THE RESULTS of the study are discussed in this section. The differences shown by the tribal pre-school children from their rural and urban peers and the gender difference expressed by the pre-school children in the areas and subareas of psycho-social development are discussed in the same order of the presentation of results.

5.1 Intellectual development

The discussions on the intellectual development of tribal pre-schoolers in comparison with that of the rural and urban children and on the sex difference in the intellectual development of pre-school children are as follows.

5.1.1 Intellectual development of tribal pre-school children in comparison with that of their rural and urban peers

The tribal pre-school children are not significantly different \( (F=1.76, P>0.05, \text{Table 4.1}) \) from their rural and urban peers in intellectual development. The tribal pre-schoolers \( (\bar{x}=110.42) \) are not significantly behind to the rural
(\bar{x}=114.13) and urban (\bar{x}=112.63) children in their mean IQ scores (Figure 4.1). It is quite surprising to note that the rural children surpass the urban children in their mean IQ scores.

Though studies have proved that disadvantaged children are less efficient in intellectual performances (Mumbaner and Miller 1970, Harari and Mc David 1974), scheduled caste children have low IQ than non-scheduled caste children (Bhargava and Aurora 1982) and the tribal pre-school children have more intelligence than their rural and urban peers (Chowdhary 1989), the present study has revealed the tribal pre-schoolers as intelligent as their rural and urban children. Studies by Sinha (1978) and (1980) have also reported no innate difference in the IQ scores of tribals and non-tribals.

Labarba (1981), Jupte et al. (1985) and Clarke-Stewart and Friedman (1987) have mentioned that inherited intelligence together with environment stimulation results in the intellectual development of the child. But the investigator found quite different types of environmental exposures for the three groups of children. The higher educational aspirations of the rural and urban parents, the constant encouragement given by these parents for the education of their children, parents' assistance in the children's studies, satisfaction of the children's needs and desires, greater preference for novelty in early childhood years, availability of pre-schools at close vicinities, longer duration of school attendance, recreational and mass media facilities all have provided more physical, intellectual, emotional, social and sensory-motor exposures to the rural and urban pre-schoolers.

All the above mentioned exposures are wanting for the tribal children. The investigator has also observed that the tribal pre-school children seldom attend the Anganwadi centres except for mid-day and mid-afternoon meals.
and keep roaming about in the forests and fields. Poor housing, lack of enough material goods and poverty are the things encircling them. The tribal parents have lot of myths and misbelieves about education and are not showing any interest in their children’s educational competence.

The pre-school centres in the tribal areas are found to be short of enough teaching and playing materials. The Anganwadi teachers have a pre-conceived notion about the inadequate motivations of the tribal children. The curriculum which is not in tune with the learning style of tribal children does not attract them to the Anganwadi centres. These children have no exposure to mass media except the movies running in the nearby theatres. In spite of all these, the tribal pre-school children are found to be equal in their IQ scores with the rural and urban children.

It is much interesting to note that though the environmental exposures availed by the tribal, rural and urban pre-school children are different they are equally reinforcing the intellectual development of these children. Some of the rural and urban exposures which are found to be quite stimulating to the intellectual development, are lacking in the tribal areas. But this loss has almost been compensated by some other stimulations availed only by the tribal pre-schoolers.

Reddy (1988) has noted down that the tribals gain their fundamental knowledge from the nature of their habitat. An interesting scene in the tribal belt is that both the parents engaged in their traditional work in the morning, are having endless conversations with their infants who are carried on their mother’s back. Studies have proved that stimulating maternal responses to the child’s signals (Yarrow et al. 1972) conversation with the child (Craig 1989) and close-mother-child bond in the early months (Vernon
are correlated with IQ gain during pre-school years. These factors often found in tribal families enhance the intelligence of tribal pre-school children and thus bring the three groups of children on the same line in their IQ scores.

The investigator also found that the tribal parents are little concerned about their children’s grade in the school and so they do not spend time in teaching their children. When the tribal parents are out for job their pre-school children are set free to be with nature.

The tribal children’s free play with earthen, wooden and indigenous toys, the casual kicking of stones, touching and handling of the objects on either side of the road while walking, collecting fruits and vegetables by throwing stones and pieces of wood, playing with bows and arrows, familiarity with the chirping sounds of the birds and the different colours of the nature while roaming about in the forests and fields have provided them varied and rich opportunities for self-exploration, self-experiment, development of creativity and sensory-motor skills which in turn foster intellectual abilities in the young tribal minds.

The tribal children’s life in constant touch with nature which is full of intellectual stimuli has been found to be the major feedback for their intellectual competence along with their rural and urban peers. Studies have reported that exploration of unfamiliar objects in the environment (Sylva, Bruner and Genova 1976), working out conflicts in play (Copple, Lisi and Sigel 1982) and exploring and playing at home (Clarke-Stewart and Friedman 1987) all improve the intellectual development of children.
The intimacy of the tribal children with nature and nature's reinforcement have highly compensated the lack of stimulations like parents' encouragement, exposure to mass media, satisfaction of physical and psychological needs, need for play materials and recreational facilities and has helped the tribal children to have equal IQ scores along with their non-tribal peers.

The rural and urban pre-schoolers are not so free to enjoy nature and to attend to the intellectual stimulations freely given by the nature. Though they have no opportunities for free play and to think in their own way, the higher educational aspirations of their parents, constant parental encouragement to get higher grades in the school, parents’ assistance in their studies, exposure to mass-media and the recreational facilities have stimulated their intellectual development.

The parents sitting together with their children and sharing their daily experiences with them in the afternoons, is another natural scene in the tribal areas. In the evenings the old people call the younger ones and reveal intelligent solutions for their problems through folk tales and songs and spend their time in singing and dancing. All these experiences enrich the tribal children's fund of knowledge and give answers to their endless questions and thus make them equally intelligent and efficient in leading their life just like the rural and urban children.

A study by Chattopadhyay (1985) has revealed that parents who let their children to participate in their discussions, who try to answer their questions and who let their children to make self-discoveries rather than imposing memory drills have children with high IQ. Another study by
Zigler et al (1982) has reported that encouraging and supporting conditions enhance the IQ performances of economically deprived children.

Though the family sharing and parent-child interactions as in the tribal families are almost absent in the rural and urban settings, the exposure to mass media, peer contact, long participation in the nursery school activities, experiments with play materials and other material goods in the home equip the rural and urban pre-school children with intellectual skills.

Above all, the free and spontaneous life of tribal pre-school children due to the lack of tensions and worries faced by their rural and urban peers of today give them much concentration in performing the intellectual tasks.

Moreover the bilingual environment in which the tribals live (Mohanty and Das 1987) and their social contact with the non tribals (Anandalakshmy 1991) have taken up the role of mass media in improving the IQ scores of tribal children.

Thus the tribal environment which is traditionally considered as disadvantageous is found to be equally stimulating to the intellectual development of tribal children just like the rural and urban environment. The life in close association with nature, the close knit parent-child interactions and the free and spontaneous life in the tribal families have provided the tribal children almost all the stimulations availed by their rural and urban peers.

In short, the tribal, rural and urban environmental exposures which are quite different from each other have enhanced its children’s intellectual potentialities with the same intensity and equally helped the three groups of children to have equal IQ scores.
Quite a good number of studies (Hetherington and Parke 1986, Atkinson et al. 1987, Devadas, Jaya and Perumal 1990 and Vernon 1990) have reported that children from rich and stimulating environment have higher IQ scores than those from poor and unstimulating environment. But according to the results of the present study no one can name an environment as rich or poor, stimulating or non-stimulating, inferior or superior, enriching or not enriching the IQ performances. Each has its own merits and demerits. Each environment has its own way of motivating and unfolding the intellectual skills in its children.

The present study thus reveals that the tribal pre-school children are as intelligent as their rural and urban peers.

5.1.2 Gender difference in the intellectual development of pre-school children

The pre-school children show no gender difference ($F = 0.97$, $P > 0.05$, Table 4.1, Figure 4.2) in their intellectual development.

The present decade is noted for its decreasing trend of discrimination towards the girl child. The public of Kerala—the literate state consider both boys and girls as equals. The recent focuses on the girl child, empowerment of women and in women studies have helped to develop a positive attitude towards the equality of both sexes. Both boys and girls are given equal status and equal chances to be in the forefront of familial, recreational and social affairs. Parents consider the girl child also as an economic asset to the family. Equal educational opportunities are provided for boys and girls in the hope of getting future financial support.
A study by the same investigator (Jose 1986) has found that the parents equally satisfy the material and psychological needs, give equal guidance and take equal participation in the routine activities of both pre-school boys and girls. Considering these factors, it is not surprising that both boys and girls with equal exposures and opportunities obtain equal IQ scores.

Though a study by (Borbora 1986) indicates more IQ for girls, studies by Maccoby and Jacklin (1974), Achargulu and Yasodhara (1984) and Sudharani (1987) have reported no sex difference in the intellectual abilities of pre-school children. In line with these studies, the present study also finds no difference in the intellectual development of pre-school boys and girls. Hence, the present investigation has come to the conclusion that the pre-school boys and girls are equally intelligent.

5.2 Social development

The differences shown by the tribal, rural, and urban pre-school boys and girls in their social development and in its subareas are discussed under two sections.

1. Overall social development and
2. Subareas of social development

5.2.1 Overall social development

(a) Social development of tribal pre-school children in comparison with that of their rural and urban peers

The tribal children show significant difference ($F = 8.12, P < 0.01$, Table 4.2) in social development from their rural and urban peers. As per the mean
scores the tribal children ($\bar{X} = 119.35$) have better social development than their rural ($\bar{X} = 114.15$) and urban ($\bar{X} = 111.82$) peers (Figure 4.3). The detailed analysis with critical ratio (Table 4.3) indicates that the tribal children are significantly better than their urban peers (CR = 2.78, $P<0.01$) but not from their rural peers (CR = 1.82, $P>0.05$) in social development. The rural and urban children are on the same line (CR = 0.82, $P>0.05$) in the same.

A host of factors enhances the social development of tribal children. Kurian (1991) has pointed out that the tribals develop a code of social life based on the environing conditions. Close association with the nature, simple environmental exploration, informal play with peers, neighbours and siblings all open the channels for good social relations and associations. As mentioned by Singh (1988), grazing, collecting fire wood, roaming about in the forests and plains and celebration of festivals help in the social development of tribal children. To Chattopadhyay (1985) the things the child has seen, heard and experienced in the environment influence the social development of the child. Though the already mentioned opportunities are wanting in the rural environment, the rural children have fewer occasions to be in touch with the nature, the neighbours and peers. This help them to secure a middle position in social development. The urban children do not get enough time to get acquainted with the nature and to explore their environment. This hampers their social development.

Doing the household activities along with parents both inside and outside the home, mutual sharing of daily experiences in the afternoons and family get-togethers in the evenings all enable the tribal children to enjoy the love and affection and the very presence of parents which in turn fosters their social development. Down (1974) has also proved that children
with enough love and support have better social development. The rural parents are also interested to keep their children with them while doing the household activities. The urban parents on the other hand, do not allow their children to engage in household activities. They themselves will do the activities for the children. Family get-togethers are hardly seen in the rural and urban sectors. All these lowers the social development of rural and urban children from that of their tribal peers.

A study by Ray (1975) has noticed that in the tribal families the activities of a supreme being and the expected standards of social contacts are conveyed to the younger generations through the tribal dances and songs and also through the oral literature. The rural parents, because of their job demands have no time to share their daily experiences with the children. The urban children, in their zest to attain good marks, also have no time to spare with their parents. All these limit the opportunities for frequent and intimate parent-child interactions in the rural and urban families and constitute lower scores in social development for rural and urban children.

Carrying the infants on the mother’s back and endless conversations between them is a natural scene in the tribal area. But the parent-child bonding in the rural and urban families is found not so strong as in the tribal families. This might have lowered the quality and quantity of the social contacts made by the rural and urban pre-schoolers. In the views of Atkinson et al. (1987) and Wartner et al. (1994) securely attached children have better social development. To Denham, Renwick and Holt (1991) close mother-child face to face exchanges are the prototypes of positive social behaviours.
As per the present study, the tribal children have better sensory (Table 4.24) and language skills (Table 4.27) than their rural and urban peers. This might have helped them to make better and more frequent contacts with others and enabled them to have higher score in social development. A study by Hazen and Black (1989) have also reported that children with better communicative skills have better social development.

The limited chances to enjoy the nature, to have social contacts, to be with parents and for intimate parent-child interactions hampers the social development of rural pre-schoolers a little but not significantly lowered the same from that of their tribal peers.

Too early training in the academic tasks and too much educational expectations of the urban parents beyond their children’s capacity might be a reason which lower the social contacts of urban children to a considerable extent.

The study thus finds higher social development for the tribal children than their rural and urban peers. But no tribal-rural and rural-urban differences are found in the social development of pre-school children. A study by Usharani (1990) has also found no rural-urban difference in the same. Thus the present study concludes that the tribal and rural pre-school children are on the same line in social development whereas the tribal pre-school children have better social development than their urban peers.

(b) Gender difference in the social development of pre-school children

The results presented in Table 4.2 show significant gender difference (F = 3.79, P < 0.05) in the social development of pre-school children.
Further analysis with critical ratio (Table 4.4) points out that the tribal girls have better social development (CR = 2.40, P < 0.05) than the tribal boys whereas the rural (CR = 1.89, P > 0.05) and urban (CR = 0.68, P > 0.05) pre-school boys and girls are equal in the same. The mean scores secured by the boys and girls reveal that the girls in the three groups have better (Figure 4.4) social development than the respective boys. These results make it clear that the pre-school girls have better social development (Figure 4.2) than the pre-school boys.

Many factors account for the better social development of tribal girls over the tribal boys. First of all, the tribal parents are uneducated and are not aware of the necessity of giving equal treatment for both boys and girls. Even now, the tribal parents consider the males as superior to females. The boys get due respect and the girls the minimum privileges. These parents train their children sex-typed social behaviours says Kattakayam (1983).

When the tribal parents are out for manual work, the pre-school boys are not interested to stay in the home and spend most of their time playing out with neighbourhood peers. Thus they imitate the behaviours of peers more than that of the parents. Whereas the girls are confined in the home doing household activities and caring the younger ones. So the girls get more chances to imitate their own mothers if present in the home or their grand parents and other elders in the family. This refine the social development of tribal girls.

The tribal pre-school girls are more available to their parents and grand parents to teach them good manners and social expectations through the folk tales and parables. But the boys are not available in the home for the same. Again it is more easy to make the girls sit down and hear the
parables. Moreover, these young girl children are trained to be less aggressive and more nurturant by their elders. All these situations and experiences allow the tribal girls to have better social development than the tribal boys.

The study also notices no gender difference in the social development of rural and urban pre-schoolers. The pre-school boys and girls in the rural and urban families get equal opportunities to encounter with the nature and to explore it. The rural and urban parents show no gender difference in assisting the children in their household and personal activities. These parents give equal training to the boys and girls in academic tasks and have equal educational expectations about them. The rural and urban children, irrespective of their sex have same level of parent-child interactions. Hence the frequency and intimacy of social contacts made by these children are found to be the same irrespective of their sex.

The rural and urban pre-school boys and girls thus show equal social development. But as per the mean scores, pre-school girls in the rural and urban sectors stood ahead of the respective boys in the same. There are studies to indicate that the girls are more nurturant (Clerke-Stewart and Friedman 1987), more socialised in home (Sriletha 1988) and more altruistic (Agarwal and Padmassi 1991) than the boys.

In short, the significantly better social development shown by the tribal girls and slightly higher scores for the rural and urban pre-school girls together constitute the overall gender difference in social development. Thus the present study reveals that the pre-school girls have better social development than the pre-school boys.
5.2.2 Subareas of social development

The discussions on the subareas of social development are presented in the following order, (a) Sociability, (b) Autonomy, (c) Initiative, (d) Adjustability, and (e) Responsibility.

(a) Sociability

(i) Sociability of tribal pre-school children in comparison with that of their rural and urban peers

The results of the study (Table 4.5) indicate highly significant variation in the sociability of tribal pre-school children ($F = 5.05, P < 0.01$) from that of the rural and urban pre-schoolers. An analysis with critical ratio (Table 4.6) shows that the tribal pre-school children are more sociable than the rural (CR = 2.43, $P < 0.05$) and urban (CR = 2.12, $P < 0.05$) children. It also shows that the rural and urban children have same level (CR = 0.56, $P > 0.05$) of sociability. The mean scores also indicate higher sociability for the tribal pre-school children (Figure 4.6) than the rural and urban children.

Many factors help the tribal children to attain better sociability than their rural and urban peers. The close family relationships, mutual sharing of daily experiences and sharing of household activities with the parents give way to frequent and intimate parent-child interactions in the tribal families. This may motivate the tribal children to be in the group, to enjoy the presence of others and to share their things with others. But the relationships in the rural and urban families are not so close-knit as in the tribal area. According to Levanvay (1972) parent-child relationships become the prototype of child’s inter-personal relationships.
While the tribal parents seemed to be more warm and affectionate in their dealings with children, the rural and urban parents have lesser time to interact with their children. Thus the tribal children learn to contact pleasingly with others. To Mink and Nihira (1986) warm and affectionate parents have highly sociable children.

The tribal mothers are found to be highly sensitive to the signals shown by the children than the rural and urban mothers. This makes the tribal children quick in responding. Maternal sensitive responsiveness results in the high sociability of children says Boom (1994).

The tribal children are found to be more interested to communicate their feelings and desires freely with others. A study by Singh and Kapur (1986) has reported that the tribal mothers encourage greater verbalisation in their children. The present study also reveals better language skills (Table 4.27) for tribal children than the rural and urban peers. This enhances the positive interactions of tribal children to a remarkable extent.

The tribal children usually play with all children without considering whether they are older or younger to them or their peers. Their informal friendship with neighbours, peers and other elders while playing, hunting, catching fish and while roaming about here and there make them more friendly with others than the rural and urban children who have no such informal friendships.

Above all, certain characteristics of the tribal life like hospitality (Kattakayam 1983), intimacy with co-villagers (Mahalingam 1988) and their reciprocity (Reddy 1988) all motivate them to behave co-operatively. Thus
the study concludes that the tribal pre-school children are highly sociable than their rural and urban peers.

(ii) **Gender difference in the sociability of pre-school children**

Table 4.5 shows a significant difference ($F = 5.53$, $P < 0.05$) in the sociability of pre-school boys and girls. The mean scores point out that (Figure 4.5) that the pre-school girls ($\bar{X} = 24.90$) are more sociable than the pre-school boys ($\bar{X} = 23.77$). Group-wise analysis of the same (Table 4.7) indicates better sociability for the tribal girls than the tribal boys (CR = 2.22, $P < 0.05$) but same level of sociability for the rural (CR = 0.98, $P > 0.05$) and urban (CR = 0.99, $P > 0.05$) pre-school boys and girls. As per the mean scores, the rural and urban girls also score higher in sociability (Figure 4.7) than the respective boys.

Some factors account for the better sociability of tribal pre-school girls than the tribal boys. The tribal parents expect different code of social behaviours from the boys and girls and train them sex-typed behaviours. They want the girls to have mature social interactions. The tribal girls are trained to be more polite and positive in their interactions and mould them as good models for the younger ones to imitate. The engagement in household activities and looking after the younger ones give the tribal girls more chances to mingle with their own family members and siblings. These make their communications more free and intimate and make them experts in sharing than the tribal boys who hold informal friendship with neighbourhood peers. The tribal girls make more pleasing contacts than the tribal boys and are more quick in answering. Thus the tribal girls are found to be highly sociable than the tribal boys.
The rural and urban pre-schoolers on the other hand show no gender difference in their sociability. Since the rural and urban parents are more educated they allow the boys and girls to have friendship with others and to enjoy the presence of others. The rural and urban children, irrespective of their sex, are given training to make positive interactions, to share things with others, to communicate freely with others and to give quick answers. These children are equally free to have social interactions with their neighbourhood peers and siblings. Thus they seemed to be equal in their sociability. But as per the mean scores the rural and urban girls also score higher in sociability than the respective boys.

In brief, the higher sociability of tribal pre-school girls and the slightly higher scores secured by the rural and urban girls in the same together constitute the higher sociability of pre-school girls. Thus the study reports that the pre-school girls have better sociability than the pre-school boys.

(b) Autonomy

(i) Autonomy of tribal pre-school children in comparison with that of their rural and urban peers

Analysis with two-way ANOVA (Table 4.8) indicates significant difference (F = 4.22, P < 0.05) in the autonomy of tribal, rural and urban pre-school children. The inter-group analysis (Table 4.9) point out that the tribal children are significantly superior to both rural (CR = 2.75, P < 0.01) and urban (CR = 2.13, P < 0.05) children in autonomy. The rural and urban children show no difference (CR = 0.78, P > 0.05) in the same. The tribal children also scored higher (X̄ = 2.3.31) than their rural (X̄ = 21.81) and
urban ($\bar{x} = 22.23$) peers in autonomy. All these indicate that the tribal pre-schoo-lerers are more autonomous (Figure 4.8) than their rural and urban peers.

The better autonomy of tribal children is contributed by many factors. The tribal children, even at the pre-school years get a lot of opportunities to be independent and free in their day to day life whereas the very nature of assisting the rural and urban children in their activities lowers their autonomy.

Doing the self-help skills and vocational skills by themselves from the very young age onwards help the tribal children to stand on their own foot. Working along with parents develop confidence in the tribal children. The tribal parents never interfere in their child’s activities and the children are free to take decisions by themselves. All these factors enhance the self-directed activities of tribal children and leave them independent of parents and teachers.

The rural and urban parents, on the other hand, do everything for the children and there is very little for the children to do, few skills to master, fewer activities to share with their parents and are not trained to take self-decisions. So they need the help of parents and others to perform a skill and are shy in carrying out a task in the presence of others.

The free handling of the indigenous and natural materials enhances the independence and self-confidence of the tribal children. But the rural and urban parents are not concerned about the play opportunities provided by the natural materials and put a lot of restrictions on their children in
using toys. This lowers the self-confidence of the rural and urban children to take decisions by themselves while playing.

Above all, the tribal children are found to be less attention seeking than their rural and urban peers. While the tribal children contact confidently with others the rural and urban children wait to be contacted. A study by Singh and Kapur (1986) has indicated that the tribal mothers believe more in fostering independence and are less strict. Whereas a study by Seth, Saksena and Srivastava (1978) have noticed that the rural mothers foster dependency in upbringing their children. The already mentioned factors account for the high autonomy of tribal children over the rural and urban peers. The present study thus concludes that the tribal pre-school children are more autonomous than their rural and urban peers.

(ii) Gender difference in the autonomy of pre-school children

The F-ratio in Table 4.8 indicates no significant gender difference ($F = 2.26, P > 0.05$) in the autonomy of pre-school children. Equal mean scores for the pre-school boys ($M_4 = 22.12$) and girls ($M_5 = 22.77$) indicate that they are equally autonomous (Figure 4.5).

In the tribal families, both boys and girls are engaged in self-help skills and sex-typed household activities. These children, irrespective of their sex, are free to do their activities by themselves. They also have their own decisions in life. All these bring about self-assured activities of the tribal boys and girls and make them equally independent of parents and teachers. Tribal boys and girls are found to be comfortable with unfamiliar persons. They carry out the skills confidently in the presence of others. More over the ways of independent living are conveyed equally to the tribal
boys and girls through the oral literature. All these foster equal autonomy in the tribal boys and girls.

In the rural and urban families, the parents show no difference in assisting the boys and girls in their personal activities, in doing the activities and in taking decisions for them. Thus these children get equal chances to do self-directed activities, to take self-decisions and are found to be equally independent and confident in their life. Hence, the pre-school boys and girls in the rural and urban families show no difference in their autonomy.

The study thus reveals that the pre-school boys and girls have the same level of autonomy.

(c) Initiative

(i) Initiative of tribal pre-school children in comparison with that of their rural and urban peers

The results in Table 4.10 indicate that the tribal pre-schoolers are not significantly different ($F = 2.96, P > 0.05$) from their rural and urban peers in initiative. Though the tribal children score better ($M_1 = 22.70$) than their rural ($M_2 = 21.28$) and urban ($M_3 = 21.07$) peers in initiative, the difference is not significant. This shows that the tribal pre-school children are as initiative (Figure 4.9) as the rural and urban children.

A cluster of factors reason out the same level of initiative in the three groups of children. The tribal, rural and urban environments, equally stimulated the respective children to be initiative in their life.

Doing personal activities by themselves, early practice in self-help skills, participation in the tribal dance and songs and sharing of work with
parents all motivate the tribal children to initiate their contacts with others, to give suggestions while playing and in family discussions. The mutual concern and intimacy in the tribal families help the children to seek out others. The close interaction with their mothers inculcate initiative in the tribal pre-schoolers. Whereas the mass media, recreational facilities, chances to participate in the competitive activities and the rural and urban parents' stimulation and interstimulations all motivate the rural and urban children to be initiative in their life.

Moreover, the rewards and punishments given by the tribal, rural and urban parents reinforce the respective children to take first step in their activities. By attending the anganwadi programme the three groups of children get equal opportunities to be initiative. Ramey, Macphee and Yeates (1982) have also reported that pre-school attending children show more leadership. The influences of classmates and teachers are found to be equal for the tribal, rural and urban children in this aspect.

The study thus finds the tribal pre-schoolers as initiative as their rural and urban peers. But as per the mean scores, the tribal children are a little ahead of rural and urban children in the same.

(ii) Gender difference in the initiative of pre-school children

The study (Table 4.10) finds a highly significant gender difference ($F = 7.75, P < 0.01$) in the initiative of pre-school children. The mean scores indicate that the pre-school girls ($M_5 = 22.51$) have higher initiative than the pre-school boys ($M_4 = 20.85$). Group-wise analysis of the same (Table 4.11) points out that rural girls have higher initiative ($CR = 2.34, P < 0.05$) than the rural boys whereas the tribal ($CR = 1.67, P > 0.05$) and urban ($CR =
boys and girls have the same level of initiative. But according to the mean scores tribal and urban girls also exceed the respective boys (Figure 4.10) in initiative. Thus the results indicate that the pre-school girls are highly initiative (Figure 4.5) than the pre-school boys.

The tribal boys and girls get equal chances to give suggestions in family get-togethers, to contribute to the adult conversation, to seek out others and to initiate contacts while they do activities by themselves and practice self-help skills. All these help the tribal boys and girls to be initiative in the same manner. Still the tribal girls score higher in the same.

The pre-school boys and girls in the urban setting are equally interested to seek out others and to initiate their contacts. Both of them give suggestions during play. Both are encouraged to take leaderships. They equally contribute to adult conversations. Both of them respect parents and teachers. Thus the urban pre-school boys and girls are on the same line in initiative. But as per the mean scores urban girls are a little ahead of boys in initiative.

The rural pre-school girls on the other hand, exceed their boys in initiative. Though the opportunities and exposures are same to both groups of children, the rural girls are found to be more initiative. The investigator observed that the rural girls are always ready to seek out others, to initiate interactions with their peers when chances are provided. She also noticed that the rural girls are more interested in using such opportunities provided to them. Whereas the rural boys are seemed to be more hesitant in their contacts and often blindly imitate others. Moreover it is easy for the rural parents to enhance their daughter’s initiative since they are more submissive.
and obedient. All these set the background for the rural girls to have higher initiative than the rural boys.

In short, the significantly higher initiative shown by the rural girls and the slightly higher scores secured by the tribal and urban girls in the same together bring about the overall gender difference in the initiative of pre-school children. Thus the study points out that the pre-school girls are highly initiative than the pre-school boys.

(d) **Adjustability**

(i) *Adjustability of tribal pre-school children in comparison with that of their rural and urban peers*

Two-way analysis (Table 4.12) indicates that the tribal pre-schoolers are significantly different from their rural and urban peers ($F = 5.55, P < 0.01$) in adjustability. Critical ratio analysis (Table 4.13) shows that the tribal children have better adjustability ($CR = 3.28, P < 0.001$) than the urban children but are equal to the rural children ($CR = 0.95, P > 0.05$) in the same. It also points out better adjustability for rural children ($CR = 2.22, P < 0.05$) than the urban children. Thus the study finds the tribal children as better adjusted (Figure 4.11) than the urban children and same level of adjustability in the tribal and rural children.

Many factors account for the higher adjustability of tribal pre-schoolers. The tribal people's respect and obedience to others and their extremely disciplined nature (Kulkarni and Dikshit 1989) help the tribal children to be more obedient to the elders and to the rules and regulations than their urban peers.
The physiological adjustment to the different climatic conditions and to the nature mentally prepare them to be comfortable in new and stressful situations. Informal friendship while playing, grazing, collecting firewood and forest produce increase their interest in group activities. The traditional dances, songs and folk tales teach them to accept and tolerate others. The adjustments made by the tribal parents and other elders serve as good models for their children to imitate the same. Moreover, it has been reported that the close mother-child face to face exchanges (Kardiner 1974, Stern 1977, and Holden and West 1989) and the sociological and psychological security (Kattakayam 1983, Singh and Banerji 1992) prevailed in the tribal family promote good adjustments.

The already mentioned opportunities which increase the adjustability of tribal children are lacking in the rural children. Yet, they show same level of adjustability. Certain characteristics of rural life which are similar to that of the tribal life like sense of collectiveness, respect for elders, more personal and fewer social relations with the primary group (Vatsyayan 1976), the sense of unity, sincerity and hospitality (Bhushan and Sachdeva 1990) all help the rural children to make good adjustments in their life.

The urban children, on the other hand, lag behind the tribal and rural children in their adjustability. Many factors hinder their adjustability. The unawareness about the nature, lack of formal and informal companionship with neighbourhood peers, less frequent and less intimate parent-child and family interactions and the exposure to mass media all arrest the adjustability of urban pre-schoolers and make them uncomfortable in new and stressful situations. Moreover, the materialistic mentality (Whiting 1973), greater competition and lack of harmony (Vatsyayan 1976) prevailed in the urban
families make them hesitant to adjust in their life. Thus they are found to be less tolerant and more aggressive than the tribal and rural children.

The study thus reports that the tribal pre-school children have same level of adjustability as their rural peers and are better adjusted than the urban pre-schoolers.

(ii) Gender difference in the adjustability of pre-school children

The present study (Table 4.12) finds highly significant gender difference in the adjustability ($F = 7.10, P < 0.01$) of pre-school children. As per the mean scores (Table 4.12 and Figure 4.5) the pre-school girls ($M_g = 24.32$) are better adjusted than the pre-school boys ($M_b = 23.08$). Detailed analysis with critical ratio (Table 4.14 and Figure 4.12) point out better adjustability ($CR = 3.15, P < 0.01$) for tribal pre-school girls than the tribal boys and equal adjustability for the rural ($CR = 1.64, P > 0.05$) and urban ($CR = 0.01, P > 0.05$) pre-school boys and girls.

Many factors enhance the adjustability of tribal pre-school girls. The tribal parents demand more adjustments from the daughters. As Kattakayam (1983) has observed, the tribal mothers train their daughters to be good housewives and prepare them for making adjustments with her in-laws through the folk tales and parables.

The traditional customs of considering the women as impure during their menstrual cycle and after delivery are still prevailed in the tribal belts. The models exhibited by the tribal mothers and other elder women in facing these social discrimination may mentally prepare the tribal girls to make adjustments even from the early childhood years. Thus they learn to be
comfortable in new and stressful situations. The tribal boys, on the other hand do not come across such circumstances in their life.

Doing the household activities and looking after the younger ones in the absence of mothers is another rich opportunity for the tribal girls to learn to accept and tolerate others. Whereas the boys are found less adjusted in their friendship with others. Along with these, the high sociability (Table 4.7) of tribal girls indicated in the study might have helped them to participate in the school activities with much interest. Thus the already mentioned circumstances help the tribal girls to have better adjustability than the tribal boys.

The rural and urban pre-school children show same level of adjustability irrespective of their sex. The rural parents expect same level of adjustability from their pre-school boys and girls. These children get equal chances to accept and tolerate others while playing with older and younger children. Parents teach them to obey rules and regulations and are trained to face the new and stressful situations. Both boys and girls have equal participation in the school activities. Thus the rural boys and girls are equally adjustable in their life. But the mean scores slightly favour the rural girls rather than the boys.

The pre-school boys and girls in the urban families have the same code of social standards to follow. They also get equal chances to be with their neighbourhood peers and friends and to make adjustment with them. The frequency and intimacy of parent-child interactions are same for them. The competition prevailed in the urban settings affect these children’s tolerance, obedience, adaptations to new and stressful situations and participation in the group activities irrespective of their sex. Hence the
urban pre-school boys and girls show similar adjustability. The mean scores also show no difference in the same.

In brief, the significantly higher adjustability of tribal girls and the higher scores secured by the rural girls in the same together contribute better adjustability to the pre-school girls. The study thus indicates that pre-school girls have better adjustability than the pre-school boys.

(e) Responsibility

(i) Responsibility of tribal pre-school children in comparison with that of their rural and urban peers

The results in Table 4.15 show no significant difference (F = 1.67, P > 0.05) in the responsibility of tribal pre-school children from that of their rural and urban peers. The mean scores (Table 4.15 and Figure 4.13) make it clear that the tribal pre-school children (M₁ = 23.44) are as responsible as the rural (M₂ = 23.08) and urban (M₃ = 22.27) children.

Many factors help the tribal pre-schoolers to have equal responsibility along with their rural and urban peers. Though three environments provide totally different experiences, they equally instil responsibility in the respective children.

Just like the rural and urban parents, the tribal parents also expect responsibility from their children and inculcate the same in them. But the way is different. The tribal parents stimulate their children to be responsible in life whereas the rural and urban parents stimulate their children to be more responsible in their studies.
The tribal children are found to be interested in asking questions about others, and in sharing their ideas and plans with others as their rural and urban peers. They seemed to be almost equally concerned about others.

The three groups of children get equal chances to attend the Anganwadi programmes. This help the three groups of children to be aware of social norms, train them to put back the toys in their proper places after use, instil in them an eagerness to complete the tasks and give them lot of chances for mutual sharing. To Ramey, Macphee and Yeates (1982) pre-school attendance improves the responsibility of children and make them more task oriented and goal directed.

In the views of Shantz (1983) and Pettit, Dodge and Brown (1988) children with positive and co-operative contact with classmates have advanced social consciousness. Above all, the same level of initiative expressed by the three groups of children (Table 4.10 and Figure 4.9) might have helped them to be equally responsible.

The study thus reports that the tribal pre-school children are equally responsible as their rural and urban peers.

(ii) Gender difference in the responsibility of pre-school children

The analysis with two-way ANOVA (Table 4.15) shows a significant gender difference ($F = 11.91, P < 0.01$) in the responsibility of pre-school children. The mean scores (Figure 4.5) indicate that the pre-school girls ($M_g = 23.85$) are highly responsible than the pre-school boys ($M_b = 22.01$). Group-wise analysis of the same (Table 4.16) and the mean scores (Figure 4.14) point out better responsibility for the tribal ($CR = 2.58, P < 0.05$) and rural ($CR =$
3.09, P < 0.01) girls than the respective boys and similar responsibility (CR = 0.31, P > 0.05) for the urban boys and girls.

The tribal girls are found highly responsible than the tribal boys. The tribal parents are more strict to girls in disciplining them and train them in such a way that they should be more responsible than boys. When the parents are out for job, the full responsibility of looking after the younger ones and of the household activities rest upon the shoulders of even the pre-school aged tribal girls. This help them to understand others feelings more and to be concerned about others more than the boys. While looking after the younger ones, these girls assist their youngsters to put back the objects they used and encourage to finish their activities by themselves. This might have become a self-training for the pre-school girls in the same and might have enhanced the responsibility of tribal girls over the tribal boys.

Further the tribal pre-school girls who are confined in the home get more chances to learn social norms and responsible behaviours through the oral literature. Moreover the high sociability (Table 4.7) and adjustability (Table 4.14) shown by the tribal pre-school girls might have helped them to share their ideas and plans in group play and to ask for assistance in difficulty. All these help the tribal girls to be more responsible than the tribal boys.

The rural pre-school girls also have better responsibility than the respective boys. The rural parents expect the girls to live in a more disciplined manner whereas the boys are permitted to do as they like. These parents compel the girls more to finish the activity which they engage in, and to put the toys and objects back in its proper places. The rural girls are found to be more responsible in their studies, more concerned about
others and are more skilful in understanding others feelings than the rural boys. The higher initiative (Table 4.11) shown by the rural girls might have helped them to be more responsible than the rural boys. Thus the rural girls come ahead in their responsibility.

Finally, the urban pre-school children show no gender difference in their responsibility. Both boys and girls are equally stimulated to be responsible in their studies. The parents reinforce the children's responsible behaviours irrespective of their sex. Thus both boys are girls are found to be equally aware of social norms, responsible in their play activities, goal directed, responsible in replacing the toys after use and interested to complete the activities. Above all, the same level of sociability (Table 4.7), autonomy (Table 4.8), initiative (Table 4.11) and adjustability (Table 4.14) shown by the urban pre-school boys and girls also make them equally responsible. Thus the urban pre-school boys and girls are found to be equally responsible in their life.

In short, the higher responsibility shown by the tribal pre-school girls and the higher scores secured by the rural girls in the same together work out the sex difference in the responsibility of pre-schoolers. Thus the present study indicates that the pre-school girls are highly responsible than the pre-school boys.

5.3 Temperament of behavioural profile

The temperament of the pre-school children is noted in terms of Intensity of reaction and the Reaction pattern. The differences in the Intensity of reaction and the Reaction pattern of the tribal pre-school
children in comparison with that of their rural and urban peers is together discussed in this section.

5.3.1 Temperament (Intensity of reaction and the Reaction pattern) of tribal pre-school children in comparison with that of their rural and urban peers

Intensity of reaction describes the children as ‘intense’ or ‘mild’ in their responses. The Reaction pattern describes the behaviour in terms of ‘positive’ and ‘negative’ patterns.

The results (Table 4.17 and Table 4.18) show no significant difference either in the Intensity of reaction ($F = 1.97$, $P > 0.05$) or in the Reaction pattern ($F = 2.54$, $P > 0.05$) of the tribal children from that of their rural and urban peers.

The mean scores (Table 4.17) and the percentage of scores obtained by the three groups ($M_1 = 121.86$, 66.75 per cent, $M_2 = 119.87$, 65.86 per cent and $M_3 = 123.47$, 67.84 per cent) for Intensity of reaction reveal the fact that the tribal, rural and urban children are equally intense in their reactions.

The mean scores (Table 4.18) and the percentage of scores for the Reaction pattern ($M_1 = 208.97$, 64.69 per cent, $M_2 = 213.13$, 66.19 per cent and $M_3 = 218.49$, 67.85 per cent) also point out that the tribal children are as positive as the rural and urban children in their reactions.

The study thus finds the tribal children as intense (Figure 4.19) and positive (Figure 4.20) as the rural and urban children in their reactions.
Studies by Friedman (1974 and 1979) and Gupta and Arora (1984) have found significant cross-cultural differences in the temperament of children. Studies have also denoted that socially deprived children have low adaptive behaviour (Guntchy 1981), feel rejected, shy and isolated (Kumar and Mehta 1983).

A study on the pre-school children in Kerala (Thomas 1991) has revealed that pre-schoolers reared in the home have more easy temperamental traits whereas those reared in orphanages have more difficult temperament. Another study by Mathew (1992) has proved that the pre-school children attending play schools have more easy temperamental traits than those staying at home. A study on the infants in Kerala (George 1993) has reported that the temperament of infants in the SOS and intact families are similar in their Reaction pattern. But they differ in their Intensity of reaction. But the present study finds same Intensity of reaction and Reaction pattern in the tribal, rural and urban pre-schoolers.

Thomas et al. (1968 and 1977), Korner (1973), Hethrington and Parke (1986), Atkinson et al. (1987), Papalia and Olds (1987) Clarke-Stewart and Friedman (1987) and Kimple, Garmezy and Zigler (1990) all have proved that the new born babies may look alike but they differ greatly in their temperament. Since these differences are visible in the new borns they cannot be the result of systematic shaping by the parents.

Sameroff and Zax (1973) have suggested that temperament may be fashioned by physiological and chemical influences on brain before birth. To Thomas, Chess and Birch (1971) the observed differences in temperament is due to heredity. In the views of Thomas and Chess (1977) genetic and pre-natal environmental origins that interact with caretaking
differences in infancy produce differences in the child’s personality. According to Sostek and Wyatt (1981) biological differences may be at the root of temperamental diversity. In the words of Fontana (1982) they are far more likely be due to inheritance than to learning. All these studies have proved that apart from individual differences within each group, the environment did not influence their temperamental traits. Along with these, the present study also indicates only individual differences in the Intensity of reaction and the Reaction pattern of these tribal, rural and urban pre-schoolers.

The tribal, rural and urban parents expect different kinds of behaviours from the respective children. The quality and quantity of parent-child interactions are also varied. Though the frequency and the ways of parent-child interactions greatly vary in each group they did not fostered differential temperamental traits in the respective group of children. Thus the study points out that the tribal children are as intense and positive as their rural and urban peers.

5.3.2 Gender difference in the Intensity of reaction and Reaction pattern of pre-school children

The results (Table 4.17 and 4.18) show no sex difference either in the Intensity of reaction \(F = 2.98, P > 0.05\) or in the Reaction pattern \(F = 0.76, P > 0.05\) of the pre-school children. The mean scores and the percentage of scores secured by the pre-school boys and girls in the Intensity of reaction \(M_4 = 123.01, 67.85\) per cent, \(M_5 = 120.45, 66.18\) per cent, Table 4.17) and in the Reaction pattern \(M_4 = 212.02, 65.84\) per cent, \(M_5 = 215.04, 66.78\) per cent) also indicate same Intensity of
reaction and Reaction pattern in them. The study thus finds same Intensity of reaction and Reaction pattern (Figure 4.2) for the pre-school boys and girls.

A study by Maccoby and Jackline (1974) has found boys as active, initiatory and aggressive than girls and the girls as more watchful, attentive and vocal. But to Indulekha (1977) sex do not influence the Intensity of reaction and the Reaction pattern of infants. In line with her, the present study also reports that the pre-school boys and girls are equally intense and positive in their responses.

The temperament is equally innate in boys and girls though the parents tend to show subtle differences in their behaviours towards the two sexes even in the first months of life. Gender is not an influencing factor in bringing about innate differences in temperament.

The present study shows significant gender difference in sociability (Table 4.5), initiative (Table 4.10), adjustability (Table 4.12), responsibility (Table 4.15), practical life skills (Table 4.21) and in sensory skills (Table 4.23). All these differences are environmental in origin. But the environmental factors did not generate gender difference in their behavioural profile.

In brief, apart from the genetic individual differences, the pre-school boys and girls show no difference in their temperamental traits. Thus the present study reports that the pre-school boys and girls are equally intense and positive in their behavioural profile.

5.4 Achievement

The differences in the achievement of tribal, rural and urban pre-school children are discussed under the following headings
5.4.1 Achievement in general

The difference in the general achievement of tribal pre-school children in relation to their rural and urban peers is discussed in this section.

(a) Achievement of tribal pre-school children in comparison with that of their rural and urban peers

The obtained results (Table 4.19) reveals that the tribal pre-school children are significantly different (F=14.49, P < 0.01) from their rural and urban peers in achievement. Inter-group analysis (Table 4.20) points out that the tribal children exceed the rural (CR=5.19, P < 0.001) and urban (CR=3.92, P < 0.001) children in their achievement. It also shows same level of achievement for rural and urban children. The mean scores also indicate higher achievement (lower score = higher achievement) of tribal children ($M_1 = 281.85$) than the rural ($M_2 = 377.71$) and urban ($M_3 = 340.42$) children (Figure 4.23).

Many studies (Sinha 1978, Ameerjain 1980, Ushasree 1980, Schaffer 1982, Ameerjain and Thimmappa 1986, Sujatha 1985, and Klonsky 1990) have proved that the disadvantaged and the tribal children have low achievement. Ushasree (1980), Rao (1986), Roy (1990) and Walker et al. (1994) have claimed that advantaged children have superior achievement. Luster and McAdoo (1994) have reported that the urban children have better achievement. But the present study reports that the tribal pre-schoolers achieve more than their rural and urban peers.
It is surprising to note that the tribal pre-school children having equal IQ scores ($F = 1.76, P > 0.05$, Table 4.1) with rural and urban children, achieve much ahead to their rural and urban peers. This makes it clear that IQ (intelligence) is not the only factor which favours the achievement. It is interesting to realise that some environmental factors have highly influenced the tribal children to achieve more than their non-tribal peers. The natural environment and the first hand experiences have provided them excellent academic stimulations and practical knowledge.

The natural habitat in which the tribal children live is a rich source of knowledge for them. They are in constant touch with the nature. Its different sounds, colours, shapes, smells, textures, its springs and soils, its cool and warm climates and natural calamities are familiar to them. These encounters with the nature enable them to become high achievers. Studies have reported that an environment full of objects, open space and with all its richness and variety help the young children to develop cognitive and intellectual skills to work out their own strategies (Mays 1985), will pace their own learning (Craig 1989) and give better comprehension and expressive language (Rose et al. 1991).

On the other hand, the congested rural and urban surroundings do not allow its children to work out their own strategies. The rural and urban children, in their zest to fetch academic excellence lose chances to explore the environment. Their disharmony with nature lowers their ability to discriminate sounds, shapes, sizes and textures and leave them ignorant of the natural and more practical clues for problem-solving. It has been reported that children who are not encouraged to explore the environment...
are seriously behind in intellectual (Atkinson *et al.* 1987) and physical-motor (Craig 1989) skills.

Doing the personal activities like washing, bathing, feeding and dressing by themselves and sharing of work with parents both inside and outside the family teach the tribal children a lot of calculations, additions and subtractions, about different shapes, sizes, textures and sounds, thus refine their psycho-motor performance whereas the rural and urban parents, because of their over-anxiety and over-involvement, do everything for the children and do not allow them to do the activities on their own. This makes the rural and urban children dependant and unsure of doing the day to day activities by themselves and in turn lowers their achievement to a large extent. Karlson (1972) has suggested that self-designed and self-paced schedules of learning are more efficient than the adult induced programmes.

The tribal children's self-reliance and courage motivate them to achieve more. The researcher, while conducting the achievement test, came across rural and urban children who, even after selecting the correct test material, asked the researcher whether it was right or wrong. They seemed to be in need of support from the researcher to take a decision. Whereas all the tribal children took their own decisions in selecting the test materials. She also noticed that the tribal children recalled the responses and recognised the objects in a short period of time. But the rural and urban children took longer time to recall the responses and to recognise the objects.

The movements made by the tribal children are so calculated whereas that of the non-tribals are not so. The tribal children seemed to be more practical-oriented, more determined, more responsible and more competitive but the rural and urban children as less practical-oriented, less determined,
and less motivated. Thus the investigator found that the tribal children are highly skilful and use their own clues in performing the psycho-motor skills correctly within a short period of time. This favours their higher achievement whereas the rural and urban children are ignorant of such clues and tips and took longer time to finish the tasks. This leads to their lower achievement.

Many studies have proved that primitive people are capable of advanced abstract thought (Mead 1932), have high need for achievement (Ray 1984), have great innate capacity for achievement (Negi 1976), have high degree of achievement motive (Misra and Tripathi 1978), are more adventurous and spontaneous, are not handicapped in responding to the tasks of divergent thinking (Kagan 1983b) and are more chance oriented (Singh 1983) than the non-deprived subjects.

The tribal pre-school children are getting a lot of chances to improve their thinking and imaginative power by engaging in both formal and informal play. They play with stones, leaves, mud, pieces of firewood, bows and arrows and indigenous toy materials. Saroja (1983) has reported that encounters with play materials enrich imagination and inventiveness, stimulate experimentation and creative ability in children.

The tribal children also form informal friendship while playing, grazing, collecting firewood and forest produce and roaming about in the hills and forests. A study by Dimant and Bearison (1991) has revealed that the pre-operational children working with peers in a variety of problem solving contexts achieve higher levels of reasoning.
On the other hand, the rural and urban children hardly get time to spare with their parents, siblings, peers and neighbourhood children because of the constant parental pressure to fetch good marks. The limited access to cultural, leisure and play facilities bring about poor achievement says Schaffer (1982).

The present study reveals that the tribal pre-school children have better social development (Table 4.3) than the rural and urban peers. The higher social competence might have helped the tribal children to be ahead in achievement than the non-tribal peers. Dubow et al. (1991) and Wentzel (1991) also reported the same.

The tribal parents after their daily work are available to their children usually in the afternoon and share their experiences mutually. This furnishes the tribal child with practical knowledge. But the rural and urban parents though available in the home do not get much time to be with their children and to share their daily experiences. This make the rural and urban children unaware of the practical knowledge to face their life.

The family get-togethers in the evenings, celebration of festivals, participation in the tribal dances and songs and listening to traditional oral literature are the other sources which give the tribal children the practical knowledge and intelligent solutions for their problems. These exposures are wanting in the rural and urban sectors.

Carrying the young child on the mother’s back with lot of verbal and non-verbal mother-child interactions is another peculiarity of the tribal belts. This responsiveness of the tribal mothers lead to cognitive competence (Olson, Bates and Bayles 1984), invites exploration, manipulation, elaboration
and imagination in children (Bronferbrenner 1989), adult like problem solving (Frankel and Bates 1990 and Freund 1990) and predict higher achievement in their children (Lewis 1993 and Boom 1994). Though the tribal mothers go for daily jobs, it does not affect their children’s achievement since the mother-child interactions are so frequent. Moorehouse (1991) is of the same opinion. On the other hand the mother-child interactions in the rural and urban families are found to be less frequent and thus lowers their achievement.

Above all, the tribal pre-school children are free from tensions and worries since the parents are not at all bothered about their grades in the school. Moreover, the tribals enjoy fun and humour and positively overcome the frustrations in life by engaging in dance and music. Whereas the rural and urban children in their hurry to get higher educational levels become irritated, frustrated and insecure which in turn hampers them in using their intelligence to a great extent. It has been proved that children with superior mental health (Ushasree 1978) and those with easy temperament (Chattopadhyay 1985, Goldstein and Rollins 1986, Kundu and Basu 1991) are high achievers.

The already mentioned factors help the tribal children to exceed their rural and urban peers in achievement. Very few studies have come out with same results. A study by Sandhu (1986) has revealed that the tribals are in no way inferior to others in their achievement. To Rath, Dash and Dash (1979) and Chowdhary (1989) the tribal pre-school children are superior in academic performance than the non-tribals. In line with those studies the present study also indicates that the tribal pre-school children have significantly higher achievement than their rural and urban peers.
(b) Gender difference in the achievement of pre-school children

The results concerning the gender difference in achievement reveal that the pre-school boys and girls are equal ($F = 1.27, P > 0.05$, Table 4.19) in their achievement. Though Mussen et al. (1984) declared significant sex difference in the achievement of pre-school children, the present study finds no difference in the achievement (Figure 4.2) of pre-school boys and girls. Many factors account for this equality.

The rural and urban parents have higher educational expectations about their children irrespective of their sex. Due to the economic constraints they want both boys and girls to become self-sufficient in life and equally motivate them to achieve more. Since these parents expect financial support from both boys and girls, equal educational exposures are given to both. They consider the girls as an economic asset to the family along with the boys. The parents show no difference in satisfying the needs and desires of boys and girls. All these situations help the rural and urban boys and girls to have equal achievement.

The tribal children also show no gender difference in their achievement. The formal and informal out-door plays increase the fine muscular development of tribal boys. Engagement in house-hold activities improve the fine motor skills of tribal girls. Hence the tribal boys and girls are found to be equally quick in completing the tasks.

The tribal boys and girls have equal access to the family get-togethers, sharing of parents and to be traditional tribal arts. This enable them to have same level of practical knowledge and to be equal in their achievement.
Above all, equal educational facilities and equal chances for social participation provided for the pre-school boys and girls in the three groups facilitate same level of achievement for both boys and girls. All these factors help the pre-school boys and girls to achieve equally. Thus the present study finds no gender difference in the achievement of pre-school children.

5.4.2 Subareas of achievement

The subareas of achievement are discussed under the respective headings.

(a) Practical life skills
(b) Sensory skills
(c) Language skills and
(d) Arithmetic skills

(a) Practical life skills

(i) Practical life skills of tribal pre-school children in comparison with that of their rural and urban peers

The study reveals no difference (F=2.39, P > 0.05, Table 4.21) in the practical life skills of tribal pre-schoolers from that of their rural and urban peers. The mean scores make it clear that the tribal (M₁ = 126.89), rural (M₂ = 130.29) and urban (M₃ = 119.23) children are equal in achieving the practical life skills (Figure 4.24). The time (in second) taken by the children to put the buttons, hooks and buckles are noted to assess the practical life skills of pre-school children. The tribal children are found to be as skillful as their rural and urban peers in achieving the practical life skills.
The children are interested to do the self-help skills by themselves from 2½ years onwards. According to Craig (1989) four year old children can put on buttons, hooks and buckles correctly. Since this pattern is same for all children, four year old tribal children can also perform these skills along with rural and urban peers.

Usually the pre-school children are exposed to a curriculum with different alphabets, words, numbers and with lot of additions and subtractions. Learning to put on the buttons, hooks and buckles is completely a new topic for them. The topic of study which is totally different from their curriculum trigger the children's intellectual curiosity and resulted in the better achievement of skills irrespective of their group.

The presentation of buttons, hooks and buckles on separate frames seemed to be equally attractive to the tribal, rural and urban children and they all very interestingly acquired the skills within a short period of time. Novelty in the presentation of skills leads to better comprehension and expression says Rose et al. (1991).

The children handled the frames as play materials and learned the skills in a playing mood which tally the learning style of pre-school children. In the views of Price, Dunn and Sanders (1981), Wheeler (1983) and Varma (1992) the instructional strategies which are congruent to the children's learning style significantly increase their achievement. All these factors help the tribal, rural and urban children to be on the same line in their achievement.

Doing the personal activities by the tribal children themselves and sharing of household activities with parents equip them with better motor
co-ordination. The rural and urban children also get the fine muscular co-
oordination by engaging in the outdoor and indoor games. Thus the tribal,
rural and urban children are found to be equally efficient and quick in
performing the practical life skills.

The already mentioned factors help the three groups of children to
achieve the practical life skills equally. The present study thus reports that
the tribal children are in no way inferior, but are equal to the rural and
urban children in their practical life skills.

(ii) Gender difference in the practical life skills of pre-school children

The two-way analysis reveals that the pre-school boys and girls differ
significantly \( (F = 3.77, P < 0.05, \text{ Table 4.21}) \) in their practical life skills.
The mean scores denote that the pre-school boys \( (M_4 = 121.36) \) have better
achievement (lower score = higher achievement) than the pre-school girls
\( (M_5 = 129.98) \) in the same (Figure 4.25). Group-wise analysis with critical
ratio (Table 4.22) reveals no gender difference in the practical life skills of
tribal \( (CR = 1.58, P > 0.05) \) and rural \( (CR = 0.02, P > 0.05) \) children
whereas significant gender difference \( (CR = 2.73, P < 0.01) \) is shown by
the urban children (Figure 4.26).

The tribal and rural pre-school children show no sex difference in
their practical life skills. Some factors account for this. The presentation of
a new topic in play way method might have created same level of eagerness
in the tribal and rural boys and girls to understand and perform the tasks in
the same manner. After learning, equal opportunities are given to all the
children to practise it. All these help them to acquire the skills with no
difference.
Furthermore, the tribal and rural parents allow their pre-school boys and girls to do the personal activities and sex typed skills on their own. Thus the tribal and rural children irrespective of their sex, are equipped with enough fine-muscular control in doing these skills equally well. Hence the tribal and rural boys and girls show no gender difference in their practical life skills. But as per the mean scores the tribal boys took less time to finish the tasks than the tribal girls.

The urban boys and girls show significant difference \((P < 0.01)\) in their practical life skills though the topic, the way of presentation and the opportunities provided for practise are same for all. The urban parents are more permissive to the boys and are more strict to the girls in teaching the self-help skills. They use threats and punishments in correcting the mistakes made by the girls whereas they ignore the mistakes of boys. Thus the boys learn it in a relaxing mood and the girls in a negative mood. Moreover, the parents usually praise the boys in their perfections but for girls they not only ignore it but also comment it only as their duty. Thus the boys might have already developed a positive attitude and girls a negative one towards learning. This motivated the urban boys to finish the tasks within a short period of time. But for girls, even though the researcher presented the skills in a way which is suited to their interest, the already set negative attitude might have lowered their attention, comprehension and performance of the skills to a large extent. All these factors help the urban boys to finish the practical life skills in a short period of time.

In short, the highly significant \((P < 0.01, \text{Table 4.22})\) lower scores (higher achievement) secured by the urban boys leads to significant \((P < 0.05, \text{Table 4.21})\) lower score (higher achievement) for the pre-school boys in their practical life
skills. Thus the study reveals that the pre-school boys have better practical life skills (Figure 4.25) than the pre-school girls.

(b) **Sensory skills**

(i) *Sensory skills of tribal pre-school children in comparison with that of their rural and urban peers*

The results in Table 4.23 indicate a significant difference in the sensory skills \( F = 3.72, P < 0.05 \) of tribal, rural and urban children. Detailed analysis with critical ratio (Table 4.24) reveals that the tribal children have better sensory skills than the rural children \( (CR = 2.29, P < 0.05) \) whereas the tribal and urban children are equal \( (CR = 0.08, P > 0.05) \) in their sensory skills. It also indicates that the urban children have better sensory skills \( (CR = 2.30, P < 0.05) \) than their rural peers. The mean scores (Figure 4.27) also indicate the same.

The tribal, rural and urban children have environmental exposures with different stimulation patterns. Yet the tribal children are equally efficient as the urban children in their sensory skills whereas the rural children are less efficient in the same.

The tribal’s life in harmony with nature is the major underlying factor for their better sensory skills. Their constant touch with nature, their play in the springs and soils, the experience with warm and cool climates, free access to open spaces and forests, familiarity with different sounds, smells, shapes and textures of the nature and barefooted walking all might have improved their ability for sensory discrimination. The urban children, though unaware of these sensory exposures provided by the nature, the recreational...
facilities and the mass media reveal the surrounding nature for them. This increases the sensory skills of urban children.

Sharing of activities with parents both inside and outside the family provide the tribal children a host of objects and opportunities to see, hear, touch and feel. The handling of natural, home made and indigenous toys broaden the sensory perception of tribal children. On the other hand, endless stimulations and interstimulations given by the urban parents encourage their children to put their hands in to each and every thing around. The manipulation of household articles and material goods improves the sensory abilities of urban children. A study by Manjuvani (1985) has also revealed that play with toys improves the perceptual discrimination of colour, form and also favours the discrimination based on touch.

Some of the social virtues of tribal children like sociability (Gisbert 1978), concern to old people, strong family ties (Kattakayam 1983), intimacy with co-villagers (Vidyarthi and Rai 1985, Mahalingam 1986) and respect for elders (Reddy 1988) all make them sensitive not only to the people around but also to the physical environment. On the other hand, greater competition, accommodation and assimilation motivate the urban children to be active in their habitat. This sensitivity to the physical environment make the tribal and urban children equally responsive to the sensory stimulations. All these factors help the tribal and urban children to be on the same line in their sensory skills.

The rural children are found to be significantly lower to the tribal and urban children in their sensory skills. The ignorance about the sensory stimulations provided by the nature, lack of mass media facilities, inadequate resources to satisfy their felt-needs, and low degree of competition are
some of the factors which hinder the sensory skills of rural children. Above all, the dissatisfaction of the needs and desires are more felt by the rural children and create an indifference in them. Hence they are found not interested to hear different sounds, to see, and to touch and feel the objects in their immediate environment. This insensitivity to the materials and chances lower the sensory encounters of the rural children.

In short, the unawareness about the nature and the indifference shown by the rural children retard the development of their sensory skills. A study by Muralidharan and Kaur (1983) has also reported that the rural children lag behind the urban children in form discrimination and immediate memory.

The present study, thus indicates that the tribal and urban children are equal in their sensory skills. It also reports that the tribal and urban children have better sensory skills than the rural children.

(ii) Gender difference in the sensory skills of pre-school children

The results in Table 4.23 indicate significant gender difference ($F = 5.57, P < 0.05$) in the sensory skills of pre-school children. The mean scores reveal that the pre-school boys have significantly better sensory skills than the pre-school girls (Figure 4.25). Group-wise analysis of the same (Table 4.25) points out that the tribal boys have significantly better sensory skills ($CR = 2.50, P < 0.05$) than the tribal girls whereas the rural ($CR = 1.26, P > 0.05$) and urban ($CR = 0.33, P > 0.05$) pre-school children show no sex difference in this area (Figure 4.28).

The tribal pre-school boys have better sensory skills than the tribal girls. An important reason which can be attributed to this is their
difference in the harmony with nature. The tribal boys are more in touch with the nature. They are free to roam about in the forests and plains. They usually engage in outdoor play, in collecting and eating locally available fruits, in netting, angling and catching fish, and in hunting birds. Thus, most of the time, they are in the open spaces, forests and lakes. Thus they get more chances to enjoy the orchestra of the nature, to experience its hardness and softness, its calmness and frustrations and the objects in different shapes and sizes. All these make the boys more discriminative in their sensory skills. The tribal pre-school girls, on the other hand, are confined in the home holding the responsibilities of household activities and caring the younger ones. Naturally they lose some of the opportunities which open the door for sensory perception and stood a little back to the boys in their sensory skills.

The rural and urban children show no gender difference in their sensory skills. The rural and urban children, irrespective of their sex, have equal accessibility to the recreational facilities and to the mass media. They got equal opportunities to manipulate toys and material goods. The urban parents show no sex discrimination in stimulating them to be sensitive to the environment in which they are living. The rural parents are also not discriminative in satisfying the needs and desires of the pre-school boys and girls. Thus the rural and urban boys and girls get equal chances to develop their sensory skills. Hence they show no gender difference in the same. But the mean scores indicate better sensory skills for the boys than the respective girls.

In short, the tribal pre-school boys are significantly better \((P < 0.05)\) in their sensory skills than the tribal girls. Though the rural and urban pre-schoolers
show no gender difference in their sensory skills, the pre-school boys in these sectors have slightly lower scores (higher achievement) than the respective girls (Figure 4.28) in the same. These constitute lower score (higher achievement) for the pre-school boys in sensory skills. Thus the study reports that the pre-school boys have better sensory skills than the pre-school girls.

(c) **Language skills**

(i) **Language skills of tribal pre-school children in comparison with that of their rural and urban peers**

The present study (Table 4.26) reports highly significant difference ($F = 12.77, P < 0.01$) in the language skills of tribal children from that of their rural and urban peers. The analysis with critical ratio (Table 4.27) makes it clear that the tribal ($CR = 4.46, P < 0.001$) and urban ($CR = 3.58, P < 0.001$) children have better language skills than their rural peers whereas the tribal and urban children are equal ($CR = 1.29, P > 0.05$) in the same. Though the tribal-urban difference is insignificant, the mean scores indicate better language skills (Table 4.27) for the tribal children. The study thus indicates better language skills (Figure 4.29) for the tribal pre-schoolers than their rural and urban peers.

There are studies to prove that children from disadvantaged environment (Pilling and Pringle 1978, Sinha 1978, Sahu and Jena 1984, Prakash and Sen 1986, Chakrabarti and Kundu 1986 and Walker *et al.* 1994) and tribal children (Govindareddy 1987) have poor language development. Phillips (1989) and Entwisle and Alexander (1990) observed no ethnic difference in the language development of children. But the present study reports that the tribal and urban children are equal in their language skills and are superior to the rural children in the same.
Many factors favoured the tribal children to have superior language skills. The family get-togethers in the evenings, the endless conversations between the tribal children and their parents, mutual sharing of daily experiences, listening to the folk tales, participation in tribal dance and music, simultaneous exposure to different languages, and intimacy with the co-villagers, frequent and intimate conversations with the siblings and neighbourhood peers while playing all accelerate the language skills of tribal children to a greater extent. The frequent mother-infant conversations in the tribal families inculcate better language skills in the tribal children. A study by Singh and Kapur (1986) has also noticed the tribal mother's greater encouragement for verbalisation. These circumstances help the tribal children to acquire more advanced language skills than others.

The already mentioned tribal situations are lacking in the urban families. Yet the urban children also show better language skills just like the tribal children. The urban children get more chances to listen to the radio and audio cassettes and to view the T.V. programmes. These stimulate interesting conversations among them. The urban children, because of their curiosity, ask lot of questions and the parents have to answer it. This leads to frequent parent-child interactions in the urban families. All these increase the language skills of urban children. Thus the study reports advanced language skills for the tribal and urban children at the same level.

The language skills of rural children are found to be significantly inferior ($P < 0.001$) to that of the tribal and urban children. Many factors contribute to this. In the rural families, both the parents go for daily wages due to the economic constraints. This lowers their chances to be with and to communicate with their children. According to Atkinson et al. (1987)
children who are not talked to, read to or encouraged to explore their environment are seriously behind in language skills. The rural children have limited chances to attend to the radio and T.V. programmes. They usually play with their own siblings and with their immediate neighbourhood peers. Their topic of conversation may also be the same. All these lower their style of language, way of talking and the correctness of pronunciation and make them feel inferior to others. This may be the reason why they seem not interested in making conversations with others and whenever they get chances to communicate they prefer to stay back.

Furthermore, the rural children are not so curious in asking questions as that of the tribal and urban children. This limit their parent-child interactions. The present study reports that the rural children lag behind the tribal and urban children (Table 4.24) in their sensory skills. This lowers their chances to communicate with others and this in turn hamper their language development. All these factors account for the poor achievement of language skills by the rural children. Thus the present study indicates that the tribal pre-school children are equal to the urban children but are superior to the rural children in their language skills.

(ii) Gender difference in the language skills of pre-school children

The present study reports (Table 4.26) that the pre-school boys and girls are equally efficient \((F = 0.58, \ P > 0.05)\) in their language skills. Mean scores also denote no gender difference (Figure 4.25) in their language skills. Many factors favour the pre-school girls to come along with boys in their language skills.
In the tribal families, the boys have free conversation with others while playing and working outside whereas the girls have constant intercommunications while doing the household activities. No discrimination is found in enjoying the family get-togethers, in the participation of tribal arts and in listening to the oral literature based on their sex. Tribal boys and girls are equally exposed to different languages. Mothers encourage verbalisation in both children. All these environment which are equally open to both help the tribal boys and girls to acquire language skills in the same way.

In the rural families, the pre-school boys and girls equally get their parents and elders in their midst to communicate. These children, irrespective of their sex, have same exposures to mass media and equal chances for peer contact. Their interest in asking questions and clearing their doubts seemed to be the same. In the present study, the rural pre-school boys and girls took same time to finish the sensory skills. All these factors favour the rural boys and girls to have equal language skills.

The pre-school boys and girls in the urban families also have equal accessibility in the social and recreational activities, to the mass media and in the family conversations. Urban boys and girls have equal chances to engage in interesting conversations with peers. Both of them are curious to clear their doubts. Hence the parent-child interactions are frequent irrespective of their sex. So the urban boys and girls also show no gender difference in their language skills.

About all, the tribal, rural and urban pre-school girls attend the anganwadi centres as the respective boys. This increases their social contacts and inter-communications. Thus the pre-school children from the three
groups show no gender difference in their language skills. Hence it can be concluded that the pre-school boys and girls are equal in their language skills.

(d) **Arithmetic skills**

(i) **Arithmetic skills of tribal pre-school children in comparison with that of their rural and urban peers**

The F-ratio (Table 4.28) for the three groups shows that the arithmetic skills of tribal children are significantly different ($F = 25.75, P < 0.01$) from that of their rural and urban peers. Table 4.29 indicates that the tribal pre-school children have significantly better arithmetic skills than the rural ($CR = 6.29, P < 0.001$) and urban ($CR = 7.49, P < 0.001$) children. Rural and urban children show no difference ($CR = 1.31, P > 0.05$) in the same.

As per the mean scores, the tribal children have highly significant achievement ($M_1 = 41.65$) in arithmetic skills (lower score = higher achievement) than the rural ($M_2 = 89.02$) and urban ($M_3 = 103.13$) children. Thus the results make it clear that the tribal children exceed their rural and urban peers (Figure 4.30) in their arithmetic skills.

The tribal children’s better achievement in arithmetic skills have many reasons. The close intimacy with the nature increases the imaginative skills of tribal children. Mays (1985) has also reported that reaching out in to the environment increases imagination.

The simple exploration of the immediate environment, doing the personal activities by themselves, playing with indigenous toys and helping
the parents in their household activities all teach them a lot of calculations, additions and subtractions. Ginsberg (1977) has reported that rules for counting and for doing addition and subtraction are developed by unschooled children. To Craig (1989) simple exploration gives way to more complex skills.

The tribal dances and songs and the traditionally transmitted oral literature disclose a lot of practical knowledge and intellectual clues to solve their life problems. Knowledge about self, tasks and strategies help in understanding number, counting and problem-solving say Hetherington & Parke (1986).

The present study reveals that the tribal children have better sensory (Table 4.24) and language (Table 4.27) skills. This help the children to be attentive to the environment, objects and to the questions asked and to make quick responses. To Sperling (1990) the sensory-perceptual capacities extent the horizons of achievement.

Above all, the tribal children’s ability for advanced abstract thought (Mead 1932), high need for achievement (Ray 1984) great innate capacity for achievement (Negi 1976), high degree of achievement motive (Mistra and Tripathi 1978), ability to respond to the tasks of divergent thinking (Kagan 1983b) and chance oriented nature (Singh 1983) all enhance the arithmetic skills of tribal children. Thus the already mentioned factors help the tribal children to achieve advanced arithmetic skills.

As per the study, the rural and urban children lag behind the tribals in arithmetic skills equally. These children are not encouraged to explore the nature and the environment in which they are living. The rural and
urban parents do not assign any household activities for their children. They do not allow their children to do anything on their own. Instead, the parents will do everything for them. Moreover, these parents hardly get time to share the practical knowledge and intellectual clues with their children. So the rural and urban children are not independent enough to do the calculations, additions and subtractions by themselves. Hence they need the support and assistance of the teachers and parents to take decisions and to solve their problems. The present study indicates poor sensory (Table 4.24) and language skills (Table 4.27) for the rural and urban children than their tribal peers. These factors lower the mathematical abilities of rural and urban children. The present study, thus reveals that the tribal pre-schoolers have better arithmetic skills than their rural and urban peers.

(ii) **Gender difference in the arithmetic skills of pre-school children**

The two way analysis (Table 4.28) indicates that the pre-school boys and girls are equal ($F = 2.01$, $P > 0.05$) in their arithmetic skills (Figure 4.25). This makes it clear that the tribal, rural and urban pre-schoolers show no sex difference in their arithmetic skills.

In the tribal sector, the pre-school boys and girls have interactions with the nature and get chances to explore the world. Both of them do their personal activities by themselves. There is no discrimination in assigning the household activities though they are engaged in sex-typed activities. The boys and girls have equal chances to listen to the oral literature and to participate in the tribal arts and family get-togethers. These situations equally inculcate the basic knowledge of additions, subtractions and simple calculations in the tribal boys and girls. Thus both of them took equal time
to finish the arithmetic skills. All these factors help the tribal pre-school boys and girls to have equal arithmetic skills.

The rural and urban pre-school boys and girls also get equal environmental exposures. In the rural and urban settings, both the boys and girls get equal opportunities to enjoy the nature and the people around. Rural and urban parents have equal educational expectations about their boys and girls. These parents show no sex discrimination in assisting their children. They get equal chances to share their practical knowledge with the children. The rural and urban children, irrespective of their sex, show same level of interest and independence in doing the household and personal activities by themselves. Moreover, the same sensory (Table 4.25) and language skills (Table 4.26) of the pre-school boys and girls in the rural and urban sectors help these children to comprehend and to finish the arithmetic skills with equal efficiency. Thus the rural and urban boys and girls are found to be equal in their arithmetic skills.

Above all, the pre-school boys and girls in the three sectors get equal chances to attend the Anganwadi programmes. So they have the same number concepts and equal skills in doing additions, subtractions and basic calculations. The already discussed factors help the pre-school boys and girls to have same level of achievement in arithmetic skills.

Thus the present study concludes that the pre-school boys and girls show no difference in their arithmetic skills.