Chapter 4

Socio-Economic Analysis of Female Employees in ICTs Parks in Kerala

4.1 Women Empowerment

The study is carried out in the state of Kerala, one of the economically and technologically advanced states. In the recent years, the state is successful in implementing various ICTs related projects and reap benefit from it. By seeing the growth in this sector and the potential work force in the state, various foreign agencies, Government of India and other non-governmental agencies have seriously involved for the further development of the ICTs sector. Their mission is to improve the quality of life of people, with the aid of ICTs in all respects. There are also many projects for the greater involvement of women and more particularly poor and rural women with the main objective to make the women both economically and socially strong.

The analysis is based on the data collected from various ICTs parks located in three districts of Kerala viz., Techno park- Thiruvananthapuram, Info park- Ernakulam and Kinfra Park near to Kozhikode, through judgement sampling survey using a structured questionnaire. The districts selected for the study were chosen keeping in mind their locations-south Kerala, middle Kerala and north Kerala- and access to ICTs.

For primary data collection and analysis, Kerala economy is divided into two viz., Urban and Rural Kerala. The data for Urban Kerala is represented through ICTs Parks and that of Rural Kerala is represented through Kudumbashree ICTs units. The study is conducted through a judgement sampling method using a structured questionnaire covering ICTs units-ICTs Parks and Kudumbashree ICTs Units, of the three regions in Kerala.
For analyzing the data thus collected Multiple Regression model, Percentile method, Case studies, Method of Averages, The Friedman Two-way Analysis of Variance by Ranks, Testing of Hypotheses and Chi-square ($\chi^2$) Test and Graphs &Diagrams were used.

The functional relationship between Women Empowerment through Employment in the ICTs sector (represented as $W$), with its parameters are given below:

$$W = f [C, E, P, S, F, I, H, D, R]$$

Where,

$W$ = Women Empowerment through employment in the ICTs sector with

- Self Confidence (C),
- Provides Increased Economic Prospects (E),
- Decision making Power (P),
- Change of status in the family and community (S),
- Support from the family for working in the ICTs units (F),
- Her contribution to family income (I),
- Freedom in household expenditure (H)
- Increased Flexibility and Skill development (D) and
- Support from the family for sharing the household responsibilities (R).

4.2 Profile of the sample respondents

All the selected 310 respondents were women who are working in the various ICTs Parks of Kerala. The respondents include women ICT employees from three regions of Kerala i.e. south Kerala, middle Kerala and north Kerala, urban areas, various age groups, income groups, and education level. A profile of the respondents on the above basis, family status, caste, and different problems faced are presented below.

4.2.1 Age wise classification of the sample
A total of 310 women respondents were interviewed by the researcher from the ICT parks of selected three districts of Kerala. The respondents comprised of different age groups. The sample respondents classified on the basis of their age is shown in the Table 4.1

**Table 4.1**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>No. of Respondents</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-23</td>
<td>96</td>
<td>30.97</td>
</tr>
<tr>
<td>23-28</td>
<td>123</td>
<td>39.68</td>
</tr>
<tr>
<td>28-33</td>
<td>79</td>
<td>25.48</td>
</tr>
<tr>
<td>33-38</td>
<td>09</td>
<td>02.90</td>
</tr>
<tr>
<td>38-43</td>
<td>03</td>
<td>00.97</td>
</tr>
<tr>
<td>Total</td>
<td>310</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Survey

Majority of the respondents belonged to the age group ‘23-28’ years. There were 123 women which constituted about 39.6 percent of the sample size in this group. 96 respondents (30.97%) were in the age group of ‘18-23’ years; 79 respondents (25.48%) were in the age group of ‘28-33’ years; and 12 respondents (3.87%) were aged more than 33 years. **The median age of women employees is 25.4 years.**

**Figure 4.1**

Graphical presentation of Age wise distribution of the sample
Figure 4.1 depicts that majority of the women employees of ICT sector are young as their age pattern suggests they are below 30 years.

### 4.2.2 Education wise classification of the sample

The ability to cope up with new technologies is an important quality in the ICT jobs. Education helps provide a base for developing the aforesaid quality. Kerala is one of the highly literate and educationally advanced states in the country. Hence it is appropriate to classify the sample respondents according to their level of education (Table 4.2).

#### Table 4.2 Education wise distribution of the sample

<table>
<thead>
<tr>
<th>Educational Status</th>
<th>+2/VHSC/ITI</th>
<th>Degree</th>
<th>PG</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Traditional BA/BSc/Bcom)</td>
<td>Professional Bsc(IT)/BCA/Computer</td>
<td>Engineering/ B.Tech</td>
<td>(Traditional MA/MSc/Mcom)</td>
</tr>
<tr>
<td>No. of employees</td>
<td>4</td>
<td>76</td>
<td>87</td>
<td>44</td>
</tr>
<tr>
<td>Total</td>
<td>4 (1.29)</td>
<td>207 (66.77)</td>
<td>99 (31.94)</td>
<td>310 (100)</td>
</tr>
</tbody>
</table>

Source::Survey

Majority of the employees i.e. 207 (66.77%) out of 310 respondents are graduates in various disciplines while 87 respondents hold a BA/BSc/BCom degree, 76 respondents hold BSc (IT)/BCA/Computer degree and 44 respondents hold Engineering/B.Tech degree. 99 (31.94%) respondents held Post graduate degree in various disciplines. 38 respondents hold MA/MSc/M.Com degree, 49
respondents hold a Professional PG and 12 respondents hold Post graduate degree in Engineering.

The Table 4.2 shows that, graduate qualified employees are high percentage (66.77%) in the ICTs field among total workers. In addition to this, professional graduates among degree holders show higher numbers in the given sample: 131 out of 207 employees. Thus it can be said that those employed at ICT parks held at least a minimum qualification of graduation further inferring that women with aforesaid qualifications have better chance of employability at ICTs parks.

4.2.3 **Type of Employment and Income wise classification of the sample**

Table 4.3 depicts the salary structure of respondents. The monthly salary of the employees varied from Rs 5000 to Rs 100000. Majority of the distribution of sample concentrated on Rs 15,000-Rs 25,000 salary scale: 138 employees out of 310. Most of them have ICTs job with 1 or 2 years of service in the field of software development and testing. Numbers of female employees with higher salary range was found to be fewer. In the Table 4.3, the salary range of 65,000 - 85,000 include only 4 women and at 85,000 - 100000 salary range there was only 2 female workers.

<table>
<thead>
<tr>
<th>Type of Employment</th>
<th>Junior Engineers</th>
<th>Senior Engineers</th>
<th>Specialists</th>
<th>Project Leaders</th>
<th>Project Managers</th>
<th>Unit Manager</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary Pattern</td>
<td>5000-15000</td>
<td>15000-25000</td>
<td>25000-45000</td>
<td>45000-65000</td>
<td>65000-85000</td>
<td>85000-10000</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 4.3

Types of Employment and income wise distribution of the sample
<table>
<thead>
<tr>
<th>(in Rs.)</th>
<th>65000</th>
<th>85000</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of employees</td>
<td>59</td>
<td>138</td>
<td>93</td>
</tr>
<tr>
<td>14</td>
<td>4</td>
<td>2</td>
<td>310</td>
</tr>
</tbody>
</table>

Source: Survey

Mainly there were two reasons for the fewer number of female employees in higher salary scale in ICTs Parks in Kerala which can be surmised as follows (i) After three or four years of service in industry, the female employees tend to take long leave for pregnancy/delivery and child care. So, due to the gap in the service both the evaluation criteria as well promotion possibility of such employees are affected. (ii) The reluctance of female employees to shift from one firm to another even when offered with higher pay scales. Due to these reasons the female employees is discriminated with lower salary range in comparison to their male counterpart. Here it is interesting to note the fact that of the two females in higher salary scale [85000 - 100000], one of them was unmarried and the other was married with no children. The government and ICTs firms should be giving attention to this matter. The role of women in procreation should not be a basis for discrimination.

Various positions held by the employees and the names of the jobs in the ICTs sector tend to vary from firm to firm. Hence classification was done into the following categories of jobs in the ICTs parks: Junior Engineering Trainees, Senior Engineers, Specialists, Project Leader, Project Manager and Unit Manager. It was found that the salary scale of employees depends on experience, qualification, performance and flexibility of employees in the ICTs field.

4.2.4 Problems faced at work place classification of the sample

It was asserted that, in Kerala, the female employees did not face any type of sexual harassment or discrimination on sex basis in ICTs field. All respondents who worked in the various ICTs units unanimously agreed that they are safe in their workplace. At the same time, they were faced with other types of problems related to work in the ICTs field.
Table 4.4

Problems faced at work place: Distribution of the sample

<table>
<thead>
<tr>
<th>Types of problems</th>
<th>Sexual harassment</th>
<th>Burden of work</th>
<th>Demand for performance</th>
<th>Any other</th>
<th>No problem (Enjoyable)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Respondents</td>
<td>0</td>
<td>98 (31.61%)</td>
<td>76 (24.52%)</td>
<td>51 (16.45% )</td>
<td>85 (27.42%)</td>
<td>310 (100)</td>
</tr>
</tbody>
</table>

Source: Survey

Table 4.4 shows that completion of work within the time period is a headache for employees. 98 respondents (31.61%) suffered from burden of work. Another problem faced by them was demand for performance. 76 respondents (24.52%) out of 310 feel unhappy with regard to this issue. Similarly, 51 employees face physical and psychological problems such as eye pain, back pain, mental tension, headache etc. On the other hand 85 (27.42%) respondents enjoy their life with ICTs jobs.

4.2.5 Earlier Family Income and Marriage status wise classification of the sample.

Based on performance and caliber, the ICT Company offers good remuneration packages to workers irrespective of gender or caste or financial status. So, there is no doubt, the initiatives to setup new ICT enterprises is a good step for providing employment opportunities for the youth in Kerala, especially women in the ICTs sector with good compensatory package. ICTs jobs have acted as a turning point in their life. Also unmarried women employees from BPL families could now expect a colorful marriage life.

Table 4.5

118
Earlier Family Income and Marriage status wise distribution of the sample

<table>
<thead>
<tr>
<th>Income Status</th>
<th>Unmarried</th>
<th>Married</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPL</td>
<td>64</td>
<td>78</td>
<td>142</td>
</tr>
<tr>
<td>APL</td>
<td>80</td>
<td>88</td>
<td>168</td>
</tr>
<tr>
<td>Total</td>
<td>144</td>
<td>166</td>
<td>310</td>
</tr>
</tbody>
</table>

Source: Survey

Table 4.5 shows the family income status and marriage status of respondents before joining ICTs jobs. The data reveals that 142 respondents (45.81%) belonged to Below Poverty Line (BPL) Families. 64 respondents (20.65%) from BPL were unmarried women and 78 respondents (25.16%) were married employees from BPL families. It is clear that ICTs job is a good factor for turn of educated youth from poor income status into sound living status. In fact, the respondents from ICTs jobs, especially, females from BPL families feel their life would become enjoyable and safe.

4.2.6 Caste wise classification of the sample

People belonging to various castes and religions are living in Kerala. Even though social justice of Kerala is better as compared to other parts of India, people belonging to various backward communities are still not getting the required representation relative to their population.

Table 4.6

<table>
<thead>
<tr>
<th>Reservation Status</th>
<th>General</th>
<th>OBC</th>
<th>OEC</th>
<th>SC</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of employees</td>
<td>204</td>
<td>104</td>
<td>1</td>
<td>1</td>
<td>310</td>
</tr>
<tr>
<td></td>
<td>(65.81%)</td>
<td>(33.55%)</td>
<td>(0.32%)</td>
<td>(0.32%)</td>
<td>(100)</td>
</tr>
</tbody>
</table>

Source: Survey
Table 4.6 indicates that out of 310 samples collected there were no workers belonging to scheduled tribe (ST) category; only one respondent (0.32%) belonged to OEC (Other Eligible Caste) and scheduled caste (SC). In the given sample 65.81% respondents belonged to general category and 33.55% from OBC. So, it may be inferred that even though people belonging to different castes are getting representation in ICTs work force it is not according to their share in total population.

4.2.7 Job opportunities to women in ICTs sector

The responses of the selected sample in relation to the question ‘women’s opportunities in the ICTs sector’ is given below in the table 4.7.

Table 4.7

<table>
<thead>
<tr>
<th>Responses</th>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Do not know</th>
<th>Disagree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Respondents</td>
<td>219 (70.64%)</td>
<td>85 (27.42%)</td>
<td>6 (1.94%)</td>
<td>0</td>
<td>310 (100)</td>
</tr>
</tbody>
</table>

Source: Survey

Majority of the respondents claimed that ICTs sector provides large employment opportunities and externalities for the bringing improvement in their life. 70.64% employees positively responded to this question. The remarkable fact is that there was no negative response towards this question. Only 6 respondents responded as ‘Do not know’.

4.2.8 Satisfaction level of the sample towards work culture

The special feature of ICTs jobs is flexi-time work based on shift working system. Generally, the working hours of workers varies from 8 hours to 9.5 hours based on the rules of various companies. For example, Infosys has 9.5 hours of working time per employee per day. At the same
time TATA Company’s working hours are only 8 hours. On the other hand, the working hours of top most companies are 24 hours with two holidays per week. So, generally the workers have the freedom to choose appropriate working hours. However, sometimes they suffer from tiredness due to the irregularity in the time of work.

Table 4.8
Distribution of satisfaction level of the sample towards work culture

<table>
<thead>
<tr>
<th>Response</th>
<th>Yes, satisfied</th>
<th>No</th>
<th>Cannot say</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Respondents</td>
<td>217 (70%)</td>
<td>54 (17.42%)</td>
<td>39 (12.58%)</td>
<td>310 (100%)</td>
</tr>
</tbody>
</table>

Source: Survey

The Table 4.8 shows that 70% respondents are very happy with work culture of ICTs firms while 54 respondents (17.42%) out of 310 feel unhappy with the work culture of ICT organisations.

4.2.9 Observing behaviour of the sample towards Current Affairs

The knowledge about the current affairs is a part of life of people of Kerala. At the same time, the study shows that female employees in the ICTs sector were reluctant in observe the current affairs inferring that their general knowledge quotient was low.

Table 4.9
Distribution of observing behaviour of the sample towards current affairs

<table>
<thead>
<tr>
<th>Response</th>
<th>Yes, watching</th>
<th>No</th>
<th>Rarely</th>
<th>Total</th>
</tr>
</thead>
</table>

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Table 4.9 shows that 119 respondents (38.39%) out of selected 310 samples replied positively to the question while 113 respondents (36.45%) replied negatively towards the query.

### 4.2.10 Availability of leisure time for the sample with family

Leisure is an integral part of life for rejuvenating the mind and body. The working hours and family liabilities may hurt the leisure time of employees.

<table>
<thead>
<tr>
<th>Response</th>
<th>Yes</th>
<th>No</th>
<th>Cannot say</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Respondents</td>
<td>102</td>
<td>179</td>
<td>29</td>
<td>310</td>
</tr>
<tr>
<td></td>
<td>(32.90%)</td>
<td>(57.74%)</td>
<td>(9.36%)</td>
<td>(100)</td>
</tr>
</tbody>
</table>

Table 4.10 indicates that 179 respondents (57.74%) agreed to the fact that there is no leisure time after delivering employment and family duties. At the same time, it they also conveyed the fact that many ICT organizations conduct tour programmes and cultural programmes for rejuvenating the mind and body their work force.

### 4.3 Factors influencing Financial Empowerment

The study aims to analyze the factors influencing financial empowerment (y_i) of the female ICTs employees in the context of functioning of the family. A multiple regression model can be developed to understand the direction and magnitude of each influencing factor of financial
empowerment. The following model and variables are identified for the analysis.

The model that fits the study is

\[ Y_i = a_0 + a_1 x_1 + a_2 x_2 + a_3 x_3 + a_4 x_4 + u, \]

Where,

- the criterion variable (dependent variable) is financial empowerment of the employees, \( Y_i \), measured in Likert Scale and
- the predictor variables (independent variables) are
  1. Monthly salary income in rupees(\( x_1 \)),
  2. Age of the ICTs worker (\( x_2 \)),
  3. Consumption Expenditure of family in Rupees(\( x_3 \)),
  4. Decision-making power (\( x_4 \)), and
- the dummy variable (\( u \)), which is measured in the scale one if satisfactory; otherwise zero.

The reason for considering \( x_1 \) to \( x_4 \) as more important is because these variables are prime factors in deciding the financial empowerment of women. The index is framed by reviewing many of the earlier literatures.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>S.E</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>( x_1 )</td>
<td>1.298</td>
<td>0.252</td>
<td>0.406</td>
<td>5.159</td>
</tr>
<tr>
<td>( x_2 )</td>
<td>-0.162</td>
<td>0.110</td>
<td>-0.144</td>
<td>-1.469</td>
</tr>
<tr>
<td>( x_3 )</td>
<td>0.53</td>
<td>0.156</td>
<td>0.394</td>
<td>3.393</td>
</tr>
<tr>
<td>( x_4 )</td>
<td>1.254</td>
<td>0.165</td>
<td>0.786</td>
<td>7.584</td>
</tr>
</tbody>
</table>

Source: Survey

R = 0.923, \( R^2 = 0.852 \) and \( R^2_{(adj)} = 0.838 \) Std. Error of the estimates = 9.638.

F value = 64.12 (0.00) at 5% level of significance.
R is a measure of the correlation between the observed value and the predicted value of the criterion variable. In this analysis R would be the correlation between the levels of financial empowerment reported by ICTs Workforce and the levels predicted for them by predictor variables. R Square ($R^2$) is the square of this measure of correlation and indicates the proportion of the variance in the criterion variable which is accounted for the regression model; in this study the proportion of the variance in the financial empowerment scores accounted for a set of predictor variables (viz., salary). In essence, this is a measure of how good a prediction of the criterion variable can made by knowing the predictor variables. However, R square tends to somewhat over-estimate the success of the model when applied to the real world, so an Adjusted R Square ($R^2_{(adj)}$) value is calculated which takes into account the number of variables in the model and the number of observations (participants) the model is based on.

From the analysis, it was found that the critical factors influencing the financial empowerment of the female ICTs employees in the context of functioning of the family are $x_1$, $x_3$ and $x_4$. Rational thinking also suggests a positive association among these variables.

The result shows the value of R-square in the analysis as 83.8 per cent, so it may be inferred that the model accounts for 83.8% of variance in the financial empowerment of the female ICTs employees in the context of functioning of the family. The t and Sig (p) values give a rough indication of the impact of each predictor variable; $x_2$ having smaller ‘t’ value (1.469) and big ‘Sig (p)’ value (0.149 which is greater than 0.05 significant level). Hence it suggests that the predictor variable ‘age of the ICTs worker’ have only very less impact on the criterion variable financial empowerment.
4.4 Socio-Economic Enhancement Indicators

In order to examine the economic and social enhancement of female employees in ICTs enterprises the following indicators have to be analyzed:

- Financial contribution of employees to the family income,
- Savings Level of the employees,
- Infrastructural Development of the family,
- Interaction with the family and friends,
- Involvement in the cultural and social activities in the workplace and
- Standard of Living of the family.

The aforesaid indicators were surveyed using responses taken from the employees in four point scales viz., highly improved, improved, less improved and No change. Table 4.12 shows the details of socio-economic enhancement of employees with ICTs jobs.

4.4.1 Financial Status of the family

The data collected from the sample shows that there is positive contribution of the female members towards the family income. In this modern age, where the cost of living is high, for the smooth functioning of a family (which includes expenses like consumption, education, health and other needs), the income from every working age group members of the family is essential. The participation of the female educated members in the paid work improves not only the income of the family but also for their own mental development. The Table 4.12 shows that 70.64% respondents assert that their income imposes positive influence on family income. Only 29.36% respondents felt that their income does not have much impact on family total income.
4.4.2 Infrastructural Development

Infrastructural development of the family means furnished houses with basic facilities, vehicles, modern electronics, Information Technology instruments and other modern facilities along with land. Recent trends highlights that malayalies give most importance to the furnished luxurious house with modern facilities. The data collected reveals that improvements found in terms of the infrastructural development is snail-paced. Only 7.1% respondents confess that there is a high improvement in the infrastructural development of the family. However, 47.1% employees (146 employees out of 310) opined that there is only slow improvement with regard to this indicator. Having said this it should be noted that the family gives more importance to providing education to their children, health care, dress and other facilities to family members.

4.4.3 Standard of Living of the family

An important turning point of the study is that majority of the employees are of the opinion that the remuneration from ICTs jobs highly influence their standard of living. From the collected data, 251 respondents out of 310 (80.97%) disclosed that there were positive changes in their standard of living after joining the ICT’s parks. Due to the financial contribution of the female members into the family income, there has been notable economic enhancement thereby improving the overall standard of living of the family. It is observed that 95% of the income from women was spent on her family’s improvement. So, the contribution of female income towards the family status enhancement does a multiplier impact on welfare and over-all development of her children and other members in the family. Thus the study underlines that after joining the ICT parks, due to the financial contribution of the female member into family there has been much improvement in the economic condition and standard of living of the family in general.

4.4.4 Savings Level of the employees
It is clear that, generally, the disposable income is divided into consumption and savings. The analysis of the collected data shows that the consumption level of the respondents’ family has greatly improved. However, the savings level of the employees did not improve well. More than half of the employees [56.78%] were of the opinion that the savings component did not improve well. On the other hand, 26.45% of respondents were very happy with respect to this parameter; main schemes of savings being accepted by the employees chitties and saving deposits in banks.

4.4.5 Interaction with family and friends

The employees opined that they enjoy a smooth and good relationship between family members, friends and neighbors. 77.10% respondents kept good relationship with their friends, on various ranges. Even with the job schedule they are able to communicate frequently with their relations through mobile phones and e-mails. By using the modern communication technologies, they keep sound relationship with the family members, relatives and native place. However, 22.90% responded that they prefer to live in their own atmosphere.

4.4.6 Involvement in the cultural activities

For the refreshment of the employees, the ICTs have set up their own Arts Club and conduct cultural meets on a frequent basis, in which the employees tend to participate. The employer also arranges tour programmes for the employees with the purpose of refreshing them. The study shows that the respondents are happy as far as this parameter is concerned, (See Table 4.12).

Table 4.12
Socio-Economic Enhancement indicators - ICTs parks

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Indicators</th>
<th>Conditions</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Highly Improved</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Financial Status of</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improved</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Less Improved</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>No Change</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>36(11.61)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>75(24.19)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>108(34.84)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>91(29.36)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>310(100)</td>
<td></td>
</tr>
</tbody>
</table>
The column wise analysis of the table 4.12 shows that a large number of responses came under the category of Less Improved (577). Similarly, the responses related to the category of ‘Improved’ and ‘Highly Improved’ was ‘480’ and ‘297’ respectively. However, the response for the choice ‘No change’ was ‘526’ due to the weak performance of savings indicator. So, it may be assumed that the life of paid employees, in the ICT parks, with their families show a general improving trend, but some indicators should still progress positively for best well-being of employees.

### 4.5 Friedman Two-way Analysis of Variance by Ranks

The following six variables are used to understand the socio-economic enhancement of women through the employment opportunities in Information and communication technologies sector in Kerala. These Six variables are statistically comparable to determine the socio-economic enhancement of women employee as it was collected at single point of time.
in an ordinal scale. Therefore, Friedman Two-way Analysis of Variance by Ranks can be used to examine the socio-economic enhancement.

- Financial Status of the family,
- Savings level of the family,
- Infrastructure Development of the family,
- Standard of living of the family,
- Interaction with family & society and
- Involvement in the Cultural activities.

The Friedman statistic \[ \text{Friedman statistic} = \frac{12}{Nk(k+1)} \sum_{j=1}^{k} (R_j)^2 - 3N(k+1), \]

where,

\( N \) = number of rows, \( k \) = number of columns

\( R_j \) = Sum of ranks in \( j \)th column, and

\[ \sum_{j=1}^{k} \text{directs one} \sum \text{the squares of the sums of ranks all} \]

\( H_0 \) = the variables supporting for socio economic enhancement of women workforce have the same distribution of scores.

\( H_1 \) = the variables supporting for socio economic enhancement of women workforce have different distribution of scores.

**Table 4.13**

Friedman Two-way Analysis of Variance by Ranks - ICTs parks

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Indicators</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Highly Improved</td>
</tr>
<tr>
<td>1</td>
<td>Financial Status of the family</td>
<td>1</td>
</tr>
</tbody>
</table>
The calculated Friedman statistic is 7.40. The F value from the Table IV of Fisher and Yeates\textsuperscript{11}, is $F (k=4, N=6, a = 0.05) = 7.60$. The calculated critical value is less than table value. Hence, the test has failed to reject $H_0$. Consequently, the Friedman statistic is significant at $\leq 0.05$ level; therefore, it may be inferred that the aforesaid variables are significantly supporting for enhancing socio economic status of female workforce at ICTs organisations and they have same distribution score.

4.6 Empowerment Parameters

Based on the analysis of empowerment studies done by UNDP, Planning Commission of India and Planning Commission of Kerala, empowerment of women through employment can be quantified by using the parameters given below. It is required in this context to explain the empowerment of women through employment in the ICTs parks with nine parameters. These nine parameters are:

- Self Confidence. (C)
- Provides Increased Economic Prospects. (E)
- Decision making Power. (P)

\textsuperscript{11} Table IV of Fisher and Yeats: Statistical tables for biological, agricultural and modern research, published by Oliver and Boyd Ltd., Edinburgh.
- Change of status in the family and community. (S)
- Support from the family for working in the ICTs units. (F)
- Her contribution to family income. (I)
- Freedom in household expenditure. (H)
- Increased Flexibility and Skill development. (D) and
- Support from the family for sharing the household responsibilities. (R).

With the help of notations (symbols) given above, the functional relationship can be explained between Women Empowerment through Employment in the ICTs sector, \( W \), with its parameters in the following way:

\[
W = f \{C, E, P, S, F, I, H, D, R\},
\]

Where,

\( W = \text{Empowerment through employment in the ICTs sector.} \)

### 4.7 Analysis based on Percentile method

The Role of paid jobs in ICTs Parks for Empowerment with the given parameters can be explained by using the Table 4.14.

#### Table 4.14

Analysis of Data from ICTs Parks

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Empowerment Parameters</th>
<th>Opinion</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No change</td>
<td>Less Improved</td>
</tr>
<tr>
<td>1</td>
<td>Self Confidence</td>
<td>12 (3.87)</td>
<td>91</td>
</tr>
</tbody>
</table>
4.7.1 **Self Confidence (C)**

One of the very important factors concerning women empowerment is Psychological development. In Kerala, families give more protection to girls than boys. Up to marriage, the girls live under the safe protective wings of their parents. For their travel and all other activities they are accompanied by guardians.

At present the situation visibly states that most of the skills the girls have are least unexploited, when compared to boys. The study of K.R. Mallika among college students in Kozhikode found out that while
more than 61% of boys are engaged in the physically exerting jobs like construction work, painting and catering jobs, less than 15% of girls get engaged in work, that too, which required less amount of physical or intellectual skills such as doing primary tuitions and tailoring.  

For empowerment the psychological development and a degree of Self confidence is necessary. In the study, we examine the confidence level of female workers. Out of 310 respondents, 36.45% employees confess that their Self confidence level improved with the ICTs jobs. Only 3.87% of (12) employees felt that there was no change in their Self confidence with ICTs jobs (See Figure 4.2).

Figure 4.2
Opinions on Self Confidence

1. No Change
2. Less Improved
3. Improved

\[12\text{(K.R. Mallika, [8th March, 2011], Mathrubhumi Daily).}\]
4. Highly improved

At the same time, 30.32% of respondents are happy with very good Self confidence level. Majority of the respondents’ (298 out of 310) view is that jobs in the ICTs sector have helped them to improve their thinking level and confidence in life (Refer Table 4.14 & Figure 4.2).

4.7.2 **Provides Increased Economic Prospects (E)**

Another important dimension of empowerment is Economic empowerment. Employment in ICTs parks brought considerable economic benefits in the basic monthly salaries of employees. Generally, this salary package is up to two or three times higher than the comparable non-ICTs work units in both private and public sector. So the experience in ICTs sector shows that this sector provides better economic rewards than other sectors for women.

From the data collected, it is clear that majority of the respondents stated that their economic background sufficiently improved after getting a job in the ICTs parks. Out of 310 respondents, 111 (35.81%) employees accepted that their economic prospects highly improved with ICT sector. (Refer Figure 4.3).

**Figure 4.3**

Opinions on Economic Prospects

1. No Change
2. Less Improved
3. Improved
4. Highly Improved

Similarly, 100 (32.26%) employees said that their economic status and standard of living also nurtured with ICTs employment. Only 4 (1.29%) employees were not satisfied with the salary in the ICTs sector [See Table 4.14].

4.7.3 Decision Making Power (P)

All the theories relating to empowerment argue that Decision Making power is the threshold for empowerment. It is clear that the decision making power at home, community and state are necessary for empowerment. The responses of the sample shows that more steps have to be initiated for the establishment of power for women in the decision making process in their home as well as in society. 31 (10%) respondents out of 310 answered that they are unhappy with respect to this parameter. That is they opined that there was ‘no change’ in their status even after joining ICTs sector jobs. At the same time, 110 (35.48%) respondents believe that they could slightly improve the power parameter positively (Refer the Figure 4.4)

**Figure 4.4**

Opinions on Decision Making Power

1. No Change
2. Less Improved
3. Improved
4. Highly Improved
However 93 (30%) respondents said that there was improvement and 76 (24.52%) employees claimed remarkable change in their authority at home and society.

4.7.4 Change in the status in the family and community (S)

Status is directly related to education, remuneration, income and type of employment. Education, financial capacity and standard of job provide good personality status in the family and society. Majority of respondents felt happy with regard to the status component (Refer Figure 4.5).

![Figure 4.5](image)

**Figure 4.5**

Opinion on Change in the status in the family and community

1. No Change
2. Less Improved
3. Improved
4. Highly Improved

Out of 310 respondents, majority were female employees. 120 (38.71%) agreed that they experienced good reputation in the family and society after joining the ICTs jobs. In the same way, 108 (34.84%) respondents answered that there was improvement and 60 (19.35%)
female employees felt that their status in the family and society was improving but slowly.

4.7.5 Support from the family for working in a ICTs units (F)

The distance between native place and work place is a constraint before the female employees. In Kerala, the ICTs parks are located only in Kochi, Kozhikode and Trivandrum. So, for working in the ICTs units the overall support and help from family members and society is needed.

Majority of the employees stressed that the support from family members is inevitable for their own development. Out of 310 employees, 28.71% (89) said that the support from inside and outside the family improved slowly. On the contrary, 19 (6.13%) female workers suffer from the lack of support they should have gotten from their family (Refer Figure 4.6). At the same time, 108 (34.84%) respondents commented that there has been improvement in the support that they receive from the family.

Figure 4.6

Opinion on Support from the family for working in a ICTs units

1. No Change
2. Less improved
3. Improved
4. Highly Improved
94 (30.32%) female workers are very happy with, highly improved, support from family and community for their work participation in the ICTs parks.

4.7.6 Contribution to family income (I)

For the wellbeing of the family and growth and structural change of the society, the work participation of youth is essential irrespective of their gender. To meet high cost of living and participation in national development, the utilization of educated females’ talent along with that of their male counterpart is inevitable in a state like Kerala. The jobs at ICTs sector are gender blind, white collared, utilizes brain and provides with financial support. Out of 310 respondents, 118 (38.06%) workers were satisfied with their financial contribution to family income (Refer Figure 4.7)

**Figure 4.7**

Opinions on Contribution to family income

![Pie chart showing opinions on contribution to family income]

1. No Change
2. Less Improved
3. Improved
4. Highly Improved

An interesting point is that the female employees from BPL families achieved high standard of living with better financial safety after their participation in the ICTs sector. Out of 143 married respondents, 83
employees confessed that they got a better choice in life partner due to jobs in the ICTs Park.

**4.7.7 Freedom in Household Expenditure (H)**

In Kerala, the traditional culture dictates a male dominated society. Day-to-day expenditures and other expenses related to family are absolutely managed by the male; such as husband, father or uncle etc. In the survey, the researcher had to observe in detail whether there is any improvement in the freedom to handle household expenditure for female employees in the ICTs Parks. The Table 4.14 shows that 40.98% employees (127 out of 310) argued that they got more freedom in dealing with day-to-day household expenditure. In the same way, 71 employees (22.90%) felt very happy for their highly improved freedom in household expenditure matters. Only 15 employees (4.83%) were found to be unhappy with respect to this parameter (Refer Figure 4.8)

**Figure 4.8**

Opinions on Freedom in Household Expenditure

1. No Change
2. Less Improved
3. Improved
4. Highly Improved

**4.7.8 Increased flexibility and skill development (D)**
The important feature of ICTs jobs is the flexibility in workplace. The employee has the freedom to choose the appropriate ICT Company. Based on the talent and experience, they have freedom to choose the top companies. Discussions showed that staff in the firms was offered positions for the upgrading and maintenance of software systems. The employees would work long, even continuous, hours in order to finish projects on time. (Refer Figure 4.9).

**Figure 4.9**

Opinions on flexibility and skill development

- 1. No Change
- 2. Less Improved
- 3. Improved
- 4. Highly Improved

In the given sample, 69 respondents (22.26%) admit that highly improved flexibility and possibility for skill development was offered in ICTs jobs. In the same sense, 30% respondents (93 workers out of 310) said that there was improved flexibility and skill development due to involvement in the workplace and 121 female employees (39.03%) opined that there is only slow improvement. However, 27 employees (8.71%) were unhappy in this regard (See the Figure 4.9).

**4.7.9 Sharing the household responsibilities (R)**
Women are still burdened with the traditional expectations of particular roles in family and in society. In the given sample, 40 female employees out of 310 [12.9%] felt that domestic responsibilities were affected by the longer working hours. Respondents reported that, when children or husband or relatives were sick at home or hospital, it is women who are typically expected to take leave off from work. Similarly, many women discontinued software work on becoming pregnant or having children. There is no law to support women’s possibility to continue work in the ICTs sector when they become pregnant (See the Figure 4.10).

There should be particular policies and practices such as flexible office hours, maternity leave, daycare centers and other facilities implemented for the welfare of employees, especially, women workers. Absence of these policies and regulations in the ICTs sector may lead to a negative gender-skewed effect.

That being said, 31.29% respondents (97) said that the sharing mentality of husband and relatives in the household responsibilities improved and 61 respondents (19.68%) felt that it has improved remarkably. Likewise, 112 respondents expected to there would be improvement in the sharing mentality of family members.

Figure 4.10  Opinions on sharing the household responsibilities

1. No Change
2. Less Improved
3. Improved
4. Highly Improved
4.8 **Non-Trade unionism in ICTs sector**

There are three phases in women empowerment: Economic Empowerment, Social Empowerment and Political Empowerment. The first indicator, economic factor can be achieved to a level in the ICT sector. Social factor is also indispensable. However political empowerment is impossible through ICTs parks employment.

The survey shows that there are two interesting facts relating to political aspects: (1) the companies always oppose to politics or unions’ interference in the functioning of ICTs Parks and [2] the youth in the ICTs sector also have a negative attitude towards political influence in their work place. Almost all workers are happy with the payment and existing gender blind working conditions in the ICTs sector. At the same time they pointed out how there was more social security for female employees even without the help of trade unions. They are happy with the team work, holidays, snacks, tours and other perks offered by IT companies.

4.9 **Analysis of the Data based on $\chi^2$ test**

Chi square test is one of the best statistic techniques for examining the association of different variables. In order to investigate the association of various empowerment parameters with its levels of improvement following formula was used.

\[ \chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}, \]

where,

$O_i$ = Observed frequency,

$E_i$ = Expected frequency and $i=1, 2, 3,...9$.

$H_0$ = There is no significant association between empowerment parameters and levels of improvement with regard to the sample.

$H_1$ = There is significant association between empowerment parameters and levels of improvement with regard to the sample.

The Table 4.14 shows that three factors for Empowerment viz., (1) Household Responsibilities, (2) Decision-making Power and (3) Increased Flexibility and Skill Development have become highest in the ‘no change’ opinion group. 40 respondents out of 310 [12.9%] face the problem of being tired of complete family responsibility along with competitive work in the
ICTs sector. Similarly 10% [31/310] respondents felt unhappy with the decision making parameter. Their decisions were absolutely controlled by guardians.

The society of Kerala should have in-depth deliberation and find out a suitable solution to improve the flexibility parameter of women. Flexibility and skill development parameter is directly related to the biological structures and responsibilities of female employment. Efforts must be undertaken to implement suitable measure for female workers to do their natural duties like pregnancy and delivery and child care, without affecting their ‘flexibility and skill development’ factor, in the work place, especially in the ICTs sector.

Table 4.15
Cross tabulation of Empowerment parameters and Levels of Improvement with regard to the sample
<table>
<thead>
<tr>
<th>Empowerment Parameters</th>
<th>Levels of Improvement</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No change</td>
<td>Less Improved</td>
</tr>
<tr>
<td>Self confidence</td>
<td>Actual</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>19.8</td>
</tr>
<tr>
<td>Economic prospects</td>
<td>Actual</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>19.8</td>
</tr>
<tr>
<td>Decision making power</td>
<td>Actual</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>19.8</td>
</tr>
<tr>
<td>Status in the family and community</td>
<td>Actual</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>19.8</td>
</tr>
<tr>
<td>Support from the family for ICTs job</td>
<td>Actual</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>19.8</td>
</tr>
<tr>
<td>Contribution to family income</td>
<td>Actual</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>19.8</td>
</tr>
<tr>
<td>Freedom in household expenditure</td>
<td>Actual</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>19.8</td>
</tr>
<tr>
<td>Flexibility and skill development.</td>
<td>Actual</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>19.8</td>
</tr>
<tr>
<td>Sharing the Household Responsibilities</td>
<td>Actual</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>19.8</td>
</tr>
<tr>
<td>Total</td>
<td>178.0</td>
<td>860.0</td>
</tr>
</tbody>
</table>

Source: Survey

0 cells (0.0%) have expected count less than 5. The minimum expected count is 19.78

Pearson Chi-Square value is 134.155, df 24

Table Value of Chi-square at α = 0.05, degrees of freedom (r-1)*(c-1) = 24 is 36.415. Since the calculated value 134.155 is greater than the table value, we fail to accept the H₀ and accept H₁. Hence, it may be inferred that
ICTs jobs are contributing towards the women empowerment with the improvement in different parameters of women empowerment being statistically significant. In nut shell, the levels of improvement are significantly associated with empowerment parameters of ICTs women workforce.

The above study was carried out in the state of Kerala, one of the economically and technologically advanced states. In the recent years, through the implementation of various ICT related projects, the state was successful in poverty eradication. There are also many projects for the greater involvement of women. The main object is to make the women both economically and socially strong. The study clearly found that the women were immensely benefited from the use of ICT. ICT has made a tremendous impact in imparting knowledge on modern technology and its uses. NGOs, SHGs working in the field, governmental agencies and other private agencies have also extended their help to promote ICT among the women. This study concluded that the ICT (information and communication technology) empower a woman in various areas like social, educational, psychological, political, technological and economical and well as to bring about few degree of disempowerment due to some internal and external reasons.

To summarize, the findings of the study from various ICTs initiatives in Kerala, shows that there is significant impact on Women’s employment, income, social roles and Empowerment of women by being employed at ICTs parks. The ICT initiative is “gender blind” and pursued within the globalised, competitive context for an increased role in markets and ‘flexibility’ and has generally reinforced gender equalities. All the statistical studies used in this study put forwards that the employment opportunities in the ICTs sector provide bright future for the youth of Kerala.