

Iconometric Analysis of Hindu Images in the Bharat Kala Bhavan Museum of Varanasi: A Focused Study of Samabhanga Images

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Abstract

Indian sculptors used to follow certain rules of proportions in the making of images that is called Tālamāna (Iconometry). It is a very systematic and scientific method in the study of aesthetic and sacred perspective of sculptures. The purpose of this paper is to analyze the theory and practice of iconometry based on both textual and contextual evidences. For this a comparison is made between the details of measurements mentioned in the Śilpa texts with the Hindu images of the Bharat Kala Bhavan Museum of Varanasi. Some Indian scholars have conducted similar studies primarily using textual data, but they rarely took contextual evidence. Our paper is a humble submission to fill this gap. Additionally, we seek to answer several questions: How do iconography and iconometry deal with each other? Is there evidence of chronological variation in the proportions of images? Do proportions align with specific textual traditions?

Keywords: Tālamāna, Iconometry, Tala, Angula, Sambhanga, Face, Crown, Proportion, Height, Palm, Śilpa texts

INTRODUCTION:

For Comprehensive art appreciation one has to judge a Sculpture on the following lines: 1. Proportions, 2. Medium of the Sculpture and its problems, 3. Expression of sentiments (Bhāva) on the faces of images. The initial criteria to access beauty of a sculpture are its proper proportions. Next comes the hard work of the artist which turns a stone block into a sculpture figure. An image is created by a team consisting of the master artist, novices and in between the two a number of persons with different levels of training and experience. When a block of stone is selected for an image the master artist makes a drawing on it, novices start cutting and chiseling the stone and when crude images are ready, several others of the team engage themselves for rubbing and softening and ultimately it is the duty of the master artist to give out a finished form of a beautiful image. In Indian tradition physical beauty is not the end of work, various types of sentiments as described in the 'NāṭyaŚāstra¹' and 'Chitrāsutra²' were

to be brought on the face of image. For the present paper we have selected for the analysis of first point i.e. proportion among the three mentioned above. In Śilpa texts we found various types of measurements for making a proportionate image. This method is broadly identified as Tālamāna system, To examine the references and implications of 'Tālamāna' mentioned in Śilpa text we have selected some Samabhanga stone sculptures of Brahmanical deities in the Bharat Kala Bhavan Museum, Varanasi. Samabhanga is a posture in which the sculptures are sculpted in straight standing position.

Previous works & Research gap:

This type of work was initiated by T.A. Gopinath Rao in a theoretical manner on the basis of Śilpa texts and Śaiva and Vaiṣṇava Āgamas. He had prepared an appendix in his monumental work 'Elements of Hindu Iconography', Vol. I, Part-II (1914). This appendix was subsequently enlarged into his well known monograph titled "Tālamāna" and published in 1920. J.N. Bannerjee put a step forward and had done both theoretical and practical study. In his scholarly work 'The Development of Hindu Iconography' he wrote a full chapter on the 'Canons of Iconometry' in which he had given a critical analysis of the texts and term for the measurements of sculptures and also measured about two dozen images of Buddha and Brahmanical deities housed in the museums of Kolkata. Thereafter few other works has come out as : Mosteller John F. (1988) The Study of Indian Iconometry in Historical Perspective; Thangavelu, S. (2001-02) Iconometry and Icon Makers; Sthapati, V. Ganapati (2002), Indian Sculptures & Iconography, Forms and Measurements; Gopalkrishana, S. (2005) Early Pandyan Iconometry; Venkatraman, Subashini (2011) The Iconometrical Perspective of the early Chola Images; Sharma, Archana (2012-13) Iconometric Study of Sarnath Sculptures & (2022) Sārnāth ki Buddhamurtiyan : Ek Tālamānāka Adhyayan. But a full scale study of such type especially taking the examples of eastern India is really ignored by later scholars.

Tālamāna system of the basis of textual description:

To fill this gap, in our present paper we have done the Iconometric study of the Hindu Images of northern India collected in the Bharat Kala Bhavan Museum, Banaras Hindu University, Varanasi. My study is based on text and context. Data collected from the literary sources have been compared with the self-measured images to get the result about theory and practice. Efforts have been made to answer Some other questions like how do iconography and iconometry deal with each other? Is there any evidence of chronological or regional variation in the proportions of images? Do proportions align with specific textual tradition? Etc.

In Indian iconometry, one unit of is called 'Tāla'³. One tāla in one palm-length, i.e., when the palm is spread, the longest length is measured from the tip of the thumb to the middle finger. Tala is also called Vitasti, Mukha, Yama, Arka, Rāsī, and Jagati. This Tāla unit is, however, further divided into Angulas⁴, one Angula is the thickness of the middle finger. One tāla has twelve angulas.

There are three units of finger - Nāmāngula, Mānāngula and Dehāngula (Dehalabdhāngula).⁴ it is also worth mentioning here that what is the standard of angula measurement used in idol measurement? There is disagreement among scholars regarding this. Angulamāna is mentioned in Kautilya's Arthasāstra.⁵ Some scholars consider it to be the measurement of the finger of the idol⁶ and some scholars consider it to be the measurement of the finger of the sculptor or the donor.⁷ Generally, according to the scientific method, the face of a human being is one 'tāla' and the entire body is approximately seven times that.⁸ But the situation is different in the context of images of deities. In the

context of the main deities, the Uttama Dasatāla system are mentioned.

Many details are known in ancient texts regarding the tāla which is based on the unit of measurement of angula. In the 'Panchmahāpuruṣa Lakṣanādhyāya' of Brihatsamhitā⁹, the description of five types of great men is found according to height and Girth, which is also mentioned with some changes in Viṣṇudharmottarapurāṇa¹⁰ and Samarāṅgaṇasūtradhāra¹¹. (Table-01)

Table-01

Sr. no.	Puruṣa	Brihat Samhitā	Viṣṇudharmottarapurāṇa	Samarāṅgaṇasūtradhāra
1	Hamsa	96 Angula	108 Angula	88 Angula
2	Sāsā	99 Angula	90 Angula	90 Angula
3	Ruchaka	102 Angula	100 Angula	92 Angula
4	Bhadra	105 Angula	106 Angula	94 Angula
5	Mālavya	108 Angula	104 Angula	96 Angula

It is noteworthy that the Aparājitaṭṭhā does not mention any such measurement, although it does contain an entire chapter on Tālamāna (Chitra-Pratimā-Tāla-Nirnaya). The Brihatsamhitā's measurements were closer to the characteristics of a Devapuruṣa/Mahā puruṣa. The Mālavya type Puruṣa appears to possess the characteristics of a Mahāpuruṣa. Buddha and most deities also share these characteristics. It is also worth mentioning that the Mālavya type Puruṣa in the Brihatsamhitā also measures 108 angulas, which, according to the standards of the Śilpa texts, is equivalent to the Navatāla. That is, the Brihatsamhitā places all Puruṣas between Aṣṭatāla (96 angulas) and Navatāla.

The Śilpa texts provide details of the various measurements of the human body. The Vaikhānasāgama mentions six types of measurements¹²: (Table: 02)

Table: 02

Māna	Measurement of the length (height) of the body.
Pramāṇa	Breadth of the body.
Unmāna	Thickness of the body.
Parimāṇa	Girth or periphery of the body.
Upamāna	Interspaces between different part of the body i.e., between one limb and the other.
Lambamāna	Total Height taken along plumb lines.

Keeping these measurements in mind, the Śilpa texts have formulated various rules for the creation of excellent sculptures, which are considered mandatory to follow. However, these also have their own categories of Uttama, Madhyama, and Adhama. The Uttama-daśa-tāla is 124 angulas, the Madhyama is 120 angulas, and the Adhama is 116 angulas. In Vaikhānasāgama, different measurements have been

prescribed for various images (Table: 03)-¹³

Table:03

1. Uttama-daśa-tāla (124 dēhāṅgulas)	Prescribed for the images of the principal deities-Brahmā, Vishṇu, and Śiva etc.
2. Madhyama-daśa-tāla (120 dēhāṅgulas)	For those of Śrīdēvī, Bhūmidēvī, Umā, Saraswatī, Durgā, Sapta-mātrikās, Ushā and Jyēshṭha.
3. Adhama-daśa-tāla (116 dēhāṅgulas)	For Indra and other Lōkapālas.
4. Navārddha-tāla (114 dēhāṅgulas)	For Kubēra and Nine Grahas (Planets) and certain other celestial objects.
5. Uttama-nava-tāla (112 dēhāṅgulas)	For Daityēśa, Yakshēśa, Uragēśa, Siddhas, Gandharvas and chāraṇas, Vidyēśa and for the Asṭamūrṭi of Śiva.
6. Sa-tryaṅgula-nava-tāla (110 dēhāṅgulas)	For such Persons as are equal to the God in Power, wisdom, sanctity etc.
7. Nava-tāla (108 dēhāṅgulas)	For Rākshasas, Asuras, Yakshas, Apsaras and Marutgaṇas.
8. Aṣṭa-tāla (96 dēhāṅgulas)	For men.
9. Sapta-tāla (84 dēhāṅgulas)	For Vētālas and Prētas.
10. Ṣata-tāla (72 dēhāṅgulas)	For Prētas.
11. Pañcha-tāla (60 dēhāṅgulas)	For Kubjas or deformed persons and for Vighnēśvara.
12. Chaturtāla (48 dēhāṅgulas)	For Vāmanas or Dwarfs and for children.
13. Tri-tāla (36 dēhāṅgulas)	For Bhūtas and Kinnars.
14. Dvi-tāla (24 dēhāṅgulas)	For Kūshmāṇḍas.
15. Ēka-tāla (12 dēhāṅgulas)	For Kabandhas.

In the Śilpa text we have found some models for measuring ‘daśa-tāla’ and Madhyama-daśa-tāla images. For example in Sūkrāniti mentions have been made for the male deity according to daśa-tāla-pramāṇa (Table: 04) and in Mānasāra, madhyama-daśa-tāla-pramāṇa for goddess images (Table 05). These measurements are basically the māna type of measurement i.e. measurement of only length.

Table-04 Height measurements of a Dasatalapramana image according to Sūkrāniti :-

Face	13 Angulas
Neck	05 Angulas

Neck to Chest	13 Angulas
Chest to Navel	13 Angulas
Navel to Penis	13 Angulas
Thigh	26 Angulas
Knee	05 Angulas
Sankha	26 Angulas
Parṣni	05 Angulas
Total Height	119 Angulas

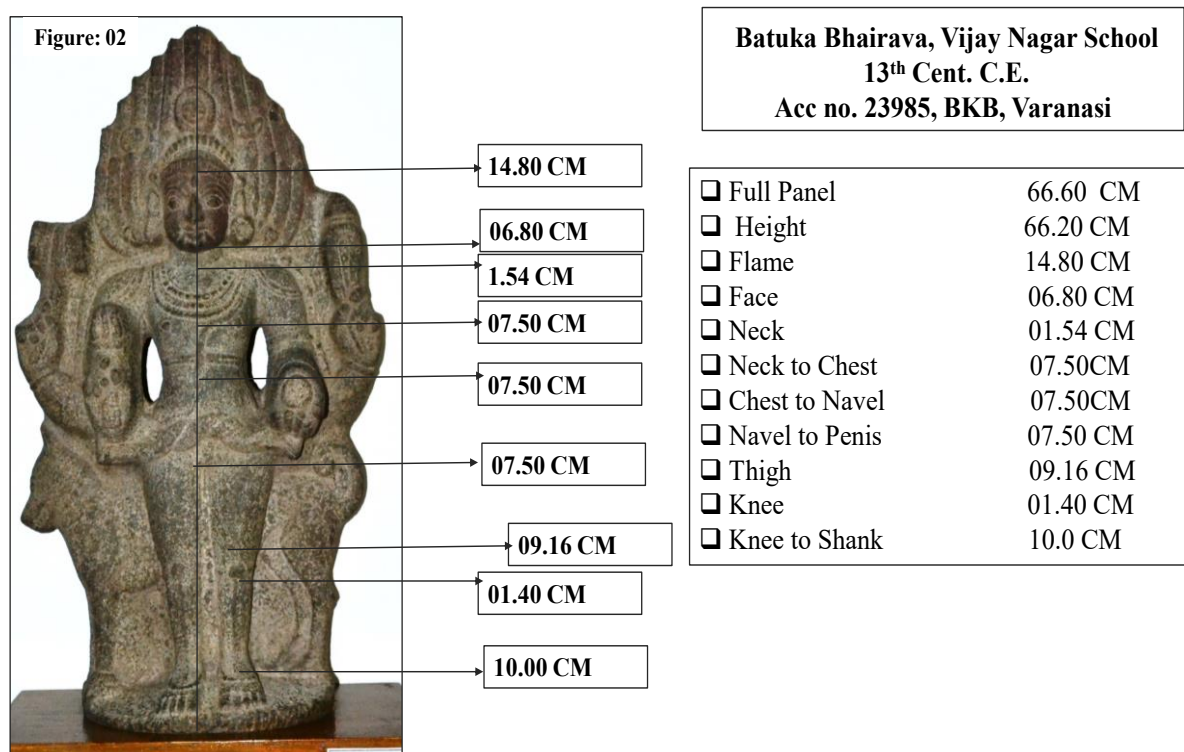
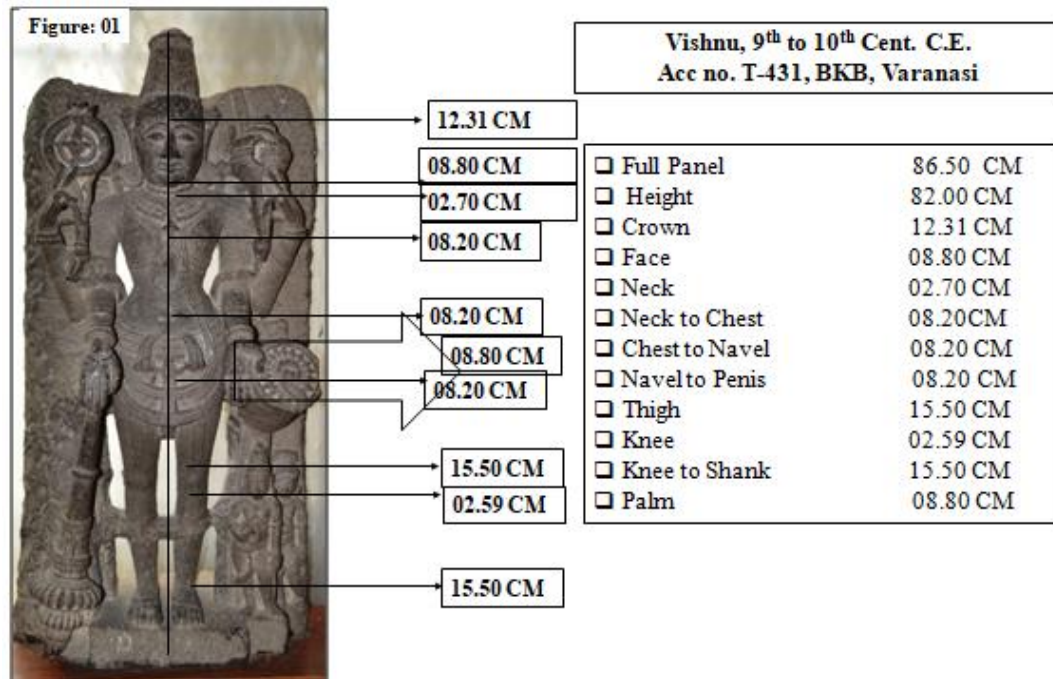
Table-05 Height measurements of a madhyama-daśa-tāla-pramāṇa image (goddess) according to Mānasāra :-

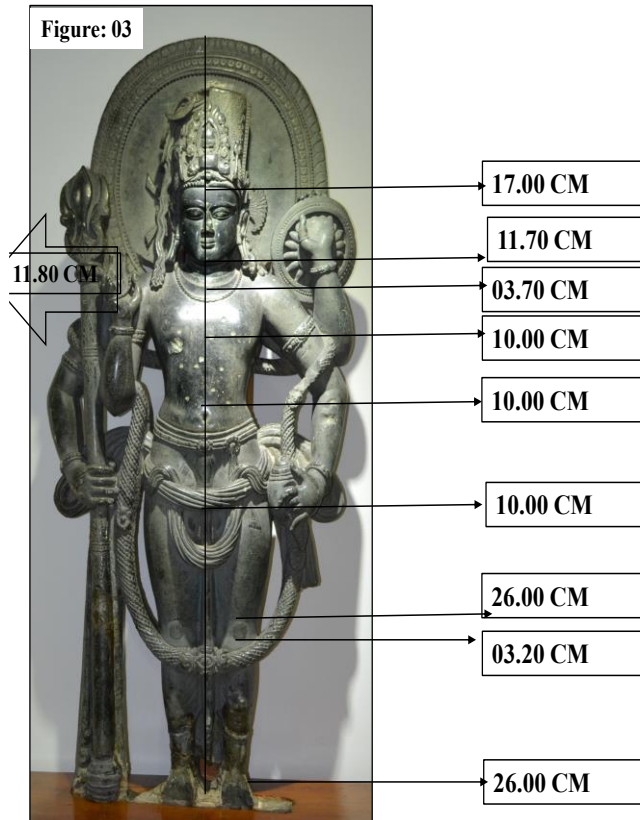
Head (Crown to hair line)	04 Angulas
Forehead (Up to the eye-line)	05 Angulas
Nose (Up to the Lip)	04 Angulas
Lip to Chin	03.50 Angulas
Neck-joint	00.50 Angulas
Neck	04 Angulas
Hiccough to Chest	13 Angulas
Chest to Navel	13 Angulas
Navel to Organ	13 Angulas
Thigh	26 Angulas
Knee	04 Angulas
Sankha	26 Angulas
Foot	04 Angulas
Total Height	120 Angulas

Methodology & Dataset Description:

Keeping the above in mind we have collected fresh data from Bharat Kala Bhavan Museum, Varanasi. we have taken 09 images of Hindu deities. These images have been measured as per Daśātāla method given in the Śilpa texts, Mānasāra and Śukraniti. The measurements which we have taken with the help of anthropometric instruments were mainly of height or length and rarely of the width of the various sections of the images. Ancient and medieval icons are usually relieve figures, so the periphery of their respective parts cannot be measured. These images very often bear on their different limbs a variety of

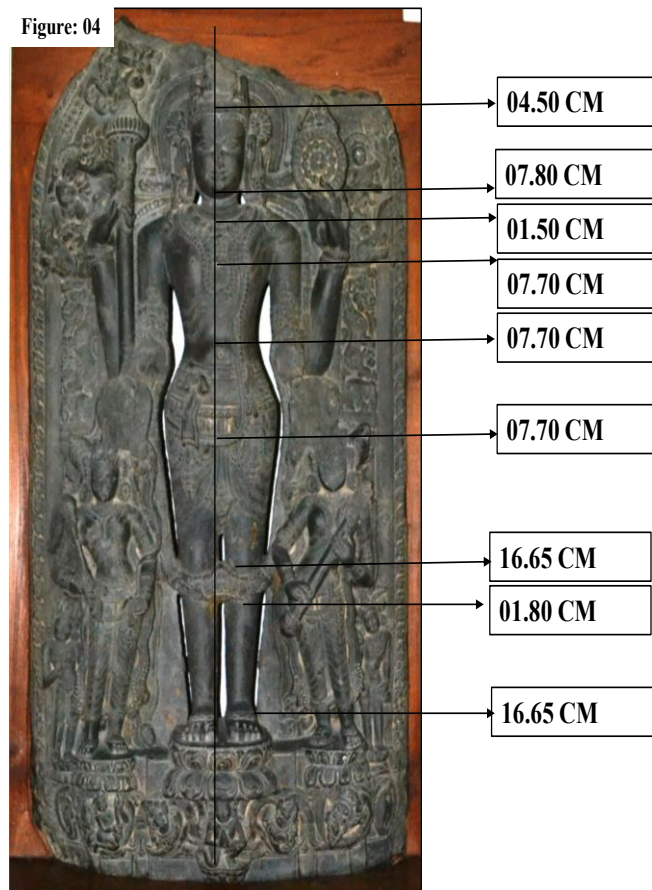
ornaments; it is extremely difficult to have correct measurement of them. Again, many images are in curve position like Dvibhanga, Tribhanga and Atibhanga, so the measurement of their length in accurate way is also hard to get than Sambhanga images. So, with above all difficulties we took only those measurements about which we could be reasonably sure and preferred to take Sambhanga images. Images with secured palm were also be helpful to take the clue of face-metry, but in more cases palm were broken or engaged with Āyudhas.





Harihara, Udaypur
12th Cent. C.E.
Acc no. 23653, BKB, Varanasi

□ Full Panel	127.00 CM
□ Height	117.60 CM
□ Crown	17.00 CM
□ Face	11.70 CM
□ Neck	03.70 CM
□ Neck to Chest	10.00 CM
□ Chest to Navel	10.00 CM
□ Navel to Penis	10.00 CM
□ Thigh	26.00 CM
□ Knee	03.20 CM
□ Knee to Shank	26.00 CM
□ Palm	11.80 CM



Vishnu, Sena Period
12th Cent. C.E.
Acc no. 21977, BKB, Varanasi

□ Full Panel	93.00 CM
□ Height	72.00 CM
□ Crown	04.50 CM
□ Face	07.80 CM
□ Neck	01.50 CM
□ Neck to Chest	07.70 CM
□ Chest to Navel	07.70 CM
□ Navel to Penis	07.70 CM
□ Thigh	16.65 CM
□ Knee	01.80 CM
□ Knee to Shank	16.65 CM

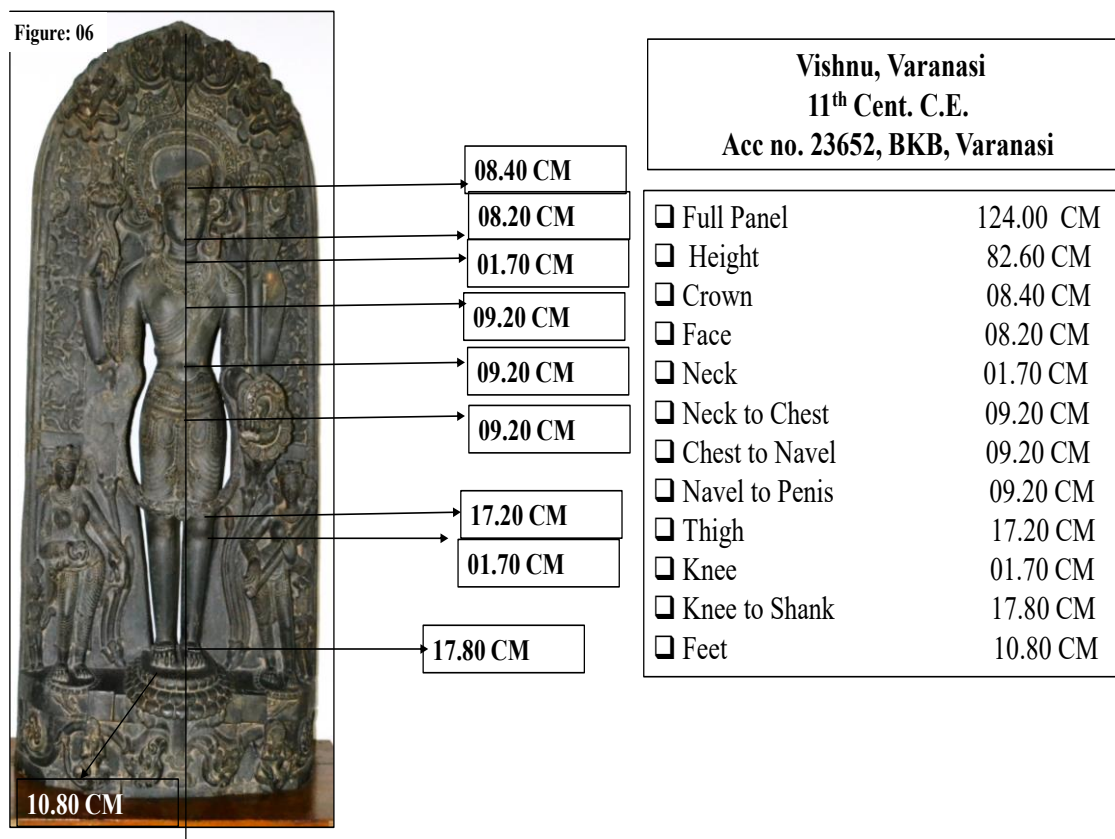
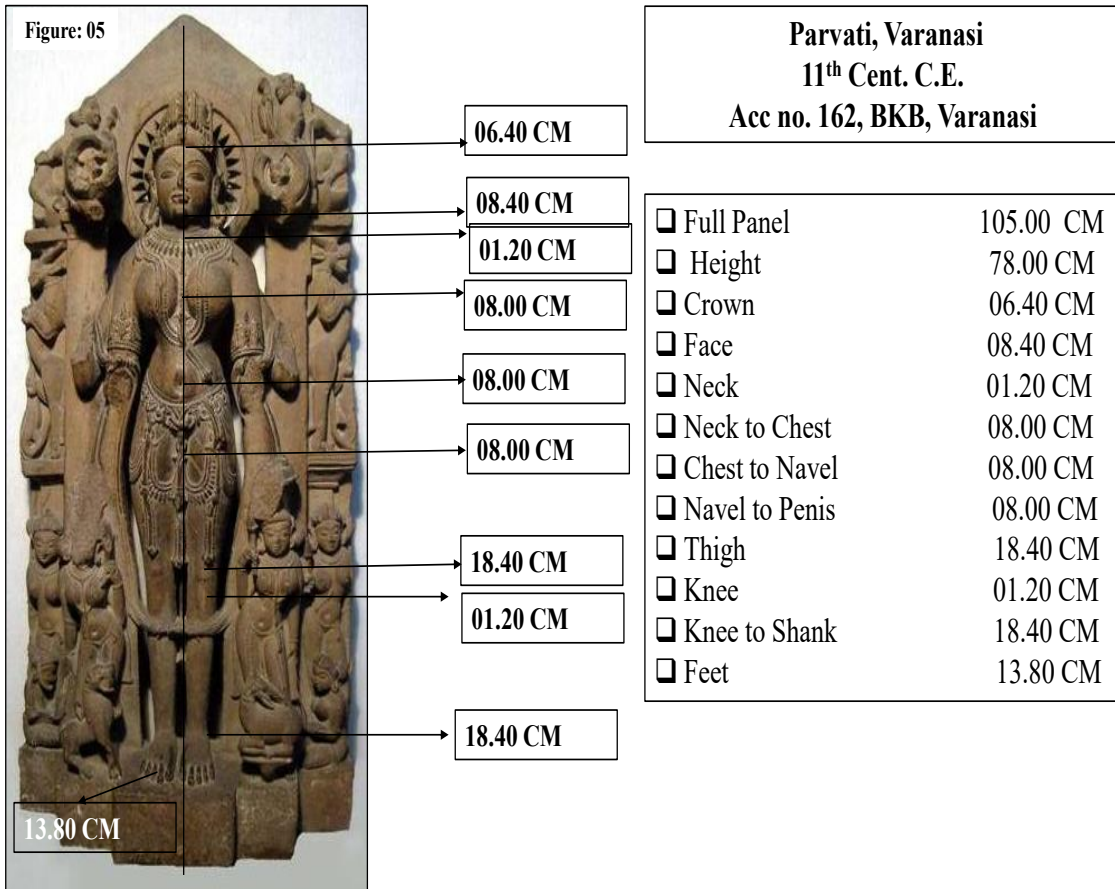




Figure: 07

Vishnu-Vamana, Varanasi
11th Cent. C.E.
Acc no. 21863, BKB, Varanasi

Full Panel	60.00 CM
Height	45.30 CM
Crown	08.50 CM
Face	06.80 CM
Neck	01.50 CM
Neck to Chest	05.00 CM
Chest to Navel	05.00 CM
Navel to Penis	05.00 CM
Thigh	06.00 CM
Knee	01.50 CM
Knee to Shank	06.00 CM
Feet	08.20 CM
Palm	07.20 CM



Figure: 08

Vishnu-Vamana, Probabaly Central India
11th Cent. C.E.
Acc no. 23982, BKB, Varanasi

Full Panel	46.00 CM
Height	39.70 CM
Kunchit Kesha	02.50 CM
Face	07.20 CM
Neck	01.50 CM
Neck to Chest	05.00 CM
Chest to Navel	05.00 CM
Navel to Penis	05.00 CM
Thigh	06.00 CM
Knee	01.50 CM
Knee to Shank	06.00 CM
Feet	08.20 CM
Palm	07.20 CM



Figure: 09

Surya, Gahadwal Period
12th Cent. C.E., Gosaipur, Varanasi
Acc no. 181, BKB, Varanasi

Full Panel	127.00 CM
Height	88.00 CM
Crown	12.00 CM
Face	09.80 CM
Neck	03.00 CM
Neck to Chest	09.40 CM
Chest to Navel	09.40 CM
Navel to Penis	09.40 CM
Thigh	16.00 CM
Knee	3.00 CM
Knee to Shank	16.00 CM

Table-06 Measurement Data Analysis

S.No.	Deity	Accession No.	Place and Period	Tālamāna
1	Viṣṇu	T-431	Unknown, 9 th to 10 th cent.C.E.	About Uttama Nava-tāla with crown) Aṣṭa-tāla (without crown)
2	Batuka Bhairava	23985	Vijay Nagar School, 13 th cent. C.E.	About Aṣṭa-tāla (with flames) Ṣata-tāla (with flames)
3	Harihara	23653	12 th cent. C.E., Udaypur	About Daśa-tāla (with crown) Nava-tāla (without crown)
4	Viṣṇu	21977	12 th cent. C.E., Sena period	About Uttama Nava-tāla (with crown) Nava-tāla (without crown)
5	Pārvati	162	11 th cent. C.E., Varanasi	About Uttama Nava-tāla (with crown) Nava-tāla (without crown)
6	Viṣṇu	23652	11 th cent C.E., Varanasi	About Madhyama Daśa-tāla (with crown) Nava-tāla (without crown)
7	Viṣṇu-Vāmana	21863	11 th cent. C.E., Varanasi	About Sapta-tāla (with crown) Ṣata-tāla (without crown)
8	Viṣṇu-Vāmana	23982	11 th cent. C.E., Probably Central India	About Ṣata-tāla (with Keśa) Pancha-tāla
9	Surya	181	12 th cent. C.E. ,Gosaipur, Varanasi	About Nava-tāla (with crown) Aṣṭa-tāla (without crown)

CONCLUSION:

After studying these images, it is observed that some of the images sculpted entirely according to classical Tālamāna system. While some images are close to the standard. Texts prescribe the Tālamāna for Śiva, Viṣṇu and Brahmāas Uttama-Daśātāla i.e. 124 dehāṅgula but my measurement results are different in all cases (Table-06). In the comparison to Śiva and Brahmā, the images of Viṣṇu are more near to textual contexts. Prescribed Tālamāna for Parvati image is Madhyama- Daśātāla but our result shows Uttama-Navatāla. Vāmana images are also not according to the Tālamāna given in textual evidences. Surya image is in Navatālavariety. In Śilpa texts the Tālamāna for Navagrahas prescribed as Navardhtāla which is just before Uttama-Navatāla. In case of Harihara our result is near to given rules. Śilpa texts may have established the ideal of Tālamāna based on the values passed on by tradition and the body structure of particular geographical region. Just as ideals in various spheres of life are not always close to reality, these descriptions of Tālamāna can also be idealistic. The measurement of deity

icons establishes the distinction between major and minor deities, which can be explained through stratification or aesthetics. Overall, Tālamāna presents the formula for proportional beauty in iconographic studies. This formula is technical and likely varies according to regional and chronological traditions. However, it is also true that among the bases used in evaluating the beauty of any icon, Tālamāna (proportional beauty) is more scientific than Bhāva/Rasa, etc. The proportionality of the image makes its beauty clear at first sight. The above analysis also states that sculptors did not follow any single textual tradition of iconometry.

This type of study is the need of Art history. In the art history of north India, it would be more relevant because very prominent art styles and schools were developed here. Examples of such varieties can be found in the museums of India. Many aspects of these sculptures had already been studied by great art historians but iconometric study may be the new field.

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