecfal-Rural, 1968-69

a/ That is, give "no response", "it makes no difference", "as many as come", etc.

b/ Based on less than 20 cases.

c/ See Table 4 for definition of the educational categories.

Table 7

PERCENTAGE WHO NEVER THOUGHT BEFORE ABOUT IDEAL FAMILY SIZE, PERCENTAGE WHO NEVER HAVE SPOKEN WITH SPOUSE ABOUT IDEAL FAMILY SIZE AND PERCENTAGE WITHOUT NUMERICAL RESPONSE TO IDEAL FAMILY SIZE

(Women in unions in seven Latin American metropolitan areas and the rural and small urban areas of four Latin American countries)

	Metropolitan Areas				Rural and small urban areas
	% never thought before	% never spoke with spouse	% without numerical response	Number of cases	% never spoke with spouse b/
Buenos Aires, Argentina	29.9	33.8	3.6	1 598	
Bogota, Colombia	54.5	56.7	4.9	1 769	65.6
Caracas, Venezuela	39.6	50.6	8.9	1 382	
Lima, a/ Peru	-	-	-	-	59.5
Mexico, Mexico	44.8	53.6	6.9	1 614	55.9
Panama, Panama	28.0	35.4	2.7	1 507	
Rio de Janeiro, Brazil	38.6	46.7	8.0	1 759	
San Jose, Costa Rica	39.9	45.6	8.8	1 343	48.5

Source: Pecfal-Urban Surveys, 1964-65; Pecfal-Rural Surveys, 1968-69.

a/ No survey was conducted in the metropolitan area of Lima.

b/ Note that the base is all women in unions to make it comparable with the urban data.

Table 8

CHECK OF INTERNAL CONSISTENCY: PERCENTAGE OF LOW EDUCATION WOMEN LIKELY TO HAVE A SPECIFIC FAMILY PREFERENCE BY WHETHER OTHER CONCEPTS EXIST

(Low education women[a/] in unions with at least one live child; rural and small urban areas of four Latin American countries)

Existence of Concept of:[b/]		Percentage likely to have defined family size preference[c/]
Family size	Family size preference	
YES	YES	62.2
NO	YES	50.0
YES	NO	37.6
NO	NO	17.5

Source: Pecfal-Rural, 1968-69.

a/ Second year of primary or less.

b/ See Table 4 for the criteria used to establish the existence of the concepts.

c/ Passed both items used to determine the likely existence of a defined family size preference (see Panel C of Table 4).

Table 9

NUMERICAL CONSISTENCY OF WOMEN LIKELY TO HAVE SPECIFIC FAMILY SIZE PREFERENCES: PERCENTAGE NOT WANTING ADDITIONAL CHILDREN BY THE EXCESS OF LIVING CHILDREN OVER THE IDEAL FAMILY SIZE
(Non-pregnant women in unions with at least one live child who is likely to have a defined family size preference; a/ Rural and semi-urban areas of four Latin American countries)

Excess living children over Ideal (Living children-Ideal)	Costa Rica	Colombia	Mexico	Peru	All countries		
					Low educ.	High educ.	All
Ideal higher(- 3 or more)	33.7	47.7	30.4	57.2	48.1	17.6	40.5
Ideal higher(- 2)	42.3	48.2	42.2	63.0	57.1	40.8	49.9
Ideal higher(- 1)	68.6	74.2	60.7	75.1	71.8	64.1	70.4
Ideal=living children (0)	74.6	89.9	72.6	79.2	77.1	82.8	79.9
Living children higher (+1)	83.0	88.3	73.2	83.6	79.9	88.2	81.8
Living children higher (+2)	80.0	95.0	72.2	85.6	82.1	85.9	82.4
Living children higher (+3) or more	85.3	100.0	81.9	84.1	89.2	91.1	88.2
Summary: Percentage inconsistent b/	26.2	23.2	28.8	45.3	34.6	23.1	31.1

Source: Pecfal-Rural surveys, 1968-69.

a/ The women in this table are those in line 12 of Table 4 who were not pregnant at the time of the interview.

b/ Weighted percentage of inconsistent replies by persons with -2, -3 or more (calculated percentage in excess of -2) and with +2 and +3 or more.

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