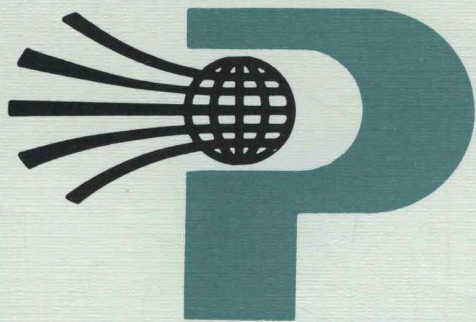




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**POPULATION CONTROL IS NO LONGER A MYTH
IN MANUPUR, PUNJAB**

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Manupur, one of more than a quarter million villages in India, has a special place in the field of population. Mahmud Mamdani's book The Myth of Population Control (1972), based on a micro-demographic study of this village in 1970, has had a powerful impact in India as well as in international forums. It expresses forcefully and with apparent objectivity the emerging left-oriented view that family planning programmes are of little use to the villagers of less developed countries.

Statements of Manupur men of all castes and occupational classes whom Mamdani could interview are quoted copiously in the book. All of them, rich or poor, landholder or not, conveyed more or less the same message: because children, particularly sons, are economically valuable (as sources of household and paid labour, insurance against various risks and old-age disability, and remittances from outside the village), Manupur villagers want as many of them as possible and hence family planning does not make sense to them. By using the data collected in 1982 from the same village, this paper shows that the family planning attitude and behaviour of villagers have changed significantly in the intervening period and attempts to relate them to socioeconomic changes that have occurred in the village.

Manupur is located in Punjab, which is the pioneer and most successful among Indian states to attain significant improvements in agricultural technology introduced by the green revolution. At the time of Mamdani's investigation, Manupur farmers, all of whom are Jat by caste, had already started enjoying the benefits of improved varieties of wheat and mechanization of some agricultural activities. According to Mamdani, however, these benefits actually increased the demand for agricultural labour--and, consequently, the labour value of children--among both landholders and landless labourers. He also cited examples to show that introduction of new technology (for example, the sewing machine) deprived many artisans of their traditional occupation and made them more dependent than before on the labour inputs of large families.

Manupur Revisited

In 1982, 12 years after Mamdani's investigation, we carried out a field investigation in the same village.¹ The main objective was to assess the economic and social changes, particularly in contraceptive behavior and attitudes toward family size, in the pattern of labour force participation among various castes, and in the economic value of children. In addition to informal discussion with key informants and observation of behaviour, a questionnaire survey was carried out in all households in which at least one

¹ The field investigation was carried out by Neeraj Kak during October-December 1982 with the assistance of local female health personnel. Moni Nag visited the village twice and had the opportunity to have informal discussions with key informants in the village. We are grateful to Sardar Joginder Singh, Sarpanch of the village Panchayat, and all the inhabitants of Manupur for the hospitality and cooperation they extended to us.

TABLE 1. POPULATION OF MANUPUR BY FOUR CASTE GROUPS, 1970 AND 1982

Caste Group ¹	Traditional Occupation	1970	1982
Jat	Farmer	1122 (59.5%)	1351 (57.2%)
Brahmin	Priest, moneylender, traditional physician	81 (4.3%)	99 (4.2%)
Harijan ²	Leather worker, sweeper, weaver	445 (23.6%)	585 (24.7%)
Other ser- vice castes ³ and Muslim	Shopkeeper, blacksmith, carpenter, barber, tailor, potter, water carrier, drummer, etc.	238 (12.7%)	329 (13.8%)
Total		1886	2364

¹The term "caste group" is used in the absence of anything more appropriate. All the Jat living in Manupur are Sikh, many of whom do not consider themselves a caste or section among the Hindu. Most of the other residents, except Brahmin, Khatri, Sonar, and Muslim, are Sikh. The migrant labourers (mostly from Uttar Pradesh in the early 1970s and from Bihar in the early 1980s) who come to the village for temporary periods are not included in population figures. It is difficult to estimate their number, but it was definitely much higher in 1982 than in 1970. During the last quarter of 1982 they numbered around 150.

²Harijan refers to what Mamdani designates as Achuta ("outcastes") and includes Chamar, Majbi, and Julaha castes.

³Other service castes include Khatri, Sonar, Lohar-Tarkhan, Nai, Marasi, Gujjar, Jheever, Darzi, and Ghumar. The word "other" is used since the Brahmin is also regarded as a service caste.

Sources: For 1970, Mamdani (1972:71); for 1982, records available from the Primary Health Centre of Manupur.

modern methods, easier to use and more effective. The striking change in age at marriage is more important" (Wyon and Gordon, 1971:298).

Increased Use of Modern Contraceptives

In his critique of the Khanna Study, Mamdani traces the rise in age at marriage to socioeconomic changes but asserts that the contraceptive programme was a total failure. He attributes the failure not to the "ignorance" or "misunderstanding" of the villagers (as most of the project personnel alleged) nor to the limitations of the contraceptive methods offered, but to the fact that the material condition of villagers belonging to most of the caste groups is such that "they want larger families" and,

"more important, they want them because they need them" (Mamdani, 1972:43). A government birth control clinic was opened at Manupur in 1963 but apparently had very little impact in the village up to 1970. By 1982, however, the acceptance of family planning was not uncommon in the village, as shown in Table 2.

TABLE 2. NUMBER OF MARRIED WOMEN OF REPRODUCTIVE AGE (15-44) USING CONTRACEPTIVE METHODS, IN FOUR CASTE GROUPS OF MANUPUR, 1982

Method	Jat	Brahmin	Harijan ¹	Other Ser- ² vice Castes and Muslim	All Groups
Tubectomy	35	1	15	5	56
Vasectomy	2	0	3	2	7
IUD	18	2	1	1	22
Condom	35	3	4	4	46
Rhythm	3	0	0	0	3
	—	—	—	—	—
Total Using	93 (60.4%)	6 (60.0%)	23 (33.8%)	12 (35.3%)	134 (50.4%)
No Method	61 (39.6%)	4 (40.0%)	45 (66.2%)	22 (64.7%)	132 (49.6%)
	—	—	—	—	—
Total Number	154	10	68	34	266

¹See Table 1, note 2.

²See Table 1, note 3.

About one-half of Manupur women of reproductive age were using a contraceptive method in 1982--a proportion considerably higher than the prevalence rate of 33 percent in Punjab and 26 percent in India in the same year. Although Mamdani does not provide an estimate of contraceptive prevalence in Manupur in 1970, the rate in 1982 was much higher than implied in his case studies and descriptive statements. The case studies include a few Jats, but none of them seems to have been using any contraceptive in 1970. In our 1982 sample of 154 Jat couples, 60.4 percent were using a contraceptive method--undoubtedly a significant change in the course of a dozen years. We found that three tubectomies out of 35 among the Jat had been performed prior to Mamdani's investigation. The contraceptive prevalence rate among the Jat in 1982 was on a par with that of the Brahmin, the caste singled out by Mamdani as favourable to family planning in 1970. The 1982 prevalence rates among the other two caste groups in Manupur were lower than those of the Jat and Brahmin, but higher than the average Punjab and Indian rates.

As to the methods of contraception used, the pattern in Manupur is somewhat different from that in Punjab or in India as a whole. Sterilization, particularly tubectomy, is currently the most popular method

in Manupur as in India, but it accounted for only 47 percent of all methods in Manupur in 1982, compared with 67 percent in Punjab and 82 percent in India. The proportions of couples using condoms and IUDs are not very high in Manupur but, when compared to the Punjab or Indian averages, they are significant. Perhaps they reflect to some extent a longer history of family planning programmes in Manupur than in other areas.

New Attitudes toward Family Size

Obviously, attitudes toward family size and family planning changed radically among all castes in Manupur since 1970. Before attempting to analyze the socioeconomic factors underlying the change, we relate below what we learned about the change from our informal discussion in 1982 with five residents of the village. The selection of case studies has been made with a view to represent varieties of castes and the attitudinal change that has occurred in the men interviewed by Mamdani in 1970 or in their sons.

D.C. (Brahmin). D.C.'s grandfather, a very rich man, was a moneylender. He was also a Hakim (traditional physician) with a large clientele in the villages around Manupur. As the prosperity and aristocracy of the Brahmin declined, many with adequate money and educational qualifications emigrated from Manupur. When Mamdani (1972:121) talked with D.C. in 1970, he, like other not-so-well-educated Brahmin who were left behind, was struggling to maintain a semblance of his customary status, privilege, and income. D.C. spent four years after high school learning the profession of the Hakim, but his practice had been considerably reduced since many villagers started using the government-owned free medical facilities at Khanna, a town four miles from Manupur. He supplemented his income by running a small shop and working as the village postmaster.

D.C.'s total monthly income of about Rupees 300 (Rupee 1=U.S.\$10) was hardly sufficient to support his wife, three sons, and three daughters. He told Mamdani that he was lucky to have three sons who were working outside Manupur. They sent him part of their salaries, which covered the family's ceremonial and emergency expenses. D.C. explained to Mamdani why he and many other villagers had accepted foam tablets from the Khanna project staff but did not use them:

"But they were so nice, you know. And they come from distant land to be with us. Couldn't we even do this much for them? Just take a few tablets?...If they are happy writing my name, let them do it. Why should it worry me?"

Two years after the birth of his sixth child (a daughter), however, D.C. decided to abstain from sexual intercourse as a birth control measure and has practiced abstinence since then. He gave two reasons: (1) even if the seventh child were a boy, he would not begin earning until D.C. was too old or dead; (2) he could not take the chance of having another daughter.

When we talked with D.C. in 1982, his income appeared to be lower than in 1970. He was still working as village postmaster, but his earnings as a shopkeeper and Hakim were nominal. His three sons were still working outside Manupur, but they sent only occasional remittances. Two of them were

married. Interestingly, both went for vasectomies at the initiative of D.C.--one after having two sons and two daughters, the other after having one son and one daughter. D.C. told us that it was good to have one son for security in old age, but it was too expensive these days to have a large family.

G.S. (Jat). On retiring from his military job in 1966, G.S. returned to Manupur and established himself as a farmer, owning 11 acres of land, an electric tubewell, and an electric chaff-cutter (Mamdani, 1972:81). His wife became sterile after bearing two sons and a daughter. At the time of Mamdani's visit in 1970, G.S.'s older son (21, married, one daughter) was living with him, and his younger son (19) was in the military. Since there was a shortage of family labour for farming, G.S. had to hire about 550 man-days of labour per year at such a high cost that, according to Mamdani's report of his family budget, had G.S. not been the recipient of a military pension, his total earnings would have fallen short of his minimal expenses. He told Mamdani that "if he had more sons, his labour costs would be significantly reduced and his household maintenance costs would only marginally increase." He also "expressed the hope that his second son would soon be married and that his two daughters-in-law would bear him many grandsons so that in the near future they could accumulate enough savings to buy more land" (Mamdani, 1972:85).

When we saw G.S. in 1982, his prospects had greatly improved. By this time the family owned a tractor and was hiring immigrant labour from Bihar for a major part of the agricultural activities. Their annual income from agriculture increased tremendously, from Rs. 3,000 in 1969-70 to Rs. 30,000 in 1981-82. G.S. was amused to hear what Mamdani had written about him. While he agreed with most of it, he added that things had changed radically and that he was wrong about his expectations from children. He told us:

"Children are of no use any more in old age of parents. They also do not do any work while going to school. My son in the military does not keep any connection with me. My son living with me has two sons and one daughter. I have advised him to get vasectomy."

The son living with G.S. told us later that he was considering a vasectomy. He thought that all of his children should be well educated and that it was better to use Bihari labourers for most of the farming activities than family or local labour.

M.S. (Nai). Although traditionally low in the caste hierarchy, the Nai (barber) along with the Darzi (tailor) are relatively prosperous among service castes in the village. Since modernization has eroded the need for traditional services provided by members of both castes, they are struggling to adjust to a new life by acquiring educational skills for their sons. Mamdani (1972:113) cites examples of a few Nai and Darzi, including M.S. According to him, they go "against another widely accepted 'truth' among family planners: that families who want education, and particularly higher education, for their children will limit their families because higher education is expensive and, therefore, to have many children is expensive." He got the impression from M.S. and other members of his caste that since they earned too little to finance the education of any children, the only solution open to them was to have enough sons, so that one could finish high

school by spending a part of his afternoon working for a farmer and then go to college, while the others worked to save and pay his fees. Once his college education was completed, he would use his increased earnings to finance his brothers' education.

Mamdani reports that M.S. succeeded in following the above strategy with his five sons. The three eldest sons have college degrees. At the time of Mamdani's visit, two of them were schoolteachers and another was a civil servant. The fourth was in college, and the youngest was in school. The third son remained unmarried at 30 in order to put his younger brother through college.

During our visit M.S. was not available, but we spoke with his second son (whom we shall call M.S. Jr.), a teacher in the local school. M.S. Jr. is the only person in the village (known to us) who has read Mamdani's book. He was very critical of it because, according to him, it virtually ignores the views of a portion of villagers, although a minority, who favour family planning. M.S. Jr. agreed that he and his brothers helped each other in attaining higher education, but all of the family members had to endure such prolonged hardship that he did not find it worthwhile. He thought that one reason for such hardship was that his parents had a large family of five sons and two daughters. His motivation for a smaller family was already formulated at the time of Mamdani's visit, but he was not interviewed by the latter. When asked why he himself has five children, he explained that he had two by his first wife, who had died, and his second wife wanted at least one son of her own.

H.S. (Lohar-Tarkhan). The traditional skills of the Lohar-Tarkhan (blacksmith-carpenter) have hardly kept pace with the change in agricultural technology and, as a result, the demand for their services has decreased sharply in Manupur. Since their numbers have increased and work cannot be increased, Mamdani (1972:112) argues that they might represent an ideal type for the family planner, but in reality he found them reasoning in a different way. To H.S., who was barely earning a subsistence living by serving only five farmers (his father used to serve fifty), the solution to his financial troubles was not to reduce the size of the family, but to increase it. A part of H.S.'s response to Mamdani's query is quoted below:

"Unless I am to leave this village, I must teach my sons to repair the new machines and maybe even get some machinery (tools) myself. The problem is I have no money, and the Cooperative Society only loans to farmers. So there is only one way out. And that is to have enough sons. Don't smile. If I have sons, they will work outside, labour even as animals do, but save. While the rest work, one son will learn the new skills. And maybe we will even be able to get some machinery with the savings of the other sons.....A rich man invests in his machines. We must invest in our children. It's that simple."

When we met H.S., his two sons were working outside Manupur as mechanics and had their own families. His only daughter was also married and was not living in his house. He told us:

"There is plenty of work for me to do. New technology has not made me useless. Of course, I have to work very hard

at this old age. My sons don't help me. These days very few do. It is better to have a small family."

T.S. (Jheever). The members of the Jheever (water carrier) caste lost their traditional job to the water pump. Since they had no skills in farm labour, the Jat employed them mostly to perform menial and time-consuming tasks, such as sending messages to other villages. Mamdani (1972:108) observed that a Jheever child, unlike his or her father, performed a variety of unskilled tasks, such as collecting manure for the farmer or tending his cattle. A Jheever boy would begin with light agricultural work at a young age and then subsequently could bring a modicum of material reward to his parents by joining the agricultural proletariat. When Mamdani spoke with T.S., a typical Jheever victim of technological change, the latter mistook Mamdani for a Khanna project worker who had returned for the summer and said:

"You were trying to convince me in 1960 that I shouldn't have any more sons. Now, you see, I have six sons and two daughters and I sit at home in leisure. They are grown up and they bring me money. One even works outside the village as a labourer. You told me I was a poor man and couldn't support a large family. Now, you see, because of my large family, I am a rich man."

When we saw T.S., he still depended upon his sons for survival, but he acknowledged that the labour situation had changed drastically during the last decade. His sons were no longer satisfied being agricultural labourers, working for the Jat. They had to compete with immigrant labourers from Bihar and Uttar Pradesh who were willing to work at a lower wage rate. The local labourers recognized that their children should be sufficiently educated to be qualified for jobs in industrial, commercial, or government sectors. At the end of our discussion with T.S., he remarked: "These days one shouldn't have more than two sons."

One gets the impression from Mamdani's book that parents of all castes except the Brahmin would like to have as many sons as possible. In our survey, however, only 16 percent of Jat males and 10 percent of Harijan males mentioned three or more when asked about their ideal number of sons. Despite a motivation toward smaller families, most Manupur residents still want to have at least two surviving sons. This is reflected both in their verbal responses and in their contraceptive behaviour. Table 3 shows that out of 63 couples who had undergone sterilization in our sample 56 (89 percent) did so when they had at least two surviving sons. Among the Jat, however, 6 couples out of 31 sterilized (19 percent) had only one son. In view of Mamdani's depiction of Manupur Jats' craving for large numbers of sons and their firm convictions against birth control, a drastic change in attitude toward family size seems to have taken place among them.

It is quite obvious that attitudes toward family size and contraceptive behaviour have changed considerably among all caste groups of Manupur since Mamdani's investigation in 1970. The change in contraceptive behaviour may be attributed at least in part to improvements in the government family planning program. Gradually the contraceptive methods available increased and delivery of services became more efficient. The change in attitude toward family size, however, can be linked mainly to a change in the economic value of children--actual as well as that perceived by the parents. The economic value of children in Manupur is manifested in their labour value and

their value as a source of old-age support and risk insurance.

TABLE 3. NUMBER OF MANUPUR COUPLES IN FOUR CASTE GROUPS IN WHICH EITHER WIFE OR HUSBAND HAS UNDERGONE STERILIZATION AFTER HAVING ONE SON OR AT LEAST TWO SONS, BY NUMBER OF SURVIVING CHILDREN, 1982

	Number of Surviving Children									
	2		3		4		5 or More		2 or More Children	
	1 Son	At Least 2 Sons	1 Son	At Least 2 Sons	1 Son	At Least 2 Sons	1 Son	At Least 2 Sons	1 Son	At Least 2 Sons
Jat	2	3	0	15	2	7	2	6	6	31
Brahmin	0	1	0	0	0	0	0	0	0	1
Harijan	0	0	0	1	0	5	1	11	1	17
Other Castes	0	0	0	1	0	3	0	3	0	7
	—	—	—	—	—	—	—	—	—	—
Total	2	4	0	17	2	15	3	20	7	56

Change in Labour Value of Children

A decline in the labour value of children is known to be associated with motivation for small families and the lowering of the fertility level (Nag, 1983:58). Let us see what the children in Manipur currently do and how the pattern of their activities has changed during the period.

From our interviews and observations, we learned that children of all castes in Manipur still do plenty of work for their own households. Tending the household livestock is a primary responsibility of children, both boys and girls. Most of the Jat and Harijan households own cattle, as do the majority of the service caste households. Fodder for the cattle is gathered in the fields and cut by a chaff-cutter to make it suitable for cattle feed. Children also help their parents in milking and washing the cattle. On holidays, the Jat boys help their parents in agricultural activities, often 7-8 hours a day. The boys of the Harijan and poor service castes often spend hours collecting firewood over long distances. From a very early age, the girls of all castes help their mothers in a variety of household work--processing and cooking food, washing clothes, cleaning utensils, making cowdung cakes for fuel, carrying water from the pump or well, sewing, etc. They spend more time caring for younger siblings than boys do and spend considerable time weaving colourful mats that are often sold or used as dowries for their marriage.

We could, however, observe two changes in the labour value of children during the period between Mamdani's investigation and ours: (1) reduction of

remunerative work by children; (2) reduction in children's work time due to changes in the nature of agricultural and household activities.

Mamdani's case studies show that the children of the Harijan and service castes, whose occupations became redundant in the advent of new technology, often did agricultural work for which they were paid as well as given free meals and clothes. During our investigation we could not find any child working as a paid labourer. Our enquiries revealed that children participate in paid work only when their families get contracts to harvest wheat for Jat farmers. The Jajmani system--the traditional exchange of services and goods among castes--has been almost totally replaced by wage labour and a system of crop-sharing, in which an entire family contracts to harvest a piece of land. The latter, according to Mamdani (1972:94), has led to an increase in the labour participation of children, since not only boys but also girls now work side-by-side with their parents and the payment to the family bears a definite relationship to the amount of work performed. We too found that many Harijan and service caste families had contractual arrangements with Jat farmers for harvesting wheat, but the number of days per year in which they engaged in this work was so small (usually 4-5 days) that the children's participation in it was not perceived by the parents as an economic contribution of any significance.

The nature of agricultural and household activities changed in a number of ways that caused a reduction in or elimination of types of children's work, including those for which they used to be paid. An important part of tending the cattle was grazing them in the fallow land. Increasing use of fallow land for agriculture and the growing practice of multiple cropping have led to a virtual absence of grazing land in the village and, consequently, to the age-old custom of boys grazing cattle in the fields. The absence of grazing has also reduced the time spent in another job typically done by children--collection of cowdung for use as fuel and manure. An important agricultural activity in which children participate is weeding. The increasing use of chemical weedkiller by Manupur farmers has largely diminished the need for this task. The introduction of rice cultivation in Manupur (and in Punjab as a whole) during the 1970s, replacing such crops as cotton, maize, and other vegetables, has also diminished the need for child labour.

One of the assumptions of the Khanna Study was that fragmentation of agricultural land was a major problem facing farmers and that it would logically motivate them toward smaller families. Mamdani (1972:74) argued that a farmer can realistically expect whatever land he inherits or buys to remain intact during his lifetime. The problem of land fragmentation does not worry him much because it is a problem for the next generation. The farmer's major problem is to meet the costs of production, and he knows that under his material circumstances the most feasible way to reduce production costs is to have many sons. During our investigation, we met a number of farmers who are themselves victims of land fragmentation and who mentioned it as a reason they should not have large numbers of children. They believe fragmentation of land has increased due to the rapid growth in population, recognition of daughters' shares in inherited land along with sons' in the Hindu Code Bill, and the reduction in the proportion of unmarried men. The plots of land owned by some farmers are so small that they need little of children's participation in agricultural activities. The price of land has also skyrocketed in recent years, so that most farmers do not expect to be

able to buy any additional land. They are concerned about the future of their children and hence want them to be educated so that they become qualified for skilled services.

Old-Age Support and Risk Insurance

Economic theories of fertility recognize that one main reason for high fertility in less developed countries is parents' expectation of support from their surviving children, especially sons, in their old age. The decline in such expectations is presumed to be one of the ways in which growth in income reduces fertility (Leibenstein, 1957). Parents in less developed countries are also motivated to have children as a source of insurance against risks of various kinds, such as draught, flood, earthquake, illness, death of spouse, or loss of job (Cain, 1981). Almost all the case studies cited by Mamdani indicate that one important reason for the parents' desire for a large number of sons is their heavy dependence on sons for old-age support and insurance against risks. Daughters are not regarded as sources of security since they are not income-earners and, moreover, they leave the parental home after their marriage. Rather, parents are rather worried about the amount of money--in view of an increasing trend toward payment of dowries--that they have to pay on daughters' marriages.

Mamdani observed three kinds of risks against which sons are of great help to Manupur parents: loss of job, natural disaster, and violent conflict. The seasonability of employment as agricultural labourers coupled with predominance of farmers' power over labourers was a source of job insecurity for many of the latter. The nonagricultural labour market in Khanna town began to expand by 1970, but the job security for unskilled labourers in Khanna was even less than in the village agricultural sector. Only the households with a large number of adult males would take the risk of sending one to Khanna for wage labour (Mamdani, 1972:95).

Natural disasters in Manupur occur most frequently during the monsoon season when dried-mud kutchas houses are often destroyed by rains, leaving their occupants homeless. Since the owners of these houses are poor and cannot afford to hire labourers to rebuild them, the presence of a few able-bodied sons is a boon in such emergencies.

Mamdani (1972:134) found that although most intercaste conflicts in Manupur were settled through arbitration by the village Panchayat, serious intracaste conflicts, usually between farmers, were often solved through the use of force. Since numbers become very important on such occasions, parents look favourably on having a large family.

During our field investigations in 1982, we found that Manupur parents still recognized the value of sons as a source of old-age security and risk insurance, but not to the extent observed by Mamdani. Almost all of the men of various castes interviewed by us complained that sons are not as dependable these days as they were previously. A few reported that they had almost no connection with their sons, who had families of their own and were living outside the village.

We also observed that although there were still varieties of risk against which sons would be the only source of insurance for many Manupur parents, the seriousness and frequency of such situations has tended to

decline. The bargaining power of agricultural labourers has increased and, along with it, their job security. The number of villagers working in the industrial, commercial, and government sectors, in which job security is greater than in the agricultural sector, has also increased. The proportion of Manupur workers in skilled and unskilled services in these sectors increased from 8 percent in 1970 to 29 percent in 1982.

Manupur villages still suffer from various types of natural disasters, but the destruction of houses due to heavy rains affects fewer households these days. During 1970-82, the proportion of pukka (brick and cement) houses replacing kutchha houses has increased significantly in Manupur. We found that almost all of the houses belonging to the Jat, Brahmin, and other service castes and more than half of the Harijan houses were pukka.

We learned from Manupur residents that inter- and intracaste conflicts still occurred in the village, perhaps with the same order of frequency as before, but the use of physical force to resolve them has declined. There was an increasing tendency to depend on the village Panchayat and police station at Khanna to resolve them. Channels of communication between Manupur and Khanna improved significantly when the entire four miles of road connecting them was made fit for year-round vehicular traffic. During Mamdani's visit, transportation between Manupur and Khanna was more difficult than in 1982.

It is clear that both the labour value of children and their value as a source of old-age support and risk insurance declined considerably among all caste groups of Manupur during 1970-82. The decline is associated with various kinds of economic and social development. Three interrelated aspects of development seem to have played crucial roles: (1) the introduction of modern agricultural technology, (2) institutional innovations and changes, and (3) expansion of formal education, particularly among girls. We now explore each of these in turn.

Introduction of New Technology

As mentioned earlier, Punjab is the first state in India to experience the green revolution, as well as the state to benefit most from it. The district of Ludhiana, to which Manupur belongs, has fared better than most other districts in Punjab, mainly because innovations in agricultural technology were introduced in Ludhiana in the early 1960s, as an IADP district. One of the most important changes in Manupur was in the method of irrigating the fields. Tubewells quickly replaced the Persian wheel and the drilled well. In 1964 the village was electrified, and by 1970 out of 127 tubewells run by oil engines, 35 also had electric motors. Some of the chaff-cutters were by then operated by electric motors. A new variety of wheat called Kalyan (prosperity) was introduced in 1967, and as a result wheat yields often trebled (Mamdani, 1972:51). Chemical fertilizer and weedkiller were also being used by the majority of Manupur farmers by the late 1960s.

Mamdani observed that although by 1970 the state-owned Land Mortgage Bank was giving loans to buy tractors, the price of a tractor was so high that only the prosperous farmers, who had the capacity to repay the loans, could afford to buy them. Only 6.6 percent of Manupur farmers owned tractors in 1970 (Ibid.:85). The income of farmers, however, has increased so rapidly

since 1970 and the tractor has become such an important implement that at the time of our visit an estimated 40 percent of farmers owned a tractor; a few of them even owned two. Ownership of tractors increased despite a steep rise in their price.

One crucial factor in the spurt of tractor ownership since 1975 in Manupur as well as in other areas of Punjab is the tremendous increase in rice cultivation. Ploughing the land for rice cultivation is a much more arduous task than doing so for wheat. Hence a tractor is more useful for production of rice than for wheat. Wheat is the staple cereal food for the residents of Punjab. Prior to the green revolution, Punjab farmers grew very little rice. However, the heavy demand for rice in other parts of India and the innovations in the technology for its production encouraged the Punjab farmers to cultivate rice as one of their multiple crops. The area under rice production in Ludhiana district rose from 3,000 hectares in 1966-67 to 91,000 hectares in 1979-80. The amount of rice produced per acre increased from 1,500 Kg. in 1960-61 to 3,443 Kg. in 1979-80 (Punjab, 1982).

Mamdani (1972:87) observed that the price of a tractor was so high that only the prosperous farmers owning 17 or more acres of land could afford to own one. According to him, "the pattern of landownership had to be changed if agriculture in Manupur was to be mechanized further." We found, however, that in the intervening 12 years, mechanization of agriculture progressed and productivity increased quite significantly, while the pattern of landownership remained almost the same, as seen in Table 4.

The little change that has occurred in landownership in Manupur is toward further consolidation of land among prosperous farmers rather than more equitable distribution. For example, the percentage of farmers owning 17 acres or more has increased from 10.7 in 1970 to 13.8 in 1982, and the percentage of total land held by them has increased from 29.7 in 1970 to 34.5 in 1982.

The main reasons why many more farmers owning medium-sized plots could own tractors in 1982 are that the income of all farmers increased considerably since 1970, as did the number of credit facilities. The use of tractors, however, is not presently confined to their owners. Totally unforeseen by Mamdani in 1970, quite a number of farmers with small and medium-sized holdings in Manupur were renting them from their owners. For the majority of farmers not owning tractors in 1982, renting them was more economical than maintaining bullocks. Our survey data show that 40 percent of farmers not owning tractors used rented tractors only, 37 percent used both rented tractors and bull-ploughs, and 28 percent used bull-ploughs only.

As we noted above, the introduction of new technology and the success of the green revolution in Manupur have reduced the need for child labour in a number of ways. Since the fallow and waste land have been made cultivable for one or another crop almost year-round, the practices of grazing cattle and collecting cowdung from the fields--jobs previously done by children--are almost totally absent these days. Previously children participated in weeding and manuring with organic fertilizer. They do not take part in using chemical weedkillers and fertilizers. Manupur children do not participate in any activity related to the production of rice, since like their elders they are not accustomed to it. Neither do children operate tractors or any other machinery run by electricity. The introduction of new agricultural

TABLE 4. OWNERSHIP OF LAND AMONG THE JAT IN MANUPUR, 1970 AND 1982

Nature of Holding	Size of Holding (Acres)	1970			1982		
		Number of Families	% of House-holds	% of Land Held	Number of Families	% of House-holds	% of Land Held
Small	0-5	49	37.4	14.8	24	33.3	11.2
Medium	6-16	68	51.9	55.5	38	52.7	54.3
Large	17 or more	14	10.7	29.7	10	13.8	34.5
Total		131	100.0	100.0	72	99.8	100.0

Sources: For 1970, Mamdani (1972:75); for 1982, our sample survey data.

technology has, however, made all Manupur parents conscious of the need to make their children learn more about it and hence to be educated in schools and colleges. It has also improved the economic condition of many villagers so that they have to depend less on children as a source of security in old age and against various types of risk.

Institutional Innovations and Changes

One main reason why Manupur farmers—even those who were not prosperous—could take advantage of advanced agricultural technology is the institutional innovations and changes that have occurred during the last few decades in Manupur and in India as a whole. The principal innovations and changes that affected, directly or indirectly, the increased use of technology as well as the attitude toward family size are the following: (1) an increase in credit facilities through cooperative societies and banks, (2) a shift from the Jajmani system to a market economy, and (3) institutional mechanisms for uplifting "Scheduled" and "Backward" castes.

Until about midcentury, Jat farmers were totally dependent on Brahmin moneylenders for their credit needs. Agricultural production was so susceptible to the vicissitudes and vagaries of nature that too much or too little rain or sun was enough to plunge the farmer into debt. Gradually an increasing number of farmers had their land mortgaged to moneylenders. The farmers had little motivation for improving their agricultural methods since the moneylender would demand a larger share of the produce. A law passed by the Punjab government in 1937 cancelled any debts where interest payments had at least doubled the principal. While the law helped most Manupur farmers temporarily, the failure of a single harvest was sufficient to drive them back into debt.

A real breakthrough in institutional credit facilities for Manupur farmers came with the establishment in 1960 of the Cooperative Society as a component of the IADP. It has two branches—the Primary Society and the Land Mortgage Bank—both of which make loans for agricultural purposes. By 1970,

98 percent of Manupur farmers were eligible for low-interest loans from the Primary Society, the only requirements being to own land and pay the necessary dues. The Land Mortgage Bank makes larger loans (e.g., for buying a tractor) by taking land as a pledge and deducting interest from its yearly yields. In the 1960s not many farmers could take advantage of the Land Mortgage Bank, but with gradually increasing productivity of land in the 1970s, the number of its clients increased much more rapidly than Mamdani seemed to anticipate.

Until recently, however, the Cooperative Society extended its credit facilities only to farmers, so that the members of the service castes (e.g., blacksmiths) who suffered economically with the introduction of new technology could not take advantage of them. The nationalization of major Indian banks in the 1970s and their policies to extend credit facilities to rural farmers and other occupational groups allowed some members of Manupur service castes to obtain loans from the newly established bank branches in Khanna. The extension of these credit facilities to Manupur villagers contributed to the decline of both the labour and risk insurance value of children.

As mentioned earlier, Mamdani (1972:94) observed that the shift from the Jajmani system of exchange of services and goods among castes to the contractual system of payment between the Jat farmers and other castes had led to an increase in the participation of child labour among the latter. Our observations about the shift leads to a different conclusion. The Jat farmers' contractual arrangements with Harijan and service caste families for harvesting wheat still exist, but these involve children's labour participation for only 4-5 days of the year. The net impact of the shift from the Jajmani system to the wage system of payment on children's labour has been to diminish its prevalence. Under the Jajmani system the Harijan and service castes were obliged to serve the Jat throughout the year in lieu of a share of crops. Since the terms of this exchange were far from equitable and were not based on payment for specific services rendered, the demand for services from the lower castes involved not only their adult males but also adult females and children. The wage system of payment is a reflection of the shift from a semifeudal economy to a market economy in Manupur and has reduced the prevalence of child labour.

Immediately after India's independence from British rule in the late 1940s, laws were passed and institutions established for the uplift of "Scheduled" and "Backward" castes. Provisions were made to give special privileges to these disadvantaged groups in education and employment. The traditional economic and social structure of rural India, however, was so unfavourable to members of these castes that very few could take advantage of these opportunities until political or technological forces could make a dent in the traditional structure. The green revolution in Punjab, along with industrial and commercial development, seems to have opened up these opportunities for the Harijan and a few other service castes in Manupur since the late 1960s. They have taken advantage of the expanded scope of employment in nonagricultural sectors in Manupur as well as in neighboring towns. For example, Mamdani (1972:93) found only 7.4 percent of the Chamar and Majbi (Harijan castes) working in nonagricultural sectors; during our investigation in 1982, 40.7 percent were doing so. The feasibility of such occupational mobility and free education for Harijan children drastically changed perceptions regarding the economic value of children.

Expansion of Formal Education

The enrollment of boys and girls in both primary school (grades 1-5) and secondary school (grades 6-10) increased from 1970 to 1982 among all castes in Manupur. The increase, however, was proportionately higher among girls than among boys. For example, the enrollment of boys in secondary school among the Jat increased from 62.7 percent in 1970 to 81.1 percent in 1982, while the enrollment of girls in the same age group increased from 29.1 percent to 62.7 percent. Mamdani (1972:100) observed that the introduction of new agricultural technology, the increased contact with the commercial world, and the institution of the modern credit system had meant a growing realization among Jat farmers that literacy and a high school education were necessary for boys. The recognition of the need for girls' education was not so common, but at least some parents felt that educated boys wanted to marry educated girls and that the amount of dowry demanded by future in-laws would be less if the girls were educated.

During our visit in 1982, we observed that the aspiration for educating both boys and girls was quite high among all castes. Many Brahmin and Jat parents wanted their sons and daughters to be educated not only in school but also in college. They were aware that higher education could qualify their children for white-collar jobs outside Manupur. Jat parents would like at least one of their sons to have such a job, so that the family would not have to depend fully on agriculture. The success stories of relatives or friends who were remitting money regularly from the Middle East, U.K., U.S.A., or Canada encourage such aspirations. Harijan and other service caste parents would also like their children to have at least secondary education and to seek jobs in nonagricultural sectors around Manupur.

Mamdani observed that even though children were in school for about six hours a day, they could find considerable time to do household and agricultural tasks. The workload of children of all castes seems to have declined during the 1970s. During our visit it was not uncommon to see children doing school homework or playing after school hours. Parents wanted their children to be good students.

The expansion of formal education in Manupur has undoubtedly increased the cost to parents of bringing up children. Although Harijan children do not have to pay any school fee and the fee for other children is quite moderate, the clothing and textbook expenses necessary for school attendance are not insignificant for many poor parents. Parents also have to sacrifice a part of their comfort and leisure when their children go to school instead of doing household work. Some parents have to sacrifice the income their children could earn if they did not go to school. Despite the rise in the cost of children and the decline in their labour value, school enrollment in Manupur is likely to continue to increase.

Summary and Discussion

The use of modern contraceptives increased considerably in Manupur between Mamdani's field investigation in 1970 and our study in 1982. The contraceptive prevalence rate in the village was 50.4 percent in 1982, compared with 33 percent in Punjab and 26 percent in India in the same year. Although sterilization, particularly tubectomy, is currently the most popular

method in Manupur, as in Punjab and India, the use of temporary methods (mostly the condom and the IUD) is proportionately higher in Manupur.

A comparison of responses obtained by Mamdani in his interviews with five men belonging to different castes with those obtained by us from the same men indicates clearly a shift in attitude toward smaller family size among members of all castes, mainly because of decline in the economic value of children. Comparative analysis of other data collected by Mamdani and us confirms this attitudinal change.

The change in contraceptive behavior of Manupur residents may be partly attributed to the availability of more effective methods in the 1970s compared with the earlier decades and to the increasing efficiency of the government family planning programme, but it seems to be primarily related to the attitudinal shift toward smaller family size. We have produced evidence from our interviews and observations that this shift can be linked mainly to the declining economic value of children--both actual and perceived--as manifested in their labour value and value as a source of old-age support and risk insurance.

It is extremely difficult to identify the specific factors that have caused a decline in the economic value of children. However, the data collected during our investigation coupled with a perusal of the socioeconomic history of Manupur and Punjab, as documented in Mamdani (1972) and elsewhere, enable us to conjecture that the following three interrelated aspects of development have played crucial roles: (1) the introduction of modern agricultural technology, (2) institutional innovations and changes, and (3) expansion of formal education, particularly among girls.

Our findings raise a legitimate question: how could such significant changes--in contraceptive behaviour, in attitude toward family size, in economic value of children, in agricultural technology, in socioeconomic institutions, and in aspiration for children's education-- occur in the space of only a dozen years? We venture three possible--not necessarily mutually exclusive--answers: (1) the introduction of new agricultural technology in Manupur by the end of the 1960s was a key factor in the whole chain, and Mamdani's investigation in 1970 occurred too early to detect its far-reaching impact on villagers' attitudes and behaviour; (2) Mamdani's attempt to ascertain villagers' attitudes and behaviour through in-depth interviews of "key informants" and participant observation (not using any survey technique) was too ambitious for the amount of time he spent in the village (presumably 3-4 months); (3) Mamdani might have missed some of the indications of change because of his ideological bias, reflected in statements such as the following: "If agriculture is to be further mechanized, productivity increased, and the small family made a 'rational' choice, then the pattern of ownership of land in Manupur must change" (1972:87).

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