Introduction

This chapter aims to explore thoroughly the design concepts of the handwritten Devanagari Brahmanical manuscripts of the seventeenth century in Maharashtra, India.

The objectives of this study are to bring to light the design thoughts and knowledge employed in the manuscript design in the seventeenth century. In the state of Maharashtra, the application of full-fledged printing technology for printing socio-publications began in the eighteenth century. A common noticeable fact is that; technology, cultural interactions, changes in rule/reign etc. always predominate and add new dimensions to the modern visual communication. This research will illuminate the publication design history of the seventeenth century Maharashtra, (India) prior to the arrival of printing technology, which was introduced in India by the Europeans. This phenomenon further brought the change in the magnitude of Indian design.

This chapter will begin with addressing various design aspects of layout and composition of the representative handwritten Devanagari Brahmanical manuscripts of the seventeenth century, and they will be compared with aspects of the modern graphic design, especially with the publication design principles.

Research Method and Procedure

For the purpose of analysis, the manuscripts collected from various repositories and categorized them under various themes as per the modern graphic layout design concepts. These selected manuscripts incorporate a range of styles and design elements, e.g. foliation or pagination, ruling patterns and methods, page-layout with the grid, text, illustrations and other design features. Each representative manuscript has been studied to understand a specific design feature used in it. Modern books with functional and utilitarian page layout design selected in order to compare their design aspects with the seventeenth century Devanagari Brahmanical manuscripts. Modern book selection
criteria included a variety of subjects, and their range of content integrated with text, imagery, illustrations and use of design elements.

A graphical representation and deconstruction methods were adopted to visualize and analyze the data and comprehended the similarity and differences in the design concepts. A comparative analysis is accomplished with the help of assorted graphic design fundamentals and composition design techniques practiced in modern publication design. A visual thinking technique and, a practice-based method are employed in the research to explore and present research finding (Gray and Malins, 2008, pp 103-107). Computer-aided digitally illustrated visualization method is implemented as a tool to draw diagrams. Digital photography and photocopying machines are put to use as assistive tools to collected representative samples. Observation methods are taken into account to compare and relate the concepts.

Analysis of page layouts of the representative manuscripts and the selective modern books put into the execution based on the criteria, which make them functional and reader friendly. The study of the criteria includes their form, structure, composition styles, layout styles, and design features.

Apart from the above-mentioned areas, an aspect has been linked to traditional sitting posture of the Indian reader and the writer is intentionally considered. This information provided is an adequate guidance of how folios of the manuscript were read or written in the ancient India as well as in the seventeenth century.

**Traditional Reading and Writing Postures of the Indians**

![Figure 4.1: Indian Reader – (People of India, 2014)](image1) ![Indian Writer - A Commemorative Postage Stamp on 'Panini' released by Indian Post Department, 2004](image2)
Thematic Categories of the Manuscripts – Conceptual Framework

Based on the layout formats and distinctive graphic design features, the representative manuscripts were selected for the study; further, they were compared with modern book designs to understand similarities and differences in design aspects.

Classification of Representative Manuscripts based on Graphic Design Features:

Theme 1: Form and Function — Seventeenth Century Devanagari Brahmanical Manuscripts and Modern Publication Designs

Theme 2: Composition and Layout Design — Seventeenth Century Devanagari Brahmanical Manuscript and Modern Publication Design

Theme 3: Layout Styles and Fundamentals of Page Layout Principles — Seventeenth Century Devanagari Brahmanical Manuscripts and Modern Publication Design

A model based on five building blocks derived for visual inspection. It is comprise of variables related fundamental of design, page layout principles, and objective of the study.

Five Building Blocks

Figure 4. 2: Building Blocks for Visual Inspection of Data
4.1 Theme 1: Form and Function of Devanagari Brahmanical Manuscripts and Modern Publication Design

4.1.1 Aims and Objectives

To examine the features corresponding to the form and the function of the seventeenth century Devanagari Brahmanical manuscripts available in Maharashtra.

The objectives of this study are to know various forms of the seventeenth century Devanagari Brahmanical manuscripts and their functional approach with simplicity in the form. It includes:

1. Page formats,
2. Page turning system, and its association with placements of turned pages
3. Flow of reading without interruption
4. The ergonomic convenience in handling folio

4.1.2 Approach to Study Forms and Functions of Manuscripts

The seventeenth century Devanagari Brahmanical manuscripts are identified and systematically recorded their external features for testing of the hypothesis.

H₀ -1 A structure of manuscripts contains many elements which are continued in the modern publication design

i) Understand and analyze representative manuscripts to understand their formats, various sizes, page-turning system, orientation of text and text flow pattern
ii) To collect evidence, this can be correlated to the physical ergonomics and reading-writing pattern of Indian tradition.
iii) Correlate collected data from the manuscripts with modern publication design

4.1.3 Data Collection

4.1.3 - (a) Page Formats

4.1.3 - (a1) Seventeenth Century Devanagari Brahmanical Manuscripts

Total 257 Devanagari Brahmanical manuscripts of the seventeenth century selected through catalogues from various libraries of Maharashtra. The data related to sizes and orientation of text are recorded in Tabular format as shown below:
Collected information is further categorized based upon two main criteria: (1) portrait format i.e. vertical orientation and; (2) landscape format i.e. horizontal orientation, depending upon their aspect width and height ratio respectively. It is explained in Table 4.1 shown below:

Table 4.1: Statistics: Manuscripts and Their Page Orientation

<table>
<thead>
<tr>
<th>Resource Library</th>
<th>Total No. of Manuscripts</th>
<th>Portrait Format</th>
<th>Landscape Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deccan College Post Graduate and Research Institute, Pune</td>
<td>53</td>
<td>53</td>
<td>-</td>
</tr>
<tr>
<td>Vedic Samshodhan Mandal, Pune</td>
<td>23</td>
<td>23</td>
<td>-</td>
</tr>
<tr>
<td>Anandashram Sansthan, Pune</td>
<td>12</td>
<td>12</td>
<td>-</td>
</tr>
<tr>
<td>Bhandarkar Oriental Research Institute, Pune</td>
<td>30</td>
<td>30</td>
<td>-</td>
</tr>
<tr>
<td>Samarth Vagdevata Mandir, Dhule</td>
<td>24</td>
<td>22</td>
<td>2</td>
</tr>
<tr>
<td>Asiatic Society of Bombay, Mumbai</td>
<td>15</td>
<td>15</td>
<td>-</td>
</tr>
<tr>
<td>Bharat Itihas Sanshodhak Mandal, Pune</td>
<td>99</td>
<td>99</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>257</strong></td>
<td><strong>255</strong></td>
<td><strong>2</strong></td>
</tr>
</tbody>
</table>

Table 4.2: Recorded Manuscript Size Range

<table>
<thead>
<tr>
<th>Orientation of Manuscript</th>
<th>Width</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum</td>
<td>Maximum</td>
</tr>
<tr>
<td>Landscape</td>
<td>6&quot;</td>
<td>13&quot;</td>
</tr>
<tr>
<td>Portrait</td>
<td>4 1/2&quot;</td>
<td>8 1/4&quot;</td>
</tr>
</tbody>
</table>
Landscape Format Manuscript - Representative Sample of the Seventeenth Century Devanagari Brahmanical Manuscript

Figure 4.3: Landscape Format – The Seventeenth Century Devanagari Brahmanical Manuscript, BISM, Bhagvad Geeta Saitkah, 1696 AD

Portrait Format Manuscript - Representative Sample of the Seventeenth Century Devanagari Brahmanical Manuscript

Figure 4.4: Portrait Format – Seventeenth Century Devanagari Brahmanical Manuscript, SVM, Kalyanpotha, 17th Century AD

4.1.3 - (a2) Page Formats of Modern Publication Design

Sizes of Modern Books

Modern books are designed in various sizes. Their book-sizes may vary as per the requirement, but the graphic designer takes utmost precautions while planning the layout. The size of the book is chosen to fit into different sections. These sections are formed by folding ISO standard size paper e.g. when A0 is divided into half, it creates
A1; when A1 divided into half, creates A2 and so on. This is the most economical approach with minimal wastage of paper as shown in Figure 4.5.

Figure 4.5: A0 Series - ISO Standard Paper with Various Subdivisions

Modern books further categorized under three different formats.
1. Portrait — width is less than height
2. Landscape — width is more than height
3. Square — width and height of book are of the same size

Figure 4.6: Digital Illustration showing Modern Publication Design Formats

Figure 4.7: Portrait Format Representative Modern Publication Designs

Figure 4.8: Landscape Format Representative, Modern Publication Designs
Modern book sizes are also scrutinized to know the utility and portability. Following are few examples of landscape and portrait format pocket-size books. These books are not only portable but also easy to carry and read while travelling.

Representative Samples of Landscape and Portrait Formats Pocket Size Books

Figure 4.10: Pocket Size Portable Books - Landscape and Portrait Formats, Modern Publication Design
4.1.3 - (b) Page Turning System and its Association with the Reading Pattern, Text Flow, and Eye Movement of the Reader

4.1.3 - (b1) Page Turning System: Seventeenth Century Devanagari Brahmanical Manuscripts

Representative manuscripts are selected to examine the page-turning system, and its functional aspects are correlated to their interface. Two types of the representative manuscripts from each category of landscape and portrait formats are chosen for the investigations.

Following areas are analyzed in-depth as a basis of reasoning, through three digital experiments to verify the hypothesis.

(i) Page-turning, placement of turned folios, text flow pattern, eye-movement
(ii) Lifting of folio with both the hands in vertical direction
(iii) Orientation of Text on Front and Back Side of Folio

Details of Representative Manuscript in table form presented as under:

<table>
<thead>
<tr>
<th>Manuscript Title</th>
<th>Physical Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Patanjali Mahabhasya</td>
<td>Orientation: Landscape (Vertical Page-turning System)</td>
</tr>
<tr>
<td>Acc. No. 817, DC, 1653 AD</td>
<td>Size of Manuscript: Width 11.3&quot; x Height 4.5&quot;</td>
</tr>
<tr>
<td></td>
<td>The Ratio of Width and Height: Approx. 2.5: 1</td>
</tr>
<tr>
<td>2  Shree Samarthakrut</td>
<td>Orientation: Portrait (Horizontal Page-turning System)</td>
</tr>
<tr>
<td>Yuddhakandachi Prat</td>
<td>Size of Manuscript: Width 4 1/2&quot; x Height 7&quot;</td>
</tr>
<tr>
<td>Bad No. 255, SVM, 17th Century</td>
<td>The ratio of Width and Height: Approx. 1 : 1.55</td>
</tr>
</tbody>
</table>

In the present digital experiment, three different scenarios of the page-turning system and reading patterns are examined in the context of referring text or content on the previous folio to understand the reading pattern. The following type of page layouts selected:

**Landscape Page Layout** : Scenario One and Two

**Portrait Page Layout** : Scenario Three

To understand the reading pattern of the Indian readers and the page-turning system, all scenarios are visually represented through graphical illustration (Figure 4.12).

Scenario 1: A folio turned in the vertical direction towards the top of the current folio.
Scenario 2: A folio turned in the horizontal direction towards right side of the current Folio.
Chapter 4: Data Analysis and Findings

Scenario 3: A folio turned in the horizontal direction towards right side of the current Folio

Every scenario is represented graphically in two parts:

<table>
<thead>
<tr>
<th>Part 1: Placement of a turned folio in a particular direction and the total space occupied by the current and turned folios.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 2: An illustrated diagram depicting the direction of the text flow and eye movement with the help of red line with an arrow</td>
</tr>
</tbody>
</table>

**Scenario 1:** To begin manuscript reading with a bunch of folios. Once reading folio 1r is complete, keep it on the top side of the folio number 2f and start reading the current folio i.e. 2f. (see Figure 4.12)

**Scenario 2:** To begin manuscript reading with a bunch of folios. Once reading of folio 1r is complete, keep it on the right side of the folio number 2f and start reading the next folio i.e. 2f. (see Figure 4.12)

Considering the width and height ratio of the manuscripts (scenario 1 & 2) i.e. 2.5:1, it is difficult to turn the page with a single hand so there is a need to use both the hands for page turning and lifting a folio.

**Scenario 3:** To begin manuscript reading with a bunch of folios. Once reading of folio 2 is complete, keep it on the left side of the current folio and start reading the next folio i.e. folio 3 as shown in the digital illustration. (see Figure 4.12)

In all the three scenarios, one thing is very much common, and that is, all folios of the manuscript are not bound, glued, or tied together. Each folio is a separate leaf. Illustrated diagram for every scenario represented separately with red arrows indicates text flow and eye movement direction. (see Figure 4.12).
Figure 4.12: Graphical Visual Representation of Page-turning Scenarios (1, 2, 3), Text flow, and Eye Movement Direction, Seventeenth Century Devanagari Brahmanical Manuscripts
4.1.3 - (b2)  Page Turning System: Modern Publication Designs

Two major types of page turning system depending on the side of binding is preferred as shown in Figure 4.13. They are:

A - Turning page on the top of the pages or sections bound on the top side

B - Turning page on the left side of the pages or sections bound on the left side

![Page Turning System Diagram]

Figure 4.13: Digital Illustration - Top Side (Type A) and Left Side Binding (Type B) Methods and Page Turning Systems, Modern Publication Design

4.1.3 - (c)  Text Flow Direction

In this experiment, the order and direction of text flow are observed.

4.1.3 - (c1)  Text Flow Direction: Seventeenth Century Devanagari Brahmanical Manuscripts

Text or verses are written in a horizontal manner one after other from left to right margin. The text is a block of syllables written inside margin area, and it is without paragraphs. Circles marked in Figure 4.14 with red colour show punctuation marks in the form of two vertical lines i.e. danda. Extra space is left between two dandas indicate a number of the stanza or end of the section.

Details of Representative Manuscript:

<table>
<thead>
<tr>
<th>Title of Manuscript</th>
<th>Physical Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samarthakrut - Ramayan - Sundarakand - Yuddhakanda</td>
<td>Orientation: Portrait (Horizontal Page-turning System)</td>
</tr>
<tr>
<td>Bad No. 746 Samarth Vagdevata Mandir 1622 AD</td>
<td>Size of Manuscript: Width 4½” x Height 7”</td>
</tr>
<tr>
<td></td>
<td>The ratio of Width and Height: Approx. 1 : 1.55</td>
</tr>
</tbody>
</table>
Figure 4.14: Text Writing Pattern of the Seventeenth Century Devanagari Brahmanical Manuscripts,

In all the three scenarios discussed in Figure 4.12, text flow direction is different. Text flow direction is conditional and dependent on the direction in which the turned folio is kept. Text flow direction of all three scenarios is explained separately in Figure 4.12

Orientation of the Text on Front and Back Side of the Folio

In this experiment, a manuscript folio is scrutinized to examine the text flow direction on the front and the backside. Details of representative manuscript:

<table>
<thead>
<tr>
<th>Title of Manuscript</th>
<th>Physical Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Patanjali Mahabhasya</em></td>
<td>Orientation: Landscape (Vertical Page-turning System)</td>
</tr>
<tr>
<td>Acc. No. 817</td>
<td>Size of Manuscript: Width 11.3&quot; x Height 4.5&quot;</td>
</tr>
<tr>
<td>Deccan College Post Graduate and Research Institute, 1653 AD</td>
<td>The Ratio of Width and Height: Approx. 2.5: 1</td>
</tr>
</tbody>
</table>

Figure 4.15: Orientation of the Text and Text Direction on Front (1) and Back Sides (2) of Manuscript Folio, Seventeenth Century Devanagari Brahmanical Manuscripts
The part number ① of Figure 4.15 make evidence a front side of the folio of the manuscript. Folio is closely observed from top edge to the bottom edge. The orientation of text is from top margin, and the text flows down towards bottom margin. A red line with an arrow indicates the direction of the text.

The part number ② of Figure 4.15 demonstrate the text flow direction of the backside of the folio. If a folio ① flipped horizontally, then it will be perceived as shown in ②. The red line with an arrow indicates the text flow direction. Text flow direction is in the reverse order i.e. from bottom to top.

4.1.3 - (c2) Text Flow Direction: Modern Publication Designs

To study text flow in modern page layouts, representative sample books are selected based on their binding styles. They are as follows:

1) The first type: books bound on the top side of pages
2) The second type: books bound on the left side of the page

Representative sample books were further categorized into three groups, depending upon a number of columns employed in layouts.

Group 1 — (Figure 4.16) books are of the landscape orientation single column and bound on the top.

Group 2 — (Figure 4.17) books are of portrait orientation single column and bound at the left side.

Group 3 — (Figure 4.18) books are also of portrait orientation but the multiple or mixed numbers of columns employed in design and pages are bound at the left side.
4.1.3 - (c2) **Group 1: Top Side Book Binding, Single Column, and Text Flow Direction**

**Physical Description of the Representative Samples**

<table>
<thead>
<tr>
<th>Binding - Top Side</th>
<th>Landscape format</th>
<th>Single Column</th>
</tr>
</thead>
</table>

Figure 4.16: Top Side Book Binding (Group 1) - Red Arrow indicates Text Flow Direction, Modern Publication Design

4.1.3 - (c2) **Group 2: Left Side Book Binding, Single Column, and Text flow Direction**

**Physical Description of the Representative Samples**

<table>
<thead>
<tr>
<th>Binding - Left Side</th>
<th>Portrait format.</th>
<th>Single Column</th>
</tr>
</thead>
</table>

Figure 4.17: Left Side Book Binding - (Group 2) Red Arrow indicates Text Flow Direction, Modern Publication Design
4.1.3 - (c2): Group 3: Left Side Book Binding, Multiple Columns, and Text flow Direction

Physical Description of the Representative Samples

<table>
<thead>
<tr>
<th>Binding - Left Side</th>
<th>Portrait format</th>
<th>Multiple Column</th>
</tr>
</thead>
</table>

Figure 4.18: Left Side Book Binding (Multiple Columns) (Group 3) - Red Arrow indicates Text Flow Direction, Modern Publication Design

4.1.3 - (d) Page Imposition and Binding Systems

The page imposition technique is employed for printing on both the sides of paper i.e. front and back, aligning content of each side with other.

4.1.3 - (d1) Page Imposition and Binding Systems: Seventeenth Century Devanagari Brahmanical Manuscripts

After scrutinizing representative manuscripts, two types of page impositions found in the seventeenth century Devanagari Brahmanical manuscripts:
Type 1: Page imposition for a single page (Figure 4.19)
Type 2: Page imposition for double spread pages (Figure 4.20)

Details of Representative Manuscript in table form presented as under:

<table>
<thead>
<tr>
<th>Type</th>
<th>Manuscript Title</th>
<th>Physical Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><em>Patanjali Mahabhasya</em></td>
<td>Orientation: Landscape (Vertical Page-turning System)</td>
</tr>
<tr>
<td></td>
<td>Acc. No. 817, DC, 1653 AD</td>
<td>1 Page on one side of sheet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Pages per Sheet</td>
</tr>
</tbody>
</table>
Type 1: Deconstruction of the representative manuscript with single folio i.e two pages per sheet demonstrated in the following example (Figure 4.19). Content is written on a single folio in the manner of one page on each side of the folio. Later, folios of manuscript stacked one above the other in the sequence of reading i.e. from the beginning of the text to the end.

Figure 4.19: A Digital Illustration of Imposition and Binding - Manuscript with Single Page on One Side

Type 2: Deconstruction of following page imposition of the representative manuscript (Figure 4.20) demonstrates that the two pages are written on each side of the manuscript. Full sheet of paper as shown in Step 1, folded into half, which is demonstrated in Step 2. Further, two pages are planned with different orientation of text as shown in Step 3. These folded folios are stacked one on top of the lower, in sequence for reading i.e. from the beginning of the text to the end.

Figure 4.20: A Digital Illustration of the Manuscript with Double Spread with Paper Size and, Imposition of Pages on Front and Back Sides of Folios
Remarkable standardized binding system has been noticed in the entire representative manuscripts. In this system, the folios of a manuscript are seen wrapped together in a white or red cloth for protection and tied them with a cotton string. The folios of the manuscript are found separate and not stitched or bound together with a thread, or glue. Sometimes these folios are kept in between wooden planks for support. No section or Coptic binding is noticed in the manuscripts screened with a date, namely the seventeenth century.

4.1.3 - (d2) Page Imposition and Binding Systems: Modern Books

In a page imposition technique, first, a big sheet of paper is selected in such a way that multiple pages can be printed on front and backside of this big sheet. Same numbers of pages are arranged on the both sides of sheet. Pages are arranged on sheet depending upon the order of pages in the book. Once the pages are arranged as per the required sequence of page numbering in book, sheet is folded. It is called as the ‘signature’ as shown Figure 4.21. Such signatures are put together in sequence using various binding techniques to form a book block.

![Figure 4.21: Imposition of Pages on Folded Sheets with ‘Signature’: Modern Book](image)

Two very common types of page imposition observed in modern book design:

Type 1: Page imposition for the left side bounded books (Figure 4.22)

Type 2: Page imposition for the top side bounded books (Figure 4.23)

Following digital illustration demonstrates Type 1 page imposition system for the left side bounded books (Figure 4.22). In this case, eight pages are arranged on a sheet of paper. These pages are aligned with each other for making a ‘signature’ on both the sides of the sheet (Front and Back) in such a way that pages can be read in sequence after folding the sheet.
Figure 4.22: Demonstration of Page Imposition for Double Spread Type of book with Binding on Left Side, Modern Publication Design, Thaipatra

Following digital illustration demonstrates Type 2 page imposition system for the top side bounded books (Figure 4.23). In this case, four pages are arranged on a sheet of paper. These pages are aligned with each other for making a ‘signature’ on both the sides of the sheet (Front and Back) in such a way that the pages can be read in sequence after folding of the sheet.
108

Chapter 4: Data Analysis and Findings

Figure 4.23: Demonstration of Page Imposition for Double Spread Type of book with Binding on Top Side, Modern Publication Design, *Shree Hanuman Chalisa*

There are various types binding techniques available to set pages together in modern book. Among them following six are most popular styles for binding modern books as shown in Figure 4.24.

1. **Case Binding** with hardcover and dust cover jacket;
2. **Open Binding** show sewn sections, create dramatic effect;
3. **Perfect Binding** where signatures are glued together along with cover page using adhesive, e.g. paperback books;
4. **Spiral Binding** in which pages lay flat when open e.g. training manuals
5. **Wiro Binding** using metal rings mainly meant for reports and corporate publications
6. **Saddle-stitch Binding** in which folded papers/signatures are stapled in the center. Cheapest and most utilitarian method most commonly used in small size booklets.

Figure 4.24: Book Binding Techniques, Modern Publication Design
4.1.4 Findings of Theme 1: Form and Function of the seventeenth century Devanagari Brahmanical Manuscripts

During the seventeenth century and before, Indian traditional style for reading and writing was to sit on the floor with crossed or folded legs. The example of such reading and writing of a manuscript shown in Figure 4.1 demonstrate that the manuscript is kept in front of a reader either on a ground or on a desk. For writing purpose, the use of a small desk was in practice.

4.1.4 (a) Page Formats of the Representative Seventeenth Century Devanagari Brahmanical Manuscripts

A. Total 230 Devanagari Brahmanical manuscripts of the seventeenth century scrutinized from various repositories to understand their formats. Interestingly, the result of this endeavor makes evident that only two types of page layout formats were prevalent for writing manuscripts. These formats are (i) landscape and (ii) portrait.

B. Out of total 230 manuscripts, 228 manuscripts are found in the landscape format, i.e. horizontal orientation. In the landscape layout format, the proportion of the width is more than the height.

C. Only two manuscripts, out of total 230 manuscripts, are found in the portrait format i.e. vertical orientation. In the portrait layout format, the proportion of the width is less than the height.

The above observations indicate that preferred format for writing a manuscript in the seventeen century was oblong-shaped landscape layout format. A very few number of portrait formats prove that manuscript designers were reluctant to change a standard landscape layout format. However, very few designers did think differently, and showed their explorative nature and, they delved into an unusual vertical page format.

Among the representative manuscript selected for the study, one of them namely “Shree Samarthakrut Yuddhakandachi Prat’ in the custody of the ‘Samartha Vagdevata Mandir’, Dhule, Maharashtra is of portrait format, i.e. vertical orientation and is one among the rarest format used in the seventeenth century.
4.1.4 (b): Page Sizes of the Representative Seventeenth Century Devanagari Brahmanical Manuscripts

Representative manuscripts analyzed to study the width and height aspect ratio. Observations did not detect any standard aspect ratio between width and height. The manuscript size-range recorded in Table 4.2, shows following results:

- In the case of the landscape type of manuscripts, the width of manuscripts is varied between 6" to 13\(\frac{3}{4}\)" and height from 4\(\frac{1}{2}\)" to 8\(\frac{1}{2}\)". (see Table 4.2)
- In portrait type of manuscripts range of width- size found between 4\(\frac{1}{2}\)" and 8\(\frac{1}{4}\)" and, height range between 7" and 9\(\frac{1}{2}\)". (see Table 4.2).

The only two vertical manuscripts found in this survey are of following sizes:
(i) 4\(\frac{1}{2}\)" x 7" and, (ii) 8\(\frac{1}{4}\)" x 9\(\frac{1}{2}\)"

However, a few unique manuscripts are found at various repositories of the types suggested by scholars in manuscriptology. They are of following sizes and types:

(i) 'Gutka' type, a small size manuscript, namely Sachitra Pancharatna Geeta, Acc. no. 628, with size 6\(\frac{1}{2}\)" x 4\(\frac{1}{2}\)", and one more manuscript of this type with Acc. No. 629 and size 5\(\frac{3}{4}\)" x 3.15" (Samartha Vagdevata Mandir, Dhule, Maharashtra)

(ii) 'Musti' type, it can be held in the fist of hand (Acc. no. 694) - size 1\(\frac{1}{2}\)" x 4" (Samartha Vagdevata Mandir, Dhule, Maharashtra)

(iii) 'Pustika' type, such manuscripts are available at Deccan College Post Graduate and Research Institute, Pune. Their width is approximately 7" and height is around 5" (Acc. No. 4071- 1654 AD, 5953 - 1667 AD, 6142, 1636 AD, 10872 - 1667 AD, 10917 - 1651AD).

4.1.4 (c): Page Formats and Sizes of the Modern Publication Designs

In modern publication designs, books with three different formats noticed: Portrait, Landscape, and Square.

Modern books are designed in the various sizes. Their sizes may vary but they are fitted under different sections, formed by folding pages of ISO standard paper sizes, e.g. A, B and C series. An ‘A0’ size paper can be folded into A1, A2 A3, A4, A5, A6, etc.
(Figure 4.5). This is a convenient system for maximum utilization of paper without any wastage. A4 paper size is the most preferred size for books and magazines.

Modern graphic designers decide the size of the book based on its function, e.g. a small pocket size is preferred for holy books as shown in Figure 4.10, and the instruction manuals are mainly of pocket size or smaller than pocket size. They are portable and easy to carry while traveling and subsequent reading. However, academic or leisure reading book sizes are in the range of 5-6" width and their height is up to 9". Coffee table books and the reference books are bigger in size, sometimes bigger than A3 size because they are supposed to be viewed and appreciated visually instead of reading. To sum up, modern books are designed in various sizes i.e. small pocket size books to big reference books.

4.1.4 (b) Page Turning System, Text flow, Orientation of Text and Eye Movement of the Reader

Page Turning System

Total space occupied when the manuscript folio is flipped, measured approximately along with a comfortable distance between two folios is recorded in the current experiment. It is recorded in Table 4.3 and 4.4 shown below. This experiment has disclosed that the total space occupied by the turned folios flipped in the vertical or horizontal direction as shown in Figure 4.12. In addition to this, the experiment has thrown light upon the reading pattern for the current and previous page.

Table 4.3: Area Occupied by Flipped Folios (Landscape Format)

<table>
<thead>
<tr>
<th>Manuscript Size</th>
<th>Width and Height Ratio</th>
<th>Scenario 1</th>
<th>Scenario 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width 11.3&quot; Height 4.5&quot;</td>
<td>Approx. 2.5: 1</td>
<td>Width 11.3&quot; Approx. Height 9&quot;</td>
<td>Approx. Width 23&quot; Height 4.5&quot;</td>
</tr>
</tbody>
</table>

Table 4.4: Area Occupied by Flipped Folios (Portrait Format)

<table>
<thead>
<tr>
<th>Manuscript Size</th>
<th>Width and Height Ratio</th>
<th>Scenario 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width 4(^{1/2})&quot; Height 7&quot;</td>
<td>Approx. 1 : 1.55</td>
<td>Approx. Width 10&quot; x Height 7&quot;</td>
</tr>
</tbody>
</table>
Scrutinizing of the manuscript through digital experimentation divulges that:
A representative manuscript selected to conduct an experiment in Scenario 1 and 2 is of landscape format with a width almost two and half times bigger than the height.

i) **Scenario 1**: In the process of reading the manuscript, already read folio turned in the upward vertical direction of the current folio. (Figure 4.12/Table 4.2). Using this pattern for turning the folios, the horizontal approximate width remains the same as the width of the manuscript and doubles the height distance. In current experiment approximate vertical distance, which includes previous and the current page is 9", i.e. twice the height of manuscript. Ergonomically, this possibility of distance creates convenience for the reader in turning the page in the vertical direction.

In addition, it is observed that eye movement is very much comfortable for looking content from the previous page. This is because the eye moves unidirectional i.e. vertical direction only. This type of vertical arrangement of folios assists in creating continuity in the text flow.

ii) **Scenario 2**: In the process of reading the manuscript, already read folio turned towards the right side of the current folio in the horizontal direction. (Figure 4.12/Table 4.2). Using this pattern for turning the folios, the vertical height of the current folio and the previous folio remains same but the horizontal distance doubles. The approximate total width turned out around 23". To work with such an oversize width is beyond the normal ergonomic capacity of human being.

This type of horizontal arrangement of folios creates a challenging situation for the reader in terms of text flow. In addition, it makes the eye movement direction complicated while referring the previous folio. Disruption in the continuity occurs because of zigzag eye movement.

In addition to findings in Scenario 1 and Scenario 2, considering fragile nature of the material used for writing the manuscript, i.e. paper, it is very much essential to use both the hands to lift and flip the folio as shown in Figure 4.11.

iii) **Scenario 3**: A representative manuscript selected to conduct an experiment in Scenario 3 is of portrait format with height almost one and half times bigger than the width.

In the process of reading the manuscript, already read folio turned towards left side in the horizontal direction (Figure 4.12/Table 4.3)
The vertical height of the current folio and previous folio remains same but the horizontal approximate total width turned around 10".

Although, this type of horizontal arrangement of folios creates a zigzag eye movement but the order of the text or information remains from the left to the right (from the previous folio to current folio). Reading pattern shows equivalence to the Devanagari script that is from the left to the right direction. This pattern of reading is convenient for the reader in case there is a need to refer to the previous page.

**Text Flow Directions**

Page turning pattern followed in the seventeenth century Devanagari Brahmanical manuscripts, in which folio is turned in the vertical direction, influenced the orientation of the text on the sides of the folio. The orientation of the text as seen in Figure 4.15 shows the reverse direction of the text on both the sides of the manuscript folio. It is complementary with the top side bounded Group 1 type of modern publication designs Figure 4.16.

**Eye Movement of the Reader**

Digital experiment conducted to study modern publication design has revealed that the text flow patterns found in Group 1 books (top side binding and single column page layout) is in vertically downward direction, and it is corresponding to the system of manuscripts of the seventeenth century. In Group 2 and Group 3 (left side binding and multiple column page layouts), text flow direction is in a zigzag direction, sometimes horizontal, vertical and angular zigzag but still it is in the direction from left to right and creating a dynamic pattern. Since reading the pattern of all Indian scripts are in the same direction i.e. left to right, the reader finds it very much convenient with the system.

**4.1.4 (c) Page Imposition and Binding System**

- All manuscripts are in the form of a bunch of separate folios made of paper.
- No holes or piercing on paper is noticed in the seventeenth century Devanagari Brahmanical manuscripts.
- No extra case or wooden planks are found to bind them together.
- Each manuscript is wrapped up in a cloth and tied with a cotton string.

In modern books, numerous types binding techniques are in practice, which are from basic utility oriented stapling to expensive case binding. Imposing technique is followed
Chapter 4: Data Analysis and Findings

in printing by arranging many pages on a big sheet of paper as shown in Figure 4.22 and 4.24. This big sheet of standard size paper is folded to make signatures, which create a possibility of printing many pages on a single sheet as shown in Figure 4.21. These signatures are bound together by means of various section-binding techniques. Case binding, open binding, perfect binding, spiral binding, wiro binding, saddle-stitch binding are the most popular binding techniques today (Figure 4.24).

4.1.5 Comparative Analysis of Forms and Functions of Representative Seventeenth Century Devanagari Brahmanical Manuscripts

4.1.5 (a) Page Formats

A distinguishable factor has been noticed while comparing the above observations of the seventeenth century Devanagari Brahmanical manuscript formats with the modern publication designs.

- In the case of manuscripts, most preferred format is landscape, only two manuscripts found out of 230 which are in portrait format. However, the modern graphic designers judiciously use three formats for page layouts, and their sizes are with respect to the ratio of the page width and the height. These formats are a portrait, landscape, and square. Most preferred format found is the portrait over the landscape. The square page format did not often used. No matter what the size of the book is, the ratio has been considered most, and accordingly they adopted the three categories mentioned above. The book sizes available today are in a variety of sizes as per their functional requirement.

- While comparing sizes of the seventeenth century Devanagari Brahmanical manuscripts and modern books, it is observed that no standardization of sizes discovered in the former as it is seen in modern publication design practices, e.g. ISO standard paper sizes.

- Although the sizes of the paper were not standardized in the seventeenth century, various nomenclatures were predefined for the manuscripts, depending upon their form, size, and function, e.g. Mushti, Gutka, Pustika, Potho, etc. A reader can hold Mushti type manuscript in the fist. Gutaka is a center stitched manuscript, which is larger than Mushti. Pustika is still larger size of manuscript and the size of Potho manuscripts have more leaves and they are thicker than Pustika.
4.1.5 (b) Page Turning System, and its Association with Placements of Turned Pages

This experiment is conducted in three different scenarios which exposed similarities in the seventeenth century Devanagari Brahmanical manuscripts and modern books in terms of page-turning, text flow, and eye movement. It is justified as follows:

i) A similarity between page turning systems is noticed on the top side bounded, single column, Group 1 type of books (Figure 4.16) and the manuscripts with Figure 4.12 - Scenario 1. In this system, while reading a manuscript, folios are turned in the vertical direction, and the turned folio is placed towards the upward direction of the current folios. Page layouts formats of such of books and manuscripts are in landscape format.

ii) Modern book pages turning system and text orientation direction are complementary with the manuscripts as seen in Scenario 1 (Figure 4.12). The only difference noticed in the modern books is that their pages are bound together with the various types of binding techniques as seen in (Figure 4.24), whereas in the case of manuscripts they comprise of loose sheets of folios.

iii) A similarity between page turning systems is noticed on the left side bounded single and multiple columns, Group 2, 3 type modern publication designs (Figure 4.17 & 4.18) and the seventeenth century Devanagari Brahmanical manuscripts as represented in Scenario 3 (Figure 4.12). In this system, while reading a manuscript or a modern book, the folios are turned in a horizontal direction towards the left side of the current folio. This is the most common page turning system adapted in modern books, borrowed from portrait format manuscripts.

4.1.5 (c) Page Imposition and Binding System

Similarities are found in the imposition system of the single folio, double spread manuscripts with the single, and double spread top side bounded modern publication designs.

In the case of a manuscript binding system, which comprises of loose folios wrapped in a cloth, provides ease of portability but does not provide ease in reading. For reading purpose, the reader has to sit down and read it in the traditional manner as shown in Figure 4.1.
However, various types of modern book sizes and binding techniques have brought an ease in holding a book in hand and in portability as well. The reader need not have to sit in a particular posture as in the case of reading a manuscript made of loose folios, instead a reader can enjoy the hassle free reading even in a journey or traveling.

4.2 Theme 2: Composition and Layout Design: Page Structure, Typography, and Graphic Strategies

Composition means organized arrangement of various design elements, such as text, images, graphics, etc. to make a layout. Fundamentals of design help in making cohesive and spatial arrangements between the content used in the design. It is achieved with effective placements, alignments, division of space, grouping, visual flow, etc. The composition should be effective and functional.

4.2.1 Aims and Objectives

To identify elements dependable for composition and layout of the seventeenth century Devanagari Brahmanical manuscripts, and compare their design concepts with the modern book designs.

The objectives of study for this ‘Theme 2’ are to explore the organization of design elements on a folio of the seventeenth century Devanagari Brahmanical manuscripts. This study will explore:

(1) Anatomy of a Page, (2) Grid System, (3) Typographic Palette — Type Style and Paragraph Alignments, (4) Graphics Strategies

4.2.2 Approach to Study Composition and Layout Design of Devanagari Brahmanical Manuscripts and Modern Books

Manuscripts are collected from various repositories with common and uncommon layout design patterns and are of various genres. Selective few are identified for the study. These representative manuscripts are scrutinized in the current study for testing of the hypothesis.

H₀ -1 A structure of manuscripts contains many elements which are continued in a modern publication design

H₀ -2 Devanagari Brahmanical manuscript designers have their distinct system, style, and pattern for designing manuscripts.
Devanagari Brahmanical Manuscripts designers believed in simplicity and hence they focused on the content of the text and used minimalistic approach to other factors such as decoration and ornamentation.

Modern books, which comprise all possible design aspects, have been selected as a representative sample. Further layout and composition related aspects of the manuscripts and the modern books compared under various heads as described in ‘Aim and Objectives’.

4.2.3 (a) Page Anatomy — Structure of a Page

The structure of any publication comprises page anatomy. A page anatomy includes margins, columns, text block area, header, footer, grid system, baseline grid, and elements of page navigation system such as running titles, page numbers, etc.

Approach to Study Structural Page Layout Components of Devanagari Brahmanical Manuscripts and Modern Books

4.2.3 (a1) Page Anatomy of the Manuscripts with Structural Page Components

Total eleven representative manuscripts selected to examine page structure of the seventeenth century Devanagari Brahmanical manuscripts from various repositories of Maharashtra, namely the Deccan College Post Graduate and Research Institute (5), Anandashram Sanstha (3), Vedic Samshodhan Mandal (1), Bhandarkar Oriental Research Institute (1), Samartha Vagdevata Mandir (2). The common features have been observed related to page structure in the above-mentioned manuscripts, documented in a visual manner.

The manuscripts with the various layout styles and subjects are selected to understand the page structure, their components, and information system design features. The manuscripts of various genres with varied layouts are selected for the study. Observations documented in a visual deconstruction method.

Details of Representative Manuscripts:

<table>
<thead>
<tr>
<th>Manuscript Title</th>
<th>Physical Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kundamartandatika</td>
<td>Orientation: Landscape</td>
</tr>
<tr>
<td>Acc. No. 10287 DC, 1691 AD</td>
<td>Size of Manuscript: Width 21.5 x Height 10.5 cm</td>
</tr>
<tr>
<td></td>
<td>The Ratio of Width and Height: Approx. 2.05 : 1</td>
</tr>
</tbody>
</table>
4.2.3 (a2) Page Anatomy of Modern Book with Structural Page Components

A basic component which makes a structure of modern book has been discussed with the help of following examples. The first example represents a single column page layout as shown in Figure 4.26. The second example represents double open spread page layout with multiple columns, which comprises left (verso) and right (recto) page (Figure 4.27).

Details of Representative Modern Book with Single Column

<table>
<thead>
<tr>
<th>Book Title</th>
<th>Publisher</th>
<th>Publication Year</th>
<th>ISBN No.</th>
</tr>
</thead>
</table>

If the case of single page layout, a horizontal page margin is called as the left and the right margins.

If the page is double spread then horizontal margins are called as the inside and outside instead of the left or the right margin.
Chapter 4: Data Analysis and Findings

Figure 4.26: Page Anatomy of Single Columns Page Layout, Digital Illustration, Modern Publication Design

Details of Representative Modern Book with Multiple Columns Layout (Figure 4.21):

<table>
<thead>
<tr>
<th>Book Title</th>
<th>Publisher</th>
<th>Publication Year</th>
<th>ISBN No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Marketing - Analysis</td>
<td>Routledge</td>
<td>2004</td>
<td>0–415–31132–2 (hbk)</td>
</tr>
<tr>
<td>and Strategy</td>
<td></td>
<td></td>
<td>0–415–31133–0 (pbk)</td>
</tr>
</tbody>
</table>

Figure 4.27: Page Anatomy — Multiple Columns and Mirror Image type Page Layout, Digital Illustration, Modern Publication Design
4.2.3 (b) Grid System in the Page Layouts of the Seventeenth Century Devanagari Brahmanical Manuscripts and Modern Books

Grid is made up of margins, columns, flowlines that break the horizontal space. It creates various spatial zones to place various elements such as text, images, and other information on the page.

4.2.3 (b1) Grid Construction Methods of the Seventeenth Century Devanagari Brahmanical Manuscripts

Approach to the study Grid System and Layouts

Four types of representative manuscripts are selected to understand the grid structure, margin area and position of the text block for the page layout. The entire process of understanding grid and structure of manuscript is explored through 'Digital Visual Representation Method'.

Following types of representative manuscripts selected for the study:
Type 1: Manuscript with a single column and a single folio layout format
(Single text block, landscape format, text oriented)
Type 2: Manuscript with a single column and a double spread page layout format
(Single text blocks, landscape format, text, and image)
Type 3: Manuscript with a variation in text blocks sizes; landscape layout
Type 4: Manuscript with single text block; portrait layout format

4.2.3 (b1) - Type 1: Grid Construction of a Manuscript with a Single Folio Layout Format

The content of a representative manuscript is selected for this study comprises only text. This manuscript has a single folio and a text block made up of a single column.

Details of manuscript as below:

<table>
<thead>
<tr>
<th>Type 1: Manuscript with Single Text block</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manuscript Title</strong>: Ranganath Virachit 'Chitsadanadalalhari' Tika, 1698 AD</td>
</tr>
<tr>
<td><strong>Library Details</strong>: Bharat Itihas Sanshodhak Mandal, Acc. No. 39,125</td>
</tr>
<tr>
<td><strong>Physical Description</strong></td>
</tr>
<tr>
<td>Orientation: Landscape Layout Format</td>
</tr>
<tr>
<td>Size of Manuscript: Width 245 mm x Height 120 mm</td>
</tr>
<tr>
<td>Genre: Religious</td>
</tr>
</tbody>
</table>
Investigation to understand the layout grid structure of ‘Ranganath Virachita ‘Chitsadanadalahari’ Tika’ manuscript, revealed following steps in grid formation and page designing (Figure: 4.28)

**Step 1:** Defining a specific size for manuscript writing.

**Step 2:** Divide space on the page into modular divisions to create columns and rows (8 columns & 6 rows).

**Step 3:** Use of outside one unit field to define a margin area (left, right, top & bottom margin: a, b, c, & d respectively as shown in Figure 4.28). ‘h’ is the text block area.

**Step 4:** Divide ‘h’ i.e. a text block area into a number of parallel lines (Figure 4.28). The distance between these lines decided as per the height/size of the character to be written on the same. Define space for folio number, running title, and section title. Mark
impression on these parallel lines with the help of a pointed stylus. This entire process helped in making a page template ready with a headline grid, running title and folio number.

**Step 5:** Using the template created earlier, complete the writing on a page as shown in final layout (Figure 4.28).

**A Different Approach in Headline Grid Construction**

Following two specimens methods are practiced to create headline grid. They are different from the method discussed in Type 1 (Figure 4.28 - Step 4). Manuscripts details are as below:

<table>
<thead>
<tr>
<th>Type</th>
<th>Manuscript Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><em>Patanjali Mahabhasya, DC, Ac. No817 1653 AD</em></td>
</tr>
<tr>
<td>2</td>
<td><em>Samarthakruta Ramayana, SVM, Anandashram, Acc No. 746, 1623 AD</em></td>
</tr>
</tbody>
</table>

![Diagram of headline grid construction](image)

Figure 4.29: Typography, Headline Grid, and Formation of Leading Space (Type 1), Seventeenth Century Devanagari Brahmanical Manuscripts

![Diagram of headline grid construction](image)

Figure 4.30: Typography, Headline Grid, and Formation of Leading Space (Type 2), Seventeenth Century Devanagari Brahmanical Manuscripts
In above specimen (Figure 4.29) Four-line grid unit used to write text. The text is written in the first and second part of the unit. The third part is left blank as a leading space between two successive lines. The second line is written using fourth and fifth parts. Sequence continued for writing rest of the text.

In above specimen (Figure 4.30) Three-line grid unit is used to write text. The text is written in the first part of the unit. The second part is left blank as a leading space between two successive lines. The second line is written using a third unit. Sequence continued for writing rest of the text.

4.2.3 (b1) - Type 2: Grid Construction of a Manuscript with a Double Spread Page Layout Format

The content of a representative manuscript selected for this study comprises text and image. This manuscript has a double spread folios and text block made up of a single column.

Details of manuscript as below:

<table>
<thead>
<tr>
<th><strong>Type 1:</strong> Manuscript with Single Text block</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manuscript Title:</strong> Kundamartanda - Suprabha Vyakhya by Anant Daivadnya, 1688 AD</td>
</tr>
<tr>
<td><strong>Library Details:</strong> Anandashram, Acc. No. S 21-1-18</td>
</tr>
<tr>
<td><strong>Physical Description</strong></td>
</tr>
<tr>
<td>Orientation: Landscape Layout Format</td>
</tr>
<tr>
<td>Size of Manuscript: Width 290 mm x Height 120 mm</td>
</tr>
<tr>
<td>Genre: Architecture</td>
</tr>
</tbody>
</table>

Investigation of layout structure of pages of 'Kundamartanda - Suprabha Vyakhya’ manuscript, revealed following steps in grid formation and page designing:

**Step 1:** Selection of a paper / sheet with a specific size for manuscript writing. (Figure 4.31)

**Step 2:** A sheet is folded once to create two leaves and four pages. (Figure 4.31)

**Step 3:** A sheet fold has defined the page imposition on the page along with the placement and direction of pages. (Figure 4.31)
Step 4: The horizontal space is divided into nine columns of equal width. The vertical space is divided into five rows of equal height (Figure 4.32). This division has defined an area for the ‘text block’ and ‘margin’ within the page layout. This procedure has created an intersection of columns and rows resulted in formation of a modular grid consisting of a number of units. One unit area from all sides utilized as a margin area i.e. left, right, top and bottom respectively. This process has also defined a text block area, denoted by ‘h’.

Step 5: To define an area for the margins and the text block area, a simple process followed i.e. one unit field space of outer side, defined as margin (a, b, c and d) and inside area i.e. ‘h’ is considered for as text block area. Figure 4.33 shows two pages of spread with symmetrical margins and text block area.
Step 6: Draw borders in order to physically indicate margin on the left and the right sides of the page. To define these guidelines for width of text, one unit space is utilized from left and right side of the page. (Figure 4.34)

Step 7: Headline grid for the text area created by deciding the type size and leading space i.e. space between two successive lines as shown in Figure 4.34. Horizontal grid is constructed within the text area by dividing it into 11 equal parts to accommodate 11 lines of text per page. Mark impression on these eleven parallel lines with the help of a pointed stylus. This entire process helped in making a page template ready with a headline grid, running title and folio number. The size of character and leading space defined in this process. The size for the image area is also decided by utilizing two-unit
horizontal space and six vertical headlines space. Thus, image area is aligned to the bottom of text block. (Figure 4.35)

Figure 4.34: Digital Illustration of Boundary Lines on the Left and the Right Margins

Figure 4.35: Digital Illustration - Grid Deconstruction with Defined Margins, Headline Grid, Page Navigation System and, Image Area

**Step 8:** Using the template created earlier, complete the writing on a page (Figure 4.36)

Figure 4.36: Digital Illustration showing Superimposition of Grid Structure, and Manuscript Page
4.2.3 (b1) - Type 3: Grid Construction of a Manuscript with a Landscape Layout Format and Variations in the Text Block Sizes

<table>
<thead>
<tr>
<th>Type 2: Manuscript with Multiple Text Blocks with Variation in Sizes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manuscript Title:</strong> 'Ragavibodh', 1616 AD</td>
</tr>
<tr>
<td><strong>Library Details:</strong> Anandashram, Acc. No. S 23-1-3</td>
</tr>
<tr>
<td><strong>Physical Description</strong></td>
</tr>
<tr>
<td>Orientation: Landscape Layout Format</td>
</tr>
<tr>
<td>Size of Manuscript: Width 245 mm x Height 145 mm</td>
</tr>
<tr>
<td><strong>Genre:</strong> Music</td>
</tr>
</tbody>
</table>

A manuscript selected for observation is of *tripatha* style. In such manuscripts layouts, the text is written in three horizontal parts. Generally, *mula* i.e. main text is written in the middle portion and the commentary is written in the top and bottom portions of the page as shown in the following example. (Figure 4.37)

Following digital illustrations represent a critical analysis of grid formation process of ‘Ragavibodh’ manuscript to design a template page.

**Step 1:** Selection of a paper with a specific size for manuscript writing.

**Step 2:** Later horizontal and vertical space are divided into a number of parts to define text and margin areas within the page layout. This process has created a number of columns with equal width and rows with equal height. The intersection of columns and rows has resulted in formation of a modular grid consisting of a number of units. In current exercise, 8 columns and 6 rows are created (Figure 4.37). One unit area from all sides decided as a margin area i.e. left, right, top and bottom respective. This process has also defined a text block area ‘h’.

**Step 3:** The top and the bottom row of a text block, ‘h’ area further divided into 3 lines each. This is grid construction for musical composition area (Figure 4.37).

**Step 4:** Two horizontal rows of units in the middle portion of text block area, ‘h’ has been identified for musical notation. These two rows are broken horizontally into six columns and vertically into six rows. The top and the bottom parts of these six horizontal lines or rows left as a margin between the top and the bottom portions of ‘musical composition’ area. Thus, a page layout is created with two different layout grids; one for the musical composition and other for the musical notations area.
Impressions are marked on these parallel lines with the help of a pointed stylus. This entire process has aided in making a page template ready with a headline grid, and folio number (Figure 4.37).

Figure 4.37: Digital Illustration of Grid Construction of a Manuscript with a ‘Tripatha’ Page Layout

**Step 5:** A place in the vertical center, right margin area determined for writing folio number. (Figure 4.38)

**Step 6:** Using the template created earlier, completed the writing on a page (Figure 4.38)

Figure 4.38: Digital Illustration - A Page Layout Template Design for a Manuscript with ‘Tripatha’ style
4.2.3 (b1) - Type 4: Grid Construction of a Manuscript with a Portrait Layout Format

<table>
<thead>
<tr>
<th>Type 3: Manuscript with Portrait Layout Format</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manuscript Title:</strong> ‘Shree Samarthakruta Yuddhakanda Prat’, 17th Century</td>
</tr>
<tr>
<td><strong>Library Details:</strong> Samartha Vagdevata Mandir, Acc. No. Bad No. 255</td>
</tr>
</tbody>
</table>

**Physical Description**

- **Orientation:** Portrait Layout Format
- **Size of Manuscript:** Width 110 mm x Height 175 mm
- **Genre:** Epic - Ramayana (Poetry)

A representative manuscript selected for the observation is a poetry form of literature. It has rhythmic and aesthetic qualities, written in Indian rhetoric system. One of the distinct design features of this layout is ‘hasia’ borders, which are eliminated from the layout design. *Hasia* borders are the prominent element of most of the manuscripts of the seventeenth century Devanagari Brahmanical manuscripts. Another unique design feature is; the verses are written in the stanza format, and each stanza comprises of four lines and forty-eight syllables. Each line has twelve syllables. Every stanza is numbered and these numbers are written below the last line. (Figure 4.39)

Following digital illustrations represent critical investigation of grid formation process of ‘Shree Samarthakruta Yuddhakanda Prat’ manuscript to design a template page. (Figure 4.39 - Figure 4.40)

**Step 1:** Selection of paper with a specific size for manuscript writing.

![Step 1: Selection of paper with a specific size for manuscript writing.](image)

**Step 2:**

![Step 2: Grid Construction of a Manuscript with a Portrait Format Page Layout - Poetry Form](image)

**Step 3:**

![Step 3: Grid Construction of a Manuscript with a Portrait Format Page Layout - Poetry Form](image)

Figure 4.39: Digital Illustration - A Grid Construction of a Manuscript with a Portrait Format Page Layout - Poetry Form
Step 2: The horizontal space is divided into five columns of equal width. The vertical space is divided into eight rows of equal height. This division has guided in the defining area for text block and margin within the page layout. This procedure has created an intersection of columns and rows resulted in the formation of a modular grid consisting of a number of units. One unit area from all sides has been utilized as a margin area i.e. left, right, top and bottom respective. This process has also defined a text block area ‘h’ (Figure 4.39 - Step 2)

Step 3: Text block i.e. ‘h’ area, as shown in Figure 4.39 - Step 3 is divided into eighteen horizontal rows. Two extra rows are added at the bottom beyond the text block area.

Step 4: Three stanzas are planned per page. As per the rhetoric style chosen for poetic writing form, each stanza is a group of four lines. Between each stanza, three horizontal rows are left blank. Thus, eighteen lines within a text block area are occupied. Further, to write a stanza number shown as ‘f’ in Figure 4.40- Step 4, a place decided i.e. in the horizontal center and in the vertical center of line number five and six; twelve and thirteen; and nineteen and twenty. Line numbers nineteen and twenty, which are outside text block and in the margin area are utilized to write stanza number of the bottommost stanza. Thus, a template of page layout is created.

Step 5: Using the template created earlier, completed the writing on a page.
A representative manuscript is selected for the observation noticed dissimilar design features from the seventeenth century Devanagari Brahmanical manuscripts. One of the distinct design features of this layout is ‘hasia’ borders which are eliminated from the layout design. Another unique design feature noticed that verses are written in the stanza format and each stanza comprises of two lines. Every stanza is numbered and these numbers are written below it. (Figure 4.42)

**Step 1:** Selection of paper with a specific size for manuscript writing.

**Step 2:** The vertical space is divided into thirty-eight rows of equal height to create a headline grid.(Figure 4.41)

**Step 3:** This division has guided in defining text block and margin area within the page layout. The top and the bottom margins are marked by using two horizontal blocks. The horizontal margin is also defined. i.e. left, right, respective. Defined a text block area is denoted by ‘h’ (Figure 4.41 - Step 2 & 3)
Step 4: Eleven stanzas are planned per page. As per the rhetoric style was chosen for poetic writing form, each stanza is a group of two lines. Between each stanza, one horizontal row is left blank. Further, to write a stanza number shown as ‘v’ in Figure 4.42- Step 4, a place decided i.e. in the horizontal center of the blank row. Thus, a template of page layout is created. The salutation of god is written in the top second row and the folio number is denoted by ‘f’ in Figure 4.42 - Step 4, is written in the first row and aligned to the right edge of the text block. Thus, a template of page layout is created.

Step 5: Using the template created earlier, completed the writing on a page
4.2.3 (b2): **Grid Construction Patterns in the Modern Books or Publication Designs**

Representative books from various genres were selected to understand the grid structure, margin area and position of the text block in the page layout. The entire process of understanding grid and structure of manuscript has been explored through 'Digital Visual Representation Method'.

Criteria for representative modern books selection are as follow:

1. Modern Book with a single column page layout format
2. Modern Book with multiple columns page layout format

### Table 4.5: Details of Representative Modern Books for Layout Grid Study

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Page Layout Grid Type</th>
<th>Book Size W x H in mm</th>
<th>Grid - Columns &amp; Rows</th>
<th>Type of Publication</th>
<th>Book Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Single Column Modular Portrait Format</td>
<td>138 x 210</td>
<td>9 x 13 Modular Grid</td>
<td>Historical Narrative Biography</td>
<td>Lokapala Raja Sayajirao Sayajirao Saket Prakashan, 2013</td>
</tr>
<tr>
<td>2</td>
<td>Single Column Landscape Format</td>
<td>138 x 240</td>
<td>1 x 1</td>
<td>Narrative Biography - Holy Book</td>
<td>Shree Gajanan Vijay Shri Shivshankar Patil, 2009</td>
</tr>
<tr>
<td>4</td>
<td>Multicolumn Modular Grid</td>
<td>190 x 257</td>
<td>3 x 4</td>
<td>Weekly Family Magazine</td>
<td>Sakal Saptahika Sakal Publishers Pvt. Ltd., 2016</td>
</tr>
<tr>
<td>5</td>
<td>Multicolumn Grid</td>
<td>190 x 257</td>
<td>3 x 1</td>
<td>Weekly Family Magazine</td>
<td>Sakal Saptahika Sakal Publishers Pvt. Ltd., 2016</td>
</tr>
<tr>
<td>6</td>
<td>Multicolumn Symmetrical Grid</td>
<td>190 x 257</td>
<td>2 x 1</td>
<td>Weekly Newsletter</td>
<td>Family Doctor, Sakal Publishers Pvt. Ltd., 2016</td>
</tr>
<tr>
<td>8</td>
<td>Mix Grid Layout</td>
<td>127 x 185</td>
<td>2-3 x 3</td>
<td>Book - Travel Guide</td>
<td>Lonely Planet</td>
</tr>
<tr>
<td>9</td>
<td>Hierarchical Grid</td>
<td>180 x 250</td>
<td>1 x 2</td>
<td>Book - Holy Book</td>
<td>Dasbodh</td>
</tr>
<tr>
<td>10</td>
<td>Golden Section</td>
<td>18 in x 9 in</td>
<td>3 x 3</td>
<td>Catalogue</td>
<td>Unpublished Work</td>
</tr>
</tbody>
</table>
4.2.3 (b2) Type 1: A Single Column Portrait Format, Modern Publication Design

A representative modern book, a biography of historical narrative genre is selected for the study. A page layout consists of single column and portrait format. Following digital illustrations represent critical investigation of grid formation process of ‘Lokapala Raja Sayajirao’ to design a template page. (Figure 4.43)

**Step 1:** Define a print area for the document, which is a trimmed book size.

**Step 2:** The vertical document space is divided into thirteen rows of equal height and horizontal space is divided into nine columns. This procedure has created an intersection of columns and rows, resulted in formation of a modular grid consisting of units. One unit area from all sides is utilized as a margin area i.e. left, right, top and bottom respectively. This process has also defined a text block area ‘h’ (Figure 4.43 - Step 2)

**Step 3:** Further, the text block area (h) is divided vertically with parallel lines for creating headline grid to compose body text on it. Page number (f) and running title (e) are aligned to the top edge of bottom margin unit. (Figure 4.43 - Step 3)

![Figure 4.43: A Single Column Page Layout with Portrait Format - Digital Illustration of Deconstruction (Type 1: Step 1-3), Modern Publication Design](image)

4.2.3 (b2) Type 2: A Single Column Landscape Format, Modern Publication Design

A representative modern book is selected for the observation of a religious narrative biography. A page layout consists of single column and landscape format. Following
digital illustrations represent critical investigation of grid formation process of ‘Shri Gajanana Vijaya’ to design a template page. (Figure 4.44)

Step 1: Define a print area for the document, which is a trimmed book size. Margin area defined. The left and the right margin sizes are bigger than the top and the bottom margins.

Step 2: Text block area is further divided into fifteen parallel lines i.e. headline grid. (Figure 4.44 - Step 2)

Step 3: The left margin is utilized for placing running title (e), and the right margin area is utilized for placing page number (f), and section title. Hasia borders as seen in handwritten manuscripts are replaced by decorative borders at the edge of left and right margin.

Figure 4.44: Single Column Page Layout with Landscape Format - Digital Illustration of Deconstruction (Type 2: Step 1-3), Modern Publication Design
4.2.3 (b2) Type 3: A Multicolumn Portrait Format, Modern Publication Design

A representative modern book selected for the observation is a weekly family magazine. A page layout consists of a multiple column and portrait format. The following digital illustrations represent critical investigation of grid formation process of ‘Sakal Saptahik’ to design a template page. (Figure 4.47)

**Step 1:** Define a print area for the document, which is a trimmed book size. (Figure 4.45 - Step 1)

**Step 2:** First margin areas have been defined. The top margin area is 28 mm. It is kept bigger in size for the purpose of header illustrations, running title, and section heading. In the bottom margin is (12 mm) mainly displayed the date of the issue and the page number. As per the requirement of the design, in few sections subject specific illustrations incorporated. The left and the right margin area are of equal size i.e. 15 mm. This process has created a text block space for placing content (h). This text block place is divided vertically into three rows of equal height and horizontally into twelve columns. This procedure created intersection of columns creating guidelines for placing content (Figure 4.45 - Step 2)

**Step 3:** Illustration of the running title is placed in the top margin area and is aligned to the left edge of text block and the width is of two columns. The text block area (h) is divided vertically with parallel lines for creating headline grid to compose body text on
Chapter 4: Data Analysis and Findings

The combination of module areas and columns help to make the template of the page layout. Areas marked for the text and images of four different type of text (Figure 4.46 - Step 3)

**Step 4:** Template created earlier, which was utilized to place various types of paragraphs with distinctive styles, are placed in the text block area along with the images (Figure 4.46 - Step 4). Final layout is represented in Figure 4.47.

Figure 4.46: Multiple Column Page Layout with Portrait Format - Digital Illustration of Deconstruction (Type 3:Step 3-4), Modern Publication Design

Figure 4.47: Multiple Column Page Layout with Portrait Format - Digital Illustration of Deconstruction (Type 3), Final Layout, Modern Publication Design
4.2.3 (b2) Type 4: A Multicolumn Modular Grid, Modern Publication Design

**Step 1:** Define a print area for the document, which is a trimmed book size. (Figure 4.48 - Step 1). First margin areas have been defined.

**Step 2:** Areas planned for the text block, running title, section title, page number, volume number. Text block area (h) is divided into three columns. (Figure 4.48 - Step 2)

**Step 3:** Text block area divided horizontally into four modules. This process has created twelve units to place the content of twelve moon signs. (Figure 4.48 - Step 3)

**Step 4:** Each module is further divided into baseline grid. Each module has line count 9 as per the chosen font size (Figure 4.48 - Step 4). Thus a template is ready to place content.

**Step 5:** Content is placed on the pages to complete the design job. (Figure 4.48 - Step 5)

Figure 4.48: Multiple Column Modular Grid Page Layout - Digital Illustration of Deconstruction (Type 4:Step 1-5), Modern Publication Design
4.2.3 (b2) Type 5: A Multicolumn Grid Page Layout, Modern Publication Design

Figure 4.49: Multiple Column Grid Page Layout - Digital Illustration of Deconstruction (Type 5), Modern Publication Design

4.2.3 (b2) Type 6: A Multicolumn Symmetrical Grid, Modern Publication Design

Figure 4.50: Multiple Column Symmetrical Grid Page Layout - Digital Illustration of Deconstruction (Type 6, Modern Publication Design)

4.2.3 (b2) Type 7: Multicolumn Asymmetrical Grid, Modern Publication Design

Figure 4.51: Multiple Column Asymmetrical Grid Page Layout - Digital Illustration of Deconstruction (Type 7), Modern Publication Design
4.2.3 (b2) Type 8: Mix Grid Layout, Modern Publication Design

Figure 4.52: A Mix Grid Page Layout - Digital Illustration of Deconstruction (Type 8), Modern Publication Design

4.2.3 (b2) Type 9: Hierarchical Grid, Modern Publication Design

Figure 4.53: A Grid Construction of a Hierarchical Grid Page Layout - Digital Illustration of Deconstruction (Type 9), Modern Publication Design

4.2.3 (b2) Type 10: Golden Ratio Grid, Modern Publication Design

Step 1: Use a template or create a Golden Ratio Grid

Step 2: Decided Image area

Step 3: Images placed in the area

Figure 4.54: A Grid Construction of a Golden Ratio Grid Page Layout - Digital Illustration of Deconstruction (Type 10), Modern Publication Design
4.2.3 (c) Type Styles and Paragraph Alignments

Every page layout has textual information and a mixture of information categories, e.g. heading, subheading, body copy, photo captions, etc. Different typefaces are chosen to represent the category. These typefaces comprise various styles such as handwritten, calligraphic, humanist, with decorated serifs, with thick and thin strokes, etc. In modern graphic design, most of the fonts have font families with attributes such as regular, bold, italics, bold italics, extra bold etc. Paragraph lines within text blocks are aligned to each other in a specific manner.

Approach to Study Type Style and Paragraph Alignments of Devanagari Brahmanical Manuscripts and Modern Books

Representative seventeenth century Devanagari Brahmanical manuscripts from various repositories of Maharashtra are selected to understand basic typographic palette and compared the observations with the modern publication design.

Representative manuscripts selected from Deccan College Post Graduate and Research Institute (6), Anandashram Sanstha (1), Samartha Vagdevata Mandir (3) and Bharat Itihas Samshodhak Mandal (3). Common features observed related to the basic typographic palette which includes type styles and paragraph alignments documented in a visual method.

Modern books with various layouts such as cover pages and inside pages are observed to understand the selection of basic typographic palette which includes type size as per the level of importance and paragraph alignments. Modern books of various genres with different layouts are selected for the study. The observations are documented in a visual method.
### 4.2.3 (c) a1: Type Styles of the Representative Seventeenth Century Representative Devanagari Brahmanical Manuscripts

Observations about typestyle, line spacing, characters per line, lines per page, alignment of text recorded in Table 4.6 along with manuscripts images.

Table 4.6: Type Styles of the Representative Seventeenth Century Devanagari Brahmanical Manuscripts

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Library</th>
<th>Manuscript Title</th>
<th>Accession No.</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SVM</td>
<td>Samarthakruta Ramayana</td>
<td>746</td>
<td>1623 AD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Style: Handwritten text</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grey Value: Medium</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Form of text - Legible, Readable</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Letters per Line:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lines Per Page: 15-17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>DC</td>
<td>Vrutta - Ratnakarah (Satikah)</td>
<td>3001</td>
<td>1637 AD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Style: Handwritten text</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Old Classic type letterforms - a, ra, sha</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grey Value: Light</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Form of text - Legible, Readable</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Letters per Line: 35-44</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lines Per Page: 11-13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>DC</td>
<td>Patanjali Mahabhasya</td>
<td>817</td>
<td>1653 AD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Style: Calligraphic text</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Old Classic type letterforms - a, sha</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grey Value: Dark (Bold)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Form of text - Legible, Readable</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Letters per Line: 55-58</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lines Per Page: 14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sr. No.</td>
<td>Library</td>
<td>Manuscript Title</td>
<td>Accession No.</td>
<td>Period</td>
</tr>
<tr>
<td>---------</td>
<td>---------</td>
<td>------------------------</td>
<td>---------------</td>
<td>--------------</td>
</tr>
<tr>
<td>4</td>
<td>DC</td>
<td><em>Patee Ganita</em></td>
<td>97</td>
<td>1661 AD</td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="image1.png" alt="Image of manuscript" /></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
|         |         | **Style:** Handwritten text, daily writing  
**Grey Value:** Dark (Bold)  
**Form of text:** Legible, Readable | **Letters per Line:** 38  
**Lines Per Page:** 20  
**Special Remarks:** Inconsistent form of lettering |
| 5       | SVM     | *Kalyanpotha*          | 158           | Late 17th Century |
|         |         | ![Image of manuscript](image2.png) |               |              |
|         |         | **Style:** Calligraphic text  
**Old Classic type letterforms - a, sha**  
**Grey Value:** Dark (Bold)  
**Form of text:** Legible, Readable | **Letters per Line:** 24  
**Lines Per Page:** 14  
**Special Remarks:** Fluid and cursive vowel symbols, paragraph space  
**Metrical literature** |
| 6       | Anandashram | *Vruddhachanakya* | S 10-2-12     | 1694 AD      |
|         |         | ![Image of manuscript](image3.png) |               |              |
|         |         | **Style:** Calligraphic text  
**Grey Value:** Dark (Bold)  
**Form of text:** Legible, Readable | **Letters per Line:** 31-36  
**Lines Per Page:** 14  
**Special Remarks:** Fluid, cursive terminals, and vowel symbols  
**Written aesthetically**  
**Metrical literature:** Four verses of eight syllables in one stanza  
**Coloured punctuation Marks** |

143
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Library</th>
<th>Manuscript Title</th>
<th>Accession No.</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>BISM</td>
<td>Bhagvad Geeta - Satikah</td>
<td>51/73</td>
<td>1696 AD</td>
</tr>
</tbody>
</table>

**Style: Calligraphic text**

- Grey Value: Dark (Bold)
- Form of text - Legible, Readable

**Letters per Line:**

- For main text - approx 48
- Commentary - approx 58
- Lines Per Page: 12

**Special Remarks:**

- Fluid, Cursive terminals and vowel symbols
- Variations in text size
- Main text is larger than the commentary
4.2.3 (c) a2: Text Alignments in the Representative Seventeenth Century
Devanagari Brahmanical Manuscripts

Representative manuscripts studied to understand various text alignments.

Details of representative manuscript with paragraph alignments presented in table form are as below:

Table 4.7: Specimens of Text alignments of the Representative Seventeenth Century Devanagari Brahmanical Manuscripts

<table>
<thead>
<tr>
<th>Type</th>
<th>Manuscript Details</th>
<th>Bhagavadgeeta Tika, BISM, Ac No. 39/125, 1698 AD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Paragraph Alignment</td>
<td>Justified - Text is aligned to the both ends of margins</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[Image]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Manuscript Details</th>
<th>Nirnaysindhu, DC Ac.No. 850, 1653 AD</th>
</tr>
</thead>
</table>
| 2    | Paragraph Alignment | Justified - Text is aligned to the both ends of margins
|      |                     | The last line of the text is effectively justified by adding specific symbols and characters to show end of the text |
|      |                     | [Image]                                           |
## Chapter 4: Data Analysis and Findings

<table>
<thead>
<tr>
<th>Type</th>
<th>Manuscript Details</th>
<th>Page</th>
<th>Paragraph Alignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Ranganath Virachit 'Chitsadanadalahari' Tika, BISM, Ac. No. 39125, 1620 AD</td>
<td>Justified - Text is aligned at both ends of margins The last line of the text is center aligned Second last line of the text is effectively justified by adding specific symbols and characters to show the end of the text as seen in Type 2.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Vruttaratnakar, DC, Ac No. 3001, 1637 AD</td>
<td>Justified - Text is aligned to the both ends of margins <em>Tripatha</em> style layout. Text block of the main text is placed in the vertical center of page, paragraph alignment of the text is justified</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Manuscript Details</td>
<td>Paragraph Alignment</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td><em>Patee Ganit, DC, Ac. No. 97, 1661 AD</em></td>
<td>The last line of the text is left aligned</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td><em>Bhagvad Geeta - Satikah, BISM, Ac. No. 51/73, 1696 AD</em></td>
<td>Justified - Tripatha style page layout</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Indented last paragraph, Paragraph begins where the last line of previous paragraph ends (Drop line text alignment)</td>
<td></td>
</tr>
</tbody>
</table>
4.2.3 (c) b1: Type Styles of Representative Modern Publication Designs

Following are the examples of the representative modern publication designs with variety of typefaces and their styles applied for text in single page layout compositions.

Figure 4.55: Use of Multiple Typestyles in Single Page Layout Designs, (Type 1-6) Modern Publication design - (Narale, Sanskrit Primer), (Pangarkar, 1990), (Family Doctor, 2016), (Saptahik Sakal, 2016), Sakal Publishers Pvt. Ltd., 2016,
4.2.3 (c) b2: Text Alignments in Modern Publication Design

Following are the most commonly used text alignments in modern publication designs.

Figure 4.56: Basic Text Alignments in Modern Graphic Designs, (Type 1-4)
Modern Publication design

Following are the examples of multiple types of paragraph alignments in single page layout

Figure 4.57: Combination of Multiple Text Alignments in Layout Composition, Modern Graphic Designs, (Pangarkar, 1990)
4.2.3 (d) Graphic Strategies

Supportive images, narrative illustrations and graphics along the side of the text help a reader in understanding the text-based information more effective. These visual contents provide ease in perusing the information more quickly rather reading a long text. Hence plays important role in page layouts.

Approach to Study Graphic Strategies in Devanagari Brahmanical Manuscripts and Modern Books

Representative seventeenth century Devanagari Brahmanical manuscripts from various repositories of Maharashtra are selected to understand graphic strategies and their placements in page layouts and compared observations with the modern publication design.

4.2.3 (d) a1: Graphic Strategies in Seventeenth Century Representative Devanagari Brahmanical Manuscripts

Representative manuscripts are selected from Deccan College Post Graduate and Research Institute (3), Anandashram Sanstha (2), Samarth Vagdevata Mandir (2), Bhandarkar Oriental Research Institute (1), and Bharat Itihas Samshodhak Mandal (2). The common features are observed in order to learn patterns in the use of illustrations. Observations documented in a visual method.
Following are the representative examples of the seventeenth century Devanagari Brahmanical manuscripts with the composition of illustrations and text together in page layouts.

Table 4.8: Seventeenth Century Devanagari Brahmanical Manuscripts - Page Layout Compositions with Illustrations and Text

<table>
<thead>
<tr>
<th>Type</th>
<th>Manuscript Details</th>
<th>Sankrantiparakarnam, BISM, Ac. No. 52/524, 1699 AD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-i)</td>
<td>Manuscript Details: Kundamartanda - Suprabha Vyakhya, Anandashram, Ac. No. S 21-1-18, 1688 AD</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cover Page - Floral border around title of manuscript</td>
<td></td>
</tr>
</tbody>
</table>

1-ii) Manuscript Details: Shree Samarthakrut Valmiki Ramayana, SVM, Ac. No. Bad No., 1622 AD

<table>
<thead>
<tr>
<th>2.</th>
<th>Manuscript Details</th>
<th>Section separator with full page illustration and section title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td><strong>Manuscript Details</strong></td>
<td><em>Patee Ganita</em>, DC, Ac. No. 97, 1661 AD</td>
</tr>
<tr>
<td>---</td>
<td>-----------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td></td>
<td><img src="image1.png" alt="Image" /></td>
<td>Text wrapped around illustration in square form</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.</th>
<th><strong>Manuscript Details</strong></th>
<th><em>Kundamartanda</em>, Anandashram, Ac. No. S 21-1-18, 1688 AD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><img src="image2.png" alt="Image" /></td>
<td>Blank space for topic relevant illustration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Evidence of text written first and illustrations are drawn later</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5.</th>
<th><strong>Manuscript Details</strong></th>
<th><em>Patee Ganita</em>, DC, Ac. No. 97, 1661 AD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><img src="image3.png" alt="Image" /></td>
<td>Mathematical Tables are placed in line with the text</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6.</th>
<th><strong>Manuscript Details</strong></th>
<th><em>Bhagavata Purana</em>, BORI, Ac. No. 61/1907-15, 1648 AD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><img src="image4.png" alt="Image" /></td>
<td>Narrative big size of illustration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Two colours painted border around illustration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Illustration extends beyond left margin lines</td>
</tr>
<tr>
<td></td>
<td>Manuscript Details</td>
<td>Description</td>
</tr>
<tr>
<td>---</td>
<td>--------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>7.</td>
<td>Devimahatmya, DC, Ac. No. 10325, 1672 AD</td>
<td>Defined space for Narrative illustration by margins on all four sides. Artist has taken a liberty by extending illustration beyond margin area.</td>
</tr>
<tr>
<td>9.</td>
<td>Rigveda Samhita, BISM, Ac. No34/568, 1681 AD</td>
<td>Typographic Graphics - Accent Marks - Use of elements of design, e.g. horizontal and vertical lines.</td>
</tr>
<tr>
<td>10</td>
<td>Manuscript Details</td>
<td>Kathakalpataru, BISM, Ac. No. 22/55, 1647 AD</td>
</tr>
<tr>
<td>----</td>
<td>-------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>i)</td>
<td>Typographic Graphics - End of chapter graphic symbols</td>
</tr>
<tr>
<td></td>
<td>i)</td>
<td>Illustrations randomly placed in the background</td>
</tr>
<tr>
<td>11</td>
<td>Manuscript Details</td>
<td>Shree Samarthakrut Yuddhakandachi Prat, Bad No. 255, SVM, 17th Century</td>
</tr>
<tr>
<td></td>
<td>i)</td>
<td>Typographic Graphics - End of chapter graphic symbols</td>
</tr>
</tbody>
</table>
Table 4.8 - Part 1 (i, ii): Use of floral patterns or geometric lines around the title of manuscript are employed in representative manuscript.

Table 4.8 - Part 2: Illustrations occupied full page area as a section separator and with the title of the section in the center of the layout.

Table 4.8 - Part 3: Image Area Deconstruction
Following is the visual representation of the ‘Pateeganita’ manuscripts. Image deconstruction revealed the text and illustration composition pattern employed in the layout. (Figure 4.59)

1. Division of Space - Page is divided into ten vertical units and five horizontal units. One unit space from all sides e.g. left, right, top and bottom is left blank as a margin area.

2. Shape of Illustration Frame - An illustration is placed within a rectangular frame with double line border.

Figure 4.59: Deconstruction of Manuscript and Layout Composition Patterns - Space Organization for Small Size Illustrations, Seventeenth Century Devanagari Brahmanical Manuscripts
3. **The size of Illustration Frame** - The width of this rectangular frame or box is of two units, and the height extends into bottom margin area.

4. **Placement of Rectangular Frame** - It is placed in such a way that the top edge of the frame is aligned with the sixth line of the text block, from the top and it extends in the bottom margin area. The left edge of the frame touches the left *hasia* borders.

5. **Text Wrapping and Inner - Outer Padding of Illustration Box** - Text is found wrapped in a rectangular manner around illustration box. No clear inner or outer padding is observed. It is because the available space is equally divided horizontally or vertically into parts. Columns and gutter space between columns are not observed,

**Table 4.8 - Part 4:** The space left blank to draw relevant illustration is found in a *Kundamartanda* manuscript page. This is the evidence of the text, which was written first, and a well-defined space was left vacant to draw supportive illustrations.

**Table 4.8 - Part 5:** Mathematical Tables are placed in line with the text without any padding space.

**Table 4.8 - Part 6: Image Area Deconstruction**

The representative layout has a narrative illustration drawn on a page along with the text. Figure 4.60 displays deconstructed visual representation method, which revealed following facts:

1. **Division of Space** - A page is divided into eleven vertical units and ten horizontal units. One unit space from all sides, e.g. left, right, top and bottom is left blank as a margin area. (Figure 4.60)

2. **The shape of Illustration Frame** - An illustration is placed within a rectangular frame with two-color border (yellow and red). (Figure 4.60)

3. **The size of Illustration Frame** - Width of this rectangular frame or box is of four units, and height eight units. (Figure 4.60)

4. **Placement of Rectangular Frame** - Illustration is aligned to the left margin and it occupies space from the top edge of margin to the bottom margin as seen in image. Illustration and text block have the same height. (Figure 4.60)
5. **Text Wrapping and Inner - Outer Padding of Illustration Box** - Text is wrapped in a rectangular manner around illustration box. No outer padding, i.e. space between illustration and text is observed. (Figure 4.60)

![Figure 4.60](image)

**Table 4.8 - Part 7:** It is an example of full-page narrative illustration. The margin areas are predefined in the template of this particular page. This is the example where manuscript artist has taken a liberty by drawing illustration beyond the top margin area.

**Table 4.8 - Part 8:** It is a rare example of the manuscript page without margin borders drawn. This provides artist an advantage to drawn full-page illustration with no limitations of margin area.

**Table 4.8 - Part 9: Graphics & Typography** - Graphical element e.g. line is used as an accent mark along with text to represent linguistic tone while recitation.
Table 4.8 - Part 10: Graphics & Typography - (i) a symbol marked with red circle is very commonly positioned at the end of section or chapter. (ii) a floral motif marked with red circle to denote the end of chapter and the text.

Table 4.8 - Part 11: Illustrations in the Background - Illustrations randomly placed in the background.

4.2.3 (d) b1: Graphic Strategies in Modern Publication Design

The study is concerned about the placement of images and illustrations along with the text in a modern publication design.

Approach to Study Graphic Strategies in Modern Publication Designs

Modern books with various genres and layout styles, which include cover pages and inside pages, are observed to study graphic strategies. In most of the layouts, the visuals are composed along with other contents such as text, tables, graphs, infographics, etc. in a layout. The observations are documented in a visual method.

4.2.3 (d) b1 Type 1: Page Layout Compositions with Visual and Text

Visuals on Cover Pages: Full Page photographic images or illustration are placed most extensively on the book cover pages i.e. front and back cover pages along with the typography. (Figure 4.61)

Figure 4.61: Images and Illustrations in Cover Page Designs (Type 1, 2 & 3) - Modern Publication Design. (Hemenway, 2006)

Visuals on Section Separators: Photographic images or illustration are employed in the section separators along with titles as seen in Figure 4.62. Part ❶ shows that image is used only on single page section separator and in Part ❷, illustration is placed across the spread i.e. left and right page.
Visuals in Chapter Opening and in Inside Pages: Photographic images or illustrations are majorly used on the chapter opening pages to give an overview of the subject as seen in Figure 4.63. Part ①, which is a magazine page layout and the images are composed interestingly. They have effects such as overlapped and tilted. Although, photographs are not aligned formally, the arrangement shows that they are interlinked. This is a dynamic layout creating rhythm. In Part ②, an illustrated figure is placed within the article. In Part ③ illustrated figure shown surrounded by the floral pattern in the beginning of prayer book. In Part ④, a combination of typography and illustration is visible.

Figure 4.63: Visuals in Chapter Opening Pages (Type 1, 2, 3, 4) - Modern Publication Design
Chapter 4: Data Analysis and Findings

Visuals on Chapter End Pages: Occasionally illustration are placed at the end of the section as seen in Figure 4.64

Figure 4. 64: Illustration Showing End of Chapter - Modern Publication Design (Pangarkar, 1990)

Visuals in the Background: Figure 4.65 is a magazine spread with left and right page. On the left side page, the photographic image is positioned below the text block as a background surface. On the right side page, the image has a lot of white space around it.

Figure 4.65: Images as the Background of the Text, Pages - Modern Publication Design,
Infographics within Pages: Figure 4.66 is a book spread page. Infographics, such as graphs and tables containing information are placed on the left and right sides of the page respectively. Right side image of Figure 4.66 is an example of illustrated infographics in a ‘Tupperware’ product catalogue.

Figure 4.66: Information Graphics and Tables - Modern Publication Design, Woodworker’s (Self, 2005),

4.2.3 (d) b1 Type 2: Page Layout Compositions: Images and Text Placement Techniques in Modern Graphic Designs

Following are few representative examples of placement of visual imagery in modern publication designs:

Figure 4.67: Text Wrapping around Visuals - Modern Publication Design, (Benson, 2009),
Figure 4.68: Visual Magnitude on the Page - Modern Publication Design, (Pattnaik, 2006)

Figure 4.69: Visuals Placement within Columns - Modern Publication Design, (Andrews, 2006)
4.2.4 Findings of Theme 2 — Composition and Layout Design: Page Structure, Typography, and Graphic Strategies

4.2.4 (a) Page Anatomy and Structural Components of the Seventeenth Century Devanagari Brahmanical Manuscripts, and Modern Publication Design

A basic structural component which is commonly observed in most of the representative manuscripts selected for the study are displayed in Figure 4.25.

Every manuscript comprises core page layout elements such as:

1. Margins on all four sides;
2. Text block with headline grid;
3. Page navigation system — running title and page or folio number

To demonstrate digital deconstruction of the manuscript, the left, right, top and bottom margin areas are denoted by characters a, b, c, d respectively in Figure 4.25. Text block is an area in which the main text is written, which denoted by character 'h'. This text block is divided vertically into required number of lines depending upon the size of the character. These horizontal lines are known as 'headline grid’ denoted by ‘i’ in Figure 4.25. Headline grid assists a scribe in not only writing text effortlessly in horizontal line but also align other elements of the page such as running title, folio number, etc. effortlessly on ruled line.
Most common elements of a page structure of the manuscript shown in Figure 4.25 reveals two different structures for the front and back side of the same folio. Each folio made up of two pages; front side page and a back-side page. The critical observation has revealed that a common practice has to put the number to a folio and not for a page. Folio numbers were acquainted to the reader on only one side of the page. In the current example, the folio number is placed twice on the back side the folio (Figure 4.25). In the first instance, a folio number is positioned on the top left side of the margin and it is below abbreviated running title. In the second instance, a folio number is placed in a right margin area and aligned to the second last headline grid. These finding are broadly similar to research conducted by other scholars.

In modern book design, double spread pages are regularly in practice to design left and right pages. As per the necessity of design, their page layouts are divided into multiple columns and rows with column margin i.e. gutter space between two columns.

It is a general practice that on double spread type pages, a text block along with running title, and page numbers positioned in mirror image style as shown in Figure 4.27.

Page navigation components generally placed in top margin (header) or bottom margin (footer) areas in alignment with the text block. Very rarely it is placed in the vertical center of the left and right margins.

The seventeenth century Devanagari Brahmanical manuscripts made up of a bunch of single folios.

**Comparative Analysis: Page Anatomy and Structural Components of the Seventeenth Century Devanagari Brahmanical Manuscripts, and Modern Publication Design**

The system of defining page structure is complementary in both the seventeenth century Devanagari Brahmanical manuscripts and modern publication design.

Similarities are observed in basic structural page components of the seventeenth century Devanagari Brahmanical manuscripts and in a modern book design as demonstrated in Figure 4.26 and 4.27 are:

1. Margins on all four sides;
2. Text block with baseline/headline grid
3. Page navigation system
4. Single column grid
Moreover following differences are evident in the page structure of the seventeenth century Devanagari Brahmanical manuscripts and of modern book design. They are:

1. Page layouts with single or multiple columns with gutter space and;
2. Double page spread page layouts with symmetrical or asymmetrical page components

Following exceptions are found in the page anatomy of the seventeenth century Devanagari Brahmanical manuscripts:

- The absence of columns with gutter space in the manuscript page layouts and organization of content using columns with gutter space in the modern publication designs.

- The page spreads were practiced in the seventeenth century Devanagari Brahmanical manuscripts as shown in Figure 4.32. However, a mirror image type of page layout is not noticed in the same because of their top side folding format. Page spreads with mirror image page layouts (Figure 4.27) are regularly practiced in modern page layouts.

4.2.4 (b) Grid Construction and Template Designing

The grid helps in composing various elements such as margin area, text block, an illustration area, page navigation system, etc. on a page layout. The use of deconstruction method has revealed the grid structure and division of space in the page layout of the seventeenth century Brahmanical Devanagari manuscripts and in the modern publication designs.

4.2.4 (b1) Grid Construction and Template Designing — Seventeenth Century Devanagari Brahmanical Manuscripts

Four types of representative manuscripts have been observed for grid construction patterns in the seventeenth century Devanagari Brahmanical manuscripts depending upon their page layout formats and type of content placed on it. These layout formats are as follows:

1. Manuscript with a single column and a single folio page layout format
   (Single text block, landscape format, text oriented)
2. Manuscript with a single column and a double spread page layout format
   (Single text blocks, landscape format, text, and image)
3. Manuscript with a variation in text blocks sizes; landscape page layout format

4. Manuscript with single text block; portrait page layout format

5. Manuscript with only headline grid; portrait page layout format

4.2.4 (b2) Similarities Recorded in the Grid Construction, Template Design and Page Making Process in the Representative Manuscripts -

- **Defining Page Size:** Template making process begins with deciding final page size of the manuscript.

- **Division of Space:** Manuscript page is divided horizontally into equal size grid as well as vertically in equal parts, creating rectangular modules or units.

- **Modular Grid:** Division of space existing on the manuscript pages are recorded as:
  i)  8 columns & 6 rows - Single folio page layout format - Figure 4.28
  ii) 9 columns & 5 rows - Double spread page layout format - Figure 4.33
  iii) 8 columns & 6 rows - Landscape page layout format - Figure 4.37
  iv) 5 columns & 8 rows - Portrait page layout format - Figure 4.39

- **Defining Margin and Textblock Area:** Once the modular grid structure is formed, one unit on the edges of the page defined as a margin area. This resulted in creating left, right, top & bottom margin, denoted as ‘a’, ‘b’, ‘c’, & ‘d’ respectively.

- **Area or units which fall inside after deciding margin area on the manuscript page is utilized as a text block for writing text. It is denoted as ‘h’ in deconstruction figures.** (Figure 4.28 - Step 3, Figure 4.33, Figure 4.37 - Step 2, Figure 4.39 - Step 2)

- **Hasia Lines or Margin Border Lines** - Margin borderlines are drawn on left and right side. Lines are drawn on the left and the right side edges of text block. The purpose of these vertical guidelines was to indicate scribe for writing text in defined space. (Figure 4.28 - Step 4, Figure 4.33, Figure 4.38 - Step 3)

- **Making Headline Grid for writing Text** - Depending upon the size of syllable and number of characters to be fitted in one single line, equidistant horizontal lines are drawn to create headline grid. Headline grid is a division of text block using the horizontal lines. The text is written on these horizontal lines. (Figure 4.28 - Step 4, Figure 4.35, Figure 4.37 - Step 3-4, Figure 4.39 - Step 3, Figure 4.40, Figure 4.41)
• **Positioning Page Navigation Content** - To define a place for page navigation system i.e. running title and page number. The observations revealed that sometimes abbreviated running title and folio numbers are placed together, one below the above or running title or folio number only one at a time. The page navigation content is mainly placed at two places. In the first instance is running title and folio number positioned in left margin aligned with the first line of text block i.e. flow line. In another instance, it is placed in the right margin area aligned at the bottom of text block using two lines of the headline grid. (Figure 4.28- Step 4, Figure 4.35, Figure 4.40 - Step 4)

All above steps ultimately make the symmetrical page template ready to write or to draw an illustration.

• **The composition of Text on Page** - Using the template created through the previous steps, the text is written on headline grid and compose a final page layout. (Figure 4.28 - Final Layout, Figure 4.35, Figure 4.36, Figure 4.35, Figure 4.38 - Step 5).

• **Space Planning for Illustrations** - A specific area is left blank for the purpose of drawing text supportive illustrations. The Figure 4.35 - 4.36 displays a rectangular blank space in the manuscript page. This rectangular space is aligned with the right margin and is measuring two units width and six headline grid line height. The upper and lower parts of illustration are further aligned with headline grid.

4.2.4 (b3) **Differences Recorded in the Grid Construction, Template Design and Page Making Process of the Representative Manuscripts**

The observations recorded in the study has revealed that the division of space, in the case of manuscripts with single text is very simple (Figure 4.28, Figure 4.33). It is a modular grid construction. In the case of multiple text manuscripts, the grid framework and the organization of information becomes complex as represented in Figure 4.37 e.g. *tripatha* manuscript, which has main text (*mula*) and commentary (*titika*).

**Case Study 1 — Type 2**: Manuscript with Multiple Text Blocks with Variation in Sizes, landscape page layout format (Figure 4.37 - Figure 4.38)

• **Division of Space**: The case study of ‘*Ragaibodh*’ has revealed that three horizontal sections of the page are easily visible. In this layout, the main text is composed in
the vertical center of the page, and the commentary is placed in the area above and below it (Figure 4.37). This page layout style is known as ‘Tripatha’.

Here two different types of grid structure employed for the division of the space.

i) **Main Grid Structure for Commentary (Tika)** - This is a similar process as followed commonly for the division of space. (Figure 4.37 - Step 2 - 3).

- A page is divided into eight columns and six rows (Figure 4.37 - Step 2 -3).
- One unit area on the all four sides of the page is defined as a left, right, top and bottom margin area. (Figure 4.37 - Step 2 - a, b, c, d)
- Text block comprises of six horizontal and four vertical fields (Figure 4.37 - Step 2 - ‘h’). Further, the text block is divided into thirteen headlines.
- Within the text block area, one horizontal field (one unit height size) on the top and the bottom were used for commentary and the two fields (two units height size) in the vertical center were used for the main text (Figure 4.37 - Step 3).
- Each field height comprised three headlines.

ii) **Grid Structure for Main Text (Mula)** - Main text area, i.e ‘h1’ (Figure 4.37 - Step 4), is constructed by dividing the total horizontal place into six vertical divisions. One part at the left and the right side ends are defined as left and right margins. This division has reduced the width of main text area than the main grid structure. The result of this division is: the left and the right side margin width happen to be bigger than the margin used for commentary text block.

- **Positioning Page Navigation Content** — The page number is placed exactly in the vertical center of right margin area near the text block margin line (Figure 4.38 - Step 4).

Thus, a symmetrical template for page layout is created.

**Case Study 2 — Type 3**: Manuscript with Modular Text block; Portrait Layout Format (Figure 4.39 - Figure 4.40)

- A representative manuscript is selected for the study of the single text block, portrait page layout formats are *Shree Samarthakruta Yuddhakanda Prat’* (Figure 4.39 - 4.40). To create a basic division of space, the similar process of grid construction seen before is to be followed.
• **Division of Space**: Manuscript page is divided horizontally into five equal size columns and vertically into eight equal size rows (Figure 4.39). A margin area is defined using one unit size on all four edges of the page. To define left, right, top and bottom margins (a, b, c, d) and the text block (h) area follow a similar pattern as seen in Figure 4.39 and Figure 4.40.

**Key Features — Division of Text Block Area**

• Systematic and thoughtful division of space created in this composition, which is based upon the rhetoric style of writing.

• This composition is a collection of verses written in a poetic meter ‘Jagati’. The peculiarity of this that, meter is it consists of forty-eight syllables distributed in four verses (lines), and each verse is made up of twelve syllables.

• Taking into account the prosodic pattern, the text block is divided into twenty-one horizontal lines used as headlines to write a text. Grid is developed as a series of rectangles in which three stanzas incorporated on one page, it is represented in Figure 4.40 - Step 4.

• Finally, the information is organized on the page as three units made of four lines each.

• **Positioning Page Navigation Content** — Each stanza is written in four verses in four lines following the Jagati meter. A gap of three lines is found maintained between every stanza. A stanza number is placed in the horizontal center and vertically in the center of first two lines that left blank after the stanza. That means poetry is written using line number 1 to 4. Line number 5 to 7 are left blank, and the stanza number is written in the vertical center of line number 5 and 6. Line number 7 is again left blank as an extra paragraph space between two stanzas. The visual representation is shown in Figure 4.40 Step 4 - 5.

Thus, a symmetrical template for page layout is created.

**Case Study 3 — Type 3**: Manuscript with Modular Text Block; Portrait Layout Format (Figure 4.40 - Figure 4.41)

A representative manuscript, namely ‘Kalyanpotha’ selected for the study of the modular text block is of portrait page layout formats.(Figure 4.401- 4.42).
**Division of Space** — A grid construction method followed in the division of space is completely different from all other patterns seen before.

**Key Features - Division of Text Block Area**

- A page is first horizontally divided into thirty eight horizontal lines, thus developing headline grid first. (Figure 4.41 - Step 2)
- Later, for the top and bottom margin area two rows of headline-grid is occupied. (Figure 4.41 - Step 3)
- For text block, a grid is developed as a series of rectangles depending upon the rhetoric style chosen. Each text block comprises one stanza made of two lines, and a third line consistently kept empty. On every page eleven stanzas are planned.

**Positioning Page Navigation Content** — A single line row purposely kept blank between each stanza and its number is placed in the horizontal center of this blank row. It is represented as ‘v’ in Figure 4.42- Step 4.1

The salutation of god is written in the top margin area in the second line. Folio number which is denoted by ‘f’ in Figure 4.42 - Step 4, is positioned in the first row and aligned to the right edge of the text block. Thus, an asymmetrical template of page layout is created.

**4.2.4 (b4) Modern Publication Design — Grid Construction and Template Designing**

Exploration of grid construction in modern books has revealed variety of grid types used in the page layout. Modern books with single and multiple columns with both portrait and landscape layout formats are selected for the study. These books pages are bound on either the left or the top edge of the book.

Page layouts with following types of grids are observed in modern book designs. These grid structures virtually divide the space into horizontal and vertical parts:-

i) **Single Column Manuscript Grid** - Grid with one text block is used in novels, essays, reports, religious books and scholarly works (Figure 4.43, Figure 4.44).

ii) **Multicolumn grid** - It gives more flexibility in placing the content on the page and it mainly used in the magazines. (Figure 4.45, 4.46, 4.47)

Two columns widths can be symmetrical (Figure 4.50) or asymmetrical (Figure 4.51)
iii) **Multicolumn Modular Grid** - Modular grid is used for the complex type of information e.g. tables, charts, product catalog, newspapers, etc. It creates modules or chunks of space (Figure 4.46)

iv) **Mix Grid Layout** - Layouts with combination of various types of grids (Figure 4.52)

vii) **Hierarchical grid** - Grid divides space horizontally. The representative example is of commentary type of layout in which main text displayed in the top part and commentary displayed in the second part of the page (Figure 4.53)

viii) **Golden section grid** - Grid used in the page of booklet applied the principle of design 'contrast' between sizes of elements to show visual hierarchy (Figure 4.54)

ix) **Baseline grid** - Every text block is comprised horizontal lines to write a text on it. The text is placed in the horizontal direction within the text block area (Figure 4.43 - Step 3, Figure 4.44 - Step 2, Figure 4.46 - Step 3, Figure 4.48 - Step 4)

**General Steps observed in Grid Construction, Template Design and Page Making Process of Modern Publication Design are:**

- **Defining Page Size** - Decide format of the book and trim the size of the book by selecting appropriate paper size (e.g. A4) by sub-dividing existing available paper size (e.g. A0). (Figure 4.40 - Figure 4.45)

- **Defining Margin and Text Block Area** - Define suitable space for left, right, top, bottom margin areas depending upon binding type chosen. This procedure creates margins and text block area. (Figure 4.43 - Step 1 & 2, Figure 4.44 - Step 1, Figure 4.45 - Step 1, Figure 4.46 - Step 1)

- **Division of Text Block Area** - Text block area is divided into expected number of columns with space between i.e. gutter space. Further text block is divided into rows and columns (Figure 4.45 - Step 2, Figure 4.48 - Step 2 & 3). This process is also divided a page into a modular grid.

Generally, a text block is divided into two to twelve numbers of columns (Figure 4.45 - Step 2). It makes easy for a designer to create units comprising 2, 3, 4, 6, 8 number of columns with gutter space.
Chapter 4: Data Analysis and Findings

The digital illustration demonstrated shows how the text block is divided into three rows and twelve columns in Figure 4.45 - Step 2. Each column and row have a breathing white space in between, known as ‘gutter space’. These divisions of working space treated as building blocks to create modules, which are combination of multiple columns. In these modules various categories of information is placed as per the volume of data (Figure 4.71).

Figure 4.71: Building Blocks of Grid - Columns and Units, Modern Publication Design

- **Baseline Grid** - By taking decision of typesize and leading space, a baseline grid is created (Figure 4.43 - Step 3, Figure 4.44 - Step 2, Figure 4.46 - Step 3).

- **Modular Grid** - A multicolumn and modular grid observed in a magazine to display weekly horoscope, represented in Figure 4.48. In this example, 4 modules are created per column, and each module has a line count of 9 in a chosen font size (Figure 4.48 - Step 3 & 4)

- **Hasia Lines or Margin Border Lines** - Majorly in most of the book layouts with portrait format and top binding type, margin borders are not observed; however, it is observed in the Devanagari holy/prayer books written in the *pothi* format (landscape page format and top side binding).
The example shown in Figure 4.44 is a landscape format prayer book with top side binding. It is written in Devanagari script, and floral hasia borders are observed.

Figure 4.44 is an example that reveal page layout design is adopted from the seventeenth century Devanagari Brahmanical manuscripts. It includes: landscape page format, template making - baseline grid, page navigation system, hasia lines, etc. Continuation of design with enhancement has been noticed.

- **Positioning Page Navigation Content** - It is observed that page navigation system comprises running title, page numbers, date and volume details of publication, etc. Three types of placement positions have been noticed in a page navigation system in modern publication designs.

  i) In most of the page layouts with portrait formats and left side binding type, page navigation details are placed in the header and footer zones. If the publication is in the double spread book format then navigation system placed at mirror image locations. For example, on the left (verso) side page, navigation content is placed in the left side margin area and in the right (recto) side page navigation content is placed in the right margin area (Figure 4.43).

  ii) In the page layouts with landscape formats and top side binding type, a page navigation system is placed in the left and the right side margin area (Figure 4.44).

  ii) Page navigation system is also arranged in entire left, center and right header or footer area (Figure 4.47, 4.48, 4.49, 4.50, 4.51) along with other graphic elements.

Thus, a template is ready to place or import contents such as text and visuals.

**Composition of Text on a Page** - Using the template created in previous steps, the text is written on headline grid to compose a final page layout. (Figure 4.25 - Finally Layout, Figure 4.44, Figure 4.46, Figure 4.48)

**Space Planning for Visuals** - Various types of visuals are employed in the page layouts. It is discussed in advance in a ‘Graphic Strategies - Modern Publication Design’
4.2.4 (b5) Comparative Analysis: Grid Construction and Template Design in the Seventeenth Century Devanagari Brahmanical manuscripts and Modern Publication Design

Similarities Recorded:

1. All representative examples confirmed that the page layout templates are created in both the seventeenth century Devanagari Brahmanical manuscripts and the modern publication designs before starting the job. It is one of the publication design planning process.

2. Other common fundamentals features have observed in both the page layouts and grid construction planning are: the use of margin, text block area, baseline / headline grid, page navigation system, and space organization for visuals.

3. One among the ten representative modern publications is selected for the layout grid study (Figure 4.44) followed the similar technique for the division of space as seen in the seventeenth century Devanagari Brahmanical manuscripts. In this example, the page is divided horizontally as well as vertically in equal parts, thereby creating rectangular modules or units. Once a modular grid structure is formed, one unit field on the edge of the page is defined as the margin area, and the rest of area is utilized as a text block.

   (Manuscript grid - Figure 4.28, 4.32, 4.33, 4.34)  
   (Modern Publication Design - Figure 4.43 - Step 1 & 2).

   Later headline grid is created in the text block area depending upon the required font size and leading (Figure 4.28 - Step 3). The text is placed or typed in the text block area (Figure 4.38 - Step 4).

   (Manuscript headline grid - Figure 4.28, 4.29, 4.30, 4.35, 4.37, 4.38)  
   (Modern Publication Design - Figure 4.43, 4.44, 4.46, 4.48)

4. One among the ten representative modern publications is selected for the layout grid study (Figure 4.44); it followed the identical page format, grid structure, headline grid, page navigation placement areas, as seen in the seventeenth century Devanagari Brahmanical manuscripts. It is a pothi style page layout, still practiced in Maharashtra for designing and printing holy books with similar design elements.

5. Grids in layout – Two types of grid construction found similar in both the seventeenth century Devanagari Brahmanical manuscripts and the modern publication designs. They are single column grid for single text block and
hierarchical grid. Single column grid is a very common format. The hierarchical grid is employed thoughtfully in the seventeenth century by using *tripatha* style grid, by placing main text in the vertical center of the page and commentary above and below (Figure 4.73) but in modern publication, design text is placed one below and above. In both the structures, space is divided horizontally (Figure 4.72).

**Figure 4.72: Hierarchical grid in Modern Publication Design, (Pangarkar, 1990)**

**Figure 4.73: Hierarchical grid with Tripatha page layout, Seventeenth Century Devanagari Brahmanical Manuscripts, Ragavibod, 1618 AD**

**Dissimilarities Recorded:**

1. The absence of columns with ‘gutter space’ i.e. space between columns in the page layouts of the seventeenth century Devanagari Brahmanical manuscripts.

2. **Features of the seventeenth century Devanagari Brahmanical manuscripts**
   i) A single column grid is developed to build up the formal balance in page layouts
   ii) A page layout has equal unit margin areas on four sides. It is defined by selecting one unit field from all four sides page.
iii) An overall placement of content followed justified alignment strategy in the layout.

3. **Features of the modern publication design**
   i) Depending upon the function of the book, variations found in the practice of grid, e.g. single column, multicolumn, modular, hierarchical grid, etc. with the horizontal and vertical division of space i.e. rows and columns.

   ii) For every page layout, the margin areas have been defined as per the requirement of the job, with aspects related to printing and binding techniques. All four sides of the margin can be of different size as displayed in Figure 4.46.

   iii) Construction of grid structures is mainly of two types: symmetrical or asymmetrical.

   iv) Multicolumn grid based page layouts with rows, columns, and baseline / headline grid have provided ease in arrangement of content on page layouts.

   iv) These layouts are more dynamic, and the formal balance is achieved by using various design principles.

4.2.4 (c) **Typographic Palette — Typestyles and Alignments**

4.2.4 (c1) **Typestyles — Seventeenth Century Devanagari Brahmanical Manuscripts**

Table 4.6 Represents features related to typestyles observed in the study of representative seventeenth century Devanagari Brahmanical manuscripts. They are as follows:

- Typestyle with mainly three categories observed in handwritten manuscripts, and they are expressions of the individual scribe. These categories can be defined as handwritten style, handwritten daily writing style, and calligraphic style.

- Characteristic of gray values of these handwritten manuscripts includes a variety such as light, medium, and dark (bold).

- Once the type style and gray value are decided, consistency was maintained throughout the manuscripts unless there was a change in the scribe.

- The size of the text is readable and the style followed is legible.
• In the case of the calligraphic text, the fluid cursive extensions or pen flourishings are observed for terminals and vowel symbols. (Sr. No. 3, 5, 6, 7)

• Written aesthetically with consistency in lettering (Sr. No. 6). Inconsistency in the form of lettering is also noticed. (Sr. No. 4)

• Metrical literature (Sr. No. 5, 6)

• Coloured punctuation marks (Sr. No. 6)

• Number of characters per line ranges between 24 and 58

• Number of lines per page ranges between 12 and 17

• Variation in the text size observed between main text and commentary. However, main text size is bigger than the text size of commentary. (Sr. No. 7)

4.2.4 (c2) Text Alignments — Seventeenth Century Devanagari Brahmanical Manuscripts

Justified, the most widely practiced / accepted paragraph alignment is noticed for writing the seventeenth century Devanagari Brahmanical manuscripts. ‘Justified’ is the type of alignment in which the text is adjusted in such a way that all lines of the paragraph reach until both — left and right side of the margins.

Interestingly, variations are observed in the last line of the text block. The observations documented as follows:

1. **Justified Alignment:** Entire text block has applied justified paragraph alignment (Table 4.7 - Type 1).

2. **Justified Alignment with supportive Graphic Elements:** In the last line, where characters are insufficient to occupy entire horizontal space within margin area. Therefore, by adding specific symbols and characters the last line is successfully justified. These symbols and characters are mainly employed in-line with text to show the end of the text and placed in the unfilled space at the end of the text or chapter (Table 4.7 - Type 2).

3. **Center Alignment:** The last line of the text block, which states the information related to date is centered aligned (Table 4.7 - Type 3). The second last line, which is actually an end of the text is successfully justified by adding specific symbols and characters to show the end of the text as seen in Table 4.7 - Type 2.
4. **Indented Justified Alignment**: A page layout of this example is of *tripatha* type. In this layout, the text block of the main text is placed in the vertical center of a page with left and right indentation and with justified paragraph alignment (Table 4.7 - Type 4).

5. **Left Alignment (Flush Left)**: The last line of the text is left aligned (Table 4.7 - Type 5).

6. **Drop Line Text Alignment**: In the *tripatha* style, the page layout paragraph alignments are justified. In this example, the third paragraph that comes after the main text is noticed indented. Each of these indented paragraphs begins at a new position as they start where the last of the previous paragraph ends. That is why this type of alignment is known as drop line text alignment (Table 4.7 - Type 6). Space to indent text is decided as seen in Figure 4.37, using grid, i.e. division of space.

7. A flush right type of text alignment is found missing in the page layouts

### 4.2.4 (c3) Typestyles — Modern Publication Design

Today in modern publication designs, the digital technology has provided flexibility to graphic designers in the selection of the fonts. By choosing appropriate font for the text creates interest in page layouts. There are umpteen numbers of typefaces with various weights such as regular, thin, bold, bold italics, extra bold, italics, etc. are available today.

The observations recorded from the data collected are related to modern publication designs and complied together in Figure 4.55. The observations show the use of typefaces with variety in size and typestyles. They are as follows:

1. A representative cover page of modern publication design (Narale, 2014) with four different typefaces are applied in the layout. Display type font with decorative typestyle is used for the title of the book (*Sanskrit Primer*). This type has thin and thick strokes and the serifs are extended with ball shape. Other information on this page is comparatively in smaller font size. (Figure 4.55-Part 1)

2. A representative sample of the title page of publication design (Pangarkar, 1990) in which chunks of information are clearly visible in the layout. Every chunk of information is represented by variety in the font, size, and other attributes such as normal and bold types. Heading ‘*Sartha Sri Dashbodaha*’ has display type font,
which is the biggest size text in the current page layout. Decreasing order of type size is applied to display other information as per their level of importance. (Figure 4.55-Part ③)

3. A representative sample of the weekly magazine inside page (2016, p. 2) shows variation in following areas such as: typefaces selected, sizes selected for titles / headings, subtitles, section, text in the header area, drop capital or initial, body text, photo caption, and index entry, etc. The use of initial or drop capital applied where the main story begins. (Figure 4.55-Part ③)

4. A representative sample is a combination of index and title page of a weekly magazine (2016, p. 18). The layout shows variation in a typeface, and their sizes in titles, author names, page numbers in the index entry. Consistency in the use of colours, typefaces and their attributes is maintained throughout for the information such as chapter title, author names, page numbers, etc. In publisher’s details area, the typefaces selected for headings are bold and information below it is of regular style. (Figure 4.55-Part ③)

5. A representative sample is a mathematics textbook (Mathematics Book, Class X, 2007). In this layout, three different typestyles are easily visible: they are heading, sub-heading and body copy. Consistency in typeface, size, and colour for these three types of information is maintained in the entire book in all the chapters. (Figure 4.55-Part ③)

6. A page from a product catalogue (Tupperware Catalogue, 2016) shows four types of information. Each type of information is shown with a different typeface and in decreasing order of size. The text within quotation marks is bigger in terms of size than other text. The product particulars are displayed in a smallest size. (Figure 4.55-Part ③)

4.2.4 (c4) Text Alignments — Modern Publication Design

Four basic types of text alignments are commonly practiced in modern publication designs. They are documented in Figure 4.51 and are as follows:

1. Paragraph Alignment — Left (Padgaonkar, 2012) (Figure 4.56-Part ①)
2. Paragraph Alignment — Right (Lokasatta, 2016) (Figure 4.56-Part ②)
3. Paragraph Alignment — Center (Purandare, 2009) (Figure 4.56-Part ③)
4. Paragraph Alignment — Justified (Sainath Sagunopasana) (Figure 4.56-Part ④)
5. Paragraph Alignment — Tapered Center, used very rarely in modern publication designs (Figure 4.57)

Generally, different text alignments are used in combinations as seen in Figure 4.57 and Figure 4.58.

Figure 4.57 is an index page of the representative modern publication design, has multiple text alignments for every category of information. The title of book and the index title are center aligned. A tapered center alignment is employed in the paragraph showcasing brief about the section. The book sections and this chapters within sections are left aligned and the page numbers are right aligned.

Figure 4.58 is an inside page of a selected representative modern publication. It is an example of the combining multiple alignments for multiple types of information. Three types of information seen in a page layout are: image, section title and text block. The image is placed near the right margin and it is aligned to the right side of the text block. Section title has left alignment. The text block has justified alignments.

4.2.4 (c5) Comparative Analysis: Typographic Palette — Typestyles and Alignments in the Seventeenth Century Devanagari Brahmanical manuscripts and Modern Publication Design

Typestyles and Alignments in the Seventeenth Century Devanagari Brahmanical manuscripts

Once the calligraphic style is defined, a manuscript artist must have tried to maintain consistency in the type size, weight and gray value of the type throughout the manuscript.

The observations revealed that most of the manuscripts are designed with no variations in the type size. The entire text of the manuscript is written in the same type style and type size. These designs without contrast led to monotonous and uninteresting layout.

The manuscripts main text is generally written in justified text alignment. In cases, if there is a less text to occupy the entire line, then a few graphic icons are added to complete the line. In few cases, a disparity of alignment is observed only in the last line of the text e.g. left, and center.
Indentation used in two ways in the manuscript layouts:

i) The first line of the main text paragraph indented very innovatively by employing drop line text alignment. However, the overall text alignment is justified.

ii) Left and right indentations are applied for the paragraph in *tripatha* style page layouts.

**Typestyles and Alignments in the Modern Publication Design**

Although umpteen numbers of fonts are made available by digital technology, graphic designers employ few selective and limited fonts in the page layout designs. e.g. headline, sub-heads, body copy etc. These type styles are continued throughout the document to maintain consistency. It also helps the reader in comprehending a particular type of information.

Variations in type size and the attention seeking display types for headings in design generate excitement for the reader. It makes page layout dynamic and adds rhythm to the layout. Big heading and subheading guide reader taking a glance at the article by getting a gist of an article from long distance also.

Contrast in size and weight of type size works as a visual hierarchy so as to attract the readers' attention while reading the order of information, e.g big size to the smallest size.

Mainly, the left, right, center and justified types of alignments are applied for paragraphs as per the requirement of the layout. Alignments are used in combination. In text-heavy paragraphs, it is observed that the paragraph alignment is justified but, the last line of the paragraph is left aligned. It is because of the reading pattern direction of the script, i.e. from left to right (Devanagari and Roman Script)

Alignments also show association with other content in the layout.

Tapering type of alignment is very rarely used in modern page layouts.

In most of the examples, the first line of the paragraphs is indented.
4.2.4 (d) Graphic Strategies

4.2.4 (d1) Graphic Strategies – Seventeenth Century Devanagari Brahmanical Manuscripts

Images displayed in Table 4.8 are the representative examples of various patterns noticed in the seventeenth century Devanagari Brahmanical manuscripts highlighting the composition strategy for the illustrations and the text together in page layouts.

The observations recorded regarding graphic strategies are employed in a page layouts of the seventeenth century Devanagari Brahmanical manuscripts are as below:

1. Graphics employed in the manuscript page layouts can be categorized as diagrams, narrative illustrations, tables, and charts and typographic graphics.

2. Graphics are placed in the manuscript page layouts for diverse reasons:
   i) Cover page designs (Table 4.8 - 1)
   ii) Section separator (Table 4.8 - 2)
   iii) Text supportive illustration - small size (Table 4.8 - 3)
   iv) Inline tables or charts (Table 4.8 - 5)
   v) Narrative illustration - big size (Table 4.8 - 6)
   vi) Full page illustration within margin area (Table 4.8 - 7)
   vii) Full page illustration without margin area (Table 4.8 - 8)
   viii) Integration of elements of design, e.g. line within typographic in certain manuscripts as linguistic features of the Devanagari script (Table 4.8 - 9)
   ix) Typographic symbols to denote end of chapters, section, etc. (Table 4.8 - 10-i)
   x) Floral symbols to denote the end of chapters, section, etc. (Table 4.8 - 10-ii)

3. Defining the size of Illustration using Page Template: As seen in the earlier section of ‘Manuscript Grid and Template Designing’ process and the text block space is divided into equal horizontal and vertical units.

Later, in case where text and illustration are composed together in a page layout, space is defined for both. The area defined is meticulously aligned with headline grid or with unit fields as shown in Figure 4.59 and 4.60. While writing the
manuscript the illustration area was left blank. Artist utilized this area to draw a supportive illustration. (Table 4.8 - 4)

For illustrations the entire page area is occupied within margins; the unit field marking in the template area is not necessary. In such cases, only margin borders are drawn as a reference for the image area. (Table 4.8 - 7)

A unique example of a full-page illustration is also noticed in Kalyanpotha manuscript as shown in Table 4.8 - 8. In this manuscript particularly, no margin lines are drawn physically, however, they are defined by a grid in the template design process.

4. **Illustration frame details:**

   **Shape:** Illustration frames observed in representative manuscripts are of rectangular shape.

   **Border:** Generally, double line border is drawn around the frame in mono colour (Table 4.8- 3, 5) or duo colour painted borders (Table 4.8- 6)

   **Padding for illustration frame:** Padding is the inner and outer white space around the illustration.

   No clear padding space is defined in the template design process of the manuscripts. It does not provide a clear area for the scribes and for illustration artist. The result is overwriting and over a painting in the margin as well as in the illustration frame area.

   Figure 4.74 is a enlarged view of the manuscript Bhagavata Purana (Table 4.8 - 6) with areas of text written beyond margin lines (part 1), illustrations extended beyond the margins (part 2), and text and illustration borders overlap each other part 3). This is a drawback of template designing pattern followed in the manuscript designing. (Refer Figure 4.59 for template of manuscript)

Figure 4.74: Approach of Scribe and Artist in writing and drawing content using manuscript template - Seventeenth Century Devanagari Brahmanical Manuscripts
5. **Typographic graphics** are employed in the text to denote end of the chapter, section as well as to justify the text / paragraph alignment as seen in Table 4.7 - Part 2, 3)

6. **Illustrations in the Background:** It is a very rare example of the seventeenth century in which two motifs placed as a background pattern alternatively, behind the text.

### 4.2.4 (d2) Graphic Strategies — Modern Publication Design

Images displayed in Figure 4.61 - Figure 4.66 are the representative examples of illustrations and photographic images, i.e. visuals employed in various types of page layouts along with the text in modern publication designs. Varied composition patterns of the image and text placement techniques in modern graphic designs are observed, documented and presented as follows:

1. Visuals which are employed in the page layouts can be categorized as photographs, hand drawn illustrations, vector illustrations, diagrams, patterns, symbols, icons, information graphics (tables and charts), typographic graphics and 3D graphics.

2. Visuals are placed in the manuscript layout page layouts for diverse reasons:
   i) Cover page designs (Figure 4.61)
   ii) Section separator (Figure 4.62)
   iii) Visuals in the opening of the chapters and in between the chapters (Figure 4.63)
   iv) Visuals between the article pages (Figure 4.64)
   v) Visuals as a background (Figure 4.65)
   vi) Infographics, such as symbols, icons, graphs, charts and table containing information (Figure 4.66)

3. **Placement of Illustrations within Page Layout** - These examples highlights the composition strategy for the visuals and text together in page layouts.
   i) The text is wrapped around the illustration, and the text follows the shape of illustration (contour) (Figure 4.67 - Part 1).
   ii) Text is wrapped around the illustration in square form (Figure 4.67 - Part 2)
   iii) Illustration has a white space around it (margin area) (Figure 4.68 - Part 3)
iv) Full bleed image which reaches up to the edges of the page (Figure 4.68 - Part 4)

v) Images are placed in line with the text, and the text is wrapped around images in square form. In this example, the images and illustrations are placed in header and footer area also (Figure 4.69 - Part 5).

vi) An image is placed within a single column area within an article (Figure 4.69 - Part 6).

vii) Multiple images are placed within an article as one image per column (Figure 4.69 - Part 7).

viii) An image is placed occupying more than one column space, e.g. two columns space (Figure 4.69 - Part 8).

ix) Images are composed of a modular grid structure (Figure 4.70 - Part 9, 10).

4. **Illustration frame details**:

   - **Shape**: Illustration frames observed in the representative modern books are of two types — i) shape of the image (Figure 4.67 - Part 1); ii) rectangular shape (Figure 4.67 - Part 2).

   - **Border**: Generally, the borders are avoided for visual in modern publication designs (Figure 4.67, 4.68, 4.69). Borders for illustrations are given whenever necessary e.g. comic book (Figure 4.70 Part 2)

5. **Captions**: Visuals within the text area always supported by captions (Figure 4.75: Padding around Visual in Modern Publication Design, *Sakal Saptahika*, Sakal Publishers Pvt. Ltd., 2016)
6. **Padding for illustration frame** - Padding is the inner and outer white space around a visual. It can be set around any visual using digital design software. Padding space is generally equivalent to the gutter space, i.e. space between the columns. In most of the page layout, a gutter space acts as a padding space around the image as shown in Figure 4.75. Equivalent horizontal space is maintained to achieve consistency and balance in the layout. It is followed meticulously in modern publication designs through page templates.

4.2.4 (e) **Comparative Analysis: Graphic Strategy in the Seventeenth Century Devanagari Brahmanical manuscripts and Modern Publication Design**

Limited type of graphics and illustrations are employed very carefully if at all necessary, in the seventeenth century Devanagari Brahmanical manuscript page layouts. No extra illumination or the use of graphics such motifs or geometrical patterns have been observed in manuscript page layouts. However, various types of visuals liberally used in modern publication designs.

Similar purpose for employing Illustrations in the seventeenth century Devanagari Brahmanical manuscripts page layouts and a variety of visuals in the modern publication designs the page layouts are evidently noticed.

**Application of Graphics**

Graphics placed on the front and back cover page designs, section separators, within the chapter pager are very common in both the cases. In modern publication designs, the graphics are placed as background for text to create dramatic texture effect. They are also used in the section opening pages.

**Organization of Space for Visuals**

In the seventeenth century Devanagari manuscripts, a page is divided into modular gird structure, which creates units or modules. These modules are selected in place illustrations. This structure does not support padding space for illustrations and text. Apparently overlapping of the text on the *hasia* borders, merging of illustration borders with the beginning letters of text is noticed.

In modern publication design, the grid structure of a page consists of a modular structure made up of columns and rows with gutter space. Grid structure guides in composing visuals in multiple ways e.g. single-multiple columns, header-footer area, in-
line with the text with clear white space between other content in the page layout. This clear white space is achieved for grouping information is a gutter space between the columns and rows. It is maintained consistently in the layout to look page designs harmonious.

The observations revealed that in the seventeenth century Devanagari Brahmanical manuscripts, the illustration area is defined, based on the units or modules formed because of grid construction. The illustration areas observed for the study are mainly in the rectangular, and the precaution is taken to align them with the flow lines of the text. The illustration areas are always marked with the double line or painted border with no padding space. Interestingly, in a very few examples, the illustrations composed as section separators are full bleed images. In one of the manuscripts two full-page illustrations without margin area found inserted.

In modern publication designs, two major text wrappings patterns around visuals are noticed. In the first case, the text is found wrapped around visual, and it creates a contour shape of visual. In the second case, the text is wrapped around the visual in a square form. In both the cases, padding space is maintained between text and visual to avoid overlapping. The visuals are placed along with the text area or independently on a page within margin area or with full bleed — occupying the entire space of the page till edges.

**Captions for Visuals**

In modern publication designs, visuals are always supported by extra information given in captions. Separate captions for illustrations are not noticed in the page layouts of the seventeenth century Devanagari Brahmanical manuscripts.
4.3 Theme 3: Layout Styles and Fundamentals of Page Layout Principles

Composition in page layout design is an organized arrangement of various design elements, such as text, images, graphics, etc. to make a layout. Fundamentals of design guide in making cohesive and spatial arrangements between the content used in the design. It is achieved with effective placements, alignments, division of space, grouping, visual flow, etc. The composition should be effective and functional.

4.3.1 Aims and Objectives

To identify aesthetic elements in the composition and layout of the seventeenth century Devanagari Brahmanical manuscripts and to compare their design concepts with the modern publication designs.

The objectives to study this theme are to explore design elements employed in organizing content in page layouts of the seventeenth century Devanagari Brahmanical manuscripts. This study will explore:

Part A  An Organization of Information
(1) Segments of manuscript and modern book
(2) Layout editorial styles and structure

Part B  Page Layout Principles
(1) Colour
(4) Contrast, emphasis, and visual hierarchy
(5) Repetition, consistency
(6) White space
(7) Visual grouping
(8) Balance in layout
4.3.2 Approach to Study Composition and Layout Designs: Layout Styles and Fundamentals of Page Layouts Principles of Devanagari Brahmanical Manuscripts and Modern Books

Manuscripts collected from various repositories with common and uncommon layout design patterns. They are of various genres. A selective few are identified for the study. These representative manuscripts are scrutinized in the current study for testing of the hypothesis.

H0 - 4 Manuscript designers have explored various types of editorial styles for the composition of page layouts, depending upon the type of content

H0 -5 Manuscript designers have practiced design principles in composition of page layout

H0 -6 Devanagari Brahmanical Manuscript designers of the seventeenth century remained unaltered by the thoughts of other contemporary design ideas and they did not adopt any other style in their design

The seventeenth century Devanagari Brahmanical manuscripts comprise possible design aspects, selected as representative samples. Further, they are compared with the modern publication designs under various heads as described in the ‘Aim and Objectives’. (see Chapter 3: Research Methodology)

4.3.3 Part A Organization of Information in Manuscripts and Modern Books

4.3.3 - Part A (1a): Segments of the Seventeenth Century Devanagari Brahmanical Manuscripts

After scrutinizing the representative manuscripts, following observations are recorded. A variety of information found in the manuscripts are categorized under various segments of Devanagari Brahmanical manuscripts. Results of the observations are presented here in Figure 4.75 and Figure 4.76.
Table 4. 9: Representative Manuscripts details — Physical Parts

<table>
<thead>
<tr>
<th>Segments of Manuscript</th>
<th>Manuscript Title</th>
<th>Library Details</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Front cover page</td>
<td>Kundamartanda - Suprabha Vyakhya</td>
<td>Anandashram S 21-1-18</td>
<td>1688AD</td>
</tr>
<tr>
<td>2. Namokar / Mangalacharna - Salutation to the God and teachers in the opening of text</td>
<td>Vruttaratnakarah Satikah</td>
<td>DC 3001</td>
<td>1637AD</td>
</tr>
<tr>
<td>3. Preamble / Introduction about manuscript</td>
<td>Vruttaratnakarah Satikah</td>
<td>DC 3001</td>
<td>1637AD</td>
</tr>
<tr>
<td>4. Colophon (Pushpika) - in the Beginning of manuscript</td>
<td>Vruddhachanakya</td>
<td>Anandashram S 10-2-12</td>
<td>1694AD</td>
</tr>
<tr>
<td>5. Section separator before beginning of new section or chapter</td>
<td>Shree Samarthakrut Yuddhakandachi Prat</td>
<td>Samarth Vagdevata Mandir Bad No. 255</td>
<td>17th Century</td>
</tr>
<tr>
<td>6. Body text with verse / canto no.</td>
<td>Vruddhachanakya</td>
<td>Anandashram S 10-2-12</td>
<td>1694AD</td>
</tr>
<tr>
<td>7. Colophon - at the end of Section</td>
<td>ShriVedaBhashya Prathamashatkam</td>
<td>Anandashram 615</td>
<td>1684AD</td>
</tr>
<tr>
<td>8. Section separator at the end of section or chapter</td>
<td>Shree Samarthakrut Yuddhakandachi Prat</td>
<td>Samarth Vagdevata Mandir Bad No. 255</td>
<td>17th Century</td>
</tr>
<tr>
<td>9. Colophon - at the of text</td>
<td>Saptmashtakpada</td>
<td>Anandashram 36</td>
<td>1669AD</td>
</tr>
<tr>
<td>10. Back cover page</td>
<td>Kundamartanda - Suprabha Vyakhya</td>
<td>Anandashram S21-1-18</td>
<td>1688AD</td>
</tr>
</tbody>
</table>
Chapter 4: Data Analysis and Findings

Figure 4.76: Various Possible Segments of the Seventeenth Century Devanagari Brahmanical Manuscripts
Following are the recorded observations. Every representative manuscript has:

a) A front cover page (Figure 4.76 - Part 1) and a back cover page (Figure 4.76 - Part 10). Cover page displays name of the text or volume and the last page i.e. back cover page reports the completion of text.

b) The common pattern noticed at the entry point of the manuscript includes ‘Namokar’ or ‘Mangalacharan’ i.e. salutation and honoring of the God and teachers in the opening of text (figure 4.76 - Part 2). Mangalacharan is the first part of any text.

c) After Mangalacharan or salutation to the God, most of the manuscript have an introduction written in a traditional rhetoric schematic structure i.e. ‘anubandha chatushtya’, (figure 4.76 - Part 3, 4).

d) Three types of colophon (pushpika) have been observed in the representative manuscripts:

i) The first type is at the beginning of the text or volume as shown in Figure 4.76- Part 3, it describes the facts related to the subject, original writer and scribe along with their social details, and meter used for composing verses. In a very few manuscripts preamble colophon observed.

ii) The second type of colophon found at the end of manuscript as seen in Figure 4.76- Part 9, gives description related to the title, subject, and the name of the author or original author, name of scribe, patronage, place of a manuscript written, date of completion, the reason of writing, suggestions, and remarks about safety and handling of the book, traditional blessings (aashirvachana), etc.

iii) The third type of colophon pattern found at the end of section or chapter as seen in Figure 4.76- Part 7. It begins with 'Iti', that means it is a final wordings of the text indicating the completion of the section. It gives facts regarding the end of chapter number, creator, details of the king, time of completion and details of scribe, etc. Last two types of colophons begin with 'Iti' or 'Itishi' that means ‘at the end of..’ as shown in Figure 4.76 - part 7 and part 9.

e) To help the reader, a page navigation system is employed on the pages of manuscripts in various ways. In few cases, section separators (Figure 4.76 - Part 5, 8) identified at the beginning and at the end of the section.
4.3.3 - Part A (1b): Segments of the Modern Books

Details of the representative modern publication selected to observe organization of information in a book

<table>
<thead>
<tr>
<th>Book Title</th>
<th>Publisher</th>
<th>Publication Year</th>
<th>ISBN No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Katharupa Mahabharata</td>
<td>Rajahansa Prakashan</td>
<td>2013</td>
<td>978-81-7434-620-9</td>
</tr>
</tbody>
</table>

Figure 4.77: Various Possible Segments of the Modern Publication Design
Most possible parts observed in the Modern books are as under:

1. A ‘Dust Jacket’ — with the front cover, spine and back cover in ‘Case binding’ type, and in the paperback binding front cover page, spine, and back cover page attached to a block of pages. (Figure 4.77 - Part 1)

2. Flyleaf — a blank or printed page leaf, at the front and back of a ‘Case Bound’ book, that is the one side of the end paper is not glued to the case. (Figure 4.77 - Part 2)

3. Half Title Page — This page contains only title of the book and it is the first page which reader sees after opening the cover page. (Figure 4.77 - Part 3)

4. Copyright Page or colophon page contains information about the publisher, date, place of publication, edition, etc. (Figure 4.77 - Part 4)

5. Dedication page — A dedication page is a voice of author in which author names the person or people for whom he/she has written the book. (Figure 4.77 - Part 5)

6. Full Title Page — Repeats the title, name of the author along with publication logo. (Figure 4.77 - Part 6)

7. Foreword is written by the person other than the author. It can be brief information about the author and his/her work. (Figure 4.77 - Part 7)

8. A preface generally covers the experience of the author about the book. How the idea developed, executed, etc., and how the book came into being, or how the idea for the book was developed. (Figure 4.77 - Part 8)

9. An acknowledgments can be part of preface or written separately stating about the people who were helpful to the author during the time of writing.

10. The introduction is written by the author as a beginning section, which gives information about the purpose and goals of the writing. (Figure 4.77 - Part 9)

11. Table of Content is a list of chapter headings and subheading along with page numbers. (Figure 4.77 - Part 10)

12. Section separator works as a divider between old and new chapters. (Figure 4.77 - Part 11)

13. Beginning of chapter page is generally different from the others and it startss on a fresh page. (Figure 4.77 - Part 12)

14. End of chapter page shows some indications to the reader about the end of chapter. (Figure 4.77 - Part 13)
4.3.3 - Part A (2): Layout Editorial Styles and Structure

4.3.3 - Part A (2a): Layouts Editorial Styles — Seventeenth Century Devanagari Brahmanical Manuscripts

Observations of page layouts uncovered following page layout styles and design patterns:

Type 1: Text Based Layouts - Single Text
Type 2: Multiple Texts Layouts; Bilingual Text (Text with Commentary)

4.3.3 - Part A (2a-1) Type 1: Text Based Layout with Single Text

Four categories of single text-based editorial styles are identified in the seventeenth century Devanagari Brahmanical manuscripts. Basic classification is dependent upon the format of the page and the arrangement of the text on the page.

Details of representative manuscripts selected for the study:

<table>
<thead>
<tr>
<th>Category</th>
<th>Manuscript Title</th>
<th>Physical Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only Text -1</td>
<td><em>Patanjali Mahabhasya</em></td>
<td>Orientation: Landscape&lt;br&gt;Size of Manuscript: Width 11.3&quot; x Height 4.5&quot;</td>
</tr>
<tr>
<td></td>
<td>Acc. No. 817, DC, 1653 AD</td>
<td></td>
</tr>
</tbody>
</table>

Figure 4.78: Text Based Layout with Single Text, (Category - Only Text 1), Landscape Format- Seventeenth Century Devanagari Brahmanical Manuscripts
Chapter 4: Data Analysis and Findings

Key Features

- The text is written in a horizontal manner, continuously in the single text block.
- The distinction between the two chapters is made aware to the reader by adding a verse at the end of the chapter. (Figure 4.78). Extra space is added before and after this verse.
- New chapter begins in the same line after previous chapter ends.
- No numbers are given to the verses within a chapter or to the chapter or section, however, chapter number is denoted linguistically.
- Consistency is maintained in the type size of the main text and at the end of chapter verse.

<table>
<thead>
<tr>
<th>Category</th>
<th>Manuscript Title</th>
<th>Physical Description</th>
</tr>
</thead>
</table>
| Only Text - 2 | *Kathakalpataru*  
Acc. No. 22/55, BISM, 1647 AD | Orientation: Landscape  
Size of Manuscript:  
Width 240 mm x Height 140 mm |

Figure 4.79: Text Based Layout with Single Text (Category - Only Text 2), Landscape Format- Seventeenth Century Devanagari Brahmanical Manuscripts

Key Features

- Text is written in horizontal manner, continuously in single text block.
- Every verse has a number and it is written at the end of the verse in line with the text (Figure 4.79).
- Consistency is maintained in the type size of text.
<table>
<thead>
<tr>
<th>Category</th>
<th>Manuscript Title</th>
<th>Physical Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only Text -3</td>
<td><em>Shree Samarthakruta</em>&lt;br&gt;<em>Yuddhakandachi Prata</em>&lt;br&gt;Bad No. 255, SVM, 17th Century</td>
<td>Orientation: Portrait&lt;br&gt;Size of Manuscript:&lt;br&gt;Width 4 1/2” x Height 7</td>
</tr>
</tbody>
</table>

Figure 4.80: Text Based Layout with Single Text (Category - Only Text 3), Landscape Format- Seventeenth Century Devanagari Brahmanical Manuscripts

**Key Features**

- The text is written in a horizontal manner, in modular text blocks (Figure 4.80).
- Each modular text block comprises a stanza made of four couplets. It is composed by using Indian rhetoric system. Each stanza has total forty-eight syllables (twelve syllables per line).
- Stanza number is placed below the fourth line, in the center of fifth and sixth. One line space is left blank after every stanza number.
- No folio numbers are observed in this case.
- Consistency is maintained in the type size of the entire text.
Chapter 4: Data Analysis and Findings

<table>
<thead>
<tr>
<th>Category</th>
<th>Manuscript Title</th>
<th>Physical Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only</td>
<td><em>Kalyanpotha</em></td>
<td>Orientation: Portrait</td>
</tr>
<tr>
<td>Text - 4</td>
<td>Acc. No. Bad No. 51, SVM, 17th Century</td>
<td>Size of Manuscript:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Width 210 mm x Height 240 mm</td>
</tr>
</tbody>
</table>

Figure 4.81: Text Based Layout with Single Text (Category - Only Text 4), Landscape Format- Seventeenth Century Devanagari Brahmanical Manuscripts

Key Features

- The text is written in a horizontal manner, in modular text blocks. (Figure 4.81).
- Each modular text block comprises of two line text.
- Stanza number is placed below in the horizontal center of the second line.
- Folio number is placed in the right margin area. It is aligned to the right edge of the text block
- Consistency is maintained in the type size of the entire text.

4.3.3 - Part A (2a-2) Type 2: Multiple Texts Layouts with Bilingual Text; (Text with Commentary)

Two types of editorial styles and structures noticed. These manuscripts are bilingual and are of commentary type.

<table>
<thead>
<tr>
<th>Category</th>
<th>Manuscript Title</th>
<th>Physical Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><em>Ranganatha Virachita 'Chitsadanadalahari' Tika</em>, Acc. No. 39/125, BISM, 1698 AD</td>
<td>Orientation: Landscape</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Size of Manuscript:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Width 11.3&quot; x Height 4.5&quot;</td>
</tr>
</tbody>
</table>
Chapter 4: Data Analysis and Findings

Figure 4.82: Layout Editorial Style - Bilingual Continuous Text Layouts Format, Seventeenth Century Devanagari Brahmanical Manuscripts

**Key Features**

- Main text is composed in the ‘Sanskrit’ language and commentary is in the ‘Marathi’ language (Figure 4.82).
- Main text and commentary are written horizontally in sequence, one after the other, as seen in Figure 4.82 - Part 1.
- The division of two distinctive kind of information is communicated to the reader by adding text e.g. ‘Shloka’ in the beginning of the main text and ‘Tika’ in the beginning of commentary. (Figure 4.82 - Part 2)
- The main text is highlighted with the box as demonstrated in Figure 4.82 - Part 3.
- The commentary is highlighted with the box as demonstrated in Figure 4.82 - Part 4.
- Numbers circled with blue colour are the verse numbers for the commentary, and the number circled with a red colour is the main text verse number. Numbers work as the navigation system for assisting reader.
- Consistency is maintained in the type size of the main text and the commentary.
• It shows that there are multiple verses written as a commentary and the format of number does not show any link or association with the main text. They are written in continues order.

<table>
<thead>
<tr>
<th>Category</th>
<th>Manuscript Title</th>
<th>Physical Description</th>
</tr>
</thead>
</table>
| 2        | Vrutta - Ratnakaraha (Satikah)  
Acc. No. 3001, DC, 1637 AD | Orientation: Landscape  
Size of Manuscript:  
Width 245 mm x Height 120 mm |

Figure 4.83: Layout Editorial Style - Commentary (Sanskrit & Sanskrit) ‘Tripatha’ Text Layouts Format, Seventeenth Century Devanagari Brahmanical Manuscripts

Key Features
• The main text is composed in the ‘Sanskrit’ language and the commentary is also explained in the ‘Sanskrit’ language. (Figure 4.83).
• Difference between the main text and commentary is shown using the content organization strategy i.e *tripatha* style. It is explained in the earlier theme namely manuscript grid construction methods. In which three distinct horizontal division of page are created while designing a template.

• The main text area is highlighted in the Figure 4.83 Part 2. It is placed in the vertical center of the page with an extra indentation on the left and the right side than the commentary text block.

• The commentary area is highlighted in the Figure 4.83- Part 2. It placed on the top and the bottom area of the page.

• Numbers are marked with two different colours, as described in in Figure 4.83- Part 3. Numbers encircled with the red colour are verse numbers of the main text, whereas numbers encircled with the blue colour, are the verse numbers for the commentary.

• Verse numbers reveal that two verses of main text written per page. Commentary for the main text is written in couplets and in a stanza format and number is given per stanza. Unlike earlier category, in this category verse numbers for the main text and the commentary correspond with each other. It helps the reader in associating commentary with the main text.

• Consistency is maintained in the type size of the main text and the commentary.

<table>
<thead>
<tr>
<th>Category</th>
<th>Manuscript Title</th>
<th>Physical Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td><em>Bhagvad Geeta - Satikah</em>, Acc. No. 51/73, BISM, 1696 AD</td>
<td>Orientation: Landscape</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Size of Manuscript:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Width 245 mm x Height 120 mm</td>
</tr>
</tbody>
</table>
Key Features

- Main text is composed in the ‘Sanskrit’ language whereas commentary is in the ‘Hindi’ language. (Figure 4.84)
- The difference between main text and commentary is shown using the content organization strategy i.e tripatha style. It is explained in the earlier theme - manuscript grid construction methods. In which three distinct horizontal divisions of page are created while template designing.
Chapter 4: Data Analysis and Findings

- The highlighted area in the Figure 4.84 - Part 2 is the main text. It is placed in the vertical center of the page with an extra indentation on the left and the right sides than the commentary text block.
- The highlighted area in the Figure 4.84 - Part 3, is the commentary and placed in top and bottom area of the page.
- Numbers are marked with two different colours, as described in in Figure 4.84 - Part 3. Numbers encircled with the red colour are verse numbers of the main text, whereas numbers encircled with the blue colour, are the verse numbers for the commentary.
- A multiple number of verses written in the main text area. For every such main text verse, one verse of commentary is written in the commentary area.
- Numbers of main text verse and commentary verse are similar.
- Main text type size is bigger than the text written in the commentary area.

4.3.3 - Part A (2b)  Layouts Editorial Styles —Modern Books

In modern publication design, page layouts are designed from a single column to multiple columns depending on the complexity and the variety of content composed within it. It is explained in detail, in Theme 2 - Grid Construction Patterns in Modern Books.

There are countless layouts available in modern publication design. Only a few are chosen as a representative samples to know page layout editorial styles and the design patterns in context with the study:

Type 1: Text Based Layouts - Single Text, Multiple Text
Type 2: Multiple Texts Layouts; Bilingual Text
Type 3: Appropriation in Page Layouts
4.3.3 - Part A (b2-1) Type 1: Layouts Styles — Text Based Layout with Single Text

<table>
<thead>
<tr>
<th>Category</th>
<th>Title of Publication</th>
<th>Physical Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shree Swami Charitra Saramruta, Shree Swami Samartha Prakashan</td>
<td>Orientation: Landscape Religious Book</td>
</tr>
</tbody>
</table>

Figure 4.85: Text Based Layout with Single Text (Category - 1), Landscape Format- Modern Publication Design

**Key Features**

- The text is written in a horizontal manner, continuously in the single text block.
- Every new chapter begins with a new page. The title of chapter number represented in bigger type size and in bold lettering. (Figure 4.85).
- Every verse has a number and it is written at the end of the verse in line with the text.
- Consistency is maintained in the type size of the main text and at end of chapter verse.
<table>
<thead>
<tr>
<th>Category</th>
<th>Title of Publication</th>
<th>Physical Description</th>
</tr>
</thead>
</table>

Figure 4.86: Text Based Layout with Single Text (Category - 2), Portrait Format, Modern Publication Design

**Key Features**

- The text is written in a horizontal manner, in modular text blocks. (Figure 4.86).
- Each modular text block comprises a stanza made of two couplets.
- Stanza number is placed at the end of the second line, in line with the text but outside text area. All stanza numbers are aligned to each other vertically.
- Page numbers are observed in this case.
- Consistency is maintained in the type size of entire body text. The heading is bigger in type size than body text and has applied bold attribute.
Chapter 4: Data Analysis and Findings

<table>
<thead>
<tr>
<th>Category</th>
<th>Title of Publication</th>
<th>Physical Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Sakal Saptahika</td>
<td>Orientation: Portrait Weekly Magazine</td>
</tr>
</tbody>
</table>

Figure 4.87: A Section - Multiple Text and Image Based Editorial Layout with Single Text (Category - 3), Portrait Format - Modern Publication Design

**Key Features**

- Representative page layout is one of the sections in the weekly magazine. It has two articles based on the same subject related to section (Figure 4.87).
- A page divided into two rows to accommodate content of two articles horizontally within multiple columns.
- In each article, three distinct typestyles are applied for heading, body text and drop capital. Headings are bigger and bolder than body copy.
- An articles begin with the drop capital letter, which is bigger in size than the body text and occupies two line space. Drop capital letter has a red colour.
- Consistency is maintained in the text styles and their attributes e.g. type size, gray value, colour, the spacing between the lines, etc. in all articles of the magazine.
- Page navigation system, e.g. running title, page numbers, and issue details are placed in header and footer area.
4.3.4 - Part A (b2-2) Type 2: Layouts Styles - Text Based Layout with Bilingual Text

<table>
<thead>
<tr>
<th>Category</th>
<th>Title of Publication</th>
<th>Physical Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kabir, Mauj Prakashan Gruha</td>
<td>Orientation: Portrait Translation of Poetry</td>
</tr>
</tbody>
</table>

Figure 4.88: Layout Editorial Style - Bilingual (Hindi & Marathi), (Category - 1), Portrait Format - Modern Publication Design

Key Features

- Main text is composed in the ‘Hindi’ language and commentary is in the ‘Marathi’ language. (Figure 4.88)
- Main text and commentary are written in a separate paragraph. The pattern of writing is: the main text written first and it is followed by several paragraphs of commentary in the vertical direction (Figure 4.88).
- The difference between two types of text, i.e. main text, and commentary is shown by adding extra indent (left margin space) to the main text.
- The main text is highlighted with the box as demonstrated in Figure 4.88 - Part 1.
- The commentary is highlighted with the box as demonstrated in Figure 4.88 - Part 2.
- Paragraphs related to the main text as well as commentary are not numbered.
- Consistency is maintained in the type size of the main text as well as the commentary.
Chapter 4: Data Analysis and Findings

<table>
<thead>
<tr>
<th>Category</th>
<th>Title of Publication</th>
<th>Physical Description</th>
</tr>
</thead>
</table>

Figure 4.89: Layout Editorial Style - Bilingual (Sanskrit & Hindi), (Category - 2), Portrait Format - Modern Publication Design

**Key Features**

- Main text is composed in the ‘Sanskrit’ language and commentary in the ‘Marathi’ language (Figure 4.89)

- Main text and commentary are written in a separate paragraph. The pattern of writing is: the main text is written first and it is followed by a single paragraph of commentary in the vertical direction (Figure 4.89).

- The structure of the layout is a hierarchical grid type.

- The difference between two types of text, i.e. main text, and commentary, is shown by the difference in type size, gray value, spacing arrangement of couplets in the main text and commentary text.

- Paragraphs of main text as well as commentary are numbered. A number of main text area matches with the number of commentary area.

- Consistency is maintained in the type styles of the main text as well as the commentary in the entire document.
Chapter 4: Data Analysis and Findings

<table>
<thead>
<tr>
<th>Category</th>
<th>Title of Publication</th>
<th>Physical Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td><em>Thaipatra, Thai Costume Collection</em></td>
<td>Orientation: Portrait Classic Traditional Book</td>
</tr>
</tbody>
</table>

Figure 4.90: Layout Editorial Style - Bilingual (Thai & English), (Category - 3), Portrait Format - Modern Publication Design

**Key Features**

- Main text is composed in the ‘Thai’ language and the commentary is in the ‘English’ language (Figure 4.90).
- Page layout is designed using two column grid. In the left side column, the text placed is in the Thai language and in the right side column is a translated version of the same in the English.
- Both the Thai and the English text have same importance, and similar type of fonts are chosen for the same. Both the text blocks begin with drop capital letter with same colour. Consistency is maintained in the type styles.
- Two headings, i.e. main heading is in Thai and the other one is translated into English, shown differently. Main heading is in bigger size than the English heading however both are planned in similar colour.
- Since it is a translation, no numbering is given for paragraphs. They are placed facing to each other in separate columns.
### Key Features

- The main text is composed in the ‘Hindi’ language and the commentary is in the ‘Marathi’ language (Figure 4.91).
- In this page layout, the page spreads are utilized in order to compose main text on the left page (verso) and commentary on right side page (recto), separately.
- The text is written in a horizontal manner, in modular text blocks.
- Each modular text block comprises a stanza made of five to six couplets.
- The stanza number is placed in the beginning are on the left side of the text block for main text as well as for commentary also.
- Apart from stanza number, a page navigation system consists of a running title, and a page number placed in the footer area.
- Consistency is maintained in the type size of the entire text.

### 4.3.3 - Part A (b2-3) Type 3: Layouts Styles - Appropriation in Page Layouts

<table>
<thead>
<tr>
<th>Category</th>
<th>Title of Publication</th>
<th>Physical Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ruchira, Part 1, Mehta Publishing House</td>
<td>Text Based Layout</td>
</tr>
<tr>
<td>2</td>
<td>CKP Khasiyat, Rohan Prakashan</td>
<td>Text and Illustration</td>
</tr>
<tr>
<td>3</td>
<td>Continental Cooking for the Indian Kitchen</td>
<td>Text and Illustration</td>
</tr>
<tr>
<td>4</td>
<td>Saptahik Sakal, Sakal Publications Pvt.Ltd.</td>
<td>Text and Images</td>
</tr>
</tbody>
</table>
Chapter 4: Data Analysis and Findings

Figure 4.92: Layout Editorial Style - Appropriation in Page Layout (Type 1 to 4), Modern Publication Design

Key Features

- All specimens of Figure 4.92 (Type 1 to 4) are of similar subject.
- Appropriation in page layout that means, editorial style or structure of presenting the information follows similar format for the page layouts.
- Difference is found in the graphic strategies.
- Type 1 - page layout is text based and multiple recipes are placed on one page and they continued from one page to next page. (Figure 4.92 - Part 1)
- In Type 2 - page layout only one recipe is placed on a page along with an illustration. (Figure 4.92 - Part 2)
• In Type 3 - page layout only one recipe per page placed along with an illustration. Information do not have title but the structure of information has similarity with Type 1 example. (Figure 4.92 - Part 3)

• Type 4 page layout has multiple recipes on a single page along with colourful images and additional information, such as details of the writer. However, the structure of presenting the information is similar to other three page layouts. (Figure 4.92 - Part 4)

4.3.3 - Part A (c): Page Navigation System

4.3.3 - Part A (c1): Page Navigation System — Seventeenth Century Devanagari Brahmanical Manuscripts

Observations revealed that the two types of contents found repeated on folios of the manuscripts.

They are:
1. Running Titles, and
2. Folio Number

Figure 4.93: Representative Samples showing Variety in Placement of a Running Title and a Folio number, Seventeenth Century Devanagari Brahmanical Manuscripts
Key Features

- Running title and folio numbers are placed mainly in the left and right margin area.
- Their position is mainly aligned to the headline grid and at various positions, e.g. top headline grid, vertical center, and bottom headline grid.
- Figure 4.93 (Part 6) shows that top margin area (header area) utilized to place full manuscript title in the left side and in the right side abbreviated section number.

4.3.3 - Part A (c2): Page Navigation System — Modern Publication Design

Observations have revealed following types of page navigation system:

1. Table of Content Page
2. Running Titles
3. Page Numbers
4. Index Pages

Following are the representative samples of the table of content pages. Following images (1, 2 & 3) demonstrates TOC pages placed in the beginning of the book, and the fourth image is an index entry type. Entries are placed at the end of the book.

Figure 4.94: Page Navigation System - Table of Content (Part 1-3), Index Entry (Part 4), Modern Publication Designs

Following are the examples of running heads and the page numbers placed at four different locations such as header and footer area (top and bottom margins), and in the left and the right margin area.
Chapter 4: Data Analysis and Findings

Figure 4.95: Page Navigation System placed in the Footer Area (Bottom Margin Area), Modern Publication Designs

Figure 4.96: Page Navigation System placed in the Header - Footer Area, Modern Publication Design

it can be boring and uncomfortable. Nothing is ever quite the way you expect it to be. India is far from the easiest country in the world to travel around. It can be hard even.

India’s story is one of many different kingdoms competing with each other, and this is never more clear than in places like Bijapur, Mandu, Golconda and other centres in
Chapter 4: Data Analysis and Findings

215

Figure 4.97: Page Navigation System placed in the Left and the Right Margin Area along with the Graphic Elements, Modern Publication Design

Key Features

- Table of content, running title, folio numbers, and index entry pages played important role in helping the reader to navigate within pages.
- Portrait page layouts - Figure 4.95 - Part 1-5, displays various placements of a page navigation content in the footer area (bottom margin).
- Portrait page layouts - Figure 4.96 - Part 6-8, displays various placements of a page navigation content in the header area (top margin).
- Portrait page layouts - Figure 4.96 - Part 9, shows placements of a page navigation content in the header and footer area both.
- Landscape page layout - Figure 4.97 - Part 10, shows placements of a page navigation content in the left and right margin area.
- Their position is mainly aligned to the page grid, text block or baseline / headline grid.

4.3.4 Part B: Page Layout Principles

Selected few representative manuscripts and modern publication designs have been studied to know page layout principles, such as visual hierarchy, contrast, colour, repetition, consistency, visual grouping, balance, rhythm and symmetry in the page layout.
4.3.4 Part B (1): Chapter Opening Pages — Entry Point

Following representative manuscripts and modern publication designs have been studied in order to understand the strategy of design for the chapter-opening page in the page layout.

4.3.4 - Part B (1a): Chapter Opening Pages — Entry Point in the Seventeenth Century Devanagari Brahmanical Manuscripts

Three categories of chapter opening pages are evidently seen in the manuscripts.

Table 4.10: Chapter Opening Patterns of the Representative Seventeenth Century Devanagari Brahmanical Manuscripts

<table>
<thead>
<tr>
<th>Category</th>
<th>Library</th>
<th>Manuscript Title</th>
<th>Accession No.</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DC</td>
<td>Kundamartandatika</td>
<td>Acc. No. 10287</td>
<td>1691 AD</td>
</tr>
<tr>
<td>2</td>
<td>SVM</td>
<td>Samarthakruta Ramayana</td>
<td>Acc No. 746</td>
<td>1623 AD</td>
</tr>
</tbody>
</table>
Chapter 4: Data Analysis and Findings

<table>
<thead>
<tr>
<th>Category</th>
<th>Library</th>
<th>Manuscript Title</th>
<th>Accession No.</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Anandashram</td>
<td>Vruddhachanakya</td>
<td>S 10-2-12</td>
<td>1694 AD</td>
</tr>
</tbody>
</table>

**Key Features**

- The majority of the manuscripts scrutinized have followed ‘Category 1’ type of chapter opening pages. Very few manuscripts found with the ‘Category 2’ type. These types of page layouts are simple and the content is symmetrically balanced.
- In all three categories, a salutation to the god is written in the beginning, at the entry point of the manuscript page.
- In ‘Category 1’ type of manuscripts, the text is written in the continuous horizontal manner using black colour. Consistency is maintained in type size and tonal values of text. No visual hierarchy in terms of the size between entry point and rest of the text have been observed.
- In ‘Category 2’ type of manuscripts extra space (white space) has been added either on the both sides of ‘salutation to the god’ or after. Thus, the manuscript designer created a visual distance or grouping of information by adding extra space. Consistency is maintained in the calligraphic style and colour of the text for ‘salutation to the god’ with the rest of the text. In the representative example, interest is created by adding calligraphic extensions to the folio numbers and placing them in the vertical center of the right margin. However, this page layout is also simple and balanced but it is more vibrant than ‘Category 1.
- In ‘Category 3’ type of manuscripts, the red colour has been employed along with the black. Application of red colour for rubricating the text namely, ‘salutation of god’ and black colour for the main text has generated a contrast in the design. The use of the red colour in the punctuation mark i.e. danda (vertical lines) builds a trigger for the reader while associating the verses with it. It also created emphasis in
the text, where red colour is applied. This layout is more dynamic than the ‘Category 2’ because of appropriate use of colour in the design, and colour consistency and continuity are also maintained for a particular type of information.

4.3.4 - Part B (1b): Chapter Opening Pages — Entry Point in Modern Publication Designs

Representative simple to complex modern publications have been selected to study of the chapter opening pages. Modern publications selected are of various genres (Figure 4.98) such as:

Type 1 - Text based religious handbook
Type 2 - Text and illustrations based Brahmanical prayer book
Type 3 - Text and illustration based weekly magazine
Type 4 - Text and image-based publication designs

![Figure 4.98: Chapter Opening Pages - Entry Point, (Type 1-4) Simple to Complex Page Layouts, Modern Publication Designs]
Common Features

- **Typographical variations** in the type style and size of heading, subheading, body copy and drop capital easily evident in the page layout. (Figure 4.98)

- The layout shows the use of a variety of fonts, the contrast in bold and regular typefaces. The order and placement of content help reader’s eye movement follow heading, drop capital and body text order. Therefore, **visual hierarchy** is achieved in the page layouts.

- **Consistency** is maintained in typefaces, size and attributes chosen for the particular style e.g. heading, body copy etc. in all the articles of the respective book.

Distinctive Key Features

- **Type 1** (Figure 4.98) page layout - content is organized to design **simple** and **balanced** layout. Interest is created in the layout by adding variety in typefaces, type styles, and their attributes. The contrast in the size of typefaces helps in adding **visual hierarchy** in the layout. Extra **white space** at the beginning of paragraphs i.e. indenting first line of a paragraph is an indicator of the new paragraph.

- **Type 2** (Figure 4.98) is the text and illustrations based Brahmanical prayer book. Page format and orientation of text shows similarity with the manuscripts. **Visual hierarchy** is shown by adding **contrast** in the size of heading, the salutation of god, and the body text.

- **Type 3** (Figure 4.98) is text and illustrations based weekly magazine. Typographical and colour variation are seen in the heading, subheading, drop capital and body text. The article begins with drop capital letter, with two-line height. **Balanced** distribution of the content resulted in a **symmetrical** page layout.

- **Type 4** (Figure 4.98) is the text and image-based publication design with image dominated chapter opening pages of articles within the magazine. **Reader’s eye follows** a path in the order of image, heading, subheading, drop a capital letter and body text. Thus **visual hierarchy** created by **image dominance, white space, the contrast in size**, and **colour**. A white space in the border area effectively used in adding a **focal point** in the page layout.
4.3.4 Part B (2): Fundamental of Design and Page Layout — Seventeenth Century Devanagari Brahmanical Manuscripts and Modern Publication Design

4.3.4 - Part B (2.1a): Colour, Contrast, Emphasis, Visual Hierarchy, Consistency, Balance, and Typography – Seventeenth Century Devanagari Brahmanical Manuscripts

Application of colour in the manuscript is examined in the context of text area only, however, the colours employed in illustrations are not considered.

Four types of manuscripts with the application of colour, identified in the representative manuscript. They are:

Type 1: Entire text is written in the black colour with no variation in text size
Type 2: Entire text is written in the black colour with variation in text size
Type 3: Text is written in two colours - black and red with no variation in text size
Type 4: Text is written in two colours - black and red with variation in text size
Type 5: Use of standardized colours, such as yellow to make corrections

Type 1 & 5 Representative manuscript shown in the following Figure 4.99. These types of manuscripts are written entirely using black colour with no variation in type size.

Figure 4.99: Type 1 & 5 - Entire Text is written in Black Colour with no Variation in Type Size - Seventeenth Century Devanagari Brahmanical Manuscripts, Kundamartanda, DC, 1691 AD
Key Features

- In ‘Type 1’ group of manuscripts (Figure 4.99), the entire text is written using black colour and continuous horizontal manner. *Hasia* borders are drawn with red colour.

- **Consistency** is maintained in the **colour** of the entire text.

- **Consistency** is maintained also in the calligraphic style, type size, tonal values, and spacing between the text and the lines in the text block area.

- Although, the text is written in black colour, certain important text, e.g. verse number, end of section text, etc. is highlighted with transparent red colour. **Emphasizing** of the text by creating **contrast** in colour is deliberately done to help reader while following page navigation system.

- Yellow colour a standardized colour for deleting the unwanted text, applied at few places for making corrections.

- Static and **symmetrically balanced** page layout.

**Type 2** Representative manuscripts shown in the following Figure 4.100. These types of manuscripts are written entirely using black colour with variation in type size.

![Figure 4.100: Type 2 - Entire Text written in Black Colour with Variation in Type Size – Seventeenth Century Devanagari Brahmanical Manuscripts, Bhagvad Geeta Satikah, BISM, 1696 AD](image)

Key Features

- In ‘Type 2’ manuscripts (Figure 4.100), entire text is written using black colour and written in a continuous horizontal manner. *Hasia* borders are drawn with black colour.

- This is an example of ‘*Triipatha*’ type of page layout, in which two types of information presented on the page: main text and commentary. The main text is
written in the bigger size than the commentary text, showing **visual hierarchy**. **Consistency** is maintained in the presentation of two types of information in the entire manuscript. Both, in the main text and the commentary **similar** style of calligraphic style, but a **difference** is noticeable in the tonal values.

- Use of variety in the **proportion** of the text sizes, enhances the **functionality** and the **aesthetic** value of the page layout.

- Page layout is **symmetrically balanced**. However, the adoption of flowing drop line text alignment for commentary area in the bottom, are added a **visual movement** in the composition. As a result page layout become **asymmetrical**, and **lively** in the bottom commentary area.

- Although, the text is written in black colour, certain important text, e.g. verse number, end of section text, etc. is highlighted with transparent red colour. This **emphasizing** of text by creating **contrast in colour** is deliberately done to help a reader while following page navigation system.

**Type 3** representative manuscript is shown in following Figure 4.101. In these types of manuscripts, the text is written in two colours – black and red with no variation in text size.

![Figure 4.101: Type 3 - Text is written in two colours - black and red with variation in text size, Seventeenth Century Devanagari Brahmanical Manuscripts, Vruddhachanakya, Anandashram, 1694 AD](image)

**Key Features**

- In ‘Type 3’ manuscripts (Figure 4.101), black and red colour are applied for specific type of text to indicate importance. Red colour applied to **emphasize** ‘salutation to god’ and for punctuation mark; whereas the body text is written in black colour. (see Table 4.10 - Category 3). **Hasia** borders are drawn with red colour.
• **Consistency** is maintained in the calligraphic style, type size, tonal values, and spacing between the text and the lines in the text block area in both colour text.

• Overall page layout is **symmetrically balanced**. However, **appropriate** use of **red colour**, made the page layout **energetic**.

**Type 4** Representative manuscripts is shown in the following Figure 4.102. In these types of manuscripts, a text is written in two colours - black and red with variation in text size.

![Figure 4.102: Type 4 - Text is written in Two Colours - Black and Red color with variation in text size, Seventeenth Century Devanagari Brahmical Manuscripts, Bhagavata Purana, BORI, 1648 AD](image)

**Key Features**

• In ‘Type 4’ manuscripts (Figure 4.102), two colours are employed in the text: red and black. *Hasia* borders drawn with red colour.

• This is an example of ‘Triipatha’ type of page layout, in which two types of information presented on the page: main text and commentary. Design principle of **contrast in size** is applied to write main text in the bigger size than the commentary text. It also added **emphasis** on the main text and helped in showing **visual hierarchy**. **Consistency** is maintained in the presentation of two types of information in entire manuscript. Both, the main text and the commentary have **similar** style of calligraphic style, but they **differ** in **tonal value** and **size**.

• Application of red colour observed in verse numbers, *danda* i.e. punctuation marks, new discourse indication, and end of section. Rest of the text is written in black colour. **Rubricated** words for the titles of new discourse indicated by creating **contrast in colour** is deliberately done to help a reader while following page navigation system and to enhance **aesthetic** value of the design.
• Use of variety in proportion of text sizes enhances the functionality and aesthetic value of the page layout.

• Text is composed symmetrically in the allotted space. Yet, the overall page layout is asymmetrical with the placed contents such as, text and illustration.

4.3.4 - Part B (2.2a): White Space, Visual Grouping, Balance in Page Layout and Typography – Seventeenth Century Devanagari Brahmanical Manuscripts

Three types of patterns are employed in the seventeenth century Devanagari Brahmanical manuscripts to distinguish one paragraph from other.

Type 1 - Addition of Extra Space between Verses - Single Text Block Format
Type 2 - Use of Unit Space between Text Blocks - Modular Text Block Format

Following manuscripts studied to understand use of white space and visual grouping.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Manuscript Details</th>
<th>Physical Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kundamartanda, Anandashram, Ac. No. S 21-1-18, 1688 AD</td>
<td>Orientation: Landscape</td>
</tr>
<tr>
<td>2</td>
<td>‘Ragavibodh’, Anandashram, Acc. No. S 23-1-3, 1616 AD</td>
<td></td>
</tr>
</tbody>
</table>

Figure 4.103: Typography and White Space (Type 1 & 2), Landscape Format Seventeenth Century Devanagari Brahmanical Manuscripts
Key Features

- Figure 4.103 (Type 1) manuscript with single text block. It is the most common pattern observed in the manuscript. In this pattern the text, verses and sections are written one after the other in horizontal manner. To differentiate one section from the other, an extra space (white space) has been added at the end of section or before and after the verse indicating the end of chapter. This addition of white space has helped in producing the effect of visual grouping of information by separating one section from the other.

- Figure 4.103 (Type 2) manuscript is an example of modular grid structure. It has ‘Tripatha’ type of page layout, in which two types of information presented on the page: main text and commentary. In the template making process, visual groups are formed by using more units for white space around the main text, which is placed in the center part of the page. More white space also help in creating negative space around the main text and making it the focal point of the layout.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Manuscript Details</th>
<th>Physical Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Kundamartanda, Anandashram, Ac. No. S 21-1-18, 1688 AD</td>
<td>Orientation: Portrait</td>
</tr>
<tr>
<td>4</td>
<td>‘Kalyanpotha’, SVM, Bad No. 51, 17th Century</td>
<td></td>
</tr>
</tbody>
</table>

Figure 4.104: Typography and White Space (Type 3 & 4), Portrait Format Seventeenth Century Devanagari Brahmanical Manuscripts
Key Features

- In Figure 4.104 (Type 3) page layout template is created by dividing a page into headline grid. Units formed by this division of space utilized for writing text. In this example every verse is written using two units and in the third verse number is written in the horizontal center. Since, the content of the third unit is the only verse number, it helped in making rest of the entire horizontal space as **white space**. This **white space** eventually resultant in separating two verses from each other and producing the effect of **visual group formation** or **chunking of information**.

- Figure 4.104 (Type 4) is an example of page template made up of modular grid structure. **Modular units** formed by the division of space utilized for writing text. In this example every verse is written using four units, and the verse number is written in the horizontal center of the fifth and the sixth unit. The seventh unit intentionally left blank as a **white space** between two stanzas. This sequence is continued for writing next two stanzas on a page. The active white space in the fifth, sixth and the seventh unit resulted in **visual group formation** or **chunking of information**.

Common Features

- A common feature found in every manuscript is that all manuscripts have a frame of white space in the form of defined margin areas. This space is intentionally created in page template design process.

- Arrangement of content in most of the page layouts is planned in such a way that the page should have **symmetrical** balance along the axis of page. Justified alignment of text, hasia borders, running titles along with page number on the left and right margins are placed in such a way that they do not disturb balance of the layout.

- In all the manuscripts scrutinized for the study did follow the similar design process. Their design process include: template designing, defining appropriate layout editorial style and structure, calligrphic style with the tonal value of the text, use of colour, and space management for illustrations. Once it is well set as a result this **visual unity** is maintained in all the pages of manuscripts.
4.3.4 - Part B (2.1b): Colour, Contrast, Emphasis, Visual Hierarchy, Consistency, Balance, and Typography – Modern Publication Design

Application of colour in the modern publication design is examined mainly in the text area only. Three types of modern publication designs are chosen with the application of colour. Simple to complex page layouts are selected for the study.

Type 1: Entire text is written in the black colour with variation in text size

Type 2: Text is written in two colours

Type 3: A document with multiple colours

Type 1: Representative page layouts of modern books shown in the Figure 4.104 displays text written entirely using black colour.

Figure 4.105: Typography, Visual Hierarchy, White Space and Single Colour (Type 1- Category 1-4)) - Modern Publication Design
Key Features

- **Type 1 - Category 1**: (Figure 4.105) A landscape page layout format with text composed in a single text block in horizontal manner and in black colour. Two levels of visual hierarchy and contrast in type size is noticeable. Page layout is symmetrically balanced.

- **Type 1 - Category 2**: (Figure 4.105) A portrait page layout format with text composed in single text block in vertical manner and in black colour. Two levels of visual hierarchy and contrast in type size is noticeable for heading and body text. White space is visible in the form of extra space between two successive paragraphs. Asymmetrical balance is formed in the page layout, as the entire text is aligned to the left edge of the page.

- **Type 1 - Category 3**: (Figure 4.105) A portrait page layout format with text composed in modular text blocks using hierarchial grid structure. Information is presented in vertical manner and in black colour. Three levels of visual hierarchy and contrast in type size are noticeable for heading, main text and commentary. White space is visible in the form of extra space between each horizontal unit. Indented space is applied in the beginning of commentary text. Visual grouping is formed because of hierarchical grid, white space and contrast. Zigzag arrangement of the main text is created visual movement in the page layout. Page layout is symmetrically balanced to the center of page.

- **Type 1 - Category 4**: (Figure 4.105) A portrait page layout format with the text composed in modular text blocks using hierarchial grid structure. Information is presented in vertical manner and in black colour. Three levels of visual hierarchy and contrast in type size are noticeable for heading, sub-heading and body text. White space is visible in the form of indented space in the beginning of body text. A line is added above and below the sub-head to show visual grouping. Page layout is symmetrically balanced to the center of page.
Type 2 Representative page layouts of modern books shown in the Figure 4.106 displays text written in two colours.

Key Features

- In ‘Type 2’ page layout (Figure 4.106), text is composed of using two colours. For heading, sub-heading cyan colour is applied and for body copy black colour.

- **Visual hierarchy** and **emphasis** is shown by using design principles, such as **contrast**, **proportion** and **colour**. Heading is bigger than sub-heading and body text. The tonal weight of heading and sub-heading is bold whereas tonal weight of body text is normal. Heading and sub-headings are presented in different colour than the body text.

- **Consistency** is maintained in the typographic attributes throughout the book, in the heading, sub-heading and body copy.

- **Blocking of white space** effect is created by pushing the heading down. This is an effective technique to compose a **focal point** in page layout with a long text.

- Overall page layout is **symmetrically balanced**. However, **appropriate** use of cyan colour, added interest in the page layout.
Type 3 Representative page layouts of the modern books shown in the Figure 4.107 has multiple colours employed in it. These four different section pages of same magazine.

Figure 4.107: Typography, Visual Hierarchy, White Space and Multicolor Page Layouts (Type 3) - Modern Publication Design

**Key Features**

- In ‘Type 3’ manuscripts (Figure 4.107) all four page layout differ from each other in placement of heading, number of columns, and image placement strategy. However, they follow similar page template for margin and page navigation system.

- **Consistency** is maintained in the typographic attributes among the level of information.

- **Visual hierarchy** is planned in the layout by using contrast and proportion to create emphasis on headings, and drop capitals

- **White space** in the page layout guide reader to look at the first images and later the text.
• Colour of heading is analogous to the images placed on the page.

• Different composition of content on each page makes page layouts symmetrical or asymmetrical. However, the entire arrangement forms visual unity and harmony in page layouts.

Common Features
• Every page layout has a frame of white space in the form of defined margin areas. This white space is intentionally created in the page template design process.

• Information is displayed in the page layout wiht the level of importance, e.g. heading, sub-heading and body copy. The visual hierarchy for the level of importance is shown using principle of design such as, contrast and proportion. Variations is noticed in type size, and tonal value along with addition of white space, and elements of design such e.g. line. Consistency is maintained in the presentation of all different types of information in entire book.
4.3.5 Findings of Theme 3: Composition and Layout Designs: Layout Styles and Fundamentals of Page Layouts Principles

4.3.5 Part A (1): Organization of Information in the Manuscripts and the Modern Books

Summary - Organization of Information in the Seventeenth Century Devanagari Brahmanical Manuscripts

- Every manuscript has a front cover page which displays the title of the text. In many manuscripts, a back cover page is also found.
- Manuscript begins with a salutation of the god.
- In the introduction section, the information is presented in the format of predefined rhetoric style, i.e., ‘anubandha chatushtya’. This is a standardized system in which explained the type of reader of this particular text, purpose of the text, its subject, and its relation with various disciplines.
- Three types of colophon or pushpika are employed in the page layout. They are preambles placed at the end of the text and in the section beginning or end colophon. Colophon helps the reader in knowing details of the author, scribe, place, date of text, rhetoric meter used for composing text, etc. Colophon placed at the beginning or end of a section e.g., ‘iti’ or ‘Itishri’ type also guide the reader in knowing their current position in the manuscripts.
- Sections Text with various sections is organized systematically in a horizontal order in a continuous manner under various segments. Two types of section separators are noticed in the representative manuscripts.
  - Within the text, denoted by the end of section text, i.e., ‘iti’ or ‘itishri’ with section number. An extra white space, one of the design principles is added between two sections to show visual grouping or chunking of data.
  - Section title is written on a separate page. In some cases, it is represented with only text or decorated with graphic borders or has full page illustration.
Summary - Organization of Information in the Modern Book Design

- Every modern book is divided into several physical segments e.g. cover page, copyright page, dedication page, full title page, foreword, preface, acknowledgment, introduction page, table of content, index page, section separator etc.

- These several segments or parts of the book are presented with specific order and have a specific function. They are generally placed on separate pages.
  - Cover page not only reveals the title of the book but also it protects the inside pages.
  - Title of book and publishers details can be seen on a full title page, half title page and copyright page.
  - Introduction page gives information about purpose and goals for writing. Dedication page, acknowledgment, foreword, and preface give information about the author, the work and the help received from the people for the work.
  - Table of Content, section separator and index pages help a reader while moving within a book as page navigation system.

- Mostly, a new sections begins with the separate page. Occasionally, as per the requirement of the document, dedicated section separators pages are added within the document.

4.3.5 Part A (1a): Comparative Analysis: Organization of Information in the Seventeenth Century Devanagari Brahmanical manuscripts and Modern Publication Design

While scrutinizing the representative manuscripts and comparing with modern book design, subsequently similar components are noticed:

i) Front and back cover pages

ii) Section separators for beginning and end of chapters

iii) Pre-amble (introduction)

iv) Colophon in the beginning

v) Numbering system for verses / stanzas / sections
Following dissimilarities noticed in the organization of information. They are:

Noticeable difference is observed in the seventeenth century Devanagari Brahmanical manuscripts namely the information is clubbed together in colophon includes mainly title, subject, and the name of the copier, original author, name of scribe, patronage, place of a manuscript written, date of completion, the reason of writing or copying manuscript, suggestions, and remarks about safety and handling of the book. However, this information is not elaborately presented using separate pages as seen in a modern book.

In modern books, this information is found spread across various predefined sections or parts in a specific order.

However, the pattern of information is almost similar in both, but the style of presentation is different.

4.3.5 Part A (2): Layout Editorial Styles and Structure

4.3.5 Part A (2a): Layouts Editorial Styles — Seventeenth Century Devanagari Brahmanical Manuscripts

Summary / Key Features

- Practice of predefined editorial style by defining structure, template, space management, and organization of content are evident in all the representative manuscripts selected for the study.

- Editorial style of manuscripts is based upon the page format, e.g. portrait or landscape and the type of text type, i.e., single or bilinugal.

- Landscape Format Page - Text written in a horizontal manner within a single text block. Two types of editorial styles are employed in the manuscript page design. They are:

  **Type 1** - No numbering is assigned for verses of body text. However, at the end of section, numbering is written linguistically instead of numerical figures. Extra white space is observed before and after the end of section verse. This space works as **white space** and help in **making a group of information** by separating it from other.

  **Type 2** - Numbers are assigned to every verse and are written in line with the text
• Portrait Format Page - Text is written in the vertical manner within modular text block units. Numbers are assigned to the stanza and are written below the last line of stanza, mostly in the horizontal center of stanza. Extra space before or after number generates **white space between two stanzas** and hence making **visual units** or groups of text.

• **Bilingual layout** is a complex type of layout in which two type of information is presented in a single page layout. Following editorial styles observed in them.
  
  - The main text (m) and commentary (c) is written in ‘m-c-m-c’ sequence. Two examples studied to understand the editorial style.

  - The first instance revealed that, in the main text and commentary numbers do not match with each other. Main text with single verse has a number, however to explain the main text, many verses are composed in the page layout. Therefore, difference is noticed in the numbering system of the main text and the commentary. However, difference in numbering is quite confusing and there is no correlation between main text and commentary verse number.

  - In the second instance is a ‘tripatha’ style page layout editorial style, in which two stanzas written on page as a main text and the commentary written in the above and below section has similar stanza number. Drop line type of paragraph alignment help in creating **visual movement** in the design.

• Numbering system works as a page navigation system. Assigning numbers for verses, stanzas and section shows the **reader friendly, utilitarian approach in manuscript system design.**

• In few layouts consistency is maintained in the typographic attributes of entire layout, e.g. type size of the main text and end of chapter verse. In a few manuscripts the difference in **tonal value, contrast and proportion** are noticed between two types of text information.
4.3.5 Part A (3): Comparative Analysis: Layout Editorial Styles and Structure of the Seventeenth Century Devanagari Brahmanical manuscripts and the Modern Publication Design

- Modern publication design with single text block and landscape page format (Figure 4.85) show similar editorial layout style as seen in the text based layout with single text manuscript (Category - Only Text 2 Figure 4.78). The text written in the horizontal manner with the verse number assigned at the end of in line with the text. The only difference noticed in the modern editorial style is the use of contrast in tonal values and proportion in the size of heading and body text to show visual hierarchy between the two. Provision of white space after heading helps in grouping of information.

- Modern publication design with modular text blocks and portrait page format (Figure 4.86) show similar unit based modular, editorial layout style as seen in the text based layout with single text manuscript (Figure 4.80 and 4.81). The difference is noticed in the placement of stanza number. In modern publication design, stanza numbers are aligned to the last line of stanza. Whereas in the manuscripts, they are written below the stanza.

For a bilingual text writing, most of the modern editorial page layout formats are vertical. The main text and commentary is written using columns, hierarchical grid structure, page spreads, etc. ‘Tripatha’ type editorial style, which was very much common for writing bilingual manuscripts, is not practiced currently in modern publication designs. However, its modified version is noticed with few changes in the hierarchical grid type editorial structure, as seen in Figure 4.88- Figure 89.

- As per the tone or the rhetoric style of the layout i.e. subject of the manuscripts, a design principle i.e. appropriation is applied in the page layout editorial style. Noticeable facts show that the manuscript are incorporated with limited graphics with no extra ornamentation or decoration of the page.

- Page navigation system is observed in the seventeenth century Devanagari Brahmanical manuscripts in the form of running title, folio numbers, verse number, stanza number, section number, etc. However, in the modern publications it is observed in the most developed form e.g. table of content page, running titles, page numbers, index pages, etc. In both the case content of page navigation system is placed in the margin areas.
4.3.5 Part B : Page Layout Principles — Seventeenth Century Devanagari Brahmanical Manuscripts and Modern Publication Designs

4.3.5 Part B (1): Entry Point

Page entry area in the manuscripts, i.e. a ‘salutation to the god’, is emphasized in few cases, by applying rubricating effect. Rubricating is achieved by writing ‘salutation to the god’ in the red colour, and the rest of the text is written in the black colour. It also creates a contrast in colour; thus, rubricated text seeks attention of the reader first. However, in many cases, the chapter-opening pages in the manuscripts found stationary with no change in colour or contrast in the page entry area. (see Table 4.10)

In modern publication designs, various key elements are in practice to highlight the entry point of the new section, new article, new paragraph, etc. (Figure 4.98). To mention such practices e.g. application of drop letter i.e. making first letter of the paragraph bigger than the body (Figure 4.98 - Type 1, 2, 3), adding visual hierarchy in the heading, subheading and body text areas (Figure 4.98 - Type 1, 2, 3, 4), making heading size big and bold using attractive display type font, etc. Indenting paragraphs with the extra white space in the beginning (Figure 4.98 - Type 1), also employed in the publications with the space crunch, e.g. newspapers.

4.3.5 Part B (2): Contrast, Proportion, Emphasis, Visual Hierarchy, and Colour

In most of the manuscripts, typographic consistency is maintained throughout the manuscript without variation in calligraphic style, size, colour, tonal values, spacing between the lines, etc.

- In a few manuscripts it is observed that certain important text found emphasized by using contrast in colour, (e.g. verse number, end of section text) is highlighted with transparent red colour or putting punctuation marks and verse numbers written in red. Application of red colour for rubricating ‘salutation to the god’ and black colour for main text has generated a contrast in the design. These techniques helped in improving the functionality and aesthetic aspect of the manuscript.

- Use of colour, contrast in tonal values not only aesthetically enhanced the page layouts of the manuscript but also made them vibrant, dynamic, yet utility oriented.
In modern publication designs, the information is presented in the levels using typographical variations in the type styles and the size to represent the heading, subheading, body copy and drop capital, etc. to add visual hierarchy in the layout. It is a very common feature of the modern publication design. Entry points of the page layouts generally have big headings, drop caps, etc.

- Use of variety in fonts, such as bold, ornamented display types for headings and readable, legible type for body text. The layout shows the use of a contrast in bold and regular typefaces. Order and placement of content help reader’s eye movement follow heading, drop capital and body text order. This makes layout dynamic.

- **Consistency** is maintained in typefaces, size and attributes chosen for the particular style e.g. heading, body copy etc. in all the articles of the respective book.

- White space is used liberally in the modern publication designs. It is employed in between title and first paragraph of the article, indenting paragraph, between two paragraphs, etc. It helps in creating focal point in the page layout.

- **Contrast, white space, colour** applied for text helped in producing the effect of visual group formation or chunking of information.

- Colour harmonies are applied among a variety contents of the publication. Selection of colour in individual page sometimes compliments with the images placed within it.

4.3.5 Part B (3): White Space

Content analysis of use of white space in the seventeenth century Devanagari Brahmanical manuscripts indicates that it is used very much actively. It is used basically to show the difference between two types of information or as ‘chunking of information’ or visual grouping.

The concept of active space is employed in almost all the manuscripts with variation, as discussed below:

- In every manuscript a frame of white space i.e margin area is found around the text block. White space is also observed in the entry point area, active space is noticed, which is added before and after or only after ‘salutation to the God’ to show visual grouping or the difference between entry point and rest of the text.
• Between two section, at the end of section or canto, end of verse, and in some layout styles such as *tripatha*, white space has been planned in template design, and applied in the form of units.

In modern book designs, white space is used liberally. It is employed in the margins, between title and first paragraph of the article, by indenting first line of the paragraphs. White space is also employed between paragraphs, two successive lines (leading), words, columns (gutter space), padding for images, for blocking title, etc.

However, white space is used by the seventeenth century Devanagari Brahmanical manuscript designers effectively and actively with the limited resources and budgets.

4.3.5 Part B (4): Balance in the Page Layout

In the manuscripts, page layouts making process that involved template making, *hasia* borders, space organization for main text along with the page navigation system was planned in such a way that in the page layouts that produced finally looked *simple* and *symmetrically balanced*. Justified text alignment is also a major factor; because of it page layouts looked symmetrically balance.

In representative modern publication page layouts with *symmetrical or asymmetrical* balance is noted. It was formed because of the distribution of content along the axis of the page and their respective alignment. However, the entire arrangement of the content includes following the fundamental of designs and application of colour, made it cohesive to form visual unity and harmony in page layout.