Canadian Studies in Population, Vol. 9, 1982, pp. 33-44

BOOMTOWN FERTILITY

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Résumé — Les données d'une enquête à Fort McMurray, Alberta, sont analysées afin de déterminer l'incidence de certains facteurs sociaux sur la fécondité. Etant donné une population jeune, très mobile, et économiquement active, on prévoyait que la fertilité de cette communauté frontiè serait plus basse que celle d'autres villes canadiennes avec une population plus âgée et plus établie. Les résultats ne confirment pas l'hypothèse: la fécondité à Fort McMurray est semblable à celle du reste du Canada. Cet article tente d'expliquer la conformité des couples de Fort McMurray quant à la taille des familles.

Abstract — Data from a 1979 survey of Fort McMurray, Alberta, are used to examine the impact of selected social factors upon fertility. Since its population is young, highly mobile, and economically active, we anticipated that fertility in this frontier community could be lower than in typical Canadian cities with older, more settled residents. The results did not confirm our hypothesis: fertility in Fort McMurray is similar to that observed elsewhere in Canada. The paper suggests explanations for the conformity of Fort McMurray couples with respect to family size.

Key Words — **"Boomtown Fertility"**

Introduction

During the past decade, considerable research has focused on resource communities and the socioeconomic impact of a single, prospering industry. Such studies have been preoccupied with the "boom to bust" mentality typically assumed to characterize residents of such localities, and the accompanying problems of social psychological adjustment to their isolated circumstances (Bowles, 1981; Jackson and Poushinsky, 1971; Lucas, 1971; Nickels and Ledger, 1976; Porteous, 1976; Riffel, 1975).

The investigation of demographic factors in resource town research has been limited principally to broad profiles which set the background for otherwise non-demographic analyses. The only demographic variable which has received serious attention is migration, due to the unusually high mobility of boomtown populations (MacMillan *et al.*, 1974). Other demographic processes have remained unexplored, among them, fertility and its links to the socioeconomic conditions typical of frontier towns. The present study, based on data collected in a frontier Alberta community, is concerned with this issue. In particular, the following questions are asked:

(1) Does fertility in Fort McMurray differ from that in other Canadian communities with older, more settled populations?

(2) Is length of residence in Fort McMurray linked to family size differences?

(3) Does fertility within the community vary in any unusual ways according to socioeconomic factors such as income, education, and occupation?

Fort McMurray provides an appropriate setting for exploration of fertility behaviour because its population is young, with a large proportion of married couples of childbearing age, and because its

residents probably migrated to the area for principally economic reasons (Matthiasson, 1971). Moreover, inhabitants of resource communities are typically seen as "rolling stones," moving frequently from place to place (Larson, 1979; MacMillan *et al.*, 1974; Matthaisson, 1971). We anticipated that this youthful, highly mobile, economically active[1] community would exhibit lower fertility than the larger Canadian population. Three further characteristics of frontier settlement led us to anticipate that Fort McMurray would be unattractive for settled family life: the stress associated with the move and subsequent adjustment period (Fried, 1965; Larson, 1979), the inadequacy of services and facilities in frontier areas (Graham *et al.*, 1975; Ward, 1973), and the unsavoury reputations of these communities.[2]

We expected, therefore, that for many couples migration to Fort McMurray would represent a temporary economic strategy for accumulating the necessary savings to establish permanent homes elsewhere. This line of reasoning seemed to be validated by Larson's (1979:94) findings that "younger, smaller families are more inclined to migrate to such communities."

Several methodological problems in our study of fertility in Fort McMurray should be noted at the outset. First, we interviewed residents who had established domiciles in the community, however temporary. Hence we can infer nothing about the characteristics of migrants who had come and gone. Second, the survey was conducted during the post-construction period which may reflect a relative "quiet after the storm." Factors thought to inhibit fertility may well have been stronger during the construction boom itself. Third, the average span of time spent by residents in the town was relatively short. Therefore, little can be said about the possible long-term influences of Fort McMurray life on fertility. Finally, our study is based on a limited sample from only one rapid growth community, and further investigation is necessary to substantiate these findings.

Data and Methods

In 1979, a social impact study was conducted in Fort McMurray, a resource community located 450 kilometers north of Edmonton. During the past 15 years, the town had grown at rates unprecedented by other northern communities. Workers flocked to the area in two major waves: the first, for the construction of the Suncor (originally Great Canadian Oil Sands) plant during 1963-1968, when the population grew at a rate of 38.5 per cent; the second, for the building of Syncrude during 1973-1978, when the population grew at 21.4 per cent annually.

The first migrants to the area were primarily single men who occupied construction camps near the plants. As Suncor became operational, family migration became more prominent — a pattern encouraged by both companies. Correspondingly, the proportion of married persons in the population aged 15 and over increased from 63 per cent in 1961 to 75 per cent in 1971. This proportion was the highest of any reported in Canada's northern communities for 1971: Yellowknife had only 44 per cent married; Grand Prairie, 67 per cent; and Whitehorse, 69 per cent.

Our study was concerned primarily with socioeconomic variables, such as employment, housing, community services, and family life, but demographic characteristics, including marriage, migration, and fertility, were also examined. The data were collected from a systematic sample of 430 dwelling units, drawn from a total number of 8,606 residences. The interviewer randomly chose an adult within the household by means of a sampling chart contained in each questionnaire. Randomness was ensured by randomly assigning different sampling charts to interview schedules. The present analysis selected only currently-married women of fertile ages (under 46 years old) — 228 respondents in total. Since the survey sampled both males and females, the data utilized in this paper were obtained from the wife in 142 cases, and from the husband concerning his wife in 86 cases.

Fertility was measured by total number of live-born children and expected completed family size. Questions were included on duration of marriage and age of wife — variables which by their nature have important effects on fertility. The socioeconomic status of respondents was gauged by a level of living index which incorporated a long list of consumer and investment items. This index was preferred to income information which, due to respondent sensitivity or question complexity, was missing in 16 per cent of the cases. Analyses using household income showed similar results to those using level of living. The other independent variables used in this paper are education (number of years of schooling completed), wife's employment status (employed or not employed), number of years resident in Fort McMurray, religion (Roman Catholic or non-Catholic), respondent's nativity (Canadian-born or foreign-born), and rural-urban background (defined by the respondent and grouped as "rural" or "small town" rural).

Characteristics of the Sample

Descriptive data on the sample confirmed our expectations that Fort McMurray's population would be young, highly mobile, and economically motivated. For example, in the 1979 municipal census those over 44 years of age represented only seven per cent of the population, compared to 25 per cent for Alberta and 28 per cent for Canada. Even in the context of other northern resource towns, this percentage is low.

Geographic mobility was assessed by several measures, among them the number of moves between different places in the five years preceding the survey. Our respondents had moved an average of 2.2 times, and only 18 per cent had not moved at all during 1974-1979. This represents a high level of geographic mobility even within Canada's relatively migratory population. In the nation as a whole, stayers accounted for about 60 per cent of the most highly mobile age group, 25-29 (Kalbach and McVey, 1979:135).

As anticipated, Fort McMurray residents were better off economically than the majority of Canadians. The average total household income for our sample was $27,000 in 1978 — considerably higher than the estimated average Edmonton income during the same period of $21,000 (Kennedy and Northcott, 1979). Since this refers to total income earned during the year, for 1978 migrants it includes incomes earned elsewhere as well as in Fort McMurray. When only those who had resided the whole year in the community were selected, incomes were even higher. For example, those who migrated to Fort McMurray during 1977 reported household incomes averaging over $29,000 in 1978. This provides indirect evidence that incomes increased as a result of the move. Even if we add an inflation factor, Fort McMurray incomes ranked well above 1977 Alberta and Canadian average household earnings, $17,600 and $16,800 respectively. Moreover, the respondents were not a select group of professional individuals who would receive these incomes no matter where they lived. Fort McMurray had a lower proportion of its population in professional, technical, and managerial occupations (24 per cent) than Edmonton (33 per cent) (Kennedy and Northcott, 1979), and a higher percentage in lower-status professions, such as processing and construction.

The women in our sample had completed, on average, 11.9 years of education. Only six per cent had dropped out at the elementary level and 22 per cent had completed more than 13 years of schooling. This compared favourably with Canadian census data for 1976, where only 16 per cent women aged 20-44 had finished secondary school (Canada, 1978:29-31). Our comparison is somewhat misleading, however, because the national data included a large proportion of older women, whose educational attainment was considerably lower.

Female labour force participation in our sample also resembled the rest of Canada: the participation rate for women was estimated at 48.3 per cent in June 1979, compared to the national unadjusted rate of 49.5 per cent. Corresponding male rates were 97.5 per cent for Fort McMurray and 80.3 per cent for Canada as a whole (Gartrell *et al.*, 1980). These participation rates are somewhat inflated by the unusual age structure of the base population: 15- and 16-year-olds were omitted from our survey, and less than one per cent of residents were over 65 years old. If the unemployed (out-of-work and

looking-for-work) are included, survey estimates of labour force participation were 56 per cent for females and 100 per cent for males.

A relatively high proportion of our respondents (21 per cent) were first generation immigrants to Canada. Forty-three per cent of the interviewees had urban backgrounds, 44 per cent came from small towns, and 13 per cent from rural areas. Protestants constituted the largest religious group (46 per cent), followed by Roman Catholics (30 per cent), other non-Christian religions (13 per cent), and "no religion" (11 per cent). This distribution is somewhat different from that of Alberta in 1971, where only 24 per cent of the population was Roman Catholic, probably reflecting the influence of migrants from eastern Canada.

TABLE 1. MEAN ACTUAL AND EXPECTED NUMBER OF CHILDREN BY AGE OF WIFE AND DURATION OF MARRIAGE FOR WOMEN UNDER 46 YEARS OLD

Age of Wife and Duration of Marriage	Mean Number of Children		N
	Actual	Expected	
Age of Wife			
Less than 25	0.78	2.33	37
25-29	1.68	2.35	74
30-34	2.24	2.37	62
35-40	2.93	2.93	29
40+	3.24	3.28	25
Total	2.02	2.53	227*
Duration of Marriage			
Less than 3 years	0.61	2.50	36
3-5	1.42	2.38	24
6-10	1.94	2.20	78
11-15	2.17	2.21	48
15+	3.83	3.86	36
Total	2.02	2.55	222*

* Totals do not correspond due to missing data on duration of marriage variable.

Results

Actual and expected fertility

Fertility in Fort McMurray revealed clear and stable patterns. Table 1 presents average parities and mean expected family sizes for women of childbearing ages. Women have had a mean of two children and anticipate an average completed family size of 2.5. The relationships between fertility and wife's age are linear and monotonic, rising smoothly from younger to older age categories ($r^2 = .285$).[3]

The most striking parity difference is between women married 11-15 years and those married more than 15 years. Such a pronounced difference (an average of 1.6 children) cannot be totally attributable

to shifts in societal norms concerning childbearing. Nor are there significant variations in length of stay in Fort McMurray by marriage duration. Our findings indicate, however, that fertility has declined in more recent cohorts and, judging from the women's expected family size, it seems that families will likely remain small.

Contrary to our expectations, fertility in Fort McMurray was similar to that observed in other parts of Canada (Table 2). In the cohort aged 40, which approximates completed fertility, average parity closely resembles that of the nation as a whole and most other Canadian cities. Average family size is smaller in Fort McMurray than in other areas, probably due to the fact that our sample is, on average, younger. In the Toronto study, for example, 52 per cent of the women were under 35 years of age, compared to 76 per cent of those in the Fort McMurray sample. Comparisons of expected completed family size in the two cities confirm this point: women aged 29-34 expected equal numbers of children (mean = 2.9).

TABLE 2. COMPARISON OF FORT MCMURRAY RESULTS WITH SELECTED CANADIAN STUDIES: AVERAGE PARITY BY AGE GROUP

	Average Parity				
Age Group	Toronto (1968)	Ottawa* (1973)	3 City** Average (1971)	Canada (1971)	Fort McMurray (1979)
Less than 25	1.02	0.9	0.83	0.91	0.78
25-29	1.50	1.8		1.71	1.68
30-34	2.47	2.7	2.45	2.62	2.24
35-39	2.68	3.2		3.16	2.93
40	2.73	3.3	3.10	3.35	3.24
Total	2.25	2.5	2.56	2.31	2.02
N	1630	802		2307	227

* Data reported to one decimal point only.

** Montreal, Toronto and Vancouver. Data for selected age groups only.

Sources: Toronto: Balakrishnan et al., 1975:23
Ottawa: Pool, 1975:30
3 Cities: Lapierre-Adamcyk, 1979:20
Canada: Collishaw, 1976:42

Since most of our sources for the above comparisons are nearly a decade old, we also examined data from the 1976 Canadian Census sample surveys. The 1976 data is not strictly comparable

because it refers to the number of resident children per husband-wife family but, for younger women, this closely approximates number of live births:

	Number of Children		
Age Group	Canada*	Alberta*	Fort McMurray
Less than 24	0.7	0.7	0.8
25 - 34	1.7	1.9	1.9

*The parities for Canada and Alberta are somewhat underestimated since they include only living resident children. Due to the absence from the household of older children, the data for the 35 age group is problematic and is not presented here. Source for Canadian and Alberta data is Census of Canada, Supplementary Reports, 'Housing and Families. Husband Wife Families,' Vol. 9, Ottawa, 1976.

Our results once again confirm the similarity of Fort McMurray to the rest of Canada; to Alberta, in fact, it is virtually identical.

While we used both age of wife and duration of marriage as independent variables for purposes of comparison, the remaining analysis will focus on the latter indicator. These variables are highly correlated ($r = .844$), but duration of marriage is more closely related to parity ($r = .680$) than age ($r = .539$), even if we omit the nonlinear components of duration of marriage. Besides, it better represents time at risk.

On the basis of our evidence so far, Fort McMurray women exhibit remarkably "typical" fertility behaviour. We still do not know, however, whether this was true of migrants when they first decided to move to the remote community. In other words, our original hypothesis could be true, but something unforseen in the boomtown experience somehow altered previous intentions. Since data did not permit us to easily examine the number of children born before and after moving to Fort McMurray, we estimated surrogate "fertility rates" per year of marrage before and after the move by disaggregating duration of marriage into two categories (Table 3). In this analysis we also controlled for socioeconomic factors generally related to both fertility and migration. The effects of these variables will be discussed in the following section.

Table 3 shows that fertility rates are virtually identical before and after moving to Fort McMurray. Each year of marriage in either period contributes, on average, 0.14 children. The larger standard error associated with the "after McMurray" variable may partially reflect the instabiltiy associated with moving, as well as the fact that the average length of marriage was greater before migration to Fort McMurray (6.3 years) than afterwards (2.6 years).

Variations in Fertility by Socioeconomic Indicators

We also investigated varations in fertility within the community to see whether any unusual patterns emerged. According to previous Canadian studies, fertility is affected by a number of socioeconomic characteristics such as education, income, country of birth, religion, labour force status of the wife, and rural-urban background. Henripin (1968) found that rural-urban background, level of schooling, wife's religion, husband's income, and wife's native language were all related to fertility. Analyzing 1971 census data, Collishaw (1976) found that such differentials were declining, but that education and income still affected fertility. Interestingly, the relationship with income, which was negative in 1961, was positive in 1971. The Toronto study (Balakrishnan *et al.*, 1975) and a fertility survey in Quebec (Henripin and Lapierre-Adamyck, 1974) noted similar but weaker associations. Income, moreover, had no systematic or significant effect on fertility in the Toronto study. Finally, research on Canadian metropolitan areas between 1961 and 1971 showed that socioeconomic variables had become less effective in explaining fertility differences over the inter-censal period (Lapierre-Adamcyk, 1979).

TABLE 3. MULTIPLE REGRESSION EQUATIONS: PARITY WITH 'SPLIT' DURATION OF MARRIAGE (MARDUR) VARIABLES AND OTHER SOCIOECONOMIC VARIABLES (N210)

Independent Variable	B	Beta	Standard Error B	F	r
Years Married Before Ft. McM.	0.139	0.576	0.012	128.92*	0.613
Years Married After Ft. McM.	0.136	0.269	0.027	25.56*	0.307
Wife's Education (Years)	-0.092	-0.157	0.031	8.71*	-0.261
Wife Employed**	-0.337	-0.118	0.144	5.48*	-0.132
First Generation Immigrant**	-0.285	-0.081	0.182	2.44	-0.160
Urban Background**	-0.132	-0.046	0.149	***	-0.153
Roman Catholic**	-0.058	-0.019	0.155	***	-0.046
Level of Living Index	-0.005	-0.018	0.021	***	-0.160
Constant	2.221				

$R^2 = 0.511$ $\bar{R}^2 = 0.492$ $F = 26.28$ $P < .0001$

Standard Error = 1.01

* Effects significant ($p < .01$).
** Binary variables: employed, immigrant, urban, Roman Catholic = 1.
*** F smaller than 1.

Zero order correlation co-efficients for parity and selected socioeconomic variables in the Fort McMurray sample are presented in Table 4 (last column). With the exception of religion, all zero order correlations with fertility are statistically significant at the .01 level. Education of the wife has the expected negative correlation, as does her labour force participation. Women with post-secondary education have an average of 1.27 less children than those with only primary education, and working women have 0.34 fewer children than do housewives. In keeping with other findings, immigrants have lower fertility (mean = 1.65 children) than native-born Canadians (mean = 2.12 children). Rural-urban differentials also operate in the usual manner, with urban women having fewer children (mean = 1.73 children) than rural women (mean = 2.23).

TABLE 4. MUTIPLE REGRESSION EQUATION: PARITY WITH DURATION OF MARRIAGE AND OTHER SOCIOECONOMIC VARIABLES (N210)

Independent Variables	B	Beta	Standard Error B	F	r
Years Married	0.156	0.693	0.011	187.89*	0.718
Wife's Education (Years)	-0.074	-0.127	0.029	6.37*	-0.261
Wife Employed**	-0.330	-0.116	0.135	5.98*	-0.132
First Generation Immigrant**	-0.270	-0.077	0.171	2.50	-0.160
No. of Years in Ft. McMurray	0.025	0.056	0.022	1.28	0.245
Level of Living Index	-0.018	-0.049	0.020	***	0.160
Urban Background**	-0.085	-0.030	0.140	***	-0.153
Roman Catholic**	Too small to be computed				-0.056
Constant	1.764				

$R^2 = 0.568$ $\bar{R}^2 = 0.555$ $F = 44.44$ $P < .0001$

Standard Error = 0.946

* Effects significant ($p < .01$)
** Binary variables: employed, immigrant, urban, Roman Catholic = 1
*** F smaller than 1

The positive relationship between level of living and fertility agrees with recent observations elsewhere in Canada: since the raising of children is costly, those with more resources can afford relatively more offspring. The lack of effect of religion on fertility is in line with Collishaw's (1976) observation that fertility differentials among religious denominations are disappearing. Length of stay in Fort McMurray is positively correlated with parity, a finding which casts further doubt on the validity of our low migrant fertility hypothesis.

Since many of the socioeconomic correlates are interrelated, a stepwise multiple regression analysis, with parity as the dependent variable, allowed us to assess their relative importance as determinants of fertility. As Table 4 shows, the combination of independent factors accounts for a rather high 56 per cent of the total variance in fertility. As expected, duration of marriage makes the most important contribution, accounting for 88 per cent of the total variance explained. Of the socioeconomic controls; only education and employment have significant independent effects on fertility. These results agree with those of Balakrishnan *et al.* (1975:182), who, using multiple classification analysis, found that both wife's education and labour force participation were correlated with fertility, net of other socioeconomic factors. In the latter study, the effect of nativity upon fertility became more pronounced after taking other variables into account whereas, in the Fort McMurray sample, the effect largely disappeared. Controlling for duration of marriage may explain these differences, since immigrants had been married, on average, one year less than native Canadians. Further, religion had considerable impact in the Toronto study; in ours, it was consistently unimportant.

Using multiple regression analysis, we also investigated whether our other fertility indicator, expected family size, was related to socioeconomic factors in similar ways as current fertility. In this case, the independent variables explained much less variance ($\bar{R}^2 = 0.18$; Std. error = 1.124; $F = 7.34$; $P. < .0001$). Duration of marriage continued to be an important predictor, but failed to have the same dominating influence on anticipated family size as on parity. Education, again, was significantly correlated with fertility: women with primary education expected an average of 3.14 children, compared to 2.29 for those with post-secondary schooling. The effects of the other independent variables upon anticipated family size were in the expected direction but none added significantly to predictive accuracy when they were added to the equation. While working women had significantly lower actual fertility (Table 4), they apparently did not expect to have fewer total children. In the Toronto study, by contrast, working women anticipated smaller families than non-working wives.

Discussion

These results conclusively show that the fertility of Fort McMurray couples was remarkably similar to the larger Canadian population. As expected, migrants were unusual in their mobility and economic behaviour, yet these factors were not linked to lower fertility. Nor did it seem that life in Fort McMurray had altered previous family size intentions, in the sense of providing competing incentives to counteract economic motivation for reduced or delayed childbearing. From what we could tell, fertility before and after the move was essentially the same. Length of residence in the community was, in fact, positively correlated with family size, but this effect largely disappeared when other variables were controlled.

What explanation can be offered for the general conformity of Fort McMurray couples with respect to their fertility behaviour? Our results indicate that residents, while atypical in certain respects, constituted an otherwise "normal" population. The larger survey also revealed fairly high levels of family and community satisfaction. Several questions probed marital and familial interaction before and after moving to Fort McMurray, including the relative frequency of "doing things together." Overall, 84 per cent of currently-married couples were married when they came to Fort McMurray. Of those married before the move, 46 per cent reported that marital relations had undergone no change, 26 per cent said they had improved, and 28 per cent felt they had worsened. By contrast, only 10 per cent of the parents reported a post-move decrease in interaction with children; 37 per cent reported an increase; and the remainder reported no change. Moving to Fort McMurray therefore seemed to have had more substantial (and more negative) effects upon spouse interaction than upon parent-child relations. Moreover, since frequent interaction with children was associated

with greater familial contentment, the move to Fort McMurray may have indirectly promoted greater family satisfaction (Krahn *et al.*, 1980).

Community satisfaction was high (mean = 6.3 on a 7-point scale) and resembled scores obtained for the same questions in the 1979 Edmonton area survey (mean = 6.1). Despite continued high in-migration (52 per cent had lived in Fort McMurray less than two years), the proportion of long-term residents who had stayed more than 4.5 years had almost doubled since 1969. Those who intended to stay permanently had more than doubled (to 48 per cent). This no doubt reflected the impact of local government and company efforts to make the town as attractive to settlers as possible by the provision of modern educational, health and recreation facilities, a variety of community services, and excellent road and air communications with Edmonton. Incomes were high and economic satisfaction was marked: a solid majority (about 60 per cent) reported that their financial position had improved in the past twelve months and 70 per cent expected further gains during the coming year.

Our findings also indicated that socioeconomic variables were related to fertility in ways resembling other Canadian localities. Our conclusions should be prefaced with the caveat that, like other studies, status was measured only at time of interview rather than before children were born. Level of living was positively associated with fertility, but the effect disappeared when other factors were controlled. The diminishing importance of income has been noted in other Canadian regions in recent years. It could be argued that economic factors have little net effect on fertility in this analysis because income levels are uniformly high in the survey area. The lack of differences between fertility in Fort McMurray and other populations provides indirect evidence against such arguments. Furthermore, pecuniary attitudes were also no more evident in Fort McMurray than in an earlier sample of the Canadian labour force. In both Fort McMurray and Canada, a significant minority (about one third) said that the inducement of a lucrative wage would pre-empt all other considerations of taking a job (Burnstein *et al.*, 1975).

Finally, our results cast doubt upon the stereotypes which portray boomtowns such as Fort McMurray as "last chance" havens for deviants and transitory fortune-seekers. Residents, on the whole, displayed typical family-building behaviour; many, in fact, viewed the community as a place to establish a permanent home. Few residents were "rolling stones" who moved continually from place to place without any attachments. Most were "normal" people who married, had children, and settled down. It is possible, however, that the inter-relationships among migration, fertility, and socioeconomic variables may vary among remote areas according to general living standards or other related factors. Similar studies of resource communities in different geographical regions, having varying levels of socioeconomic development or diverging employment policies, might well disclose peculiarities in fertility among boomtown migrants.

Acknowledgments

The data used in the analysis for this paper were collected under Research Project HS30.5, funded by the Alberta Oil Sands Environmental Research Program, Alberta Environment, Edmonton. The assistance of Geoff T. Rowe and David F. Sunahara with data preparation and analysis is gratefully acknowledged.

Footnotes

1 A large body of literature has been devoted to the study of the relationship between economic factors and fertility. While some demographers have argued for a positive income-fertility relationship (Becker, 1960; Kunz, 1965; Spengler, 1966), others have found that as income increases, fertility decreases (Blake, 1968; Cain, 1971; Cain and Weininger, 1970). In support of the latter hypothesis, several reasons are given: rising child costs accompanying increase in income (Cain, 1971; Leibenstein, 1957; Preston, 1971; Schultz, 1969), the nonstatic nature of tastes which increases the demand for alternative goods (Blake, 1967; Easterlin, 1969), and various noneconomic pressures associated with prosperity which lead parents to desire "high quality" children (Blake, 1967; Cain, 1971; Easterlin, 1969). Still other studies have shown little apparent interaction between the two variables (Cramer, 1980; Freedman and Thornton, 1982). The Freedman and Thornton paper provides a useful up-to-date review of studies on this relationship.

2 McVey and Ironside (1978) found that Alberta residents rated Fort McMurray, of all communities over 5,000 population in Alberta, as the least-desirable city in which to live. This study was conducted coincident to the peak of construction activity related to Syncrude, the second and larger of the two oil sands extraction plants in the Fort McMurray area.

3 There is a significant nonlinear component in the effects of marriage duration on fertility: $r^2 = .411$, $\eta^2 = .458$; $F = 6.24$; $P < .001$). However, effects were approximately linear and simple transformations failed to significantly improve r^2. In the case of number of children expected, the relationship is non-linear ($r^2 = .064$, $\eta^2 = .234$; $F = 15.65$; $P < .001$) and approximates a quadratic J curve.

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Received June, 1981; revised June, 1982.