RESULTS AND DISCUSSION

4.1 Rank positions of value categories.

260 samples were selected from Civil, Electrical, Mechanical, Computer and Electronics branches for the study. Test scores were converted into percentages on the basis of the total scores and are given in the Appendix IV-1 (page 185).

The value orientation preferences of engineering students are as follows.

<table>
<thead>
<tr>
<th>Value orientation</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement</td>
<td>1</td>
</tr>
<tr>
<td>Social</td>
<td>2</td>
</tr>
<tr>
<td>Aesthetic</td>
<td>3</td>
</tr>
<tr>
<td>Economic</td>
<td>4</td>
</tr>
<tr>
<td>Power</td>
<td>5</td>
</tr>
<tr>
<td>Religious</td>
<td>6</td>
</tr>
</tbody>
</table>

Reddy and Parameswaran (1966) in their study found that engineering students were more theoretical. Rao, Puri and Singhvi (1978) have pointed out that jobs that provide opportunities to be creative and paying economically were
preferred by all professional students including engineering. Pestonjee and Akhtar (1969 a) in their study found that social service, fame and self expression were the three most preferred values of engineering faculty.

Individuals with a high need to achieve prefer job situations with personal responsibility, feedback, and an intermediate degree of risk. High achievers are generally successful in entrepreneurial activities (Robbins, 1996).

Most preferred value of the managers from industrially advanced countries is achievement (England, 1978). MBA students from School of Management Studies; Cochin, and Symbiosis Institute, Pune showed achievement as their most preferred value (Poduval, 1987; Pillai, 1987). The least preferred value of the group is religious which is in accordance with the value pattern of college students (Reddy and Parameswaran, 1966; Poduval 1987). Pareek, Banerjee and Chattopadhyay (1980) in their study pointed out that competition for maximizing gain will be related to achievement motivation. High achievement and competent orientation and emphasis on profit maximization and high productivity are the characteristic features of successful managers from industrially advanced countries (England 1978).

Power value is a less preferred one in the present study. This value pattern is not the same value pattern of the best managers. Best managers have high need for power and very low need for affiliation (Mc Clelland & Burnham, 1976).

Other studies among college students agree with the low preference for power value (Rezler, 1963; Poduval, 1987). But Bhatnagar’s (1971) study revealed that Indian students are high on political value and low on aesthetic and social values. Bhatnagar studied the general set of Indian students but the students included in the present study consist only of professional students and the general
climate of the country also might have contributed to such a change. Social value orientation is very high among engineering students. Occupational value of engineering faculty in India gave social as their most preferred value (Pestonjee & Akhtar, 1969a).

Economic value orientation of engineering students is having only the fourth rank in the present study indicating that they have not imbibed the values held by successful managers. If the economic value orientation occupies a higher rank position then their value pattern would have been very similar to that of managers from industrially advanced countries and successful entrepreneurs.

4.2 Value orientation and gender differences of engineering students.

198 male and 62 female final year engineering students constituted the sample. Test scores have been converted to corresponding percentages on the basis of the total scores and are given in the Appendix IV-2 (page 185). The value orientation preferences of males and females in descending order are:

**Males**: Achievement, social, aesthetic, power, economic, and religious.

**Females**: Achievement, social, economic, aesthetic, religious and power.

Achievement is the most preferred value for males and females.

Social is the second most preferred value for males and females.

Aesthetic is the third preferred value for males and a less preferred value for females.

Power and religious are low preferred values for both groups.

Economic is the third preferred value for females and less preferred value for males.

The value orientation preferences of male engineering students and female engineering students are not significantly correlated ($r = 0.71, t = 2.016$). In other words the value pattern of males and females are distinct. This finding
is in tune with the observations of several other studies (Sharma, 1964; Reddy & Parameswaran, 1966; Pestonjee, Akhtar and Chowdhary, 1967; Pestonjee, Akhtar, 1969b; Annamma, 1984; Genov, 1985; Gheorghiev, 1985; Feather & McKee, 1992; Passakos, 1996; Sheeran, et. al. 1996).

Achievement and social are the two most preferred values for both males and females.

Religious and power are very low preferred values for both groups. This is similar to the value pattern of M.B.A. students (Poduval, 1987). Religious was the least preferred value for college students (Reddy & Parameswaran, 1966). In the present study also religious is the least preferred value for males and the last but one preferred value for females. The study by Reddy & Parameswaran revealed that religious value was high among girls but in the present study females show very low preference to religious value. This may be because of the social and economic changes in the present society. In the present study, economic value orientation among females is high compared to that of the males. Achievement, social and economic are the preferred values of females. This pattern is similar to the value pattern of successful entrepreneurs.

This observation about female engineering students from Kerala could be different from other states in India. The Kerala females are educated and career oriented and it is often said that large numbers are females in certain professional fields such as medical and teaching.

Economic value orientation of males is very low. They have high achievement and social values. Their value pattern as observed in the study needs further exploration in terms of their occupational choices. It is quite possible that the male subjects are more career oriented for professional advancement rather than having a desire to become entrepreneurs.
4.3 Value orientation and religious affiliation of engineering students.

106 Hindu, 25 Muslim, and 129 Christian students constitute the sample. Test scores were converted into percentages on the basis of total scores for all the three groups and are given in the Appendix IV-3 (page 186). The value orientation preferences of Hindu, Muslim and Christian engineering students in descending order are:

- **Hindu students**: Achievement, social, aesthetic, economic, power, and religious.
- **Muslim students**: Achievement, social, power, aesthetic, economic and religious.
- **Christian students**: Achievement, social, aesthetic, economic, power and religious.

Achievement is the most preferred and religious is the least preferred value for all groups. Social is the second most preferred value for all groups.

Aesthetic is the third preferred value for Hindu and Christian students and the less preferred value for Muslim students.

Power is the third preferred value for Muslim students and less preferred value for other groups of students.

Hindu and Muslim students of engineering agree on achievement, social, and religious values. Hindu students are more oriented to aesthetic and economic values and less oriented to power value compared to Muslim students. The value orientation preferences of Hindu and Muslim students of engineering are correlated significantly ($r_s = 0.83$, $t = 2.976$), implying that the difference in value orientation pattern is not significant.

Hindu and Christian students of engineering gave equal preference for all value categories. The value orientation preferences of these groups are perfectly correlated, that is the value pattern of both groups are identical.

Muslim and Christian students of engineering agree on achievement, social and religious values. Muslim students gave more preference to power value and less preference to economic and aesthetic values compared to Christian
students. The value orientation preferences of these groups are significantly correlated ($r = 0.83$, $t = 2.976$), and hence there is no basic dissimilarities in the value orientation pattern.

Value orientation preferences of Hindus, Muslims and Christians are significantly correlated.

Power value orientation of Muslim students is more than that of Hindu and Christian engineering students.

Results show that the influence of religion on the value orientation of engineering students is not significant. A study conducted by Feather, et al. (1992) revealed that the values endorsed were consistent with Baha'i teachings. Similarity in views was found among Catholic and Protestant teachers (McEwen, 1985). Ethnic background had no significant relationship with values congruency (Posner, 1992). But Annamma's (1984) study revealed that Christian religion is more favourable to spiritualism than others. Chia et al., (1994) in their study found that family values of Chinese, Mexican and the U.S. were different.

Thus the findings on this issue of the impact of religious and ethnic factors on value orientation are inconsistent.

4.4 Places of residence and value orientation of engineering students.

In the sample of engineering students, 59 were from rural areas, 84 were from semi-urban areas and 89 were from urban areas. The scores obtained were converted into percentages and are given in the Appendix IV-4 (page 186). The rank positions of the six categories of values for engineering students from different places of residence in descending order are:

Students from rural places: Social, achievement, economic, aesthetic, power and religious.

Students from semi-urban places: Achievement, social, aesthetic, power, economic and religious.
Students from urban places: Achievement, social, aesthetic, economic, power and religious.

Social value is the first preference for rural students and second most preferred value for semi-urban and urban students of engineering.

Achievement is the most preferred value for students from semi-urban and urban areas and second most preferred value for students from rural areas.

Economic is the third most preferred value for students from rural areas and less preferred value for other groups.

Aesthetic is the third most preferred value for students from semi-urban and urban areas and less preferred value for students from rural areas.

Power and religious are less preferred values for students from different areas.

Students from rural and semi-urban areas have the same preference on religious value.

Engineering students from rural areas gave more preference to economic & social values and less preference to achievement, aesthetic and power values compared to students from semi-urban areas. The value orientation preferences of these groups of students are not significantly correlated ($r_s = 0.77$, $t = 2.41$). Hence there is significant difference in value orientation patterns among engineering students from rural and semi-urban areas.

Students from rural and urban areas agree on power and religious values. Students from rural areas gave more preference to economic & social values and less preference to achievement & aesthetic values compared to students from urban areas. The value orientation preferences of these groups are significantly correlated ($r_s = 0.885$, $t = 3.80$), implying that the difference in the value orientation pattern is only incidental.

Engineering students from semi-urban and urban areas agree on
achievement, aesthetic, social and religious values. Students from semi-urban areas gave preference to power value and less preference to economic value compared to students from urban areas. The value orientation preferences of these two sets of students are significantly correlated ($r_s = 0.94, t = 5.51$), implying that these groups are homogeneous in their value patterns.

Students from rural areas gave high preference to economic value whereas students from semi-urban areas gave last but one preference to economic value. Achievement value is the most prioritized value for the general set of engineering students and social value is the second most preferred value for them. In the case of students from rural areas the order is reversed. Social, achievement and economic values are the preferred values for students from rural areas. Students from rural areas show high level of social/humanistic orientation and achievement orientation. Residential background has no relationship to value orientation of college students (Annamma, 1984). This result is not in agreement with the value orientations of engineering students from rural and semi-urban areas. In the present study there is significant variation in the value orientation pattern of students from rural and semi-urban areas. Review of literature did not reveal relevant studies on this aspect.

### 4.5 Annual income of the family and value orientation of engineering students.

Engineering students were divided into four groups according to the annual income of their families. The groups were:

1. **Low income group whose annual income is less than Rs. 25000/-**
2. **Middle low income group whose annual income is Rs. 25,000/- and above but less than Rs. 50,000/-**.
3. **Middle high income group whose annual income is Rs. 50,000/- and**
above but less than rupees one lakh. and

(iv) High income group whose annual income is above rupees one lakh.

There were 38 in low income group, 73 in middle low income group, 87 in middle high income group, and 34 in high income group.

The scores obtained were converted in to percentages and are given in the Appendix IV-5 (page 187). The value orientation preferences of the engineering students from different income groups in descending order are as follows:

Low income group : Achievement, social, economic, aesthetic, power, and religious.
Middle low income group : Achievement, social, aesthetic, economic, power and religious.
Middle high income group : Achievement, social, aesthetic, economic, power and religious.
High income group : Achievement, social, aesthetic, economic, power and religious.

Achievement and social are the most preferred and second most preferred values and religious is the least preferred value for all groups of engineering students from various economic backgrounds.

Economic is the third most preferred value for low income group, and less preferred value for all other income groups.

Aesthetic is the third most preferred value for middle low, middle high and high income groups, and less preferred value for low income group.

Power is a less preferred value for all income groups.

The value orientation preferences of these groups are significantly correlated ($r_s = 0.94, t = 5.51$), implies that these income groups are homogeneous in their value orientation pattern.

Low income group and middle high income group agree on the top two values namely, achievement and social and the least preferred value, namely, religious. Low income group is more oriented to economic value and less oriented to aesthetic and power values compared to middle high income group.
The value orientation preferences of these groups are significantly correlated ($r_\alpha = 0.83$, $t = 2.96$), implies that there exists no real difference in value orientation pattern among these groups.

The high income group and low income group of engineering students agree on achievement, social, power and religious values. High income group is more oriented to aesthetic and less oriented to economic value compared to the low income group. The value orientation preferences of these groups are significantly correlated ($r_\alpha = 0.94$, $t = 5.51$). This shows that the groups are homogeneous in their value orientation patterns.

Middle low income and middle high income groups of engineering students agree on achievement, social, aesthetic and religious values. Middle low income group is more oriented to economic and less oriented to power compared to middle high income group. The value orientation preferences of these groups are significantly correlated ($r_\alpha = 0.94$, $t = 5.51$). This shows that these groups have exactly similar type of value orientation patterns.

Middle low income group and high income group have exactly a similar type of value orientation preferences.

Middle high and high income group of engineering students agree on achievement, social aesthetic and religious values. Middle high income group is more oriented to power value and less oriented to economic value compared to high income group. The value orientation preferences of these groups are significantly correlated ($r_\alpha = 0.94$, $t = 5.51$). This shows that both groups are homogeneous in their value orientation patterns.

Low income group gives emphasis to high achievement orientation and economic value orientation. Students from low income families were more oriented to economic values than students from high income families (Reddy & Parameswaran, 1966). Annamma's (1984) study showed that high income group
was more 'materialism'-oriented. The present study is in agreement with the study of Reddy & Parameswaran and not in agreement with the study by Annamma (1984). Govindarajacharyulu (1984) in his study found that economic factors did not influence occupational values of students.

Analysis of the results of various subgroups under economic criteria show that the economic backgrounds of the students do not influence their value orientation patterns. That is all the income sub groups are homogeneous in their value orientation patterns.

4.6. Past educational achievement and value orientation of engineering students.

The entire sample was divided into three groups on the basis of their P.D.C/ plus 2 marks. They were:

i) **Low achievers** : those engineering students who secured less than 60% marks in their P.D.C/ plus 2 examination.

ii) **Medium achievers** : those who secured 60% and above but less than 75% marks in their PDC/Plus 2 examination, and

iii) **High achievers** : those who secured 75% or more marks in the P.D.C / Plus 2 examination.

There were 13 low achievers, 120 medium achievers and 94 high achievers in the sample (those who responded with vague answers were excluded). The number of samples in the low achievers group is small. The scores obtained were converted into percentages on the basis of group totals and are given in the Appendix IV-6 (page 187). The value orientation preferences of the medium achievers and high achievers in descending order are:

- **Medium achievers**: Achievement, social, aesthetic, economic, power and religious,
- **High achievers**: Achievement, social, aesthetic, power, economic and religious.
Achievement, is the most important value, social is the second most important value, aesthetic is the third preferred value and religious is the least important value for both medium achiever and high achiever students of engineering. Economic and power are less preferred values for both groups of engineering students. Medium achievers are more oriented to economic and less oriented to power value compared to high achievers. The value orientation preferences are significantly correlated ($r = 0.94$, $t = 5.51$), implying that academic achievement has no impact on the value orientation pattern.

Creativity comes under achievement orientation. High creative group had low economic value (Paramesh, 1970). Study conducted by Sprinthal (1964) showed that high achievers are significantly different from par and low achievers in value orientation. Study by Darmody (1991) reveal that subjects with scores on formal reasoning and low scorers on formal reasoning are significantly different. Study by Jones (1990) showed that academically successful and academically unsuccessful differ significantly in their values.

4.7 Summary of findings

The value orientation preferences of engineering students in descending order are: achievement, social, aesthetic, economic, power and religious.

Achievement is the most preferred value for all subgroups of engineering students except students from rural areas. Social is the second most preferred value for all subgroups except for students from rural areas.

Power value is considered to be one of the least preferred items among all groups.

All subgroups except females gave the least preference for religious value.

Economic value orientation is very low among all groups except students
from low income group, from rural areas and females. The combination of achievement, social and economic values shows the value pattern of successful entrepreneurs. It seems, from the present study that female engineering students, engineering students from rural areas and engineering students from low income families are awakening categories of potential entrepreneurs of Kerala as these categories show greater preference to achievement, economic and social values.

Table 11 shows the rank order preferences of different value categories as given by different sub groups of engineering students.

Table 11

<table>
<thead>
<tr>
<th>Value orientation preferences of engineering students in general and on the basis of personal characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering Students</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>General</td>
</tr>
<tr>
<td>Males</td>
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<tr>
<td>Females</td>
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<tr>
<td>Hindus</td>
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<tr>
<td>Muslims</td>
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<tr>
<td>Christians</td>
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<tr>
<td>Rural</td>
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<tr>
<td>Semi-Urban</td>
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<tr>
<td>Urban</td>
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<tr>
<td>Low income</td>
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<tr>
<td>Middle low income</td>
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<tr>
<td>Middle high income</td>
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<tr>
<td>High income</td>
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<tr>
<td>Medium achievers</td>
</tr>
<tr>
<td>High achievers</td>
</tr>
</tbody>
</table>