CHAPTER 5

A COMPARATIVE STUDY OF SELECTED MICROFINANCE INSTITUTES

In this Chapter I have done following things. Firstly I have done inter comparison of General information related to selected MFIs i.e. NABARD, SIDBI, SEWA and TF. Secondly I have done Comparison through Chart of selected MFIs. To know the contribution of selected MFIs in Gujarat (Region wise). Thirdly I have done Comparison through Model. To know how selected MFIs distributing Fund to the users. Then in next stage I have done intra comparison of selected MFIs (according to research methodology chapter). Its represents how effectively MFIs rendering service to the Gujarat in last five years through various Schemes of funding. Mean, Mode and Median also separate calculated for each service. Table wise interpretation is given for the betterment of the particular activity. At end of specific calculation related hypotheses is tested and result obtained through appropriate statistics tools. After completion of above mention work hypotheses results interpretation is given to understand the position of particular MFIs in Gujarat. Above interpretations is also useful for the recommendations part in last chapter.
5.1 General information’s:

Below general information is given related to selected microfinance institution. (i.e. NABRD, SIDBI, SEWA, and TF.)

**Table No 5: General information’s**

<table>
<thead>
<tr>
<th>Particular</th>
<th>NABARD</th>
<th>SIDBI</th>
<th>SEWA</th>
<th>TF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full form</td>
<td>National bank for agriculture and rural development</td>
<td>Small industries development bank of India</td>
<td>Self employed women association</td>
<td>Tribhuvand as Foundation</td>
</tr>
<tr>
<td>Establishment</td>
<td>12th July 1982</td>
<td>2nd April 1990</td>
<td>1979</td>
<td>198</td>
</tr>
<tr>
<td>Objective(s)</td>
<td>For providing credit for the promotion of agriculture, small scale industries, cottage and village industries, handicrafts and other rural crafts and other allied economic activities in rural areas with a view to promoting IRDP and securing prosperity of</td>
<td>Promoting sustainable and equitable agriculture and rural development through effective credit support, related services, institution building and other innovative initiatives.</td>
<td>Minimum wages for labour and women self employment</td>
<td>primary health care and health education in the rural areas</td>
</tr>
</tbody>
</table>
rural areas and for matters connected therewith.

<table>
<thead>
<tr>
<th>Head Quarter in India</th>
<th>Mumbai, Maharashtra</th>
<th>Lucknow, UP</th>
<th>Ahemdabad, Gujarat</th>
<th>Anand, Gujarat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chair person / CMD</td>
<td>Umesh Chandra Sarangi</td>
<td>R. M. Malla</td>
<td>Ela bhatt</td>
<td>Dr.(Ms) Amrita Patel</td>
</tr>
<tr>
<td>Total Executive committ ee member</td>
<td>11</td>
<td>11</td>
<td>21</td>
<td>09</td>
</tr>
<tr>
<td>Main Head Branch in Gujarat (Addres s)</td>
<td>Nabard Tower, Nr Usmanpura Cross Road, Opp Municipal Garden, Usmanpura, Ahmedabad – 380013</td>
<td>Navjivan Amrut Jayanti Bhavan, 1ST Floor, Behind Gujarat Vidhyapith, Navjivan Postoffice, Navjivan, Ahmedabad – 380014</td>
<td>8 Navrang Colony 3RD Floor, Nr Navrangpura Railway Crossing, Gramhaat House, Navrangpura, Ahmedabad - 380009</td>
<td>Rajodpura NR Gopal nagar , Ganesh crossing , ANAND-388001</td>
</tr>
<tr>
<td>Coverin g states</td>
<td>29 (including unioun terattory)</td>
<td>24 (including unioun terattory)</td>
<td>09</td>
<td>01</td>
</tr>
<tr>
<td>Internati onal types</td>
<td>SANASA Development Bank,</td>
<td>Germany, Japan International Cooperation</td>
<td>Sewa Afganistan</td>
<td>With UNICEF</td>
</tr>
<tr>
<td>(past and/ or present)</td>
<td>Sri Lanka, KFW Japan, etc.</td>
<td>Agency (JICA), Kreditanstalt für Wiederaufbau (KfW) and French Development Agency (AFD), etc</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------------------</td>
<td>---------------------------------------------------------------</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Nodal Agency</td>
<td>The agriculture Refinance and development corporation (ARDC) (Est. 1963)</td>
<td>Industrial development bank of India (IDBI) (Est. 1964)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taking finance / grant</td>
<td>World Bank, Government of India, etc.</td>
<td>State financial Corporation, Commercial bank, state industrial development corporation etc. schemes sponsored by various Central Ministries</td>
<td>Sewa bank, Sewa association, etc.</td>
<td>Amul &amp; Anand dairy cooperative society, UNICEF, etc.</td>
</tr>
<tr>
<td>Granting loan /fund / finance</td>
<td>Agriculture base</td>
<td>Micro, Small, Medium sector base</td>
<td>For women self employment</td>
<td>Different types of services</td>
</tr>
<tr>
<td>Training center(s)</td>
<td>06</td>
<td>05</td>
<td>01</td>
<td>01</td>
</tr>
<tr>
<td>Credit rating agency</td>
<td>MCRIL/ CRISIL/ ICRA/ CARE/ -SME Rating Agency of India Ltd, MCRIL/ CRISIL/ CARE/</td>
<td>______</td>
<td>______</td>
<td></td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------------------------------------------------------</td>
<td>--------</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td>Interest Rate</td>
<td>8.5% to 15%</td>
<td>12.0%</td>
<td>9% to 11%</td>
<td></td>
</tr>
<tr>
<td>Refinance interest rate</td>
<td>6.5 %</td>
<td>9.0%</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Health care/ Insurance Activity</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Contribution in Gujarat out of India</td>
<td>4.44 %</td>
<td>7.64%</td>
<td>53.75%</td>
<td></td>
</tr>
<tr>
<td>Scheme s / services / facilities / opportuni ties</td>
<td>Minor Irrigation, Land Development, Farm Mechanization, Plantation &amp; Horticulture, Fisheries, Animal Husbandry, Providing finance through Refinance, MSME Refinance, Micro credit, NBFCs, Term loan, Capacity Building grant to MFIs, Risk Fund for smaller</td>
<td>New Employment generated, Helped women regain work, Increase in price of waste, Government assistance New Employment generate,</td>
<td>Environmen t sanitation, Urine Pregnancy Tests for Maternal health care, pregnancies registered, Lactating mothers provided</td>
<td></td>
</tr>
<tr>
<td>Award(s)</td>
<td>Govt. Sponsored Programmes, Non-Farm Sector, Self – Help Groups. Loan through Commercial Banks, Regional Rural Banks, State Co-operative and Banks State Co-operative Agriculture &amp; Rural Development Banks etc.</td>
<td>MFIs, Beneficent Assisted through partner MFIs Credit Linked Capital Subsidy Scheme, Technology Upgradation Fund Scheme for Textile Industry, Integrated Development of Leather Sector Scheme, Scheme of Technology Upgradation/Setting up /Modernization/ Expansion of Food Processing Industries etc.</td>
<td>Assistance to regain work that had been stopped or lost Wage, increases Welfare assistance, Bonus, Members Education Training, Management Training, Marketing Training Technical Training, Skill up gradation, SEWA bank loan, sewa insurance. Etc.</td>
<td>counseling, Family planning services, deliver Disposable Delivery Kit, Child health care, Newborn put on KMC facilities, Cancer awareness, Programme, Cancer diagnosis camps, OPD, Sonography Tests, Immunization, Family Planning operations, Distribution of Nirodh, Copper-T inserted, Distribution of contraceptive tablets, Balwadies etc.</td>
</tr>
</tbody>
</table>
| Award, etc. | Award in 2011, etc. | -Honorary Doctorate, Hong Kong University 2010.  
-UNFPA’s "Ladli Award" for work with women and girls to SEWA - Academy 2010.  
-Skoch Financial Inclusion Award to Kheda District Association for Best Practices and efforts for poverty alleviation programmes for the year 2011.  
-Skoch Financial Inclusion Award for Best Practices in Micro finance and efforts for poverty alleviation.  
-NASA Institute of Ahmadabad for their best services to society.  
-In 1992 TF got National Award.  
-Ramon Magsaysay Award for 'Community Leadership' in 1963.  
-Etc. |
<table>
<thead>
<tr>
<th>Logo / symbol</th>
<th>alleviation programmes to Shri Mahila SEWA Sahkari cooperative bank Limited for the year 2010. Etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>website</td>
<td><a href="http://nabard.org">http://nabard.org</a></td>
</tr>
<tr>
<td></td>
<td><a href="http://sidbi.org">http://sidbi.org</a></td>
</tr>
<tr>
<td></td>
<td><a href="http://sewaahe">http://sewaahe</a> mdabad.org</td>
</tr>
<tr>
<td></td>
<td><a href="http://trbhuvandasfoundationanand.org">http://trbhuvandasfoundationanand.org</a></td>
</tr>
</tbody>
</table>
5.2 Comparisons through charts

Below four graphs is given. Which is represents region wise contribution in India by selected MFIs and its shows their contribution in Gujarat contribution.

A comparison through chart wise is done below and it’s indicate region wise contribution by the selected Microfinance institutes and benefit available to the Gujarat.

Chart No. 5.1. NABARD Contribution Region wise

The above chart shows that NABARD contribution region wise for the year of 2010-11 were Gujarat getting around only benefit of 4.44 %.
Chart No. 5.2. SIDBI Contribution Region wise

The above chart shows that SIDBI contribution region wise for the year of 2010-11 were Gujarat getting around only benefit of 7.64 %.

Chart No. 5.3. SEWA Contribution Region wise

The above chart shows that SEWA contribution region wise for the year of 2010-11 were Gujarat getting major benefit of 53.75 %.
Chart No. 5.4. TF Contribution Region wise
TF is only working inside the Gujarat

The above chart shows that TF contribution region wise for the year of 2010-11 were Gujarat getting benefit of 100.00 %.

(For NABARD & SIDBI Region Description: Maharashtra & Goa, Gujarat, Northern: Chandigarh, Delhi, Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab and Rajasthan, North Eastern: Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim, Southern: Andhra Pradesh, Karnataka, Kerala, Pondicherry, Tamil Nadu and Lakshadweep Islands, Eastern: A&N Islands, Bihar, Jharkhand, Odisha and West Bengal, Central: Madhya Pradesh, Chhattisgarh, Uttar Pradesh and Uttarakhand)

Interpretations: above four chart shows that nabard is contributing 4.44 % in gujarat out of india. SIDBI is contributing 7.64 % in gujarat out of india. SEWA is contributing 53.75% in gujarat out of india. TF is contributing 100 % in gujarat out of india. Particularly NABARD & SIDBI Should more focus on GUJRAT. Provide more fund & Schemes to Gujarat.
5.3 Comparison through models

Following an attempt is done to understand models of working and distribution channel of selected MFIs.

5.5: Model: The value chain of NABARD

(Source: NABARD)

Above is given Model which indicate that how NABARD is working with refinancing, commercial bank, NGOs, SHGs and RRBs.
5.6: Model: The value chain of SIDBI

(Source: Annual Report of SIDBI)

The above Model shows that how SIDBI is working with Capacity Building, Commercial bank wholesale funding, social venture, MFIs, Individuals, Federation and transformation of loan.
5.7. Model: The value chain of SEWA

The above Model shows that how SEWA management through Sewa federations, Sewa bank, Sewa Bharat, Sewa Cooperatives, Sewa Members associations, Sewa Bharat and Sewa members.
5.8. Model: The value chain of TF

The above Model shows that how TF management in different services with the Board of trustees, District centers, taluka centers, and TF Members and other beneficial.

Above four models shows that each MFIs has different structure, management system, working patterns and distribution channels.
Intra-comparison of Selected Microfinance Institutions activity wise

INTRA- COMPARISION OF NATIONAL BANK FOR AGRICULTURE AND RURAL DEVELOPMENT’S (NABARD) DIFFERENT ACTIVITIES.

5.4 Purpose Wise Microfinance Disbursements by NABARD under Investment Credit To State Of Gujarat

NABARD is providing services on the basis of two criteria, first is Purpose Wise Microfinance Disbursements by NABARD under Investment Credit to State Of Gujarat. Activities are Minor Irrigation (MI), Land Development (LD), Farm Mechanization (FM), Plantation & Horticulture (PH), Fisheries (FH), Animal Husbandry (AH), Govt. Sponsored Programmes (GSP), Non-Farm Sector (NFS), Self –Help Groups (SHGs). All this activities individually compared on the basis of its last five years workings. Chart and statically tool mean, mode and median also find out to know the performance. Table wise interpretation is given for the betterment of the Activity. Then after purpose wise all the activities intra-compared for the hypotheses testing.

Table No. 5. 1. NABARD Investment Credit to State of Gujarat for Minor Irrigation (Rs. In Lakhs)

<table>
<thead>
<tr>
<th>Years</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor Irrigation</td>
<td>7542</td>
<td>9578</td>
<td>9683</td>
<td>11374</td>
<td>11519</td>
<td>49696</td>
</tr>
</tbody>
</table>

(Source: Annual Report of NABARD)
The above table shows that NABARD Investment Credit for the Minor Irrigation in the State of Gujarat for the last five years. The amount is shows in lakhs of rupees and the same thing is represented through below chart. The statically work related to mean, median and mode also found to understand its performance and consistency.

Chart no. 5.9. NABARD under Investment Credit to State of Gujarat for Minor Irrigation. (Rs. In Lakhs)

<table>
<thead>
<tr>
<th>Years</th>
<th>Total Amount of Minor Irrigation (Rs. In Lakhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-07</td>
<td>7542</td>
</tr>
<tr>
<td>2007-08</td>
<td>9578</td>
</tr>
<tr>
<td>2008-09</td>
<td>9683</td>
</tr>
<tr>
<td>2009-10</td>
<td>11374</td>
</tr>
<tr>
<td>2010-11</td>
<td>11519</td>
</tr>
</tbody>
</table>

Statically work

I) Mean (x) = \[
\frac{\text{Total Amount of Minor Irrigation}}{\text{Total No. of years}}
\]

\[
\begin{align*}
49696 & = \frac{\text{Mean(x)}}{5} \\
\text{Mean(x)} & = 9939 \text{ Lakhs Rs.}
\end{align*}
\]

Mean is the most common terms and widely use measure of an average of the observing data.
ii) Median (M) = \( \frac{n + 1}{2} = \frac{5 + 1}{2} = \frac{6}{2} = 3^{rd} \) year’s Amount

Median (M) = 9683 Lakhs Rs.
Median is defining as the middle value of the observation data.

(iii) Mode (Z):

Follow any one (1) condition

A) Highest Amount of Observation Data.
B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

Mode (Z) = 11519 Lakhs Rs.

Mode is defining the value of the Variable which occurs most frequent in the observing data.

Interpretation: From above Calculation of Mean, Median & Mode I could suggest that NABARD Distributed purpose wise Fund in Gujarat for the Schemes of Minor irrigation in the positive manner and the growth rate was increased. i.e. 2006-07 to 2010-11 was 53.33 %. NABARD should maintain its Performance.

Table No. 5.2 NABARD under Investment Credit to State of Gujarat for Land Development

<table>
<thead>
<tr>
<th>Years</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Development</td>
<td>3215</td>
<td>3109</td>
<td>3285</td>
<td>3319</td>
<td>3356</td>
<td>16284</td>
</tr>
</tbody>
</table>

(Source: Annual Report of NABARD)

The above table shows that NABARD Investment Credit for the Land Development in the State of Gujarat of the last five years. The amount is shows in lakhs of rupees and the same thing is represented through below chart. The statically work related to mean, median and mode also found to understand its performance and consistency.
Chart No. 5. 10. NABARD under Investment Credit to State of Gujarat for Land Development (Rs. In Lakhs)

Statically work

I) \( \text{Mean} (x) = \frac{\text{Total Amount of Land Development}}{\text{Total No. of years}} \)

\[ \frac{16284}{5} = 3257 \text{ Lakhs Rs.} \]

Mean is the most common terms and widely use measure of an average of the observing data.

ii) \( \text{Median} (M) = \frac{n + 1}{2} = \frac{5 + 1}{2} = \frac{6}{2} = 3^{rd} \text{ year’s Amount} \)

\[ \text{Median} (M) = 3285 \text{ Lakhs Rs.} \]

Median is defining as the middle value of the observation data.

(iii) \( \text{Mode} (Z): \)

Follow any one (1) condition

A) Highest Amount of Observation Data.
B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

\( \text{Mode} (Z) = 3319 \text{ Lakhs Rs.} \)

Mode is defining the value of the Variable which occurs most frequent in the observing data.
**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that NABARD Distributed Purpose wise Fund in Gujarat for the Schemes of Land Development in the positive manner and the growth rate was increased. i.e. 2006-07 to 2010-11 was 6.25%. NABARD should maintain its Performance.

**Table No. 5.3 NABARD under Investment Credit to State of Gujarat for Farm Mechanization**

(\text{Rs. In Lakhs})

<table>
<thead>
<tr>
<th>Years</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Mechanization</td>
<td>2015</td>
<td>2220</td>
<td>2284</td>
<td>2361</td>
<td>2441</td>
<td>11321</td>
</tr>
</tbody>
</table>

(Source: Annual Report of NABARD)

The above table shows that NABARD Investment Credit for the Farm Mechanization in the State of Gujarat of the last five years. The amount is shows in lakhs of rupees and the same thing is represented through below chart. The statically work related to mean, median and mode also found to understand its performance and consistency.

**Chart No. 5.11. NABARD under Investment Credit to State of Gujarat for Farm Mechanization**

(Rs. In Lakhs)

![Chart](chart.png)

Statically work
Total Amount of Farm Mechanization

\[ \text{Total Amount} = \frac{\text{Total No. of years}}{11321} = \frac{5}{5} \]

**Mean (x)** = 2264 Lakhs Rs.

Mean is the most common terms and widely use measure of an average of the observing data.

\[ \text{Median (M)} = \frac{n+1}{2} = \frac{5+1}{2} = \frac{6}{2} = 3^{rd} \text{ year’s Amount} \]

**Median (M)** = 2284 Lakhs Rs.

Median is defining as the middle value of the observation data.

**Mode (Z)**

Follow any one (1) condition

A) Highest Amount of Observation Data.
B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

**Mode (Z)** = 2441 Lakhs Rs.

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that NABARD Distributed Purpose wise Fund in Gujarat for the Schemes of Farm Mechanizations in the positive manner and the growth rate was increased. i.e. 2006-07 to 2010-11 was 20.00%. NABARD should maintain its Performance.
Table No. 5.4 NABARD under Investment Credit to State of Gujarat for Plantation & Horticulture *(Rs. In Lakhs)*

<table>
<thead>
<tr>
<th>Years</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plantation&amp; Horticulture</td>
<td>1985</td>
<td>2215</td>
<td>2273</td>
<td>2274</td>
<td>2338</td>
<td>11085</td>
</tr>
</tbody>
</table>

(Source: Annual Report of NABARD)

The above table shows that NABARD Investment Credit for the Plantation and Horticulture in the State of Gujarat of the last five years. The amount is shows in lakhs of rupees and the same thing is represented through below chart. The statically work related to mean, median and mode also found to understand its performance and consistency.

Chart No. 5.12. NABARD under Investment Credit to State of Gujarat for Plantation& Horticulture. *(Rs. In Lakhs)*

Statically work

1) **Mean (x)** = \[
\frac{\text{Total Amount of Plantation& Horticulture}}{\text{Total No. of years}}
\]
\[
\frac{11085}{5} = 2217 \text{ Lakhs Rs.}
\]

Mean is the most common terms and widely use measure of an average of the observing data.

\[
\frac{n + 1}{2} = \frac{5 + 1}{2} = \frac{6}{2} = 3^{rd}\text{ year’s Amount}
\]

\[
\text{Median (M)} = 2273 \text{ Lakhs Rs.}
\]

Median is defining as the middle value of the observation data.

(iii) Mode (Z)

Follow any one (1) condition

A) Highest Amount of Observation Data.
B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

\[
\text{Mode (Z)} = 2338 \text{ Lakhs Rs.}
\]

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that NABARD Distributed Purpose wise Fund in Gujarat for the Schemes of Plantation & Horticulture in the positive manner and the growth rate was increased. i.e. 2006-07 to 2010-11 was 15.00%.

NABARD should maintain its Performance.

**Table No. 5.5 NABARD under Investment Credit to State of Gujarat for Fisheries**

<table>
<thead>
<tr>
<th>(Rs. In Lakhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Fisheries</td>
</tr>
</tbody>
</table>

(Source: Annual Report of NABARD)
The above table shows that NABARD Investment Credit for the Fisheries in the State of Gujarat of the last five years. The amount is shows in lakhs of rupees and the same thing is represented through below chart. The statically work related to mean, median and mode also found to understand its performance and consistency.

**Chart No. 5.13. NABARD under Investment Credit to State of Gujarat for Fisheries.**

<table>
<thead>
<tr>
<th>Years</th>
<th>Fisheries (Rs. In Lakhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-07</td>
<td>38</td>
</tr>
<tr>
<td>2007-08</td>
<td>25</td>
</tr>
<tr>
<td>2008-09</td>
<td>77</td>
</tr>
<tr>
<td>2009-10</td>
<td>54</td>
</tr>
<tr>
<td>2010-11</td>
<td>47</td>
</tr>
</tbody>
</table>

Statically work

I) **Mean** \((x) = \frac{\text{Total Amount of Fisheries}}{\text{Total No. of years}}\)

\[
= \frac{241}{5} = 48 \text{ Lakhs Rs.}
\]

Mean \((x) = 48 \text{ Lakhs Rs.}\)

Mean is the most common terms and widely use measure of an average of the observing data.

ii) **Median** \((M) = \frac{n + 1}{2} = \frac{5+1}{2} = \frac{6}{2} = 3^{rd} \text{ year’s Amount}\)
**Median (M)** = 77 Lakhs Rs

Median is defining as the middle value of the observation data.

**(iii) Mode (Z):**

Follow any one (1) condition

A) Highest Amount of Observation Data.
   B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

**Mode (Z) =** 77 Lakhs Rs.

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that NABARD Distributed Purpose wise Fund in Gujarat for the Schemes of Fisheries in the positive manner and the growth rate was increased. i.e. 2006-07 to 2010-11 was 23.68%. NABARD should maintain its Performance.

**Table No. 5.6 NABARD under Investment Credit to State of Gujarat for Animal Husbandry**

<table>
<thead>
<tr>
<th></th>
<th>(Rs. In Lakhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years</td>
<td>2006-07</td>
</tr>
<tr>
<td>Animal Husbandry</td>
<td>2066</td>
</tr>
</tbody>
</table>

(Source: Annual Report of NABARD)

The above table shows that NABARD Investment Credit for the Animal Husbandry in the State of Gujarat of the last five years. The amount is shows in lakhs of rupees and the same thing is represented through below chart. The statically work related to mean, median and mode also found to understand its performance and consistency.
Chart No. 5.14. NABARD under Investment Credit to State of Gujarat for Animal Husbandry.

(Rs. In Lakhs)

Statically work

I) **Mean** \( (x) \)

\[
\text{Mean} \ (x) = \frac{\text{Total Amount of Animal Husbandry}}{\text{Total No. of years}}
\]

\[
= \frac{11268}{5}
\]

\[
\text{Mean} \ (x) = 2254 \text{ Lakhs Rs.}
\]

Mean is the most common terms and widely use measure of an average of the observing data.

\[
n + 1 = 5+1 = 6
\]

\[
\frac{2}{2} = \frac{\text{3rd year's Amount}}{\text{2}}
\]

**Median** \( (M) \)

\[
\text{Median} \ (M) = 2187 \text{ Lakhs Rs.}
\]

Median is defining as the middle value of the observation data.

(iii) **Mode** \( (Z) \):

Follow any one (1) condition

A) Highest Amount of Observation Data.

B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

**Mode** \( (Z) \) = 2478 Lakhs Rs.
Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that NABARD Distributed Purpose wise Fund in Gujarat for the Activity of Animal Husbandry in the positive manner and the growth rate was increased. i.e. 2006-07 to 2010-11 was 20.00%. NABARD should maintain its Performance.

**Table No. 5.7 NABARD under Investment Credit to State of Gujarat for Govt. Sponsored Programmes** (Rs. In Lakhs)

<table>
<thead>
<tr>
<th>years</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Govt.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sponsored</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Programmes</td>
<td>1436</td>
<td>1739</td>
<td>2027</td>
<td>2566</td>
<td>2356</td>
<td>10124</td>
</tr>
</tbody>
</table>

(Source: Annual Report of NABARD)

The above table shows that NABARD Investment Credit for the Govt. Sponsored Programmes in the State of Gujarat of the last five years. The amount is shows in lakhs of rupees and the same thing is represented through below chart. The statically work related to mean, median and mode also found to understand its performance and consistency.

**Chart No. 5.15. NABARD under Investment Credit to State of Gujarat for Govt. Sponsored Programmes** (Rs. In Lakhs)
Statically work

<table>
<thead>
<tr>
<th>Mean (x)</th>
<th>Total Amount of Govt. Sponsored Programmes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I) Mean (x) = [ \frac{\text{Total Amount of Govt. Sponsored Programmes}}{\text{Total No. of years}} ]</td>
<td></td>
</tr>
</tbody>
</table>

\[ \frac{10124}{5} = 2025 \text{ Lakhs Rs.} \]

Mean (x) = 2025 Lakhs Rs.

Mean is the most common term and widely use measure of an average of the observing data.

\[ \text{ii) Median (M)} = \frac{n + 1}{2} = \frac{5+1}{2} = \frac{6}{2} = 3^{rd} \text{ year’s Amount} \]

Median (M) = 2027 Lakhs Rs.

Median is defining as the middle value of the observing data.

(iii) Mode (Z):

Follow any one (1) condition

A) Highest Amount of Observation Data.
B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

Mode (Z) = 2566 Lakhs Rs.

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that NABARD Distributed Fund in Gujarat for the Activities of Govt. Sponsored Programme in the positive manner and the growth rate was increased. i.e. 2006-07 to 2010-11 was 64.28%. NABARD should maintain its Performance.
Table No. 5.8 NABARD under Investment Credit to State of Gujarat for Non-Farm Sector
(Rs. In Lakhs)

<table>
<thead>
<tr>
<th>Years</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Farm Sector</td>
<td>7544</td>
<td>7892</td>
<td>8088</td>
<td>8368</td>
<td>8558</td>
<td>40450</td>
</tr>
</tbody>
</table>

(Source: Annual Report of NABARD)

The above table shows that NABARD Investment Credit for the Non-Farm Sector in the State of Gujarat of the last five years. The amount is shown in lakhs of rupees and the same thing is represented through below chart. The statically work related to mean, median and mode also found to understand its performance and consistency.

Chart No. 5.16. NABARD under Investment Credit to State of Gujarat for Non-Farm Sector.
(Rs. In Lakhs)

Statically work

1) Mean \( (x) = \frac{\text{Total Amount of Non-Farm Sector}}{\text{Total No. of years}} \)

\[ = \frac{40450}{5} \]

194
Mean\(x\) = 8090 Lakhs Rs.

Mean is the most common terms and widely use measure of an average of the observing data.

\[
\text{ii) Median (M)} = \frac{n + 1}{2} = \frac{5+1}{2} = \frac{6}{2} = 3^{\text{rd}} \text{year’s Amount}
\]

\[
\text{Median (M)} = 8088 \text{ Lakhs Rs.}
\]

Median is defining as the middle value of the observation data.

(iii) Mode (Z):
Follow any one (1) condition
A) Highest Amount of Observation Data.
B) Max. Time Repeat Amount in Observation Data
Here, in this case condition “A” Apply

\[
\text{Mode (Z)} = 8558 \text{ Lakhs Rs.}
\]

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that NABARD Distributed Fund for the Schemes of Non Farm Sector in Gujarat in the positive manner and the growth rate was increased.

i.e. 2006-07 to 2010-11 13.33%. NABARD should maintain its Performance.

| Table No. 5.9 NABARD under Investment Credit to State of Gujarat for Self –Helps Groups (Rs. In Lakhs) |
|-------------------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Years                                           | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 | Total |
| Self Helps Groups                               | 1292    | 1615    | 2620    | 3173    | 2545    | 11245 |

(Source: Annual Report of NABARD)

The above table shows that NABARD Investment Credit for the Self Help Groups in the State of Gujarat of the last five years. The amount is shows in lakhs of rupees and the same thing is represented through below chart. The statically work related to mean, median and mode also found to understand its performance and consistency.
Chart No. 5.17. NABARD under Investment Credit to State of Gujarat for Self-Helps Groups. (Rs. In Lakhs)

Statically work

i) **Mean (x)** = \[ \frac{\text{Total Amount of Self-Helps Groups}}{\text{Total No. of years}} \]

Total Amount of Self-Helps Groups = 11245
Total No. of years = 5

Mean (x) = 2249 Lakhs Rs.

Mean is the most common terms and widely use measure of an average of the observing data.

\[ \frac{n + 1}{2} = \frac{5 + 1}{2} = \frac{6}{2} = 3^{rd} \text{ year’s Amount} \]

ii) **Median (M)** = \[ \frac{5 + 1}{2} = \frac{6}{2} = 2620 \text{ Lakhs Rs.} \]

Median is defining as the middle value of the observation data.

(iii) **Mode (Z)**

Follow any one (1) condition

A) Highest Amount of Observation Data.
B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply.
Mode (Z) = 3173 Lakhs Rs.

Mode is defining the value of the Variable which occurs most frequent in the observing data.

Interpretation: From above Calculation of Mean, Median & Mode I could suggest that NABARD Distributed Fund in Gujarat for the Schemes of SHGs in the positive manner and the growth rate was increased. i.e. 2006-07 to 2010-11 was 92.30%. NABARD should maintain its Performance.

Table No. 5.10 NABARD under Investment Credit to State of Gujarat for others activity. (Rs. In Lakhs)

<table>
<thead>
<tr>
<th>Years</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Others activity</td>
<td>10512</td>
<td>14486</td>
<td>14671</td>
<td>15224</td>
<td>15578</td>
<td>70471</td>
</tr>
</tbody>
</table>

(Source: Annual Report of NABARD)

The above table shows that NABARD Investment Credit for the Other Activity in the State of Gujarat of the last five years. The amount is shows in lakhs of rupees and the same thing is represented through below chart. The statically work related to mean, median and mode also found to understand its performance and consistency.

Chart No. 5.18. NABARD under Investment Credit to State of Gujarat for others activity (Rs. In Lakhs)
Statically work

\[ \text{Mean (x)} = \frac{\text{Total Amount of Others Activity}}{\text{Total No. of years}} \]

\[ = \frac{70471}{5} = 14094.2 \]

**Mean (x)** = 23490 Lakhs Rs.

Mean is the most common terms and widely use measure of an average of the observing data.

\[ \text{Median (M)} = \frac{n + 1}{2} \]

\[ = \frac{5 + 1}{2} = \frac{6}{2} = 3 \]

**Median (M)** = 14671 Lakhs Rs.

Median is defining as the middle value of the observation data.

(iii) **Mode (Z):**

Follow any one (1) condition

A) Highest Amount of Observation Data.

B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

**Mode (Z)** = 15578 Lakhs Rs.

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that NABARD Distributed Fund in Gujarat for the Activity of Others in the positive manner. The growth rate was increased. i.e. 2006-07 to 2010-11 was 47.61%. NABARD should maintain its Performance.
Hypotheses Testing

- \( H_0 \): NABARD significantly distributes purpose-wise Microfinance in Gujarat.
- \( H_1 \): NABARD does not significantly distribute purpose-wise Microfinance in Gujarat.

Table no.: 5.11 Combine table of Purpose Wise Microfinance Disbursements by NABARD under Investment Credit to State Of Gujarat.

(Rs. In Crore)

<table>
<thead>
<tr>
<th>Different Schemes</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor Irrigation (MI)</td>
<td>75</td>
<td>96</td>
<td>97</td>
<td>114</td>
<td>115</td>
</tr>
<tr>
<td>Land Development (LD)</td>
<td>32</td>
<td>31</td>
<td>33</td>
<td>33</td>
<td>34</td>
</tr>
<tr>
<td>Farm Mechanization (FM)</td>
<td>20</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Plantation &amp; Horticulture (PH)</td>
<td>20</td>
<td>22</td>
<td>23</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Fisheries (FH)</td>
<td>0.38</td>
<td>0.25</td>
<td>0.77</td>
<td>0.54</td>
<td>0.47</td>
</tr>
<tr>
<td>Animal Husbandry (AH)</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Govt. Sponsored Programmes (GSP)</td>
<td>14</td>
<td>17</td>
<td>20</td>
<td>25</td>
<td>23</td>
</tr>
<tr>
<td>Non-Farm Sector (NFS)</td>
<td>75</td>
<td>79</td>
<td>81</td>
<td>84</td>
<td>85</td>
</tr>
<tr>
<td>Self-Help Groups (SHGs)</td>
<td>13</td>
<td>16</td>
<td>26</td>
<td>32</td>
<td>25</td>
</tr>
<tr>
<td>Others (Oth)</td>
<td>105</td>
<td>145</td>
<td>147</td>
<td>152</td>
<td>155</td>
</tr>
<tr>
<td>Total</td>
<td>374.38</td>
<td>449.25</td>
<td>472.77</td>
<td>511.54</td>
<td>508.47</td>
</tr>
</tbody>
</table>

(Source: Annual Report of NABARD)

The above shows Combine tables of Purpose Wise Microfinance Disbursements by Nabard under Investment Credit to State Of Gujarat of the
last five years. The amount is shows in crores of rupees and the same thing is represented through below chart. The statically work related to mean, median, mode and for Hypothesis testing through $t$-test is calculated below to understand its performance and consistency.

Chart no. 5.19. Combine Chart of Purpose Wise Microfinance Disbursements by Nabard under Investment Credit to State Of Gujarat
Statically work

Total Amt. of Purpose wise disbarment by NABARD

1) **Mean (x)** = \[ \frac{\text{Total Amt. of Purpose wise disbarment by NABARD}}{\text{Total No. of years}} \]

\[ = \frac{2316.41}{5} \]

**Mean(x) = 463 crore Rs.**

Mean is the most common terms and widely use measure of an average of the observing data.

\[ \begin{align*}
\text{ii) Median (M)} & = \frac{n + 1}{2} = \frac{5+1}{2} = \frac{6}{2} = 3^{\text{rd}} \text{ year’s Amount} \\
\text{Median (M)} & = 473 \text{ crore Rs.} 
\end{align*} \]

Median is defining as the middle value of the observation data.

(iii) **Mode (Z):**

Follow any one (1) condition

A) Highest Amount of Observation Data.

B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

**Mode (Z) = 508 crore Rs.**

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Hypotheses Testing**

Here Observation is less then < 30 hence t- test is recommended

For, t – test \( \mu \) value is necessary

In this case Mode (Z) value is recommended for \( \mu \) value

**Hypotheses**

\( H_0 = \text{NABARD significantly distributes Microfinance in Gujarat.} \)

\( H_0 = \mu = 508 \)

\( H_1 = \text{NABARD does not significantly distribute Microfinance in Gujarat.} \)

\( H_1 = \mu \neq 508 \)
\[ \text{For, t-test standard deviation (S) is to be find through following formula} \]

\[ S^2 = \frac{1}{n} \left( \frac{\sum d_i^2}{n} - \frac{(\sum d_i)^2}{n^2} \right) \]

\[ S^2 = \frac{1}{5} \left( \frac{12527 - 1}{5} \right) = \frac{12526.80}{5} = 2505.36 \quad S = 50.05 \]

Now, t-test formula

\[ t = \frac{|x - \mu|}{S} \frac{n-1}{5-1} = \frac{45}{50.05} \frac{5-1}{45 \times 2} = 1.7982 \]

degree of freedom (d.f.) = n-1 = 5-1 = 4
5% level of significant st 4 d.f. = 2.776

\[ t = 1.7982 \quad t\text{-Calculation} < t\text{-table} \]

1.7982 < 2.776
t –Calculation value is less then t- table value
Hence, \( H_0 \) = is accepted
\( H_0 = \mu = 508 \)
(t- table value is taken from statistic table of t -Distribution )

Result of Hypotheses Testing

\( H_0 \) = NABARD significantly distributes purpose wise Microfinance in Gujarat.

5.5 Agency Wise Microfinance Disbursements by Nabard Under Investment Credit To State of Gujarat

The second criterion is to Agency Wise Microfinance Disbursements by NABARD under Investment Credit to State of Gujarat. Commercial Banks, Regional Rural Banks, State Co-operative and Banks State Co-operative Agriculture & Rural Development Banks. All this activities individually compared on the basis of its last five years workings. Chart and statically tool mean, mode and median also find out to know the performance. Table wise intapretation is given for the betterment of the Activity. Then after Agency wise all the activities intra compared for the hypothesis testing.

Table No. 5.12 NABARD under Investment Credit to State of Gujarat for Commercial Banks. (Rs. In Lakhs)

<table>
<thead>
<tr>
<th>Years</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Banks</td>
<td>4987</td>
<td>5684</td>
<td>5867</td>
<td>6057</td>
<td>7348</td>
<td>29943</td>
</tr>
</tbody>
</table>
(Source: Annual Report of NABARD)

The above table shows that NABARD Investment Credit for the Commercial banks in the State of Gujarat of the last five years. The amount is shows in lakhs of rupees and the same thing is represented through below
chart. The statically work related to mean, median and mode also found to understand its performance and consistency.

**Chart No. 5.20. NABARD under Investment Credit to State of Gujarat for Commercial Banks.**

(Rs. In Lakhs)

![Chart](chart)

Statically work

I) **Mean (x)** = \[ \frac{\text{Total Amount of Commercial Banks}}{\text{Total No. of years}} \]

\[ \frac{29943}{5} = 5989 \text{ Lakhs Rs.} \]

**Mean(x) = 5989 Lakhs Rs.**

Mean is the most common terms and widely use measure of an average of the observing data.

\[ \frac{n + 1}{2} = \frac{5+1}{2} = 6 \]

**Median (M) = 5867 Lakhs Rs.**

Median is defining as the middle value of the observation data.
Mode (Z): follow any one (1) condition
A) Highest Amount of Observation Data.
B) Max. Time Repeat Amount in Observation Data
Here, in this case condition “A” Apply

Mode (Z) = 7348 Lakhs Rs.
Mode is defining the value of the Variable which occurs most frequent in the observing data.

Interpretation: From above Calculation of Mean, Median & Mode I could suggest that NABARD Distributed Agency wise Fund in Gujarat through the Commercial Bank in the restricted manner. The growth rate was increased. i.e. 2006-07 to 2010-11 was 46.00%. NABARD should improve its performance.

Table No. 5.13 NABARD under Investment Credit to State of Gujarat for Regional Rural Banks

<table>
<thead>
<tr>
<th>Years</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Rural Banks</td>
<td>1654</td>
<td>1758</td>
<td>1879</td>
<td>2457</td>
<td>2287</td>
<td>10035</td>
</tr>
</tbody>
</table>

(Source: Annual Report of NABARD)

The above table shows that NABARD Investment Credit for the Regional Rural Banks in the State of Gujarat of the last five years. The amount is shows in lakhs of rupees and the same thing is represented through below chart. The statically work related to mean, median and mode also found to understand its performance and consistency.
Statically work

I) Mean \((x) = \frac{\text{Total Amount of Regional Rural Banks}}{\text{Total No. of years}}\)

\[ \frac{10035}{5} = 2007 \text{ Lacs Rs.} \]

Mean is the most common terms and widely use measure of an average of the observing data.

ii) Median \((M) = \frac{n + 1}{2} = \frac{5+1}{2} = \frac{6}{2} = 3^{rd} \text{ year’s Amount}\)

\[ \text{Median} (M) = 1879 \text{ Lacs Rs.} \]

Median is defining as the middle value of the observation data.

(iii) Mode \((Z)\):

Follow any one (1) condition

A) Highest Amount of Observation Data.
B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply
Mode (Z) = 2457 Lakhs Rs.
Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that NABARD Distributed Agency wise Fund in Gujarat through Regional Rural Banks the in the restricted manner. The growth rate was increased. i.e. 2006-07 to 2010-11 was 35.29%. NABARD should improve its performance.

**Table No. 5.14 NABARD under Investment Credit to State of Gujarat for State Co-operative Banks.**

<table>
<thead>
<tr>
<th>Years</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Co-operative Banks</td>
<td>664</td>
<td>714</td>
<td>801</td>
<td>1251</td>
<td>1356</td>
<td>4786</td>
</tr>
</tbody>
</table>

(Source: Annual Report of NABARD)

The above table shows that NABARD Investment Credit for the State Cooperatives Banks in the State of Gujarat of the last five years. The amount is shows in lakhs of rupees and the same thing is represented through below chart. The statically work related to mean, median and mode also found to understand its performance and consistency.

**Chart No. 5.22. NABARD under Investment Credit to State of Gujarat for State Co-operative Banks.**
Statically work

i) **Mean** (x) = \[
\frac{\text{Total Amount of State Co-operative Banks}}{\text{Total No. of years}}
\]
\[
= \frac{4786}{5}
\]
\[
\text{Mean}(x) = 957 \text{ Lakhs Rs.}
\]
Mean is the most common terms and widely use measure of an average of the observing data.

ii) **Median** (M) = \[
\frac{n + 1}{2} = \frac{5+1}{2} = \frac{6}{2} = 3^{rd} \text{ year’s Amount}
\]
\[
\text{Median} (M) = 801 \text{ Lakhs Rs.}
\]
Median is defining as the middle value of the observation data.

(iii) **Mode** (Z): follow any one (1) condition
A) Highest Amount of Observation Data.
B) Max. Time Repeat Amount in Observation Data
Here, in this case condition “A” Apply
\[
\text{Mode} (Z) = 1356 \text{ Lakhs Rs.}
\]
Mode is defining the value of the Variable which occurs most frequent in the observing data.
Interpretation: From above Calculation of Mean, Median & Mode I could suggest that NABARD Distributed Agency wise Fund in Gujarat through State Cooperatives Banks the in a restricted manner. The growth rate was increased. i.e. 2006-07 to 2010-11 was 133.33%. NABARD should improve its performance.

Table No. 5.15 NABARD under Investment Credit to State of Gujarat State Co-operative Agriculture & Rural Development Banks (SCARDB) (Rs. In Lakhs)

<table>
<thead>
<tr>
<th>Years</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>(SCARDB)</td>
<td>1787</td>
<td>1889</td>
<td>1986</td>
<td>2221</td>
<td>2351</td>
<td>10234</td>
</tr>
</tbody>
</table>

(Source: Annual Report of NABARD)

The above table shows that NABARD Investment Credit for the SCARDB in the State of Gujarat of the last five years. The amount is shows in lakhs of rupees and the same thing is represented through below chart. The statically work related to mean, median and mode also found to understand its performance and consistency.

Chart No. 5.23. NABARD under Investment Credit to State of Gujarat State Co-operative Agriculture & Rural Development Banks (SCARDB)
Statically work

I) **Mean (x)** = \[
\frac{\text{Total Amount of SCARDB}}{\text{Total No. of years}}
\]

\[
= \frac{10243}{5}
\]

**Mean (x)** = 2045 Lakhs Rs.

Mean is the most common terms and widely use measure of an average of the observing data.

\[
\text{Median (M)} = \frac{n + 1}{2} = \frac{5+1}{2} = \frac{6}{2} = 3^{rd} \text{ year’s Amount}
\]

**Median (M)** = 1986 Lakhs Rs.

Median is defining as the middle value of the observation data.

(iii) **Mode (Z):**

Follow any one (1) condition

A) Highest Amount of Observation Data.

B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” apply

**Mode (Z)** = 2351 Lakhs Rs.

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that NABARD Distributed Agency wise Fund in Gujarat through State Co-operative Agriculture & Rural Development Banks the in a restricted manner. The growth rate was increased. i.e. 2006-07 to 2010-11 was 33.33%. NABARD should improve its performance.
Hypotheses Testing

- $H_0 =$ Nabard Significantly Distributes Agency Wise Microfinance in Gujarat.
- $H_1 =$ Nabard does not significantly Distribute Agency Wise Microfinance in Gujarat.

Table no. 5.16. Combine table of Agency Wise Microfinance Disbursements by NABARD under Investment Credit to State of Gujarat.

<table>
<thead>
<tr>
<th>particulars</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Banks(CB)</td>
<td>50</td>
<td>57</td>
<td>59</td>
<td>61</td>
<td>73</td>
</tr>
<tr>
<td>Regional Rural Banks(RRBs)</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>25</td>
<td>23</td>
</tr>
<tr>
<td>State Co-operative Banks(SCBs)</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>State Co-operative Agriculture &amp; Rural Development Banks(SCARDB)</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>22</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td><strong>91</strong></td>
<td><strong>101</strong></td>
<td><strong>106</strong></td>
<td><strong>121</strong></td>
<td><strong>134</strong></td>
</tr>
</tbody>
</table>

(Source: Annual Report of NABARD)

The above combine table Agency Wise Microfinance Disbursements by Nabard under Investment Credit to State of Gujarat of the last five years. The amount is shows in Crores of rupees and the same thing is represented through below chart. The statically work related to mean, median, mode and for Hypothesis testing through t-test also calculated below to understand its performance and consistency.
**Chart no. 5.24. Combine chart of Agency Wise Microfinance Disbursements by Nabard under Investment Credit to State of Gujarat**

Statically work

1) \( \text{Mean} (x) = \frac{\text{Total Amount of Agency wise M.F.}}{\text{Total No. of years}} \)

\[
\begin{align*}
\text{Total Amount of Agency wise M.F.} & = 553 \\
\text{Total No. of years} & = 5 \\
\text{Mean} (x) & = \frac{553}{5} = 110.6 \text{ crore Rs.}
\end{align*}
\]

Mean is the most common terms and widely use measure of an average of the observing data.
ii) Median (M) = \( \frac{n+1}{2} = \frac{5+1}{2} = \frac{6}{2} = 3^{rd} \) year’s Amount

\[ \text{Median (M)} = 106 \text{ crore Rs.} \]

Median is defining as the middle value of the observation data.

(iii) Mode (Z):

Follow any one (1) condition

A) Highest Amount of Observation Data.
B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

\[ \text{Mode (Z)} = 134 \text{ crore Rs.} \]

Mode is defining the value of the Variable which occurs most frequent in the observing data.

Hypotheses Testing

Here Observation is less then < 30 hence t- test is recommended

For, t – test \( \mu \) value is necessary

In this case Mode (Z) value is recommended for \( \mu \) value

Hypotheses

\( H_0 = \) Nabard Significantly Distributes Agency Wise Microfinance in Gujarat.

\( H_0 = \mu = 134 \)

\( H_1 = \) Nabard does not significantly Distribute Agency Wise Microfinance in Gujarat.

\( H_1 = \mu \neq 134 \)

<table>
<thead>
<tr>
<th>( x_i )</th>
<th>( di = x_i - x(110) )</th>
<th>( di^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>91</td>
<td>-19</td>
<td>361</td>
</tr>
<tr>
<td>101</td>
<td>-9</td>
<td>81</td>
</tr>
<tr>
<td>106</td>
<td>-4</td>
<td>16</td>
</tr>
<tr>
<td>121</td>
<td>11</td>
<td>121</td>
</tr>
<tr>
<td>134</td>
<td>24</td>
<td>576</td>
</tr>
<tr>
<td>( \sum x_i =553 )</td>
<td>( \sum di =3 )</td>
<td>( \sum di^2 =1155 )</td>
</tr>
</tbody>
</table>
\[
\bar{x} = \frac{\sum x_i}{n} = \frac{553}{5} = 110.6
\]

For, t-test standard deviation (S) is to be find through following formula

\[
S^2 = \frac{1}{n} \left( \sum d_i^2 - \frac{(\sum d_i)^2}{n} \right)
\]

\[
S^2 = \frac{1}{5} \left( 1155 - \frac{(3)^2}{5} \right)
\]

\[
S^2 = \frac{1153.2}{5} = \frac{230.64}{5} = S = 15.1868
\]

Now, t-test formula

\[
t = \frac{|x - \mu|}{S} \sqrt{n-1} = \frac{|110.6 - 134|}{15.1868} \frac{5-1}{15.1868} = 23.4 \times 2
\]

\[
t = 3.0342
\]

degree of freedom (d.f.) = n-1 = 5-1 = 4

5% level of significant st 4 d.f. = 2.776

\[
t > t\text{-table}
\]

3.0342 > 2.776

t –Calculation value is greater then t-table value
(t-Table value is taken from statistic table of t-Distribution)

Hence, \(H_0\) is rejected
\(H_1 = \mu \neq 134\)

**Result of Hypotheses Testing**

\(H_1 = \) Nabard does not significantly Distribute Agency Wise Microfinance in Gujarat.
5.6 SIDBI Assistance to Gujarat under Schemes of Microfinance

SIDBI is providing Assistance to Gujarat under various Schemes of Microfinance such as Refinance, MSME Refinance, Micro credit, NBFCs, Term loan, Capacity Building grant to MFIs, Risk Fund for smaller MFIs, and No. of beneficent Assisted through partner MFIs. All this activities individually compared on the basis of its last five years workings. Chart and statically tool mean, mode and median also find out to know the performance. Table wise interpretation is given for the betterment of the Activity. All the activities intra- compared for the hypotheses testing.

**Table no.: 5.17. Refinance Assistance**

<table>
<thead>
<tr>
<th>Years</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refinance</td>
<td>20756</td>
<td>36612</td>
<td>74136</td>
<td>74336</td>
<td>81423</td>
<td>287263</td>
</tr>
</tbody>
</table>

(Source: Annual Report SIDBI)

The above table shows that SIDBI assistance for the Refinance in the State of Gujarat of the last five years. The amount is shows in lakhs of rupees. The same thing is represented through below chart. The statically work related to mean, median and mode also found to understand its performance and consistency.
Chart no. : 5.25. Refinance Assistance

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Amt. of Refinance</th>
<th>Rs. in lac</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-11</td>
<td>81423</td>
<td>20756</td>
</tr>
<tr>
<td>2009-10</td>
<td>74336</td>
<td>36612</td>
</tr>
<tr>
<td>2008-09</td>
<td>74136</td>
<td></td>
</tr>
<tr>
<td>2007-08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006-07</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Statically work

1) Mean (x) = \( \frac{\text{Total Amt. of Refinance}}{\text{Total No. of years}} \)

Mean is the most common terms and widely use measure of an average of the observing data.

\[
\text{Mean(x)} = \frac{287263}{5} = 57452.6 \text{ lakhs Rs.}
\]

2) Median (M) = \( \frac{n+1}{2} = \frac{6}{2} = 3^{rd} \text{ year’s data} \)

Median (M) = 74136 lakhs Rs.

3) Mode (Z): Follow any one (1) condition

A) Highest Amount of Observation Data.
B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

Mode (Z) = 81423 lakhs Rs.
Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that SIDBI Distributed Fund in Gujarat for the Activity of Refinance Assistance in the positive manner. The growth rate was increased. i.e. 2006-07 to 2010-11 was 29.34%. SIDBI should maintain its performance.

**Table no.: 5.18 MSME Refinance**

<table>
<thead>
<tr>
<th>Years</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSME Refinance</td>
<td>9448</td>
<td>11572</td>
<td>16200</td>
<td>24616</td>
<td>28648</td>
<td>90484</td>
</tr>
</tbody>
</table>

(Source: Annual Report SIDBI)

The above table shows that SIDBI assistance for the MSME Refinance in the State of Gujarat of the last five years. The amount is shows in lakhs of rupees. The same thing is represented through below chart. The statically work related to mean, median and mode also found to understand its performance and consistency.

**Chart no.: 5.26. MSME Refinance**
Statically work

I) **Mean (x)** = \[ \frac{\text{Total Amt. of MSME Refinance}}{\text{Total No. of years}} \]

\[
\begin{align*}
\text{Total Amt. of MSME Refinance} &= 90484 \\
\text{Total No. of years} &= 5 \\
\text{Mean (x)} &= \frac{90484}{5} \\
&= 18096.8 \text{ lakhs Rs.}
\end{align*}
\]

**Mean(x) = 18096.8 lakhs Rs.**

Mean is the most common terms and widely use measure of an average of the observing data.

ii) **Median (M)** = \[ \frac{n+1}{2} \]

\[
\begin{align*}
\text{Medin (M)} &= \frac{5+1}{2} = \frac{6}{2} = 3^{rd} \text{ year’s data} \\
\text{Median (M)} &= 16200 \text{ lakhs Rs.}
\end{align*}
\]

Median is defining as the middle value of the observation data

(iii) **Mode (Z):**

Follow any one (1) condition

A) Highest Amount of Observation Data.  
B) Max. Time Repeat Amount in Observation Data  

Here, in this case condition “A” Apply

**Mode (Z) = 28648 lakhs Rs.**

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that SIDBI Distributed Fund in Gujarat for the Activity of MSME Refinance in the positive manner. The growth rate was increased. i.e. 2006-07 to 2010-11 204.25%. SIDBI should maintain its performance.

**Table no.: 5.19 Micro Credits**

<table>
<thead>
<tr>
<th>Years</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro Credit</td>
<td>1516</td>
<td>2864</td>
<td>6984</td>
<td>10684</td>
<td>13625</td>
<td>35673</td>
</tr>
</tbody>
</table>

(Source: Annual Report SIDBI)
The above table shows that SIDBI assistance for the Micro Credit in the State of Gujarat of the last five years. The amount is shown in lakhs of rupees. The same thing is represented through the below chart. The statistically work related to mean, median and mode also found to understand its performance and consistency.

**Chart no.: 5.27. Micro Credits**

<table>
<thead>
<tr>
<th>Years</th>
<th>Total Amt. of Micro Credit</th>
<th>Rs. in lac</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-07</td>
<td>1516</td>
<td>0</td>
</tr>
<tr>
<td>2007-08</td>
<td>2864</td>
<td>5000</td>
</tr>
<tr>
<td>2008-09</td>
<td>6984</td>
<td>10684</td>
</tr>
<tr>
<td>2009-10</td>
<td>10684</td>
<td>13625</td>
</tr>
<tr>
<td>2010-11</td>
<td>13625</td>
<td>15000</td>
</tr>
</tbody>
</table>

Statically work

1) **Mean (x)** = \[ \frac{\text{Total Amt. of Micro Credit}}{\text{Total No. of years}} \]
\[ \frac{35673}{5} = 7134.6 \text{ lakhs Rs.} \]
Mean is the most common terms and widely used measure of an average of the observing data.

2) **Median (M)** = \[ \frac{n + 1}{2} \times \frac{5+1}{2} \times \frac{6}{2} = 3^{rd} \text{ year’s data} \]
\[ \frac{2864}{2} = 6984 \text{ lakh Rs.} \]
Median is defining as the middle value of the observation data.

(iii) **Mode (Z):**
Follow any one (1) condition
A) Highest Amount of Observation Data.
B) Max. Time Repeat Amount in Observation Data
Here, in this case condition “A” Apply

**Mode (Z)** = 13625 lakhs Rs.
Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that SIDBI Distributed Fund in Gujarat for the Activity Micro Credit in the positive manner. The growth rate was increased. i.e. 2006-07 to 2010-11 was 806.66%. SIDBI should maintain its performance.

**Table no.: 5.20 Non Banking Financial Corporation’s (NBFCs)**

<table>
<thead>
<tr>
<th>Years</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBFCs</td>
<td>620</td>
<td>616</td>
<td>744</td>
<td>30</td>
<td>345</td>
<td>2355</td>
</tr>
</tbody>
</table>

(Source: Annual Report SIDBI)

The above table shows that SIDBI assistance for the NBFCs in the State of Gujarat of the last five years. The amount is shows in lakhs of rupees. The same thing is represented through below chart. The statically work related to mean, median and mode also found to understand its performance and consistency.

**Chart no.: 5.28. NBFCs**
Statically work

I) **Mean** (x) = \[ \frac{\text{Total Amt. of NBFCs}}{\text{Total No. of years}} \]

\[ = \frac{2355}{5} = 471 \text{lakhs Rs.} \]

**Mean(x)** = 471 lakhs Rs.

Mean is the most common terms and widely use measure of an average of the observing data.

\[ \text{ii) Median (M)} = \frac{n + 1}{2} = \frac{5+1}{2} \]

\[ = \frac{6}{2} = 3 \text{rd year’s data} \]

**Median (M)** = 744 lakhs Rs.

Median is defining as the middle value of the observation data.

(iii) **Mode** (Z):

Follow any one (1) condition

A) Highest Amount of Observation Data.

B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

**Mode (Z)** = 744 lakhs Rs.

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that SIDBI Distributed Fund in Gujarat for the Activity of NBFCs in the negative manner. The growth rate was decrees. i.e. 2006-07 to 2010-11 was -43.54 %. SIDBI should increase growth rate and maintain its performance.

**Table no.:5.21 Term loan**

<table>
<thead>
<tr>
<th>Years</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term loans</td>
<td>1392</td>
<td>2784</td>
<td>6672</td>
<td>10048</td>
<td>12435</td>
<td>30825</td>
</tr>
</tbody>
</table>

(Source: Annual Report SIDBI)
The above table shows that SIDBI assistance for the Term loans in the State of Gujarat of the last five years. The amount is shows in lakhs of rupees. The same thing is represented through below chart. The statically work related to mean, median and mode also found to understand its performance and consistency.

Chart no.:5.29. Term loan

<table>
<thead>
<tr>
<th>Years</th>
<th>Total Amt. of Term loan</th>
<th>Mean (x) = Total Amt. of Term loan / Total No. of years</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-07</td>
<td>1392</td>
<td>30825</td>
</tr>
<tr>
<td>2007-08</td>
<td>2784</td>
<td>6165 lakh</td>
</tr>
<tr>
<td>2008-09</td>
<td>6672</td>
<td>6672 lakh</td>
</tr>
<tr>
<td>2009-10</td>
<td>10048</td>
<td>10048 lakh</td>
</tr>
<tr>
<td>2010-11</td>
<td>12435</td>
<td>12435 lakh</td>
</tr>
</tbody>
</table>

Statically work

1) **Mean (x)** = \( \frac{\text{Total Amt. of Term loan}}{\text{Total No. of years}} \)

\[
\begin{align*}
\text{Mean (x)} & = \frac{30825}{5} \\
& = 6165 \text{ lakh Rs.} \\
\end{align*}
\]

Mean is the most common terms and widely use measure of an average of the observing data.

2) **Median (M)** = \( \frac{n + 1}{2} \) = \( \frac{5 + 1}{2} \) = \( \frac{6}{2} \) = 3rd year’s data

\[
\begin{align*}
\text{Median (M)} & = \frac{6}{2} \\
& = 3 \text{rd year’s data} \\
& = 6672 \text{ lakh Rs.} \\
\end{align*}
\]
Median is defining as the middle value of the observation data.

(iii) Mode (Z):

Follow any one (1) condition

A) Highest Amount of Observation Data.
B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

Mode (Z) = 12435 lakhs Rs.

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that SIDBI Distributed Fund in Gujarat for the Activity of Term Loan in the positive manner. The growth rate was increased. i.e. 2006-07 to 2010-11 was 785.71%. SIDBI should maintain its performance.

**Table no.: 5.22 Capacity Building Grant to MFIs.(CBGM)**

<table>
<thead>
<tr>
<th>Years</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBGM</td>
<td>80</td>
<td>28</td>
<td>49</td>
<td>36</td>
<td>125</td>
<td>318</td>
</tr>
</tbody>
</table>

(Source: Annual Report SIDBI)

The above table shows that SIDBI assistance for the Capacity Building grant to MFIs in the State of Gujarat of the last five years. The amount is shows in lakhs of rupees. The same thing is represented through below chart. The statically work related to mean, median and mode also found to understand its performance and consistency.
Statically work

I) Mean (x) = \frac{\text{Total Amt. of Capacity Building Grant to MFIs}}{\text{Total No. of years}}

\begin{align*}
\text{Mean (x)} &= \frac{318}{5} \\
&= 63.6 \text{ lakh Rs.}
\end{align*}

Mean is the most common terms and widely use measure of an average of the observing data.

ii) Median (M) = \frac{n+1}{2} = \frac{5+1}{2} = \frac{6}{2} = 3^{rd} \text{ year’s data}

\begin{align*}
\text{Median (M)} &= 49 \text{ lakhs Rs.} \\
\text{Median is defining as the middle value of the observation data.}
\end{align*}

(iii) Mode (Z):

Follow any one (1) condition

A) Highest Amount of Observation Data.
B) Max. Time Repeat Amount in Observation Data
Mode (Z) = 125 lakhs Rs.

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that SIDBI Distributed Fund in Gujarat for the Activity of Capacity Building Grant to MFIs in the positive manner. The growth rate was increased. i.e. 2006-07 to 2010-11 was 56.25%. SIDBI should maintain its performance.

**Table no. : 5.23 Risk Fund for Smaller MFIs**

<table>
<thead>
<tr>
<th>Years</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Fund for Smaller MFIs</td>
<td>14</td>
<td>28</td>
<td>49</td>
<td>18</td>
<td>89</td>
<td>198</td>
</tr>
</tbody>
</table>

(Source: Annual Report SIDBI)

The above table shows that SIDBI assistance for the Risk fund for smaller MFIs in the State of Gujarat of the last five years. The amount is shows in lakhs of rupees. The same thing is represented through below chart. The statically work related to mean, median and mode also found to understand its performance and consistency.

**Chart no. : 5.31. Risk Fund for Smaller MFIs**
Statically work

Total Amt. of Risk Fund for Smaller MFIs

I) **Mean (x)** = \[\frac{\text{Total Amt. of Risk Fund for Smaller MFIs}}{\text{Total No. of years}}\]

\[
\begin{align*}
198 &= \frac{\text{Total Amt. of Risk Fund for Smaller MFIs}}{198} \\
5 &= \frac{5}{198} \text{ Mean (x) = 36.9 lakhs Rs.}
\end{align*}
\]

Mean is the most common terms and widely use measure of an average of the observing data.

\[
\begin{align*}
\text{Median (M)} &= \frac{n + 1}{2} = \frac{5 + 1}{2} = \frac{6}{2} = 3 \text{rd year’s data}
\end{align*}
\]

\[\text{Median (M) = 49 lakhs Rs.}\]

Median is defining as the middle value of the observation data.

(iii) **Mode (Z)**:

Follow any one (1) condition

A) Highest Amount of Observation Data.

B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

\[\text{Mode (Z) = 89 lakhs Rs.}\]

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation**: From above Calculation of Mean, Median & Mode I could suggest that SIDBI Distributed Fund in Gujarat for the Activity of Risk Fund for smaller MFIs in the positive manner. The growth rate was increased. i.e. 2006-07 to 2010-11 800.00%. SIDBI should maintain its performance.

**Table no.:5.24. Beneficent Assisted through partner MFIs**

<table>
<thead>
<tr>
<th>Years</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beneficent Assisted</td>
<td>34</td>
<td>51</td>
<td>66</td>
<td>85</td>
<td>98</td>
<td>334</td>
</tr>
</tbody>
</table>

(Source: Annual Report SIDBI)
The above table shows that SIDBI assistance for the Risk fund for smaller MFIs in the State of Gujarat of the last five years. The amount is shown in lakhs of rupees. The same thing is represented through below chart. The statically work related to mean, median and mode also found to understand its performance and consistency.

Chart no.:5.32.Beneficent Assisted through partner MFIs

<table>
<thead>
<tr>
<th>Years</th>
<th>Total beneficent Assisted</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-07</td>
<td>34</td>
</tr>
<tr>
<td>2007-08</td>
<td>51</td>
</tr>
<tr>
<td>2008-09</td>
<td>66</td>
</tr>
<tr>
<td>2009-10</td>
<td>85</td>
</tr>
<tr>
<td>2010-11</td>
<td>98</td>
</tr>
</tbody>
</table>

Rs. in lac

Statically work

I) Mean (x) = \[
\frac{\text{Total beneficent Assisted}}{\text{Total No. of years}}\]

\[
= \frac{334}{5}
\]

Mean(x) = 66.8 lakhs Rs.
Mean is the most common terms and widely use measure of an average of the observing data.

ii) Median (M) = \[
\frac{n+1}{2} = \frac{5+1}{2} = \frac{6}{2} = 3^{rd} \text{ year’s data}
\]

Median (M) = 66 lakhs Rs.
Median is defining as the middle value of the observation data.
(iii) **Mode (Z):**

Follow any one (1) condition

A) Highest Figure of Observation Data.
B) Max. Time Repeat Figure in Observation Data

Here, in this case condition “A” Apply

**Mode (Z) = 98 lakhs Rs.**

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that SIDBI Distributed Fund in Gujarat for the Activity of Beneficent Assisted through partner MFIs in the positive manner. The growth rate was increased. i.e. 2006-07 to 2010-11 was 233.33%. SIDBI should maintain its performance.
Hypotheses Testing

- $H_0$ = SIDBI significantly distributes Microfinance through various schemes in Gujarat.
- $H_1$ = SIDBI does not significantly distributes Microfinance through various schemes in Gujarat.

Table no. 5.25 Combine table of SIDBI’s Assistance to Gujarat under various Schemes of Microfinance (Rs. In Crore)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Refinance</td>
<td>208</td>
<td>366</td>
<td>741</td>
<td>743</td>
<td>814</td>
</tr>
<tr>
<td>MSME Refinance</td>
<td>94</td>
<td>116</td>
<td>162</td>
<td>246</td>
<td>286</td>
</tr>
<tr>
<td>Micro credit</td>
<td>15</td>
<td>29</td>
<td>70</td>
<td>107</td>
<td>136</td>
</tr>
<tr>
<td>NBFCs</td>
<td>6.2</td>
<td>6.1</td>
<td>7.4</td>
<td>0.3</td>
<td>3.5</td>
</tr>
<tr>
<td>Term loan</td>
<td>14</td>
<td>27</td>
<td>67</td>
<td>100</td>
<td>124</td>
</tr>
<tr>
<td>Capacity Building grant to MFIs</td>
<td>0.8</td>
<td>0.2</td>
<td>0.5</td>
<td>0.4</td>
<td>1.2</td>
</tr>
<tr>
<td>Risk Fund for smaller MFIs</td>
<td>0.1</td>
<td>0.2</td>
<td>0.5</td>
<td>0.18</td>
<td>0.9</td>
</tr>
<tr>
<td>Beneficent Assisted through partner MFIs</td>
<td>0.3</td>
<td>0.5</td>
<td>0.6</td>
<td>0.8</td>
<td>1.0</td>
</tr>
<tr>
<td>Total</td>
<td>338.4</td>
<td>545</td>
<td>1049</td>
<td>1197.68</td>
<td>1366.6</td>
</tr>
</tbody>
</table>

(Source: Annual Report SIDBI)

The above Combine table SIDBI’s Assistance to the state of Gujarat under various Schemes of Microfinance of the last five years. The amount is shows in Crores of rupees. The statically work related to Mean, Median, Mode and for Hypotheses testing through t – test is calculated below to understand performance and consistency.

Statically work

1) **Mean** ($\bar{x}$) = \[
\frac{\text{Total Amount of Various Schemes}}{\text{Total No. of years}}
\]

\[
\begin{align*}
4496.68
\quad \frac{\bar{x}}{} &= \frac{\text{Total Amount of Various Schemes}}{5} \\
\end{align*}
\]
Mean(x) = 899.536 crore Rs.

Mean is the most common terms and widely use measure of an average of the observing data.

\[ \frac{n + 1}{2} = \frac{5 + 1}{2} = \frac{6}{2} = 3^{rd} \text{ year's Amount} \]

ii) Median (M) = \[ \frac{1049}{2} \]

Median (M) = 1049 crore Rs.

Median is defining as the middle value of the observation data.

(iii) Mode (Z):

Follow any one (1) condition

A) Highest Amount of Observation Data.

B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

Mode (Z) = 1366.6 crore Rs.

Mode is defining the value of the Variable which occurs most frequent in the observing data.

Hypotheses Testing

Here Observation is less then < 30 hence t- test is recommended

For, t – test µ value is necessary

In this case Mode (Z) value is recommended for µ value

Hypotheses:

\[ H_0 = \text{SIDBI significantly distributes Microfinance through various schemes in Gujarat.} \]

\[ H_0 = \mu = 1366.6 \]

\[ H_1 = \text{SIDBI does not significantly distributes Microfinance through various schemes in Gujarat.} \]

\[ H_1 = \mu \neq 1366.6 \]

<table>
<thead>
<tr>
<th>xi</th>
<th>( di = x_i - X(935) )</th>
<th>( di^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>338.4</td>
<td>-596.6</td>
<td>355216</td>
</tr>
<tr>
<td>726</td>
<td>-209</td>
<td>43681</td>
</tr>
<tr>
<td>1049</td>
<td>114</td>
<td>12996</td>
</tr>
<tr>
<td>1197.68</td>
<td>262.68</td>
<td>69000</td>
</tr>
<tr>
<td>1366.6</td>
<td>431.6</td>
<td>186278</td>
</tr>
</tbody>
</table>

\[ \sum x_i = 4677.68 \]

\[ \sum di = 2.68 \]

\[ \sum di^2 = 667171 \]
\[ x = \frac{\sum x_i}{n} = \frac{4677.68}{5} = 935.63 \]

For, t-test standard deviation (S) is to be find through following formula

\[
S^2 = \frac{1}{n} \left\{ \sum d_i^2 - \frac{(\sum d_i)^2}{n} \right\}
\]

\[
S^2 = \frac{1}{5} \left\{ 667171 - \frac{(2.68)^2}{5} \right\}
\]

\[
S^2 = \frac{667169.56}{5} = \frac{133433.9}{S^2} = 365.28
\]

Now, t-test formula

\[
t = \frac{|x - \mu|}{S} \frac{n-1}{\sqrt{5-1}} = \frac{|935.63 - 1366.6|}{365.28} = \frac{430.97 \times 2}{365.28}
\]

\[ t = 2.3596 \]

degree of freedom (d.f.) = n-1 = 5-1 = 4

5% level of significant st 4 d.f.= 2.776

\[
t -\text{Calculation} < t -\text{table}
\]

2.3596 < 2.776

\[
t -\text{Calculation value is less then t- table value}
\]

(t- table value is taken from statistic table of t-Distribution)

Hence, \( H_0 = \) is Accepted

\[ H_0 = \mu = 1366.6 \]

**Result of Hypotheses Testing**

\( H_0 = \) SIDBI significantly distributes Microfinance through various schemes in Gujarat.
INTRA-COMPARISON SELF EMPLOYED WOMEN’S ASSOCIATION’s (SEWA) ACTIVITIES.

5.7 Sewa’s Trade-wise memberships in Gujarat

SEWA is providing various facilities such as first are Employment Generated through Waste Paper-Pickers, Manual Laborers and Home-based workers. It include activity such as New Employment generated, Helped women regain work, Increase in price of waste, Government assistance, New Employment generate, Assistance to regain work that had been stopped or lost, Wage increases, Welfare assistance, Bonus, New employment generated, and Wage increases. Second is Loans through SEWA Bank for the purpose of To purchase equipment required for work, To purchase stock of raw material for the goods and To purchase sheds and the third is VIMO SEWA or Claims paid Health Insurance, Maternity, Asset (Flood), Natural Death and Accidental Death. All this activities individually compared on the basis of its last five years working. Chart and statically tool mean, mode and median also find out to know the performance. Table wise interpretation is given for the betterment of the Activity. Then after all the activities intra compare for the hypothesis testing.

Table no.: 5.26 Trade-wise memberships in Gujarat (No. of women)

<table>
<thead>
<tr>
<th>Main Categories of workers</th>
<th>06-07</th>
<th>07-08</th>
<th>08-09</th>
<th>09-10</th>
<th>11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Laborers</td>
<td>254110</td>
<td>329507</td>
<td>361386</td>
<td>411074</td>
<td>454134</td>
</tr>
<tr>
<td>and Service Providers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home based worker</td>
<td>84704</td>
<td>86962</td>
<td>120462</td>
<td>137024</td>
<td>151378</td>
</tr>
<tr>
<td>Street vendors</td>
<td>50821</td>
<td>57010</td>
<td>72277</td>
<td>82214</td>
<td>90828</td>
</tr>
<tr>
<td>Small Producers</td>
<td>33881</td>
<td>45830</td>
<td>48185</td>
<td>54811</td>
<td>60551</td>
</tr>
<tr>
<td>Total</td>
<td>423516</td>
<td>519309</td>
<td>602310</td>
<td>685123</td>
<td>756891</td>
</tr>
</tbody>
</table>

(Source: Annual Report SEWA)
The above table shows that Sewa’s trade wise membership in the state of Gujarat of the last five years. Same thing is represented through Chart below. The statically work related to Mean, Median, and Mode is calculated to understand performance of it.

**Chart no. : 5.33. Trade-wise memberships in Gujarat**

<table>
<thead>
<tr>
<th>Years</th>
<th>Home based worker</th>
<th>Street vendors</th>
<th>Small Producers</th>
<th>Manual Laborers and Service Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-12</td>
<td>120000</td>
<td>50000</td>
<td>350000</td>
<td>100000</td>
</tr>
<tr>
<td>2009-10</td>
<td>110000</td>
<td>40000</td>
<td>300000</td>
<td>90000</td>
</tr>
<tr>
<td>2008-09</td>
<td>100000</td>
<td>30000</td>
<td>250000</td>
<td>80000</td>
</tr>
<tr>
<td>2007-08</td>
<td>90000</td>
<td>20000</td>
<td>200000</td>
<td>70000</td>
</tr>
<tr>
<td>2006-07</td>
<td>80000</td>
<td>10000</td>
<td>150000</td>
<td>60000</td>
</tr>
</tbody>
</table>

Statically work

1) **Mean (x) = \( \frac{\text{Total of Trade-wise membership in Gujarat}}{\text{Total No. of years}} \)**

\[
\text{Mean (x)} = \frac{2467840}{5} = 493568 \\
\text{Mean (x)} = 616960
\]

Mean is the most common terms and widely use measure of an average of the observing data.

2) **Median (M) = \( \frac{n + 1}{2} \) = \( \frac{5+1}{2} \) = \( \frac{6}{2} \) = 3rd year’s data**

\[
\text{Median (M)} = \frac{6}{2} = 3 \text{rd year’s data}
\]

**Median (M) = 602310**

Median is defining as the middle value of the observation data.
(iii) **Mode (Z):**
Follow any one (1) condition
   A) Highest figure of Observation Data.
   B) Max. Time Repeat figure in Observation Data
Here, in this case condition “A” Apply

**Mode (Z) = 756891**

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that SEWA’S Trade-wise memberships in Gujarat was increased in positive manner. The growth rate was increased. i.e. 2006-07 to 2010-11 78.71 %. Sewa should maintain it.


**Table no.: 5.27. Waste Paper-Pickers Campaign**

<table>
<thead>
<tr>
<th>Particulars</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2011-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Employment generated</td>
<td>2958612</td>
<td>3446500</td>
<td>3745189</td>
<td>3889546</td>
<td>4578967</td>
</tr>
<tr>
<td>Helped women regain work</td>
<td>269785</td>
<td>300000</td>
<td>311589</td>
<td>356821</td>
<td>402361</td>
</tr>
<tr>
<td>Increase in price of waste</td>
<td>69000</td>
<td>72000</td>
<td>76000</td>
<td>81000</td>
<td>86000</td>
</tr>
<tr>
<td>Government assistance</td>
<td>456231</td>
<td>525540</td>
<td>569345</td>
<td>598215</td>
<td>635421</td>
</tr>
<tr>
<td>Total (Rs.)</td>
<td>3753628</td>
<td>4344040</td>
<td>4702123</td>
<td>4925582</td>
<td>5702749</td>
</tr>
</tbody>
</table>

(Source: Annual Report SEWA)

The above table shows that Sewa’s Waste Paper-Pickers Campaign in the state of Gujarat of the last five years. Same thing is represented through Chart below. The statically work related to Mean, Median, and Mode is done to understand performance of it.
Statically work

1) **Mean (x)** = \[
\frac{\text{Total Amt. of Waste Paper-Pickers}}{\text{Total No. of years}}
\]

\[
\frac{23428122}{5} = 4685624 \text{ Rs.}
\]

Mean is the most common terms and widely used measure of an average of the observing data.

2) **Median (M)**

\[
\text{Median (M)} = \left( \frac{n + 1}{2} \right) \text{th year's data}
\]

\[
\text{Median (M)} = \frac{5 + 1}{2} = \frac{6}{2} = 3^{rd} \text{ year's data}
\]

Median is defining as the middle value of the observation data.

3) **Mode (Z)**

Follow any one (1) condition

A) Highest Amount of Observation Data.
B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

\[
\text{Mode (Z)} = 5702749 \text{ Rs.}
\]

Mode is defining the value of the Variable which occurs most frequent in the observing data.
**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that SEWA Employment Generated in Gujarat through Waste Paper-Pickers activity in the positive manner. The growth rate was increased. i.e. 2006-07 to 2010-11 was 51.92%. SEWA should maintain it.

**Table no. : 5.28. Manual Laborers’ Livelihood Campaign**

<table>
<thead>
<tr>
<th>Particulars</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2011-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Employment generate</td>
<td>645700</td>
<td>761800</td>
<td>812000</td>
<td>879000</td>
<td>932000</td>
</tr>
<tr>
<td>Assistance to regain work that had been</td>
<td>3600000</td>
<td>4700000</td>
<td>5500000</td>
<td>6100000</td>
<td>6700000</td>
</tr>
<tr>
<td>stopped or lost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wage increases</td>
<td>26758000</td>
<td>31551000</td>
<td>38545000</td>
<td>41256000</td>
<td>46512000</td>
</tr>
<tr>
<td>Welfare assistance</td>
<td>2420000</td>
<td>2610000</td>
<td>2950000</td>
<td>3245000</td>
<td>3654000</td>
</tr>
<tr>
<td>Bonus</td>
<td>656000</td>
<td>761000</td>
<td>798000</td>
<td>835000</td>
<td>932000</td>
</tr>
<tr>
<td>Total (Rs.)</td>
<td>34079700</td>
<td>40383800</td>
<td>48605000</td>
<td>52315000</td>
<td>58730000</td>
</tr>
</tbody>
</table>

(Source: Annual Report SEWA)

The above table shows that Sewa’s Manual Laborers’ Livelihood Campaign in the state of Gujarat of the last five years. Same thing is represented through Chart below. The statically work related to Mean, Median, and Mode is done to understand performance of it.

**Chart no. : 5.35. Manual Laborers’ Livelihood Campaign**
Statically work

I) **Mean (x)** = \[ \frac{\text{Total Amt. of Manual Laborers}}{\text{Total No. of years}} \]

\[
\frac{234113500}{5}
\]

\[\text{Mean(x)} = 46822700 \text{ Rs.}\]

Mean is the most common terms and widely use measure of an average of the observing data.

\[
\text{ii) Median (M)} = \frac{n + 1}{2} = \frac{5+1}{2} = \frac{6}{2} = 3^{rd} \text{ year’s data}
\]

\[\text{Median (M)} = 48605000 \text{ Rs.}\]

Median is defining as the middle value of the observation data.

(iii) **Mode (Z)**:

Follow any one (1) condition

A) Highest Amount of Observation Data.

B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

\[\text{Mode (Z)} = 58730000 \text{ Rs.}\]

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that SEWA Employment Generated in Gujarat through Manual Laborers’ Livelihood Campaign activity in the positive manner. The growth rate was increased. i.e. 2006-07 to 2010-11 was 72.33 %. SEWA should maintain it try to increase it.
Table no.: 5.29 Home-based workers

<table>
<thead>
<tr>
<th>Particulars</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2011-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>New employment generated</td>
<td>5896000</td>
<td>6350000</td>
<td>6875000</td>
<td>7245000</td>
<td>7768000</td>
</tr>
<tr>
<td>Wage increases</td>
<td>1324000</td>
<td>1621000</td>
<td>1875000</td>
<td>2031000</td>
<td>2356000</td>
</tr>
<tr>
<td>Bonuses</td>
<td>140000</td>
<td>150000</td>
<td>586000</td>
<td>657000</td>
<td>785000</td>
</tr>
<tr>
<td>Total (Rs.)</td>
<td>7360000</td>
<td>8121000</td>
<td>9336000</td>
<td>9933000</td>
<td>10909000</td>
</tr>
</tbody>
</table>

(Source: Annual Report SEWA)

The above table shows that Sewa’s Home based workers in the state of Gujarat of the last five years. Same thing is represented through Chart below. The statically work related to Mean, Median, and Mode is done to understand performance of it.

Chart no.: 5.36. Home-based workers
Statically work

Total Amt. of Home-based workers

I) **Mean (x)** = \[ \frac{\text{Total Amt. of Home-based workers}}{\text{Total No. of years}} \]

\[ \frac{45659000}{5} = 9131800 \text{ Rs.} \]

Mean is the most common terms and widely use measure of an average of the observing data.

\[ \text{Mean (x)} = 9131800 \text{ Rs.} \]

ii) **Median (M)** = \[ \frac{n + 1}{2} = \frac{5 + 1}{2} = \frac{6}{2} = 3^{rd} \text{ year’s data} \]

\[ \text{Median (M)} = 9336000 \text{ Rs.} \]

Median is defining as the middle value of the observation data.

(iii) **Mode (Z)**:

Follow any one (1) condition

- A) Highest Amount of Observation Data.
- B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

\[ \text{Mode (Z)} = 10909000 \text{ Rs.} \]

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that SEWA Employment Generated in Gujarat through Home-based workers activity in the positive manner. The growth rate was increased. i.e. 2006-07 to 2010-11 was 48.22 %. SEWA should maintain it.
**Hypotheses Testing**

- $H_0$ = SEWA Significantly Generated Employment through Various Activities in Gujarat.
- $H_1$ = SEWA does not Significantly Generated Employment through Various Activities in Gujarat.

**Table no. 5.30. Combine table of Employment Generated through Waste Paper-Pickers, Manual Laborers and Home-based workers**

(Rs in lakhs)

<table>
<thead>
<tr>
<th>Particulars</th>
<th>06-07</th>
<th>07-08</th>
<th>08-09</th>
<th>09-10</th>
<th>11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Employment generated</td>
<td>29.58</td>
<td>34.46</td>
<td>37.45</td>
<td>38.89</td>
<td>45.78</td>
</tr>
<tr>
<td>Helped women regain work</td>
<td>2.69</td>
<td>3.00</td>
<td>3.11</td>
<td>3.56</td>
<td>4.02</td>
</tr>
<tr>
<td>Increase in price of waste</td>
<td>0.69</td>
<td>0.72</td>
<td>0.76</td>
<td>0.81</td>
<td>0.86</td>
</tr>
<tr>
<td>Government assistance</td>
<td>4.56</td>
<td>5.25</td>
<td>5.69</td>
<td>5.98</td>
<td>6.35</td>
</tr>
<tr>
<td>New Employment generate</td>
<td>6.45</td>
<td>7.618</td>
<td>8.12</td>
<td>8.79</td>
<td>9.32</td>
</tr>
<tr>
<td>Assistance to regain work that had been stopped or lost</td>
<td>36.00</td>
<td>47.00</td>
<td>55.00</td>
<td>61.00</td>
<td>67.00</td>
</tr>
<tr>
<td>Wage increases</td>
<td>267.58</td>
<td>315.51</td>
<td>385.45</td>
<td>412.56</td>
<td>465.12</td>
</tr>
<tr>
<td>Welfare assistance</td>
<td>24.20</td>
<td>26.10</td>
<td>29.50</td>
<td>32.45</td>
<td>36.54</td>
</tr>
<tr>
<td>Bonus</td>
<td>6.56</td>
<td>7.61</td>
<td>7.98</td>
<td>8.35</td>
<td>9.32</td>
</tr>
<tr>
<td>New employment generated</td>
<td>58.96</td>
<td>63.50</td>
<td>68.75</td>
<td>72.45</td>
<td>77.68</td>
</tr>
<tr>
<td>Wage increases</td>
<td>13.24</td>
<td>16.21</td>
<td>18.75</td>
<td>20.31</td>
<td>23.56</td>
</tr>
<tr>
<td>Bonuses</td>
<td>1.40</td>
<td>1.50</td>
<td>5.86</td>
<td>6.57</td>
<td>7.85</td>
</tr>
<tr>
<td>Total</td>
<td>451.91</td>
<td>528.478</td>
<td>626.42</td>
<td>671.72</td>
<td>753.4</td>
</tr>
</tbody>
</table>

(Source: Annual Report SEWA)
The above Combine study contents Employment Generated through Waste Paper-Pickers, Manual Laborers and Home-based workers of the last five years. The statically work related to Mean, Median, Mode and for Hypothesis testing, t-test is calculated below to understand performance of it.

Statically work

Total Amount of Employment Generated

I) Mean $(x) = \frac{\text{Total No. of years}}{3031.928} \div 5 = 606.3856 \text{ lakhs Rs.}

Mean is the most common terms and widely use measure of an average of the observing data.

\[
\text{Mean} = \frac{n + 1}{2} = \frac{5+1}{2} = \frac{6}{2} = 3^{rd} \text{ year’s Amount}
\]

\[
\text{Median} (M) = 626.42 \text{ lakhs Rs.}
\]

Median is defining as the middle value of the observation data.

(iii) Mode $(Z)$:

Follow any one (1) condition

A) Highest Amount of Observation Data.
B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

\[
\text{Mode} (Z) = 753.4 \text{ lakhs Rs.}
\]

Mode is defining the value of the Variable which occurs most frequent in the observing data.

Hypothesis Testing

Here, Observation is less then < 30 hence t- test is Recommended

For, t -test standard deviation $(S)$ is to be find through following formula

For, t – test $\mu$ value is necessary
Hypotheses:
$H_0 = \text{SEWA Significantly Generated Employment through Various Activities in Gujarat.}$

$H_0 = \mu = 753.4$

$H_1 = \text{SEWA does not Significantly Generated Employment through Various Activities in Gujarat.}$

$H_1 = \mu \neq 753.4$

<table>
<thead>
<tr>
<th>$x_i$</th>
<th>$d_i = x_i - (606.38)$</th>
<th>$d_i^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>451.91</td>
<td>-154.09</td>
<td>23743</td>
</tr>
<tr>
<td>528.47</td>
<td>-77.53</td>
<td>6010</td>
</tr>
<tr>
<td>626.42</td>
<td>20.42</td>
<td>417</td>
</tr>
<tr>
<td>671.72</td>
<td>65.72</td>
<td>4319</td>
</tr>
<tr>
<td>753.4</td>
<td>147.4</td>
<td>21726</td>
</tr>
</tbody>
</table>

$\sum x_i = 3031.9 \quad \sum d_i = 1.92 \quad \sum d_i^2 = 56215$

$$x = \frac{\sum x_i}{n} = \frac{3031.9}{5} = 606.38$$

In this case Mode (Z) value is recommended for $\mu$ value

$$S^2 = \frac{1}{n} \left\{ \sum d_i^2 - \frac{(\sum d_i)^2}{n} \right\}$$

$$S^2 = \frac{1}{5} \left\{ 56215 - \frac{(1.92)^2}{5} \right\}$$

$$S^2 = 56214.26, \quad S^2 = 11242.85, \quad S = 106.32$$

Now, t-test formula

$$t = \frac{|x - \mu|}{S} n-1 \quad \frac{|606.38 - 753.4|}{106.32} \quad \frac{147.02 \times 2}{106.32} = \frac{147.02 \times 2}{106.32}$$
\[ t = 2.7656 \]

degree of freedom (d.f.) = n-1 = 5-1 = 4

5% level of significant st 4 d.f. = 2.7656

t -Calculation < t - table
\[ 2.7656 < 2.776 \]

t –Calculation value is less then t - table value
(t- table value is taken from statistic table of t -Distribution )

Hence, \( H_0 = \) is Accepted
\( H_0 = \mu = 753.4 \)

Result of Hypotheses Testing

\( H_0 = \) SEWA Significantly Generated Employment through Various Activities in Gujarat.

5.9 Sewa’s Training

Table: 5.31 Sewa’s Training

<table>
<thead>
<tr>
<th>Particulars</th>
<th>06-07</th>
<th>07-08</th>
<th>08-09</th>
<th>09-10</th>
<th>11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member’s Education</td>
<td>756</td>
<td>827</td>
<td>889</td>
<td>965</td>
<td>1023</td>
</tr>
<tr>
<td>Management Training</td>
<td>154</td>
<td>181</td>
<td>198</td>
<td>212</td>
<td>289</td>
</tr>
<tr>
<td>(including management development, business plan)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketing Training</td>
<td>25</td>
<td>32</td>
<td>56</td>
<td>89</td>
<td>102</td>
</tr>
<tr>
<td>Technical Training</td>
<td>84</td>
<td>125</td>
<td>158</td>
<td>204</td>
<td>281</td>
</tr>
<tr>
<td>(including on house-keeping, catering)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skill up gradation</td>
<td>35</td>
<td>50</td>
<td>95</td>
<td>109</td>
<td>152</td>
</tr>
<tr>
<td>(garment workers, computers)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1054</td>
<td>1215</td>
<td>1396</td>
<td>1579</td>
<td>1847</td>
</tr>
</tbody>
</table>

(Source: Annual Report SEWA)
The above table shows that Sewa’s training activity in different areas for the state of Gujarat of the last five years. The figures shows number of women benefited through this activity. The statically work related to Mean, Median, and Mode is done to understand performance of it.

Statically work

\[ \text{Total Training to Women} = \frac{\text{Total No. of years}}{\text{7091}} \]

Mean (x) = \[ \frac{1418}{5} = 283.6 \]

Mean is the most common terms and widely use measure of an average of the observing data.

\[ \text{Median (M)} = \frac{5+1}{2} = \frac{6}{2} = 3 \]

Median (M) = 1396

Median is defining as the middle value of the observation data.

(iii) Mode (Z):

Follow any one (1) condition

A) Highest Figure of Observation Data.
B) Max. Time Repeat figure in Observation Data

Here, in this case condition “A” Apply

Mode (Z) = 1847

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that SEWA provided training in Gujarat to a good No. of women’s in the positive manner. The growth rate of training members was increased. i.e. 2006-07 to 2010-11 was 63.63%. SEWA should maintain training activity.
5.10 Sewa Bank Hypotheses Testing

- $H_0$ = SEWA significantly distributes Loans through SEWA Bank in Gujarat.
- $H_1$ = SEWA does not significantly distribute Loans through SEWA Bank in Gujarat.

Table no.: 5.32 Loans through SEWA Bank (Rs. In lakhs)

<table>
<thead>
<tr>
<th>Reason for loan</th>
<th>Years</th>
<th>06-07</th>
<th>07-08</th>
<th>08-09</th>
<th>09-10</th>
<th>11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>To purchase equipment required for work</td>
<td></td>
<td>97.85</td>
<td>108.28</td>
<td>115.68</td>
<td>136.58</td>
<td>153.25</td>
</tr>
<tr>
<td>To purchase stock of raw material for the goods</td>
<td></td>
<td>547.89</td>
<td>601.30</td>
<td>641.45</td>
<td>668.92</td>
<td>693.65</td>
</tr>
<tr>
<td>To purchase sheds</td>
<td></td>
<td>563.57</td>
<td>607.45</td>
<td>638.52</td>
<td>659.51</td>
<td>673.24</td>
</tr>
<tr>
<td>Total Amount (Rs.)</td>
<td></td>
<td>1209.31</td>
<td>1317.03</td>
<td>1395.65</td>
<td>1465.01</td>
<td>1520.14</td>
</tr>
</tbody>
</table>

(Source: Annual Report SEWA)

The above table shows that the loan distributed by Sewa for various purpose in the state of Gujarat of the last five years. The figures indicate rupees in lakhs. The same thing is represented through chart below. The statically work related to mean, median, mode and for Hypothesis testing t-test is calculated below to understand performance of it.

Chart no.: 5.37. Loans through SEWA Bank
Statically work

I) **Mean (x)** = \[ \frac{\text{Total Amt. of Loans}}{\text{Total No. of years}} \]

\[ = \frac{6907.14}{5} \]

**Mean(x) = 1381.428 lakhs Rs.**

Mean is the most common terms and widely use measure of an average of the observing data.

\[ \text{Median (M)} = \frac{n + 1}{2} = \frac{5 + 1}{2} = \frac{6}{2} = 3^{\text{rd}} \text{ year’s data} \]

**Median (M) = 1395.65 lakh Rs.**

Median is defining as the middle value of the observation data.

(iii) **Mode (Z):**

Follow any one (1) condition

A) Highest Amount of Observation Data.

B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

**Mode (Z) = 1520.14 lakhs Rs.**

Mode is defining the value of the Variable which occurs most frequent in the observing data.
Hypotheses Testing

Here, Observation is less than 30 hence t-test is Recommended
For, t-test µ value is necessary
In this case Mode (Z) value is recommended for µ value

Hypotheses

H₀ = SEWA significantly distributes Loans through SEWA Bank in Gujarat.
H₀ = µ = 1520.14

H₁ = SEWA does not significantly distribute Loans through SEWA Bank in Gujarat.
H₁ = µ ≠ 1520.14

<table>
<thead>
<tr>
<th>xi</th>
<th>di = xi - x (1381)</th>
<th>di²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1209.31</td>
<td>-171.69</td>
<td>29477</td>
</tr>
<tr>
<td>1317.03</td>
<td>-63.97</td>
<td>4092</td>
</tr>
<tr>
<td>1395.65</td>
<td>14.65</td>
<td>214</td>
</tr>
<tr>
<td>1465.01</td>
<td>84.01</td>
<td>7056</td>
</tr>
<tr>
<td>1520.14</td>
<td>139.14</td>
<td>19359</td>
</tr>
</tbody>
</table>

\[ \sum x i = 6907.14 \]
\[ \sum di = 3.79 \]
\[ \sum di^2 = 60198 \]

\[ x = \frac{\sum x i}{n} = \frac{6907.14}{5} = 1381.428 \]

For, t-test standard deviation (S) is to be find through following formula

\[ S^2 = \frac{1}{n} \left\{ \sum di^2 - \frac{(\sum di)^2}{n} \right\} \]

\[ S^2 = \frac{1}{5} \left\{ 60198 - \frac{(3.79)^2}{5} \right\} \]
Now, t-test formula

\[
| x - \mu | \frac{n-1}{S} = \frac{|1381.43 - 1520.14|}{109.72} = \frac{138.71 \times 2}{109.72} = 2.5284
\]

degree of freedom (d.f.) = n-1 = 5-1 = 4

5% level of significant st 4 d.f. = 2.776

t -Calculation < t - table
2.5284 < 2.776

t –Calculation value is less then t- table value

(t- table value is taken from statistic table of t -Distribution )

Hence, \( H_0 \) is Accepted
\( H_0 = \mu = 1520.14 \)

**Result of Hypostases Testing**

\( H_0 = \text{SEWA significantly distributes Loans through SEWA Bank in Gujarat.} \)
5.11 Sewa Insurance Hypotheses Testing

- $H_0 =$ SEWA has significantly paid insurance claimed to the Micro client in Gujarat.
- $H_1 =$ SEWA has not significantly paid insurance claimed to the Micro client in Gujarat.

Table no.: 5.33 VIMO SEWA Claims paid (Rs. In lakhs)

<table>
<thead>
<tr>
<th>Particulars</th>
<th>06-07</th>
<th>07-08</th>
<th>08-09</th>
<th>09-10</th>
<th>10-11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Insurance</td>
<td>86.56</td>
<td>97.41</td>
<td>108.87</td>
<td>114.54</td>
<td>119.58</td>
</tr>
<tr>
<td>Maternity</td>
<td>0.12</td>
<td>0.13</td>
<td>0.14</td>
<td>0.15</td>
<td>0.25</td>
</tr>
<tr>
<td>Asset (Flood)</td>
<td>3.45</td>
<td>6.12</td>
<td>5.89</td>
<td>6.84</td>
<td>3.48</td>
</tr>
<tr>
<td>Natural Death</td>
<td>29.00</td>
<td>33.00</td>
<td>36.00</td>
<td>40.00</td>
<td>44.00</td>
</tr>
<tr>
<td>Accidental Death</td>
<td>5.04</td>
<td>5.27</td>
<td>5.69</td>
<td>5.93</td>
<td>6.35</td>
</tr>
<tr>
<td>Total (Rs.)</td>
<td>124.17</td>
<td>141.93</td>
<td>156.59</td>
<td>167.46</td>
<td>173.66</td>
</tr>
</tbody>
</table>

(Source: Annual Report SEWA)

The above table shows that the claims paid by vimo sewa for various purpose in the state of Gujarat of the last five years. The figures indicate rupees in lakhs. The same thing is represented through chart below. The statically work related to Mean, Median, Mode and for Hypothesis testing t – test is calculated below to understand performance of it.

Chart no.: 5.38. VIMO SEWA Claims paid (Insurance)
Statically work

Total Amt. of Claims paid

I) Mean (x) = \[
\begin{array}{c}
\text{Total No. of years} \\
763.81
\end{array}
\]

\[
= \frac{763.81}{5}
\]

\[
\text{Mean(x)} = 152.762 \text{ lakhs Rs.}
\]

Mean is the most common terms and widely use measure of an average of the observing data.

\[
\frac{n + 1}{2} = \frac{5+1}{2} = \frac{6}{2} = 3^{rd} \text{ year’s data}
\]

ii) Median (M) = 156.59 lakhs Rs.

Median is defining as the middle value of the observation data.

(iii) Mode (Z):

Follow any one (1) condition

A) Highest Amount of Observation Data.

B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

Mode (Z) = 173.66 lakhs Rs.

Mode is defining the value of the Variable which occurs most frequent in the observing data.

Hypotheses Testing

Here, Observation is less then < 30 hence t- test is recommended

For, t – test \( \mu \) value is necessary

In this case Mode (Z) value is recommended for \( \mu \) value
Hypotheses

$H_0 =$ SEWA has significantly paid insurance claimed to the Micro client in Gujarat.
$H_0 = \mu = 173.66$

$H_1 =$ SEWA has not significantly paid insurance claimed to the Micro client in Gujarat.
$H_1 = \mu \neq 173.66$

<table>
<thead>
<tr>
<th>xi</th>
<th>di = xi -x (152.76)</th>
<th>di²</th>
</tr>
</thead>
<tbody>
<tr>
<td>124.17</td>
<td>28.59</td>
<td>817.38</td>
</tr>
<tr>
<td>141.93</td>
<td>10.83</td>
<td>117.28</td>
</tr>
<tr>
<td>156.59</td>
<td>3.83</td>
<td>14.66</td>
</tr>
<tr>
<td>167.46</td>
<td>14.7</td>
<td>216.09</td>
</tr>
<tr>
<td>173.66</td>
<td>20.94</td>
<td>438.48</td>
</tr>
</tbody>
</table>

$\sum x_i = 763.81$  $\sum di = 78.89$  $\sum di^2 = 1603.89$

$\overline{x} = \frac{\sum x_i}{n} = \frac{763.81}{5} = 152.76$

For, t-test standard deviation $(S)$ is to be find through following formula

$S^2 = \frac{1}{n} \left( \sum di^2 - \frac{(\sum di)^2}{n} \right)$

$S^2 = \frac{1}{5} \left( 1603.89 - \frac{(78.89)^2}{5} \right)$

$S^2 = \frac{359.16}{5} = 71.83, \quad S = 8.47$

Now, t-test formula

$t = \frac{|x - \mu| - n}{\sum di} = \frac{152.76 - 173.66}{5} = \frac{20.90 \times 2}{8.47} = 8.47$
\[ t = 4.9350 \]

degree of freedom (d.f.) = \( n-1 = 5-1 = 4 \)

5% level of significant st 4 d.f. = 2.776

t -Calculation \(<\ t-\) table

\[
4.9350 \ < \ 2.776
\]

t –Calculation value is greater then t- table value
(t- table value is taken from statistic table of t -Distribution)

Hence, \( H_0 \) is Rejected

\[ H_1 = \mu \neq 173.66 \]

**Result of Hypotheses Testing**

\[ H_1 \text{ = SEWA does not significantly paid insurance claimed to the Micro- client in Gujarat.} \]
INTRA-COMPARISON OF TRIBHUVANDAS FOUNDATION’S (TF) ACTIVITIES.

Tribhuvandas Foundation provides facilities to No. Beneficial through various Activities. Activities are Urine Pregnancy Tests done for Maternal health care in villages, New pregnancies registered, Total deliveries registered, Lactating mothers provided counseling, Family planning services provided in field, Disposable Delivery Kit Unit to beneficial, Child health care, Newborn put on KMC facilities, Persons contacted for Cancer awareness, Persons motivated for de-addiction from cancer, Cancer patients followed in field, Patients completed treatment of Cancer, Cancer diagnosis camps attended by patients, OPD patients, Sonography Tests, Immunization, Family Planning operations, Distribution of Nirodh to beneficial, Copper-T inserted, Distribution of contraceptive tablets to beneficial, Beneficial Children’s from Balwadies. All this activities individually compared on the basis of its last five years working. Chart and statically tool mean, mode and median also find out to know the performance. Table wise intapretation is given for the betterment of the Activity. Here correlation find out for memberships fee ADS Contribution and TF income and TF expenses. Then after all the activities intra compare for the hypothesis testing.

5.12 TF Membership Fees

**Table no.: 5.34 Membership Fees collected in TF**

<table>
<thead>
<tr>
<th>Years</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fees (Rs.)</td>
<td>2170807</td>
<td>1325967</td>
<td>1164365</td>
<td>1232489</td>
<td>1626563</td>
<td>7520191</td>
</tr>
</tbody>
</table>

(Source: Annual report of T.F.)

The above table shows that the Membership fees collected by TF in the state of Gujarat of the last five years. The figures indicate rupees. The
same thing is represented through chart as below. The statically work related

to Mean, Median and Mode is calculated to understand performance of it.

**Chart no.: 5.39. Membership Fees collected in TF**

![Chart](chart.png)

Statically work

I) **Mean** \((x) = \frac{\text{Total Amount of Membership Fees}}{\text{Total No. of years}}\)

\[
\frac{7520191}{5} = 1504038.2 \text{ Rs.}
\]

 Mean is the most common terms and widely use measure of an

average of the observing data.

ii) **Median** \((M) = \frac{n + 1}{2} = \frac{5+1}{2} = \frac{6}{2} = 3^{rd} \text{ year’s Amount}\)

\[
\text{Median} (M) = 1164365 \text{ Rs.}
\]

Median is defining as the middle value of the observation data.

(iii) **Mode** \((Z)\):

Follow any one (1) condition

A) Highest Amount of Observation Data.

B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply
Mode \( (Z) = 1626563 \text{Rs.} \)

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that TF Collected Fund in Gujarat through a Membership Fees in the negative manner. The growth rate of collection was decreased. i.e. 2006-07 to 2010-11 was -25.07 \%. TF should increase collections of fees.

### 5.13 TF Anand Dairy Societies (ADS) Contributions

**Table no. : 5.35 Anand Dairy Societies (ADS) Contributions in TF**

<table>
<thead>
<tr>
<th>Year</th>
<th>06-07</th>
<th>07-08</th>
<th>08-09</th>
<th>09-10</th>
<th>10-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADS contribution (Rs.)</td>
<td>2410000</td>
<td>2280000</td>
<td>2280000</td>
<td>2145051</td>
<td>2133000</td>
<td>11248051</td>
</tr>
</tbody>
</table>

(Source: Annual Report from T. F.)

The above table shows that the Anand dairy societies contribution in TF for the state of Gujarat of the last five years. The figures indicate rupees. The same thing is represented through chart as below. The statically work related to mean, median and mode is calculated to understand performance of it.

**Chart no. : 5.40. Anand Dairy Societies (ADS) Contributions in TF**

![Chart showing contributions over years]

Rs.
Statically work

Total Amount of Anand Dairy Society Contributions

I) Mean (x) = \frac{\text{Total Amount of Anand Dairy Society Contributions}}{\text{Total No. of years}}

\begin{align*}
\text{Mean} (x) &= \frac{11248051}{5} \\
&= 2249610.2 \text{ Rs.}
\end{align*}

Mean is the most common terms and widely use measure of an average of the observing data.

\begin{align*}
\text{ii) Median (M)} &= \frac{n + 1}{2} = \frac{5+1}{2} = \frac{6}{2} = 3^\text{rd} \text{ year’s Amount} \\
\text{Median (M)} &= 2280000 \text{ Rs.}
\end{align*}

Median is defining as the middle value of the observation data.

(iii) Mode (Z):

Follow any one (1) condition

A) Highest Amount of Observation Data.

B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

\begin{align*}
\text{Mode (Z)} &= 2133000 \text{ Rs.}
\end{align*}

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that TF Collected Fund in Gujarat through an Anand Dairy Society Contribution in the Negative manner. The growth rate of collection was decreased. i.e. 2006-07 to 2010-11 was -11.49 %. TF should improve & Try to increase its collection from ADS.

**Co-relation between Membership fee and ADS contribution**

Table no.: 5.36 Co-relation between Membership fees and ADS Contributions
No. | Particular               | 06-07   | 07-08   | 08-09   | 09-10   | 10-11   
--- |-------------------------|---------|---------|---------|---------|---------
X   | Membership fees         | 2170807 | 1325967 | 1164365 | 1232489 | 1626563 |
Y   | Anand Dairy Society Contributions | 2410000 | 2280000 | 2280000 | 2145051 | 2133000 |

(Source: Annual Report from T.F.)

The above table shows that the co-relation between Membership fees and Anand dairy societies contribution in TF for the state of Gujarat of the last five years. The figures indicate rupees. Below rank co-relation method is used to know co-relation between them is positive or negative.

**Table no.: 5.37. Rank co-relation**

<table>
<thead>
<tr>
<th>X</th>
<th>Y</th>
<th>RX</th>
<th>RY</th>
<th>d</th>
<th>d²</th>
</tr>
</thead>
<tbody>
<tr>
<td>2170807</td>
<td>2410000</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1325967</td>
<td>2280000</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1164365</td>
<td>2145051</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1232489</td>
<td>2133000</td>
<td>3</td>
<td>5</td>
<td>-1</td>
<td>1</td>
</tr>
<tr>
<td>1626563</td>
<td>2133000</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

(Source: Annual Report from T. F.)

Now, $\text{Ed}^2 = 2$

$\frac{6\text{Ed}^2}{n(n^2-1)} = \frac{6\times2}{12} = \frac{12}{24} = 1 - \frac{12}{4(24)}$

$\frac{6x2}{5(5^2-1)} = \frac{12}{5(25-1)} = \frac{12}{4(24)}$

$= 1 - \frac{12}{96} = 1 - 0.125 = R = +0.875$ positive relation ship

**Interpretation:** Co-relation between Membership fees and ADS Contributions was positive i.e. +0.875 that means both contributing amount in same manners. Both should maintain this relation in future.
5.14 TF Incomes

Table no.: 5.38 Incomes of TF

<table>
<thead>
<tr>
<th>YEAR</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>1914327</td>
<td>1973450</td>
<td>2854125</td>
<td>1968852</td>
<td>2568923</td>
<td>11279679</td>
</tr>
<tr>
<td>(RS)</td>
<td>0</td>
<td>1</td>
<td>8</td>
<td>9</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

(Source: Annual Report Tribhuvandas Foundation)

The above table shows that the Income of TF for the state of Gujarat of the last five years. The figures indicate rupees. The same thing is represented through chart as below. The statically work related to mean, median and mode is calculated to understand performance of it.

Chart no.: 5.41. Incomes of TF

Statically work

1) Mean \( (x) = \frac{\text{Total Amount of Incomes}}{\text{Total No. of years}} \)

\[
\begin{align*}
\text{Total Amount of Incomes} & = 112796792 \\
\text{Total No. of years} & = 5 \\
\text{Mean}(x) & = 22559358.4 \text{ Rs.}
\end{align*}
\]
Mean is the most common terms and widely use measure of an average of the observing data.

\[ \text{ii) Median (M)} = \frac{n + 1}{2} = \frac{5 + 1}{2} = \frac{6}{2} = 3^{rd} \text{ year’s Amount} \]

Median (M) = 28541258 Rs.
Median is defining as the middle value of the observation data.

(iii) Mode (Z):
Follow any one (1) condition
A) Highest Amount of Observation Data.
B) Max. Time Repeat Amount in Observation Data
Here, in this case condition “A” Apply

Mode (Z) = 25689234Rs.
Mode is defining the value of the Variable which occurs most frequent in the observing data.

Interpretation: From above Calculation of Mean, Median & Mode I could suggest that TF collected Income Fund in Gujarat in the positive manner. The growth rate was increased. i.e. 2006-07 to 2010-11 was 34.19 %. TF should maintain the flow of income and try to increase it.

5.15 TF Expenses

Table: 5.39 Expenses of TF

<table>
<thead>
<tr>
<th>YEAR</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expense (Rs.)</td>
<td>225127</td>
<td>2224972</td>
<td>2586786</td>
<td>1887070</td>
<td>2368956</td>
<td>11319058</td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>0</td>
<td>6</td>
<td>6</td>
<td>0</td>
<td>7</td>
</tr>
</tbody>
</table>

(Source: Annual Report Tribhuvandas Foundation)

The above table shows that the Expenses of TF for the state of Gujarat of the last five years. The figures indicate rupees. The same thing is represented through chart as below. The statically work related to mean, median and mode is calculated to understand performance of it.
Chart no.: 5.42 Expenses of TF

Statically work

Total Amount of Expenses

I) Mean (x) = \[
\frac{\text{Total No. of years}}{113190587} = \frac{5}{5} = 22638117.4 \text{ Rs.}
\]
Mean is the most common terms and widely use measure of an average of the observing data.

ii) Median (M) = \[
\frac{n + 1}{2} = \frac{5 + 1}{2} = \frac{6}{2} = 3^{rd} \text{ year’s Amount}
\]
Median (M) = 25867866 Rs.
Median is defining as the middle value of the observation data.

(iii) Mode (Z):
Follow any one (1) condition
A) Highest Amount of Observation Data.
B) Max. Time Repeat Amount in Observation Data
Here, in this case condition “A” Apply

Mode (Z) = 23689560 Rs.
Mode is defining the value of the Variable which occurs most frequent in the observing data.
**Interpretation:** From above Calculation of Mean, Median & Mode I could suggest that TF spend fund for different expenses in Gujarat for the betterment of the people. The growth rate of expenses was increased. i.e. 2006-07 to 2010-11 was 5.22 %. TF should provide more service to the people for that them expenses also increase in relation with the services in future.

**Co–relationship between Incomes and Expenses of TF**

**Table: 5.40: Co–relationship between Incomes and Expenses of TF**

<table>
<thead>
<tr>
<th>Particulars</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
</tr>
</thead>
<tbody>
<tr>
<td>X TF Income</td>
<td>19143270</td>
<td>19734501</td>
<td>28541258</td>
<td>19688529</td>
<td>25689234</td>
</tr>
<tr>
<td>Y Expense</td>
<td>22512735</td>
<td>22249720</td>
<td>25867866</td>
<td>18870706</td>
<td>23689560</td>
</tr>
</tbody>
</table>

(Source: Annual Report T. F.)

The above table shows that the co-relation between Income and Expenses of TF in the state of Gujarat of the last five years. The figures indicate rupees. Below rank co-relation method is used to know co-relation between them is positive or negative.

**Table: 5.41. Rank Co-relation**

<table>
<thead>
<tr>
<th>X</th>
<th>Y</th>
<th>Rx</th>
<th>Ry</th>
<th>d (Rx-Ry)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19143270</td>
<td>22512735</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>19734501</td>
<td>22249720</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>28541258</td>
<td>25867866</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>19688529</td>
<td>18870706</td>
<td>3</td>
<td>5</td>
<td>-2</td>
</tr>
<tr>
<td>25689234</td>
<td>23689560</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

\[ Ed^2 = 8 \]

\[ R = 1 - \frac{6Ed^2}{n(n^2-1)} \]

\[ = 1 - \frac{6 \times 8}{5(5^2-1)} = 1 - \frac{48}{5(25-1)} = 1 - \frac{48}{4(24)} = 1 - \frac{96}{96} = 1 - 1 = 0 \]

1 – 0.500 \( R = + 0.500 \) its shows positive relationship.

**Interpretation:** Co–relationship between Incomes and Expenses of TF was positive i.e. +0.500 that means both working flow was in same manners. Both should maintain this relation in future.
5.16 TF Number of Beneficial through various Activities

Hypotheses Testing

- $H_0 =$ Tribhuvandas Foundation has significantly satisfied number of beneficial through various Activities in Gujarat.
- $H_1 =$ Tribhuvandas Foundation has not significantly satisfied number of beneficial through various activities in Gujarat.

Table no. 42: Number of Beneficial through various Activities of TF

<table>
<thead>
<tr>
<th>No. of Beneficial through various Activity</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urine Pregnancy Tests done for Maternal health care in villages</td>
<td>6589</td>
<td>7658</td>
<td>11325</td>
<td>16925</td>
<td>14025</td>
</tr>
<tr>
<td>New pregnancies registered</td>
<td>36578</td>
<td>37452</td>
<td>28963</td>
<td>40785</td>
<td>41912</td>
</tr>
<tr>
<td>Total deliveries registered</td>
<td>26987</td>
<td>37541</td>
<td>39521</td>
<td>36524</td>
<td>39396</td>
</tr>
<tr>
<td>Lactating mothers provided counseling</td>
<td>36587</td>
<td>22458</td>
<td>35964</td>
<td>38754</td>
<td>40376</td>
</tr>
<tr>
<td>Family planning services provided in field</td>
<td>28456</td>
<td>26589</td>
<td>23458</td>
<td>22453</td>
<td>25476</td>
</tr>
<tr>
<td>Disposable Delivery Kit Unit to beneficial</td>
<td>2300</td>
<td>2635</td>
<td>1897</td>
<td>3621</td>
<td>2000</td>
</tr>
<tr>
<td>Child health care Total Registered Births</td>
<td>26547</td>
<td>32154</td>
<td>44210</td>
<td>39521</td>
<td>35736</td>
</tr>
<tr>
<td>Newborn put on KMC facilities</td>
<td>785</td>
<td>564</td>
<td>965</td>
<td>1024</td>
<td>1222</td>
</tr>
<tr>
<td>Persons contacted for Cancer awareness</td>
<td>756231</td>
<td>789654</td>
<td>856324</td>
<td>897563</td>
<td>902673</td>
</tr>
<tr>
<td>Persons motivated for de-addiction from cancer</td>
<td>2545</td>
<td>3654</td>
<td>3287</td>
<td>4521</td>
<td>3678</td>
</tr>
<tr>
<td>Cancer patients followed in field</td>
<td>2415</td>
<td>2354</td>
<td>1258</td>
<td>2965</td>
<td>2824</td>
</tr>
<tr>
<td>Patients completed treatment of Cancer</td>
<td>98</td>
<td>63</td>
<td>78</td>
<td>135</td>
<td>100</td>
</tr>
<tr>
<td>Cancer diagnosis camps attended by patients</td>
<td>657</td>
<td>589</td>
<td>957</td>
<td>751</td>
<td>850</td>
</tr>
<tr>
<td>OPD patients</td>
<td>2034</td>
<td>3587</td>
<td>10245</td>
<td>24587</td>
<td>37146</td>
</tr>
</tbody>
</table>
The above table shows Number of beneficial through various Activities of TF in the states of Gujarat for the last five years. The figure is indicating no. of persons benefited through various activity of TF. The statically work related Mean, Median, and Mode. For Hypothesis testing t – test is calculated below to know the performance of the TF.

Statically work

I) **Mean (x)** = \[
\frac{\text{Total No. of Beneficial}}{\text{Total No. of years}}
\]

\[
= \frac{5541849}{5}
\]

**Mean(x) = 1108370**

Mean is the most common terms and widely use measure of an average of the observing data.
ii) Median (M) = \( \frac{n + 1}{2} = \frac{5 + 1}{2} = \frac{6}{2} = 3^{rd} \) year’s observations

\[ \text{Median (M)} = 1089997 \]

Median is defining as the middle value of the observation data.

(iii) Mode (Z):

Follow any one (1) condition

A) Highest Amount of Observation Data.
B) Max. Time Repeat Amount in Observation Data

Here, in this case condition “A” Apply

\[ \text{Mode (Z)} = 1188914 \]

Mode is defining the value of the Variable which occurs most frequent in the observing data.

**Hypotheses Testing**

Here Observation is less then < 30 hence t- test is recommended

For, \( t – \) test \( \mu \) value is necessary

In this case Mode (Z) value is recommended for \( \mu \) value

**Hypotheses**

\( H_0 = \) Tribhuvandas Foundation has significantly satisfied number of beneficial through various Activities in Gujarat.

\[ H_0 = \mu = 1188914 \]

\( H_1 = \) Tribhuvandas Foundation has not significantly satisfied number of beneficial through various activities in Gujarat.

\[ H_1 = \mu \neq 1188914 \]

<table>
<thead>
<tr>
<th>( x_i )</th>
<th>( d_i = x_i - \bar{x} )</th>
<th>( d_i^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>955451</td>
<td>-152919</td>
<td>23384220561</td>
</tr>
<tr>
<td>1152747</td>
<td>44377</td>
<td>1969318129</td>
</tr>
<tr>
<td>1089997</td>
<td>-18373</td>
<td>337567129</td>
</tr>
<tr>
<td>1154740</td>
<td>46370</td>
<td>2150176900</td>
</tr>
<tr>
<td>1188914</td>
<td>80544</td>
<td>6487335936</td>
</tr>
</tbody>
</table>

\[ \sum x_i = 5541849 \quad \sum d_i = -1 \quad \sum d_i^2 = 34328618655 \]
\[
\sum x_i / n = 5541849 / 5 = 1108370
\]

For, \( t \)-test standard deviation (\( S \)) is to be find through following formula

\[
S^2 = \frac{1}{n} \left\{ \sum di^2 - \left( \frac{\sum di}{n} \right)^2 \right\}
\]

\[
S^2 = \frac{1}{5} \left\{ 34328618655 - \frac{(-1)^2}{5} \right\} = 34328618654.8
\]

\[
S^2 = \frac{34328618654.8}{5} = 6865723730.96, \quad S = 82859.6628
\]

Now, \( t \)-test formula

\[
t = \frac{|x - \mu|}{S} \sqrt{n-1} = \frac{|1108370 - 1188914|}{82859.6628} \cdot \frac{5-1}{2} = \frac{80544 \times 2}{82859.6628}
\]

\[
t = 1.9441
\]

degree of freedom (d.f.) = \( n-1 = 5-1 = 4 \)

5% level of significant st 4 d. f. = 2.776

\( t \)-Calculation < \( t \)-table

1.9441 < 2.776

\( t \)-Calculation value is less then \( t \)-table value

(t-table value is taken from statistic table of \( t \)-Distribution)

Hence, \( H_0 \) is accepted

\( H_0 = \mu = 1188914 \)

**Result of Hypotheses Testing**

\( H_0 = \) Tribhuvandas Foundation has significantly satisfied number of beneficial through various activities in Gujarat.
5.17 HYPOTHESIS TESTING RESULTS AND INTERPRETATION

- $H_0 =$ NABARD significantly distributes Purpose wise Microfinance in Gujarat.
- $H_1 =$ NABARD does not significantly distribute Purpose wise Microfinance in Gujarat.

Result of hypotheses (From Page No. 199 to 203)

$H_0 =$ is Accepted

$H_0 =$ NABARD significantly distributes Microfinance in Gujarat.

Interpretation:

Hypotheses result shows that NABARD is significantly distribute microfinance in Gujarat through various activities in last five years. Activities performance growth rate was increased in positive manner. Which was in the year 2006-07 contributed 374.38 crores rupees. If I consider this performance as base performance than in the 2007-08 year performance was 449.25 crores of Rs. (20.05 % growth rate increased then the base year) was achieved. In The 2008-09 year performance was 472.77 crores of Rs. (26.20 % growth rate increased then the base year) was achieved. In The 2009-10 year performance was 511.54 crores of Rs. (36.63 % growth rate increased then the base year) was achieved. In the 2010-11 year performance was 508.47 crores of Rs. (35.82 % growth rate increased then the base year) was achieved. Hence I would recommend from my study that the way NABARD is Distributing Microfinance purpose wise that should carry in the same manner with increasing growth rate.
• **H₀** = Nabard Significantly Distributes Agency Wise Microfinance in Gujarat.

• **H₁** = Nabard does not significantly Distribute Agency Wise Microfinance in Gujarat.

**Result of hypotheses (From Page No.211 to 214)**

H₀ = is rejected

H₁ = Nabard does not significantly Distribute Agency Wise Microfinance in Gujarat.

**Interpretation:**

Hypothesis result shows that Nabard does not significantly Distribute Agency Wise Microfinance in Gujarat through various activities in last five years. Activities performance growth rate was not increased or grow in significant manner. Which was in the year 2006-07 contributed only 91 crores rupees. If I consider this performance as base performance than in the 2007-08 year performance was101 crores of Rs. (10.98 % growth rate increased then the base year) was achieved. In The 2008-09 year performance was 106 crores of Rs. (16.48 % growth rate increased then the base year) was achieved. In The 2009-10 year performance was 121 crores of Rs. (32.96% growth rate increased then the base year) was achieved. In the 2010-11 year performance was 134 crores of Rs. (47.25 % growth rate increased then the base year) was achieved. But through hypotheses result, I would recommend from my study that the way NABARD is Distributing Microfinance purpose wise that should not growing in specific manner. Its contribution is not sufficient. Nabard should provide or create more agencies in Gujarat for developing MF activities.
• $H_0 =$ SIDBI significantly distributes Microfinance through various schemes in Gujarat.
• $H_1 =$ SIDBI does not significantly distributes Microfinance through various schemes in Gujarat.

**Result of Hypotheses (From Page No. 229 to 231)**

$H_0 =$ is Accepted

$H_0 =$ SIDBI significantly distributes Microfinance through various schemes in Gujarat.

**Interpretation:**

Hypothesis result shows that SIDBI significantly distributes Microfinance through various schemes in Gujarat through various activities in last five years. Activities performance growth rate was increased in positive manner. Which was in the year 2006-07 contributed 338 crores rupees. If I consider this performance as base performance than in the 2007-08 year performance was 545 crores of Rs. (61.240 % growth rate increased then the base year) was achieved. In The 2008-09 year performance was 1049 crores of Rs. (210.35 % growth rate increased then the base year) was achieved. In The 2009-10 year performance was 1197 crores of Rs. (254.14 % growth rate increased then the base year) was achieved. In the 2010-11 year performance was 1367 crores of Rs. (304.43 % growth rate increased then the base year) was achieved. Hence I can recommend from my study that the way SIDBI Should continue in same manner of increasing growth rate to distribute Microfinance through various schemes.
• H₀ = SEWA Significantly Generated Employment through Various Activities in Gujarat.

• H₁ = SEWA does not Significantly Generated Employment through Various Activities in Gujarat.

**Result of Hypotheses (From Page No. 240 to 243)**

H₀ = is Accepted

H₀ = SEWA Significantly Generated Employment through Various Activities in Gujarat.

**Interpretation:**
Hypothesis result shows that SEWA Significantly Generated Employment through Various Activities in Gujarat through various activities in last five years. Activities performance growth rate was increased in positive manner. Which was in the year 2006-07 contributed 452 lakhs rupees. If I consider this performance as base performance than in the 2007-08 year performance was 529 lakhs of Rs. (17.03 % growth rate increased then the base year) was achieved. In The 2008-09 year performance was 626 lakhs of Rs. (38.49 % growth rate increased then the base year) was achieved. In The 2009-10 year performance was 672 lakhs of Rs. (48.67 % growth rate increased then the base year) was achieved. In the 2010-11 year performance was 753 lakhs of Rs. (66.59 % growth rate increased then the base year) was achieved. Hence I would recommend from my study that the way SEWA Significantly Generated Employment through Various Activities and carry the increasing growth rate in the same manner. Provide more employment opportunity through various activities.
• H₀ = SEWA significantly distributes Loans through SEWA Bank in Gujarat.
• H₁ = SEWA does not significantly distribute Loans through SEWA Bank in Gujarat.

**Result of Hypostases (From Page No.245 to 248)**

H₀ = is Accepted

H₀= SEWA significantly distributes Loans through SEWA Bank in Gujarat.

**Interpretation:**
Hypothesis result shows that SEWA significantly distributes Loans through SEWA Bank in Gujarat in last five years. Bank loan performance growth rate was increased in positive manner. This was in the year 2006-07 loan distributed 1209 lakhs rupees. If I consider this performance as base performance than in the 2007-08 year loan performance was1317 lakhs of Rs. (8.93 % growth rate increased then the base year) was achieved. In The 2008-09 year loan performance was 1396 lakhs of Rs. (15.46 % growth rate increased then the base year) was achieved. In The 2009-10 year loan performance was1465 lakhs of Rs. (21.17 % growth rate increased then the base year) was achieved. In the 2010-11 year loan performance was 1520 lakhs of Rs. (25.72 % growth rate increased then the base year) was achieved. Hence I would recommend from my study that the way SEWA bank significantly distributes Loans that should carry the growth rate in the same manner.
Hypothesis result shows that SEWA has not significantly paid insurance claimed to the Micro-client in Gujarat through VIMO SEWA activities in last five years. Claimed performance growth rate was not increased in significant manner. Which was in the year 2006-07 claim paid 124 lakhs rupees and if I consider this performance as base performance than in the 2007-08 year claim paid performance was 142 lakhs of Rs. (14.51 % growth rate increased then the base year) was achieved. In the 2008-09 year claim paid performance was 156 lakhs of Rs. (25.80 % growth rate increased then the base year) was achieved. In the 2009-10 year claim paid performance was 168 lakhs of Rs. (35.38 % growth rate increased then the base year) was achieved. In the 2010-11 year claim paid performance was 174 lakhs of Rs. (40.32 % growth rate increased then the base year) was achieved. Hence I would recommend from my study and hypotheses result that the way SEWA does not paid insurance claimed to the Micro-client in significant manner and sewa try to make claim process faster as well as create more number of client. Sewa should increase its performance in this activity.
• $H_0 =$ Tribhuvandas Foundation has significantly satisfied number of beneficial through various Activities in Gujarat.

• $H_1 =$ Tribhuvandas Foundation has not significantly satisfied number of beneficial through various activities in Gujarat.

**Result of Hypotheses (From Page No.262 to 265)**

$H_0 =$ is Accepted

$H_0 =$ Tribhuvandas Foundation has significantly satisfied number of beneficial through various activities in Gujarat.

**Interpretation:**

Hypothesis result shows that Tribhuvandas Foundation (TF) has significantly satisfied number of beneficial through various activities in Gujarat in last five years. Activities performance growth rate was increased in positive manner. Which was in the 2006-07 year, 955451 numbers of beneficial got different services through TF? If I consider this performance as base performance than in the 2007-08 year performance was 1152747 number of beneficial (20.64% growth rate increased then the base year) was served. In The 2008-09 year performance was 1089997 number of beneficial (14.08 % growth rate increased then the base year) was served. In the 2009-10 year performance was1154740 number of beneficial (20.85 % growth rate increased then the base year) was served. In the 2010-11 year performance was1188914 number of beneficial. (24.43 % growth rate increased then the base year) was served. Hence I can recommend from my study that the way Tribhuvandas Foundation has significantly satisfied number of beneficial through various activities. TF should carry the increased growth rate of services in the same manner.