Social Psychological Investigation on Determinants of Fertility

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Three hundred fifty-nine respondents, representing mothers with either one child (N = 124) or two children (N = 235), were asked to complete the questionnaire about their considerations and intentions regarding whether or not to have another child in their family. The data were analyzed according to Fishbein's attitude-behavior model. The model assumes that the individual's actual behavior is a function of one's behavioral intention. And this intention is determined by two factors : (a) the individual's attitude toward the behavior, and (b) one's subjective norm.

The results showed that (1) the mother with one child intended to have another child within two years, but the mother with two children did not, and (2) while one-boy-mothers' intentions were determined by their attitudes toward the behavior, one-girl-mothers' and two-children-mothers' intentions were determined by their subjective norms respectively.

Because the actual behavior will be measured a year later, this study is concerned with only the behavioral intention. The relationship between the behavioral intention and the actual behavior will be examined in the following paper.

Key words : attitude, norm, Martin Fishbein, intention

The purpose of this paper is to examine the applicability of social psychological approaches to population problems. It is a well-known fact that rapid population growth is causing many serious problems. We surely realize that continued population growth is partly responsible for the energy crisis, depletion of other national resources, food shortages and pollution of the environment. And we see that the rapid increase in the world population has been viewed as contributing indirectly to such problems as poverty, unemployment, illiteracy, disease, and crime.

Of course, population growth within a defined geographic area results from the balance of births, deaths and migrations. Generally speaking, the increasingly rapid growth in population is due to a widening of the gap between birth rates and death rates. This is not to say that women are giving birth to more children today than in the past. Rather the population explosion is due largely to advances in medicine and agriculture which have reduced infant mortality and raised life expectancy. Fawcett and Arnold (1973) have noted that naturally there is no desire on the part of individuals or goverments to raise death rate in order to control population growth. Births, then, are the target of interest in dealing with the problem of population growth. And there can be no doubt that population growth is a problem : "growth must eventually cease, and the only legitimate questions are how and when," (p. 24).

According to the Population Council's International Research Awards Program on the Determinants of Fertility, past research on determinants of fertility can be roughly divided by discipline and by methodological approaches. The major bodies of reseach can be considered under the heading of socio-economic studies, which are identified with sociology and social demography, the micro-economics of fertility, and social--psychological approaches. In the general socio-economic studies, the demographers have attempted to explain the determinants of fertility with the values of socio-economic indicators (Kirk, 1971 ; Repetto, 1979). From those studies, we find there is an inverse relationship between socio-economic indicators, such as household income, education, or women's employment status and fertility. But the detailed results often show inconsistencies (Graff, 1979 ; Standing, 1978). According to Davis and Blake (1956), such inconsistencies are due to an imprecision in specifying the intermediate or proximate variables. However, the powerful framework for analyzing the relationships between the socioeconomic

variables and fertility was explored by Bongaarts (1978). Another approach to fertility determinants is one by micro-economists. They apply the consumer theory to the fertility studies (Becker, 1965 ; Lancaster, 1966; Scanzpni et al., 1972). Despite the statistical sophistication, they find inconsistencies between variables such as female education and fertility (Rosenzweig and Evenson, 1977). As mentioned above, this paper will focus on the social psychological approaches to fertility, it is appropriate to review mainly the social psychological aspects of fertility determinants.

Over the past two decades, many studies regarding the utility of psychological variables were reported, mostly in the United States. There are four major fertility studies ; they are (1) the Indianapolis Study (Kiser & Whelpton, 1958), (2) the Princeton Study (Westoff, Potter, & Sagi, 1963 ; Westoff, Potter, Sagi, & Mischler, 1961), (3) the Growth of American Families Studies (Freedman, Whelpton & Campbell, 1959 ; Whelpton, Campbell & Patterson, 1966) and (4) the National Fertility Study (Westoff & Ryder, 1977). In those initial studies to measure psychological factors such as those associated with fertility-related attitudes and behavior, only small relationships between psychological and fertility-related variables have been found. One of the problems with past research has been the lack of theory guiding the research effort. Most of the large scale field studies have not been based on any underlying or organizing theory but rather have been restricted to the testing of a large number of "interesting" hypothesis (Davidson et al., 1975). As Kiser (1962) has pointed out, although the members of the steering committee of the Indianapolis Study "made a special effort" to formulate an organizing principle or body of theory to guide their work, they found this task rather frustrating and this effort was finally abandoned.

In order to understand the factors influencing the fertility determinants, it is worthwhile to explore the perceived child (children) of prospective parents. That is , to examine psychological variables associated with the parents' decision as to whether or not to have a child (another child).

More recently, there have been several theoretical and methodological advances in the area of fertility and family planning, especially among investigators focusing on the various values that parents derived from having children. The psychological value of adding another child to the family has been presented in a systematic conceptual framework by Hoffman and Hoffman. Fawcett et al. (1975) and Bulatao et al. (1983) conducted researches focusing on the value of children to better understand psychological values. They have tackled conceptual and methodological aspects of family planning variables. A great deal of researches has been devoted to identifying and measuring the perceived costs and benefits (both economic and noneconomic) of children. The international Value-of--Children (VOC) studies of Fawcett et al. (1975) are especially notable. Also, these studies offer comparable cross-cultural data for analysis.

Another approach has been made by Fishbein (1972). He has proposed a theory of social behavior and a cognitive model which has been widely applied to the investigation of family planning attitudes, behavioral intentions and behaviors. After reviewing the family planning literature he saw no apriori reasons why psychological processes underlying the formation of family planning intention should differ from processes underlying the formation of any other behavioral or outcome intention. Consistent with this argument, Fishbein and his colleagues have done fruitful work, and developed a model which brought considerable success in predicting family planning behavior (Jaccard & Davidson, 1972 ; Davidson & Jaccard 1975 ; Fishbein & Jaccard, 1973).

According to this theory, an individual's behavior (B) is assume to be a function of his intention to perform the behavior in question, that is his behavioral intention (BI), and this intention is a function of two factors : (a) his beliefs about the consequences of performing that behavior multiplied by the evaluation of those consequences and (b) his beliefs about what others think he should do, that is, his normative beliefs multiplied by his motivation to comply with those perceived norms. The theory is presented as follow :

$$B \sim BI = \left[\sum_{i=1}^{n} Bi ai \right] W_1 + \left[\sum_{i=1}^{m} NBi Mci \right] W_2 \quad \cdots\cdots\cdots(1)$$

Where

B : overt behavior

BI : the behavioral intention to perform that behavior

Bi : the beliefs (perceived probability) that performing the behavior will lead to some consequences Xi

ai : the evaluation of Xi

NBi : the perceived expectations of referent i

Mci : the motivation to comply with referent i

W_1 and W_2 : empirically determined regression weights

The first component of equation 1 ($\sum Biai$) is a measure of attitude. Fishbein's (1963) theory proposes that an individual's attitude toward some object is viewed as a function of his beliefs about that object and evaluations of those beliefs.

However, in Equation 1, the first component represents an individual's attitude toward the behavior per se and not an attitude toward the object of the behavior. Fishbein (1967) presented an alternative formulation as follows:

$$B \sim BI = [Aact]W_1 + \left[\sum_{i=1}^{m} NBiMci\right]W_2 \quad \cdots\cdots(2)$$

Where

Aact : the attitude toward the behavior in question, and the remaining symbols are previously defined.

A number of studies have provided emperical support for the model proposed in Equation 1 and 2 (Ajzen & Fishbein, 1972 ; Pomazal & Jaccard, 1976 ; Stutzman & Green, 1982). In Japan, Inoue & Tanaka (1973) attempted to test Fishbein's model and continuing studies are proving fruitful empirical support for that model.

This study has two main purposes ; the first is to apply Fishbein's model to actual family planning behavior as well as to behavioral intention. In other words, it is to find out the determinants of family planning behavior ; to have or not to have another child in specific situations. But as this study was actually conducted in the summer of 1984, and the overt behavior will be measured in the summer of 1985, results reported in this paper are only about behavioral intentions. The second purpose is to try to find out the value differences between the mother who has only one child, and the mother who already has two children. According to Berelson (1973), psychologically-oriented studies of the value of children to parents represent one of the new lines of inquiry in the general area of determinants of fertility. The value and cost of children is a topic that is usually associated with psychological and economic research. But in this paper, only the first body of the study will be generally discussed.

In Japan, a noticeable study has been conducted by the Mainichi Newspaper Company. That is the Public Opinion Survey on Family Planning in Japan. Not only was this survey a pioneer project in the world, but it has also been continued every two years since 1950. This project has been attempting to look at Japan's turbulent economy and society in the postwar period from the standpoint of family planning. In other words, we can see the inside history of Japan's economic and social development in this survey. From this report, we learn that the Japanese birth rate has been declining since 1973. The crude birth rate of Japan was 19.4 in 1973, and continued to decline to 12.7 in 1983. However, the rate in Japan was still higher than in a few western countries like West Germany (10.1, 1982), Sweden (11.1, 1982), Netherlands (12.0, 1982), the phase of declining birth rate in modern Japanese society is major topic in population areas.

Of course, economic and social factors have affected fertility both directly and indirectly. But it seems not only those factors, but also the change of the value system among people toward childbearing and birth control has much influence on fertility. Surprisingly, very few studies, other than this Public Opinion Survey, have been conducted in Japan using microlevel approach, that is concerning the social psychological aspects to the fertility and family planning.

By limited stages, this study tries to make detailed observations on the fertility and family planning behavior of Japanese mothers.

Method

Sample

The respondents in this study were 359 Japanese mothers. Of these, 124 had one child and 235 had two children. In each case the respondent was not pregnant and under 35 years of age and the youngest or only child in the family was under 5 years of age.

Potential respondents' names were obtained through various lists of kindergarden and nursery school pupils.

All respondents were asked to complete the questionnaires in their homes and to return them mail.

The mean age of one-child-mothers was 26.3 years and that of two-children-mothers

was 29.4 years.

Measuring the Independent Variables

The measurement of the three independent variables of the Fishbein model being investigated are described below :

(1) *Attitude toward having or not having another child* (Aact)

The attitudinal variable was measured by using the semantic differential method (Osgood, Suci, & Tannenbaum, 1957). Using this method, respondents were asked to rate their having another child within two years by checking each of the following evaluative scales :

Your having another child within two years is

good ⌊_____⌋ bad
foolish ⌊_____⌋ wise
pleasant ⌊_____⌋ unpleasant
unbeneficial ⌊_____⌋ beneficial

The response to each scale could be scored from +3 to −3 and the sum of these scores was used as the attitude measure.

(2) *Normative beliefs* (NB)

Normative beliefs were obtained regarding what six referents, potentially significant ones, thought the respondent ought to do regarding whether or not to have another child. The referents were chosen from among the referents used by Fishbein and his colleagues in their studies. They included : spouse, parents, siblings and other close family members, close friends, in-laws, and people who hold the same religious or moral beliefs.

Respondents were asked to check on following scales :

Your husband expects you to have another child within two years.

very likely ⌊_____⌋ very unlikely

Their answers were measured by an 11-point scale with categories ranging from "very likely" (scored + 5) to "very unlikely" (scored −5).

(3) *Motivation to comply* (Mc)

Respondents were next asked to assess how important each of these referent's opinion was to them in making the decision regarding whether or not to have another child. For example, "How important is it to you to do what your husband wants you to do ?" Their answers were obtained using an 11-point scale with ranging from "not at all important" (scored −5) to "very important" (scored + 5). The more important the respondent feels it is to do what the referent expects her to do, the greater the motivation to comply.

The normative component of this model was obtained by the sum of the products of the probability that each referent thought the respondent should have another child multiplied by the respondent's motivation to comply with the referent (NBMc).

Table 1　Mean scores of behavioral intention

Sample Group and Size	BI
All (N = 359)	−0.97
One child (N = 124)	2.23
Two children (N = 235)	−2.66
One boy (N = 61)	2.16
One girl (N = 63)	2.30
Two boys (N = 73)	−2.63
Two girls (N = 54)	−2.20
One boy One girl (N = 108)	−2.91

Note : Possible scores range from −5 (very unlikely) to +5 (very likely).

Measuring the dependent Variables

Intention to have another child (BI)

The respondents were first asked to state how many children they intended to have, prior to being asked about the components of the

model. In the latter part of the questions concerning the model, they were again asked about their intentions regarding whether to have (or not to have) another child within (1) the next 2 years, (2) the next 4 years, and (3) any time in the future (11-point scale).

Results and Discussion

In proceeding to test the predicting power of the model regarding behavioral intention (BI), an examination was made on the relationship between the number of living children and the behavioral intention to have another child. As shown in Table 1, the mean score of intentions of all the respondents (N=359) was −0.97, and we can say that the mother who had only child had positive intentions (2.23) on the one hand, and the mother with two children has rather negative intentions (−2.66) on the other.

The Seventeenth National Survey on Family Planning (Mainichi Newspapers, 1984)reported that the perceived ideal number of children for each couple was 2 (43.8%) or 3 (42.7%) and the average was 2.55. So we can presume the perceived ideal number of children in modern Japanese society is roughly 2 or 3.

On the basis of above results, a further analysis was done according to Fishbein model, this discerned the degree to which its attitudinal or normative components predicted the behavioral intentions of the respondents to have another child within two years. This specific situation (within two years) was chosen as the critical dependent variable, because it matched the time orientation of the various questions comprising the model; the respondents were asked to assess a variety of questions concerning the next two years. Also the multiple regression analyses were performed using the two components of the model, the attitudinal and normative, as independent variables in predicting BI. These analyses were performed separately for the total sample and for the subsamples determined by number and sex of living children.

As shown in Table 3, it could be seen that Fishbein model provided accurate predictions of family planning intentions. The multiple correlation of the model's components with behavioral intention to have another child within two years was .76 ($p < .001$). The correlation between the dependent variable and each component of the model was .65 for the attitudinal component and .72 for the normative component respectively, and either was statistically significant beyond the .001 level.

According to the mean scores (Table 2), the one- child- mothers had positive scores both in Aact (2.13) and NB (2.16). And there was no significant difference between the one- boy-mothers and the one-girl-mothers.

But the results of the multiple regression analyses (Table 3) showed a difference according to the child's sex difference, that is, the one-boy-mothers' intentions were relatively determined by their Aact (.57, $p < .001$) than by NB (.36, $p < .001$), but the one-girl-mothers' intentions were reversely determined by NB (.49, $p < .001$) rather than Aact (.36, $p < .001$).

Concerning the two-children-mothers, they had negative mean scores in both Aact (−0.43) and NB (−1.41), and there were small differences among two-children-mothers' normative components; that is, we could just find two-girls -mothers had higher normative scores (−0.73) than the rest of the two- children- mothers (−1.61, $p < .001$). But as Table 3 shows, the in-

Table 2 Mean scores of attitudinal and normative compornent

Sample Group and Size	AB	ΣNBs
All (N = 359)	0.45	−0.18
One child (N = 124)	2.13	2.16
Two children (N = 235)	−0.43	−1.41
One boy (N = 61)	2.00	2.17
One girl (N = 63)	2.26	2.11
Two boys (N = 73)	−0.71	−1.49
Two girls (N = 54)	−0.04	−0.73
One boy One girl (N = 108)	−0.44	−1.69

Note : Possible scores range from −5 (very unlikely) to +5 (very likely), converted.

Table 3 Zero order correlations between attitudinal (Aact) and normative (∑ NBs) components and behavioral intention (BI), standardized regression coefficients (betaweights β) and multiple correlations

Sample Group and Size	AB-BI γ	AB-BI β	∑NBs-BI γ	∑NBs-BI β	R
ALL (N = 359)	.65	.31*	.72	.52*	.76*
One child (N = 124)	.52	.35*	.49	.29*	.57*
Two children (N = 235)	.52	.26*	.63	.50*	.67*
One boy (N = 61)	.76	.57*	.66	.36*	.82*
One girl (N = 63)	.69	.36*	.73	.49*	.78*
Two boys (N = 73)	.58	.34*	.66	.50*	.73*
Two girls (N = 54)	.69	.36*	.77	.55*	.82*
One boy One girl (N = 108)	.61	.37*	.67	.49*	.74*

* P < .001

tentions of two-children-mothers were more influenced by NB (.50, p< .001) than Aact (.26, p < .001) relatively, and the two-girls-mothers were most influenced by NB (.55, p < .001). Judging from the above results, in determinants of the behavioral intention, there were considerable differences caused by the children's sex. That is, while mothers with one boy might be able to decide to have or not to have another child, being rather indifferent to referents' expectation, mothers with one girl or two children might feel that they did not have such freedom.

This strikingly noticeable finding is due to sex preferences and the number of living child (children). We could say that parents think about their child (children) and value them in terms of satisfactions and costs, and also they value sons and daughters differently. However in this paper, we did not make any investigation as to the value which mothers held about their child (children); we should make further examination concerning parents' consideration for child (children). The Value-of-Children projects explored the question of sex preferences and the motivation behind them. Cross-culturally, they found great differences. For example, in Korea and Taiwan, greater value was on sons than daughters. Sons were valued to continue the family name, or to provide various types of economical and practical help and old-age-support. But in Japan, there was only a small value difference between sons and daughters. However, the reseacher explained that this small differences arose because Japanese mostly put emphasis on the psychological satisfaction of sex preference.

When it was compared with other countries, the differences were small, but further investigations are needed in order to find out the power of the influence of those psychological factors. In Japan, we can observe that boys are more often welcomed as successors in families than girls.

From the findings in this study, a number of interesting topics have been explored. Making

deep and detailed approaches, focusing on psychological variables involved in family planning and fertility-related behaviors, are required. More specifically, we should try to apply the social psychological theory of the determinants of behavioral intentions in order to understand family planning behavior. This knowledge is necessary in order for family planning programs to be effective. So further studies should be made to find out closer related variables with family planning behaviors.

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