Chapter-3

Research Methodology
CHAPTER-3
RESEARCH METHODOLOGY

Only proper methods and techniques can yield true factual results. This Chapter deals with the methods and techniques adopted in conducting the operational aspects of the present study. It discusses the universe and describes about the sample size and its selection for the research. It also discusses the tools and technique used for collecting the data and presents the validity aspect of the same.

This chapter covers the details as given below:

- Research Design
- Locale of the Study
- Population and Sampling Procedure of the Study
- Tools and Techniques
- Statistical analysis of data
- Experience of the data collection

3.1 Research Design

This study on application aspect is exploratory in its design and does not strive to deduce results in conclusive quantitative form. However, as Davies (1993) states that the results of exploratory research are not usually useful for decision-making by themselves, but they can provide significant insight into a given situation. Exploratory research involves gathering
information and developing ideas about a relatively under-researched problem or context. The value of exploratory research could be that it clears the ground for other kinds of research, or that it throws up interesting differences and comparisons between more well-studied topics, and those that are less well-studied (Morell, 2010). This type of research lays foundation for the formulation of different hypotheses of research problems (Panneerselvem, 2004). Kothari (2009) states “the objective of exploratory research is to gather preliminary information that will help define problems and suggest hypotheses.” (p.18)

Surprisingly, Bandhej which is such a popular craft of the state has never been a base of core academic research in the region. Literature exploration supported the view that a strong need for an exploratory study was felt to provide a platform for further research in the domain. Present study will extend a base for further research in this unexplored area of textiles handicrafts.

3.2 Locale of the Study

In any research selection of locale is a significant aspect. The present study is carried out in Jaipur, Sikar and Jodhpur cities of Rajasthan. Renowned historian Dhamija (1977) states that Rajasthan has a number of tie-dye centers: the famous are Jodhpur, Jaipur and Sikar. Various experts in the field of traditional textile like Kamladevi Chattopadhyoy, Chandramani
Singh, Kamlesh Mathur, Pupul Jaykar, and Moti Chandra also place Rajasthan and its cities as important centre of Bandhej production. Hence, these three cities Jaipur, Sikar and Jodhpur were selected to explore the Bandhej craft and various related aspects. More precisely Jaipur being the capital city and export center, Sikar being most productive center and Jodhpur being famous as originating city of Bandhej craft were the most obvious and apt choices.

Jaipur is the capital city of the state; hence it is the centre of all the commercial activities. Furthermore, various kinds of handicraft activities flourish in Jaipur. The city has in it a fully developed domestic market as well. In addition it has got all export transportation facilities. Consequently, a good deal of Bandhej is produced here and sold in the domestic market, as well as exported abroad. Dr. Singh, a historian specialist in the field of textiles and costumes refers to Jaipuri Chunari as “the most popular form of tie and dye” in her catalogue, Textiles and Costume from the Maharaja Sawai Man-Singh II Museum (1979, p. xxxviii). According to Buhler (1954) it is difficult to trace the origin of this craft to any particular area. It first developed in Jaipur in the form of Leheria. The Leheria or wrap resist dyed clothes of Jaipur were used for turban clothes and for sarees.

Sikar has developed as one of the most productive cells of Bandhej craft because of its proximity with the capital city and because there are a lot
many skilled artisans living in the city. Literature review also gives account of *Sikari Bandhej*. According to Belfer (1992), the *Sikari Bandhej*, a form of *Chunari* from Sikar in Shekhawati, Rajasthan is known throughout India. Aryan (1987) explored that the art of *Bandhej* craft started in Sikar city in 17\textsuperscript{th} century. Further this art gradually developed in other parts of Shekhawati.

Further, Jodhpur is one of the oldest places where the art of tie and dye started. According to Shah (1995), the *Bandhej*-craft is said to have commenced in Jodhpur in 15\textsuperscript{th} century. It is said that an artisan from Multan named Mohammed Bin Kasim brought some fascinating tie-dyed cloth in the court of Rao Jodhaji, the then ruler of Jodhpur. Then onwards it was developed in the city by the king. It follows then that this art in Jodhpur is as old as the city itself.

Thus the researcher selected these cities to explore and analyse certain aspects of the *Bandhej*-craft to use truly representative samples and present a useful research study of Rajasthani *Bandhej*.

3.3 Population and sampling procedure

*Bandhej* is an art that involves different skillful people at multiple levels. As an art, it has various stages of production such as designing, tying, dying etc, and as a business activity, it has a total supply chain involving sourcing of raw material, manufacturing, wholesaling and retailing. Therefore, as a handicraft it involves two categories of people engaged in it:
Traders and Artisans. Traders further include greymen (who sell the raw material) manufacturer (under whom tiers, dyers, designers work as a production unit, and who sell the tie-dyed cloth to the wholesaler), wholesaler (who buy the tie-dyed cloth from manufacturer in bulk and sells to retailer) and retailer (who sell the final Bandhej products to the consumer). Artisans include- designers (who imprint the designs) tiers (who tie the cloth) and dyers (who dye the cloth in different colours). Since the objective of the research is to study about the craft comprehensively, all of the categories of traders and artisans involved in the production and marketing are taken as sample. Figure 8 shows all the stakeholders (Traders and Artisans) involved in this activity.

![Stakeholders](image)

*Figure 8. Stakeholders involved in Bandhej craft*

The artisans and traders engaged in Bandhej craft are not registered in any government or non-government agency. The sector is unorganized. Various government departments such as: District Industrial Centre (DIC) Jaipur, DIC, Sikar and DIC, Jodhpur, Small Scale Industry (SSI) Jaipur; Hasthshilp Udyog Kendra, Jaipur; and Chamber of Commerce, Jaipur were explored but no record could be found regarding the artisans involved in this craft.
An unpublished work done by Pant (1992) entitled *Home Based Women Workers in an Urban Setting*, reveals that home based self-employed women workers in tie and dye handicraft production in Jaipur city constitute typical informal unorganized sector and a snowball technique was used to approach the women involved in tie-dye work.

Further, in an interview session dated 12 August 2010 with the then Deputy Director, Tourism Department working on Rajasthani odhani. She confirmed that no authentic list of the artisans involved in this art was found. Literature review also supports this.

Thus on the basis of baseline survey, a list of some prominent manufacturers and some award winner artisans was prepared. Three prominent award winner and celebrated artisans from Jaipur, Sikar, and Jodhpur were interviewed to prepare a source list. Basics of the trade or the supply-chain of *Bandhej* was understood to know the people at each level. Moreover, nine most successful and productive manufacturers three each from Jaipur, Sikar and Jodhpur were also interviewed for the purpose. As the manufacturers are the link between other traders and the artisans, information regarding location of the artisans in different colonies as well as addresses of the greymen, wholesalers and retailers of *Bandhej* garments were obtained from them.

The total number of artisans and traders from three cities is cited in the figure 9. Thus the information was received that in Jaipur city there are nearly 1000 families of dyers, and about 20,000 families of tiers living in 11
colonies. There are nearly 500 people who create and print design on the cloth and the category of traders includes 200 prominent businessmen who sell grey material, 150 wholesalers, and approximately 500 retailers.

In Sikar city in the category of artisans, there are nearly 800 families of dyers living in 8 colonies and nearly 7000 families living in 11 colonies involved in tying activity spread all through the city. There are nearly 300 people who create and print design on the cloth. The category of traders includes 10 prominent businessmen who sell grey material, 40 manufacturers and 200 retailers. There are no wholesalers in Sikar.

Jodhpur has also got a good productivity of Bandhej craft. The artisans include 1000 dyer and 5000 tier families living in nine colonies. Nearly 200 people are involved in designing. There are about 50 prominent businessmen who sell grey material, 50 manufacturer 80 wholesalers, and approximately 400 retailers as shown in Figure 9.

![Figure 9. Overview of Artisans and Traders in the Three Cities](image-url)
The designers and dyers reside together in the same colonies. The tiers being from both Hindu and Muslim communities are found in various colonies scattered all through the city. Further, a list of the colonies of the designers, dyers and tiers along with their postal addresses was made on the basis of the baseline survey and interviews as shown in the Table 5, 6. These colonies are also marked in the Jaipur, Sikar, and Jodhpur city maps (Figure 10, 11 and 12).

Table 5. List of Colonies of Designers and Dyers in the Three Cities

<table>
<thead>
<tr>
<th>Jaipur City n=11</th>
<th>Sikar City n=9</th>
<th>Jodhpur City n=9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designer and Dyers Colonies</td>
<td>Colonies</td>
<td>Pin Code</td>
</tr>
<tr>
<td>Ramganj Bazar</td>
<td>302002</td>
<td>Firdose Mohalla</td>
</tr>
<tr>
<td>Shastri Nagar Ram Nagar</td>
<td>302016</td>
<td>Jhadishah Dargah Mohalla</td>
</tr>
<tr>
<td>Naya Jalapura</td>
<td>302001</td>
<td>Madarsa Mohalla</td>
</tr>
<tr>
<td>Bhatta Bashti</td>
<td>302016</td>
<td>Lal Masjid Mohalla</td>
</tr>
<tr>
<td>Vidyadhar Nagar Central Spine Sector 7</td>
<td>302023</td>
<td>Marose Mohalla</td>
</tr>
<tr>
<td>Ghatgate</td>
<td>302003</td>
<td>Dobhiyan Mohalla</td>
</tr>
<tr>
<td>Kishanpol Bazar</td>
<td>302001</td>
<td>Tabela- Bazar</td>
</tr>
<tr>
<td>Choti Chopar</td>
<td>302001</td>
<td>Maniyar Mohalla</td>
</tr>
<tr>
<td>Badi Chopar</td>
<td>302001</td>
<td></td>
</tr>
<tr>
<td>Neelgaro ka Nala</td>
<td>302003</td>
<td></td>
</tr>
<tr>
<td>Galti Gate</td>
<td>302003</td>
<td></td>
</tr>
</tbody>
</table>
Table 6. List of Colonies of Tiers in the Three Cities

<table>
<thead>
<tr>
<th>Tiers Colonies</th>
<th>Pin code</th>
<th>Colonies</th>
<th>Pin code</th>
<th>Tiers Colonies</th>
<th>Pin code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jaipur City n=11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ramganj Bazar</td>
<td>302002</td>
<td><strong>Bisattiyan Mohalla</strong></td>
<td>332001</td>
<td>Khanda Falsa</td>
<td>342001</td>
</tr>
<tr>
<td>Shastri Nagar Ram Nagar</td>
<td>302016</td>
<td><strong>Islamiya School Mohalla</strong></td>
<td>332001</td>
<td>Kaml Nehru Nagar (12)</td>
<td>342009</td>
</tr>
<tr>
<td>Naya Jalapura</td>
<td>302001</td>
<td><strong>Chejaran Mohalla</strong></td>
<td>332001</td>
<td>Chandana Bakar.</td>
<td>342009</td>
</tr>
<tr>
<td>Bhatta Basti</td>
<td>302016</td>
<td><strong>Sabalpura Mohalla</strong></td>
<td></td>
<td>Masuriya Colony</td>
<td>342003</td>
</tr>
<tr>
<td>Vidyadhar Nagar sector7</td>
<td>302023</td>
<td><strong>Narwan Mohalla</strong></td>
<td>332001</td>
<td>Kabutaron ka Chowk</td>
<td>342008</td>
</tr>
<tr>
<td>Ghatgate</td>
<td>302003</td>
<td><strong>Industrial Area</strong></td>
<td>332001</td>
<td>Moti Chowk</td>
<td>342001</td>
</tr>
<tr>
<td>Kishanpol Bazar</td>
<td>302001</td>
<td><strong>Shivmandir Colony</strong></td>
<td>332001</td>
<td>Sardar Market</td>
<td>342001</td>
</tr>
<tr>
<td>Choti Chopar</td>
<td>302001</td>
<td><strong>Dhobhiyan Mohalla</strong></td>
<td>332001</td>
<td>Surya colony</td>
<td>342001</td>
</tr>
<tr>
<td>Badi Chopar</td>
<td>302001</td>
<td><strong>Ranishati Mohalla</strong></td>
<td>332001</td>
<td>Jalori Gate</td>
<td>342001</td>
</tr>
<tr>
<td>Neelgaro ka Nala</td>
<td>302003</td>
<td><strong>Mohalla Karigaran</strong></td>
<td>332001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Galta Gate</td>
<td>302003</td>
<td><strong>Housing Board Basti</strong></td>
<td>332001</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 10. Colonies of dyers, designers and tiers in Jaipur city
SIKAR CITY MAP

Figure 11. Colonies of dyers, designers and tiers in Sikar City
Figure 12. Colonies of dyers, designers and tiers in Jodhpur city
Sampling Procedure

(a) Selection of artisans. Due to the amorphousness of the cluster and no authentic list being available, multi-stage sampling was used. Multistage sampling is employed when the population is regarded as being composed of a number of first stage or primary sampling units (PSU’s) each of them being made up of a number of second stage units in each selected PSU and so the procedure continues down to the final sampling unit, with the sampling ideally being random at each stage (Crawford, 1990). The sample was taken from the prepared list of colonies of the respective clusters of the three cities.

Approximately, 50% of the total colonies were selected randomly for the purpose. Thus in Jaipur city five colonies were selected from dyers and tiers category and from the Sikar city four colonies of dyers and five colonies of tiers were selected randomly. Similarly, in Jodhpur city four colonies of dyers and tiers respectively were selected for the study. Further, 10 families from each of the selected colonies were chosen as sample using the snowball technique i.e. the first sample element selected was asked to identify other member of population (Craig and Douglass, 1999). A great care was taken by the investigator to select the families which produce maximum amount of tie and dye work. As the designers are quite less in number compared to tiers and dyers 10% of the total numbers of designers were selected as the sample from each of the cities Table7.
Research Methodology

Table 7. Selection of Artisans

<table>
<thead>
<tr>
<th>City</th>
<th>Designer</th>
<th>Tier</th>
<th>Dyer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jaipur</td>
<td>50</td>
<td>05 Colonies</td>
<td>05 Colonies</td>
</tr>
<tr>
<td>Sikar</td>
<td>30</td>
<td>05 Colonies</td>
<td>4 Colonies</td>
</tr>
<tr>
<td>Jodhpur</td>
<td>20</td>
<td>4 Colonies</td>
<td>5 Colonies</td>
</tr>
</tbody>
</table>

Note: From each of these colonies 10 families were selected

(b) Selection of traders. Separate lists of the traders involved in the Bandhej trade in the three cities were made with the help of the manufacturers. Further, 10 percent of the approximate total number of the greymen, manufacturer, and wholesalers were taken as sample from the respective three cities. As the retailers are in big numbers, only 5% retailers were taken from each of the cities. A small size of sample was selected among the traders, as the researcher intended to explore only the details of procedure of production and supply-chain of the craft. Here again the snowball method was used to approach these people. Table 8 shows the sampling of traders and artisans in the three cites with their respective categories.

Table 8. Sample selected for the study

<table>
<thead>
<tr>
<th>City</th>
<th>Traders n=126</th>
<th>Total</th>
<th>Artisans families n=370</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Greymen</td>
<td>Manufacturer</td>
<td>Wholesaler</td>
<td>Retailer</td>
</tr>
<tr>
<td>Jaipur</td>
<td>20</td>
<td>13</td>
<td>15</td>
<td>25</td>
</tr>
<tr>
<td>Sikar</td>
<td>01</td>
<td>04</td>
<td>00</td>
<td>10</td>
</tr>
<tr>
<td>Jodhpur</td>
<td>05</td>
<td>05</td>
<td>08</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>22</td>
<td>23</td>
<td>55</td>
</tr>
</tbody>
</table>
3.5 Tools and Techniques of Data Collection

Keeping in view the specific objectives, the data was collected both from primary and secondary sources. The primary source data was collected through the structured, semi-structured interview, case study and observation method. Secondary data was collected from both published and unpublished literature such as, booklets, project reports, books, magazines, newspapers, technical and trade journals. Since the study was exploratory-cum-descriptive, therefore, to collect the data both qualitative and quantitative approach was adopted for the study. For the quantitative methods, structured interview schedule was used. For the qualitative data semi structured interview, case study, observation and analysis of information collected from both published and unpublished literature such as, booklets, project reports, books, magazines, newspapers, technical and trade journals were used.

Triangulation is actually used to increase the study accuracy (Webb, Campbell, Schwartz & Sechrest, 1966, Smith & Kleine, 1986, Denzin, 1978, and Golafshani, 2003). Methodological triangulation is defined as the use of more than two methods in studying the same phenomenon under investigation (Mitchell, 1986). In the present study methods triangulation was done by using different qualitative and quantitative methods. The tools used in the present study were:

- Structured Interview Schedule for the designers, dyers, and tiers. (Annexure-1)
• Semi-structured Interview Schedule for Greymen, Manufacturers, wholesalers and Retailers (Annexure-3)
• Checklist for Observation Method (Annexure-4)
• Case Study for National Awardee (Annexure-2)

3.5.1 Structured interview schedule for the artisans. The Structured Interview Schedule was used for designers, dyers, and tiers. A structured interview is a quantitative research method generally employed in survey research. The aim of this approach is to ensure that each interview is presented with exactly the same questions in the same order as given in the schedule. The same questions are asked to all respondents. Corbetta (2003) states structured interviews are “… interviews in which all respondents are asked the same questions with the same wording and in the same sequence” (p. 269).

The schedule drew information about the following heads:

• General information (name, age, education, income etc)
• Production details regarding technique, cloth, design and dyes
• Health Hazards (working condition and effects)

The details of the number of items in each head for the tier dyer and designer are given below in Table 9.
Table 9. Details of Structured Interview Schedule for the Artisans

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Information</td>
<td>19</td>
</tr>
<tr>
<td>Production Details regarding technique,</td>
<td>21</td>
</tr>
<tr>
<td>design, cloth and dyes</td>
<td>25</td>
</tr>
<tr>
<td>Health Hazards Related</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Total Items</td>
<td>44</td>
</tr>
</tbody>
</table>

3.5.2 Case study of national awardees. Remenyi et al (2000) argue that case studies are being increasingly used in business and management studies as an evidence collection approach for several reasons, including the fact that the scope of the case study is extensive, ranging from individuals to business groups, to fiscal policies. Further, a case study approach emphasizes the total or holistic situation as a combination of different factors and this orientation is most appropriate way dealing with the complexity of a trade. Hence, to explore the entire scenario of the craft pertaining to designs, dyes, colours, garments produced, techniques, antiquity, novelty and future of the craft and to plunge deep into the craft, case study method was also employed in the present study. Three award winner artisans, one from each city were selected for case study purpose.

3.5.3 Semi-structured interview schedule for traders. Semi-structured interviews are non-standardized and are frequently used in qualitative analysis. The researcher has a list of key themes, issues, and questions to be covered. To record the interview notes taking or tape recordings is used. (David & Sutton, 2004). The interview schedules were
prepared for greymen, manufacturers, wholesalers and retailers considering the objective of the study. The semi-structured interview schedule concentrated to draw information about traders regarding the following main heads:

**Grey men**
- General information
- Information related to purchase and sales issues of grey cloth
- Information related to type, quality of grey cloth and their uses
- Information pertaining to profitability and income

**Manufacturer**
- General information
- Information related to production
- Information related to dyers, tiers and designers
- Information related to income
- Information related to finished product and its distribution.

**Wholesaler and Retailer**
- General information
- Information related finished product and its distribution
- Information related to pricing, profitability and income
- Information related to export of *Bandhej*

**3.5.4 Observation method.** Observation is the way of gathering data by watching behavior, events, or noting physical characteristics in their
natural setting (Taylor et al. 1996). Observational research findings are considered strong in validity because the researcher is able to collect in-depth information about a particular behavior.

The researcher observed the health problems of the artisans personally through visual examination so as to ensure whether or not they have eruption on skin, body pain and irritation on skin. A check list of the probable symptoms was made in consultation with a dermatologist. Observation was mainly based on the check-list. However, other possibilities were also explored while execution. Further, designing, tying, and dying procedures were also observed. The artifacts, their motifs, designs and patterns and type of cloth were observed. Moreover, designs and patterns of Bandhej were also collected by taking pictures of them.

3.5.5 Validity and reliability of tool

(a) Validity of the tool. Content validity of the tool was properly ascertained. To confirm the content validity of tool, opinion of the subject experts were sought viz. management expert, government official having expertise in the textiles handicraft domain, and Head of an NGO working in the area. They gave their suggestions to improve the tool. The tool was improved in the light of the suggestions given by the experts.

(b) Reliability. Reliability of a tool is as important as the validity because only through a reliability test stability of the outcome can be
ascertained. “The stability aspect is concerned with securing consistent result, with repeated measurement of the same persons and with the same instrument” (Kumar 2009). Test retest method was used to assess the reliability of the structured interview schedule. The structured interview schedule was given to ten artisans of designer, tier and dyer categories in Sikar city the test was repeated after a gap of 15 days.

Test of correlation between scores was used to establish the reliability of the tool by applying the following formula:

\[
r = \frac{\sum xy - \frac{1}{n}(\sum x)(\sum y)}{\sqrt{\left(\sum x^2 - \frac{1}{n}(\sum x)^2\right) \times \left(\sum y^2 - \frac{1}{n}(\sum y)^2\right)}}
\]

Where,

\(r\) is the reliability coefficient of the whole test
\(n\) is the sample size for the paired measurements
\(x\) represents individual measurements of the first variable, \(x\)
\(y\) represents individual measurements of the second variable, \(y\)

The reliability coefficient for the structured interview schedule was 0.92 for designer, 0.89 for tier and .93 for dyer. Thus, the tool was found to be highly reliable. Reliability of the semi-structured interview schedule was evaluated by restating the question in slightly different form at a later time in interview.
3.5.6. Pre-testing of the tool. The pre-testing was done on 15 artisans of Bandhej craft. This was done to ensure that the tool was not ambiguous and was being properly understood by the respondents. The questions, which were asked for explanation by some of the artisans, were rewritten in a simple and easy to understand language.

3.5.7. Seeking consent. In all disciplines of enquiry, it is considered unethical to collect information without the knowledge of the participant, and their expressed willingness and informed consent. Therefore, the respondents were made adequately aware of the type of information the researcher wanted from them, why the information is being sought, for what purpose it will utilised, how they were expected to participate in the study, and how it will directly or indirectly affect them in turn. The consent was voluntary and without any kind of coercion.

3.5.8. Administration of tools. The tools constructed for data collection were administered by the investigator herself. The first 2-3 visits in the field in each city were made to establish rapport with the artisans and the traders. The administration of structured interview schedule in each category normally took approximately 15-20 min per artisan. The investigator herself administered the tool as most the artisans were illiterate. On an average, in three months artisans of one city were covered. Thus the data collection from artisans took 9-10 months from April 2009 to January 2010.
The traders of Bandhej craft i.e. manufacturer, wholesalers, and retailers were also interviewed by the researcher with semi-structured interview schedule. They were visited randomly at first and then the appointment was sought for an appropriate time telephonically. One semi-structured interview took about 40 minutes. Similarly, case studies of the national awardees were also done to comprehend the scenario of the craft. Thus the total data collection was done over a period of 20 months during 2010 and 2011.

The observation of the artisans work place, production procedure, tools and artifacts was done while conducting the interviews. The visits were scheduled in the peak hours of their daily work, so that observation can be effectively made.

3.6. Statistical Analysis of Data

After completion of the entire field work the coding of the data were done and was tabulated. For the analysis of the data percentage, mean scores, standard deviation, ‘t’, Anova and post hoc were used. The formula used for:

Mean Score

\[
X = \frac{f_1 \cdot f + f_2 \cdot f + f_3 \cdot f + \ldots + f_n \cdot f}{N}
\]

Standard Deviation

\[
\sigma = \sqrt{\frac{\sum d^2}{N} - \left[ \frac{\sum d}{N} \right]^2}
\]
\[
\begin{align*}
    t &= \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{(N_1 - 1)S_1^2 + (N_2 - 1)S_2^2}{N_1 + N_2 - 2}\right) \left(\frac{1}{N_1} + \frac{1}{N_2}\right)}} \\
    SS_{\text{total}} &= \sum_{j=1}^{p} \sum_{i=1}^{n_i} (x_{ij} - \bar{x})^2 \\
    \text{Anova} &= SS_{\text{between}} = \sum_{j=1}^{p} n_j (x_{ij} - \bar{x})^2 \\
    SS_{\text{within}} &= \sum_{j=1}^{p} \sum_{i=1}^{n_i} (x_{ij} - \bar{x}_j)^2 \\
    MS_{\text{between}} &= \frac{SS_{\text{between}}}{df_{\text{between}}} \\
    MS_{\text{within}} &= \frac{SS_{\text{within}}}{df_{\text{within}}} \\
    \text{Post hoc} &= \text{HSD} = \frac{M_1 - M_2}{\sqrt{MS_w (1/n)}} \\
\end{align*}
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3.7. Experience of the data collection

The field work done for the study shall always be cherished as a memorable experience. To acquire a comprehensive understanding of the textiles handicrafts and the problems faced by the artisans the researcher met with the all the people directly or indirectly involved in the craft. Initially, the artisans, being uneducated or less educated had fear of revealing the information but later when the purpose of the visits was explained to them, they gradually started confiding. On the other hand it was all the more difficult to exude information from the traders. However, due to persistence efforts they yielded the desired information though reluctantly. The experience of interviewing the exceptionally skilled veteran awardees was the most pleasant one. The experience was unforgettable and gave a constructive insight into the subject.