The present study is one more piece of research, at micro-level, of the process of adoption of agricultural innovations, broadly falling under the domain of sociology of rural development. It does not aspire to neatly fit facts with theory, though an undercurrent of critical analysis informed the researcher despite the major approach being somewhat tilted towards the 'macro-orientation of modernization approach'. It does not directly deal with the structural, political and consequential aspects of the problem. Its broad objective has been to analyse the interplay of numerous socio-economic, socio-psychological and communicational factors that presumably facilitate or hinder the adoption of innovations.

The conceptual genesis of adoption's studies has been traced to the approach of 'diffusionism', propounded by early anthropologists. This approach implicitly ratifies the supremacy of Western model of development, bypassing the considerations of receptivity and resource endowments and historically evolved specificities of priorities of other countries. But India has apparently followed a corollary of this concept, gradual 'improvement approach' of development, that necessitates adoption of new technology among others. It is now wellknown that the bulk of the
increased agricultural development (i.e. more output) as a result of application of new technology has been concentrated in relatively small geographical areas and among resourceful sections, while in large parts of the country where small farmers and sharecroppers predominate and where a large mass of the population below the poverty line lives, the gains from new technology have been rather limited. The same situation prevails in cases of nearly all specific (purpose, area or target-group) rural development programmes.

The study has not been able to take the problem in its totality even in the area under study as the very notion of diffusion and adoption imply a 'snap-shot' view of reality confined to analysis of individual decision taken at some point of time. On the basis of agricultural innovations adopted, three levels of adoption - high, medium and low - have been delineated, and coefficient of association was analysed in terms of independent variables (i.e. socio-economic, socio-psychological and communication factors). The study is based on informations provided by two hundred 'contact farmers' (one hundred from each village panchayat) of Dhankutwa and Balthar village panchayats of Sikta block in West Champaran district of Bihar State. Despite being endowed with fertile soil,
good rainfall, abundant surface and groundwater resources and plentiful supply of labour, the area has remained one of the backward ones due to lack of infrastructural facilities and the absence of radical agrarian reforms. The study of adoption behaviour of such backward region may provide some insights into the compulsions, constraints and aspirations of the rural people.

But the dilemma of the researcher is epistemological to some extent in the sense that he tries to replicate social realities of which he himself is a part through the use of certain sociological conceptual and analytical categories. Indeed the methodological rigour achieved is not very high as that requires examining the validity of concepts in terms of their historicity, universality and cultural specificity. Its methodology tries to approach postulational-deductive model, as the empirical contents have been analysed in substantive details to judge their correspondence to theoretical propositions and to postulate their interrelatedness.

Evaluation of hypotheses (which formed the basis for this research) has to be done in the light of correlational analysis of data to find out if they are confirmed or disconfirmed (fully or partially). The researcher is
aware that a correlation formula usually reflects only a few of the variables in the context under study. In fact, any formula is but an ideal-typical construct which only approximates, more or less, the raw, fragmentary data torn out of actual complex context. Thus, the formula used here (Pearsonian 'r') assumes that the bivariate data are distributed normally, but human behaviour in society never satisfies such ideal assumptions. Moreover, there are possibilities of such correlations (called spurious) in which hidden factors may be exerting the influence for which the surface factor is erroneously credited. No doubt, the interpretation may be spurious, not the statistical correlation as such. In any case, no causal inferences can be drawn from mere association of variables.

In a conventional pattern of null hypothesis, the first that one proposes is that in terms of responses to innovations, there is no significant difference between the respondents of the two village panchayats. A perusal of the findings of the preceding three chapters, confirms this hypothesis as will be more explicit in the following parts.

The second set of hypotheses pertains to assertion of association of younger age, more education and higher
caste with high adoption level. In this study, age has been found negatively correlated with adoption (table 3.5). It implies "older the age, lesser adoption and younger the age, more adoption", thus confirming the hypotheses to some extent. Similar finding has been reported by some studies (for example, Hutson:1971:25). However, it is at variance with other studies that report no relationship (like, Reddy and Kivlin:1968) or indicate relationship of adoption with middle or older age (i.e. Bhutia:1974). There is little difference between respondents of the two areas in this regard. But caste is found to be non-significantly (at high and medium levels) and negatively (at low level) associated with adoption (table 3.3). It suggests that higher caste has little to do with adoption (similar finding in Dasgupta:1975), thus not confirming this part of our hypothesis. Education is associated with medium level adoption only (though not in Balthar). It indicates that the relationship between formal education and adoption is not that simple, and it is mediated by other variables. Thus, the second set of hypotheses is only partially confirmed in terms of younger age and education being significant in adoption to some extent, and even this is not true of caste.
The third composite hypothesis was related with the presumption that not type and size of family as such but presence of earning members and subsidiary occupation is related to adoption. The findings (table 3.9a and b) indicate that type of family is not associated with high adoption level, but it is positive and significant at medium level in Dhankutwa, not so in Balthar. The size of family happens to be nonsignificant or negative (table 3.9 b). Its being negative at high adoption level suggests 'larger family, lower adoption'. The finding is at variance with that of a study (Moscardi:1979:37). It nearly confirms the first part of hypothesis. But the remaining part of the hypothesis was not confirmed by the findings. The association between adoption and the earning members (table 3.11), as well as subsidiary occupation (table 3.13) is negative or nonsignificant. The finding is at variance with that of other studies (Jetley:1977; Moscardi: 1979, etc.). The finding may imply unprofitable subsidiary work and less remunerative works by earning members. It also implies priority of investment of extra income in other urgent matters than innovation-adoption. In any case, this hypothesis was partially substantiated in terms of type and size of family being not associated, but was partially found invalid as earning members and subsidiary occupation were not found associated with adoption.
The fourth composite hypothesis states that the size of land, assured labour and irrigation sources are associated with high adoption. The analysis of data reveals that size of land is negatively correlated with high level of adoption in Dhankutwa, implying large land is not conducive to adoption (conforming to the finding of Chattopadhyay and Rudra;1976). It shows chance correlation (zero correlation) in Balthar at the same level. But at medium and low adoption levels, size of land is positively correlated in Dhankutwa (similar finding by Moulik:1975), though nonsignificant in Balthar. But at low level of adoption, highly positive correlation is indicated in Balthar, while it remains nonsignificant in Dhankutwa (table 3.15). It partially confirms the first part of hypothesis. However, labour was not found associated with adoption; it is negative at low adoption level and nonsignificant at other levels (table 3.17). The finding is at variance with that of other studies (i.e. Bernsten and Rahim:1982). Whereas, irrigation source is associated only at medium adoption level in Dhankutwa, it is negative or nonsignificant in Balthar and other levels as well. Thus, the hypothesis is substantiated only to a lesser extent.
The other economic variables analysed are farm building, livestock and vehicles, subsequently associated with high, low and middle level of adoption. Association is positive at low adoption level in case of marketing agency, but negative at high level. The differences between the two areas are negligible in these regards. The fifth hypothesis pertains to dominance of neighbours as information source of innovations leading to effecting adoption as compared to mass media and town visits. The first part is definitely correct as the majority of respondents (61.6%) had indicated neighbours as information source (table 4.1). The finding is similar to that of other studies (Maulik:1975). The other part is not confirmed as the association was found negative or non-significant at all adoption levels (table 4.2). On the contrary, radio and newspapers (two mass media) were found significantly associated with adoption (at high level in Balthar and medium one in Dhankutwa). The finding is at variance with that of other studies (Ambastha and Singh: 1978). But it stands negative or nonsignificant at the low level of adoption. It implies that mass media may effect the adoption process at later stage, not initially. Thus, the second part of the hypothesis stands partially disconfirmed, as town visits were also found positively associated (also by Mulay and Ray:1973) at medium level (not in Balthar).
The sixth hypothesis that more contacts with VLWs are associated with high adoption, has not been found confirmed anyway (table 4.8). It is contrary to some other studies' findings (Jetley:1977). It is apparent that in Dhankutwa there is only 'chance relation' (zero), while in Balthar, it is negative or nonsignificant at all levels. The meeting purposes, evaluation of regularity and efficiency of VLWs are also not associated with adoption as such.

The seventh hypothesis was that higher educational aspirations and aspirations for mechanised farming for sons were correlated with higher adoption. But the findings only partially support it in case of medium level adoption at Dhankutwa, and low level adoption at Balthar; and in all other cases it is nonsignificant and negative. The finding is at variance with that of other studies (Roy et al.:1968; Jetley:1977). It implies that aspirations as such to educate wards or mechanised farming is only partially associated with adoption of innovations, though it does not belittle education or mechanised farming as such.

The eighth hypothesis proposed higher association of political aspiration with adoption, and prestige as well as
benefit being reasons of political aspiration. The analysis of data proves that the second part of the hypothesis is valid as most of the respondents have pointed out prestige and benefits (second priority is contacts) as reasons (table 5.5). But the first part stands nearly disconfirmed as political aspiration was not found associated with adoption in all cases except that of Balthar where a positive correlation at high adoption level is found (table 5.6). Thus, the hypothesis is partially confirmed.

The ninth hypothesis presumes that the value-orientations - conservative, liberal and progressive - are not significantly related to adoption. It was found that conservative value-orientation is not associated anyway with adoption (table 5.11 a). The liberal value-orientation is positively correlated at low adoption level (even not this in Balthar). While progressive value-orientation was found highly significant at high adoption level only in Balthar, not in Dhankutwa. It implies that progressive and liberal value-orientations are conducive, to some extent, to adoption. Thus, the hypothesis is only partially confirmed.
The analysis of the validity of the hypotheses suggests that there is little difference in adoption behaviour of respondents of both village panchayats. The initial presumption of Dhankutwa being relatively developed than Balthar does not hold ground at least in terms of adoption of agricultural innovations. The correlational analysis reflects the significance of some socio-economic, socio-psychological and communication variables on the one hand, and refutes certain presumed effects on the other. Age was found effecting adoption, thus confirming the popular notion of younger age being conducive to innovations' adoption. But caste was not associated, and education was only partially (at medium level) relevant only in Dhankutwa. Not type of family, but its size was found associated with adoption (at medium level only) in Dhankutwa. But earning members and subsidiary occupation were not found anyway related with adoption. Land of size was not found associated at high adoption level, but at other levels in Dhankutwa only, not in Balthar where it is so only at low level. Labour and irrigation sources were not associated with adoption. Other socio-economic factors - farm-building, livestock and vehicles were partially associated subsequently at high, low and medium levels of adoption. In case of information source,
neighbours predominate. Though few respondents use radio and newspapers, that too for other purposes than farm news they were found associated only at high level adoption in Balthar and medium level in Dhankutwa. But VLWs were not found directly associated with adoption anyway. In socio-psychological realm, educational occupational and political aspirations were not found associated with adoption significantly, except in case of political one being relevant at higher level adoption in Balthar. Conservative value-orientation was not found correlated with adoption, but liberal and progressive ones were found partially associated at low and high levels subsequently.

The study has apparently not taken into account the influences of socio-economic variables on communication or socio-psychological variables, and vice versa. Indeed, it could have proved helpful in providing significant sociological insight. But as the emphasis has been on analysing the adoption of agricultural innovations, other variables have been analysed only in its terms, thus, circumscribing the study to a particular frame of conceptual and analytical reference. Moreover, as the respondents were the 'contact farmers' of the area of study, a deep probing of their adoption behaviour could have indicated the extent of success of the specific extension scheme.
(i.e. Training and Visit System) under which they had been selected. But again, this was beyond the pale of the objectives of the study. Similarly the unprobed issues of consequences (in the Mertonian senses) of adoption, taking into consideration the concept of 'cultural relativism', can be one of the suggested issues for future research as such study also requires a considerable time gap.

It will be rather oversimplification and unrealistic to attempt sweeping generalisation on the basis of such data. Such realisation has prompted the researcher to discard such attempts. However, certain implications and suggestions for future policy emphasis as well as research in agricultural development can be attempted in general way. Future research will have to take a holistic approach which is in harmony with the prevailing socio-economic parameters. That approach must be ecologically adaptable and culturally sustainable in the long run. The focus of agricultural development policy has to be on improving indigenous farming practices, for example, improving local varieties and emphasis on green manure will be more conducive rather than high yielding varieties which require very high doses of chemical fertilisers. Moreover, a cropping system will have to be developed for each agro-
climatic zone instead of centralized and capital-intensive system of agricultural innovations. More pertinent issues are redistribution of land ownership as well as opening up of socio-economic opportunities. In fact, the emphasis on adoption of innovations is in itself value-loaded and biased against such areas and people who are not endowed, resourceful and privileged.