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## **RURAL-URBAN RELIGIOUS REGIONS OF INDIA: REGIONALISATION WITH CLUSTER ANALYSIS**

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**Abstract:** Yu-Fu Tuan exemplified “Religion” as a major theme for study in Humanistic Geography. This paper briefly introduces the spatial distribution of seven religious groups in India based on census 2011 data as a foundation for applying regionalisation techniques. The paper aims to divide India into Religious Regions for both rural and urban populations separately for seven religious groups. This division would help examine the spatial variability and concentration of various religious groups in urban and rural areas. The question to answer is whether the clustering is different for rural and urban populations. The Cluster Analysis technique was used to cluster district-level data, resulting in six religious clusters. The nomenclature of urban clustering showed a mix of religious groups, while rural clusters were distinct. The main findings of the paper are that Hindus, Christians, and Sikhs have a greater concentration in rural areas of districts, while Muslims, "Buddhists+Hindus," and "others" (other religions) have a higher concentration in urban areas. The results of the Cluster Analysis for Religious Regions of rural and urban populations provide a clear picture. The paper's findings show demographic uniqueness that can help frame policies related to religious and socio-political matters effectively.

**Key Words** - Religion, Hindus, Spatial concentration, Urban-Rural, Religious regions, Cluster Analysis.



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## Introduction

Human geographers are concerned with various spatial aspects of human activities bridging the physical and cultural landscapes. In cultural geography, religion has its importance. The word 'Religion' has roots in the Latin word 'ligare' means to bind. It is defined as a set of fundamental ideas and practices that bind people together in a cosmos, an ordered world, and that link them in the community (Eck, 2012). Religion is such a trait which when seen in its essence, has its effect on almost every walk of life of its adherents. In different religions, people have different food habits, clothing, fairs and festivals, modes of worship, rites and rituals and the way they connect to the 'Almighty – the God'. India is home to people of various faiths.

Knox & Marston (2015) write that Hinduism is the oldest faith to emerge in the Indo-Gangetic plains about 4000 years ago. Jainism and Buddhism developed on the sacred land of India during the ancient historic period. Then the advent of Muslims started and increased during the medieval period. Europeans also transformed our demography in various ways in the modern historical period. The present Indian population is a combined picture of these historical factors. At present two most important binaries of population mapping are the rural-urban binary. Most of the analyses are based on differences in literacy, sex ratio, income disparities etc. Here, this paper attempts to analyse the rural-urban concentration of the population by their religion.

## Data Sources and Research Methodology

Census 2011 series C-01 provide state and district-level data on population by religious community ([www.censusindia.gov.in/2011census](http://www.censusindia.gov.in/2011census)). Household series H-1 provides data on district-wise census houses. These data variables were standardized by expressing the number of adherents in each district as a percentage of the total population of the district. The religious regions of India were carved out by data reduction technique i.e. cluster analysis. Cluster analysis collapses the data row-wise by finding rows of data that are similar to one another (using SPSS). It requires an important judgment when using k-means clustering is applied by



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choosing the number of clusters (Bauer, 2012). The same number of clusters was chosen for the rural-urban population to facilitate comparison.

## **Discussion and Results**

### **Religious Groups and their Spatial Distribution**

A few geographers had worked on religion in India. Religion as part of cultural geography has a great impact on the socio-economic and political life in India. The first social scientist to provide a comprehensive spatial analysis of religious communities in India was Jon Brush (1949), followed by Davis (1951), Gosal and Mukhrji (1970), and Dutt & Devgun (1979). Generally, Hindus are spread all over India with lesser concentration in the periphery (Dutt & Devgun 1979) as the central viewpoint. Krishan (1995) wrote on demographic space expansion by minorities in India. Here it will not be out of the box to discuss the main religious groups of India.

### **Hinduism – The Religion of Trinity of Brahma, Vishnu and Mahesh**

The *Vedic* religion, as revealed in the Vedas and the Upanishads, is the bedrock of Hinduism and is traditionally designated as *Sanatana Dharma*. Hinduism is a human phenomenon of immense magnitude and diversity. Nag (2007) beautifully answers to the question of Hinduism that the origin of Hinduism goes back to a very distant past and it is almost impossible to give a continuous account of Hinduism from its beginning to its present form.

### **Spatial Distribution**

Hindus comprise more than three-fourths of the Indian population and thus have a great impact on the cultural landscape of India. Though with a confirmed slowly and steadily declining population share, Hindus are in absolute majority in 530 districts (out of 640 districts). In 403 districts Hindus have a percentage share higher than their national average of 79.8 per cent. They are in the minority in 110 districts. Hindus have a lesser concentration along its land borders except the eastern coastal belt (Dutt et al, 1996). The areas having less concentration of Hindus



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include the state of Jammu & Kashmir, Punjab plains, north-western Uttar Pradesh, a central patch comprising parts of Chhattisgarh and Jharkhand, Eastern West Bengal along the border of Bangladesh, and the whole of North East India except few districts of Assam and Tripura. Among Union Territories Nicobar Islands and Lakshadweep has scant Hindu population.

### **Islam – The Religion of Prophet Muhammad**

Islam came to the Indian subcontinent within decades of its birth. Arab merchants had been trading along the west coast of India even before the advent of Islam. Increasingly, some of them settled along the southern and western coast, married locally, and formed pockets of Islamic culture interacting peacefully with their neighbours (Clothey, 2006). In medieval India, particularly in the 12th century Muslims stayed in India and ruled over larger parts of India. Most Muslim rulers adopted the conversion policy from other religious faiths to Islam. Today majority of Muslims in India are the descendants of converted Hindus.

### **Spatial Distribution**

Muslims make up the second-largest religious community and the largest minority in India. In 2011 they constituted 14.2 per cent of the country's total population. Muslims had maintained a higher decadal growth rate than the national average resulting in a larger population share in each coming decade (Premi, 2004). In 32 districts, they enjoy the absolute majority while in 131 districts, the Muslim population crosses their national average but remains below the absolute majority mark. In the north, Jammu & Kashmir has 18 districts having the largest share of Muslim population, Shopian ranks top with 98.52 per cent population. Another remarkable area of their presence in the northern plains is north-western Uttar Pradesh. Several districts of West Bengal – Assam valley and adjoining areas have comparatively large numbers of Muslims.

### **Christianity – The Religion of Jesus Christ**

There were at least three separate migrations of Jews into India – one group, known as the Cochin Jews, settled in the southwestern area now referred to as Kerala; another known as “Bene Israel” settled largely in what is now Mumbai; the third was a small nineteenth-century migration



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of entrepreneurs and their families known as Baghdadi Jews. Starting in the sixteenth century, the Indian subcontinent became the venue for “East India” trading companies, in collaboration with the crowns of several European nations. The Portuguese were the first on the scene, followed within a century by the Danish, Dutch, French, and British traders. These contacts brought about the era of colonialism, which led in turn to Indian responses and the dawning of modern India (Clothy, 2006).

### **Spatial Distribution**

At present Christians constitute 2.3 per cent of the total population as per census 2011. In 35 districts they are in absolute majority. They occupy three distinct areas namely, the north-eastern hilly states; twin clustered districts of Jharkhand and Odisha and the Malabar (Kerala-Goa) coast. In the north-east, the states of Meghalaya, Mizoram and Nagaland are truly Christian majority states with all 26 districts having Christian majority.

### **Sikhism - The Religion of Guru Nanak**

It was the last quarter of the 15th century AD when Guru Nanak Dev (1469–1539) founded a new religion in the pious land of India. In the beginning, it developed in the shadow of Hinduism and by the 18th century it became an independent religion under the teachings of ten sacred Gurus. Today Sikhs are mainly concentrated in the Punjab Plain (Premi, 2004).

### **Spatial Distribution**

The Sikhs make up only 1.72 per cent of the total population of India and hence rank fourth. They are in absolute majority in only 15 districts of Punjab. Sikhs concentrate in Punjab and its adjoining areas. Their numbers may be small but they are present in all 640 districts from north to south and east to west in India.

### **Buddhism - The Religion of Buddha**

Around the sixth century BCE, yet another “heterodox” movement developed that proved to be highly significant in several ways. Founded by a person variously called Siddhartha or



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Gautama, the movement came to have the name Buddhism (Clothey, 2006). At that time many people of Hindu origin adopted this new stream against the malpractices prevalent in core Hinduism. The Maurya King Ashoka (269 - 232 BCE) recognized Buddhism as his state religion after the devastating Kalinga war. Paradoxically India has fewer followers of Buddhism now, though its origin is indigenous.

### **Spatial Distribution**

According to the 2011 census Buddhists constitute only 0.7 per cent (84.4 lakhs) of the national population. They are present above their national average mark in 82 districts. But in only four districts they cross the absolute majority figure of 50 per cent i.e. Twang (Arunachal Pradesh), Leh-Laddakh (Kashmir), Lahul-Spiti (Himachal Pradesh) and North District (Sikkim). Buddhist concentration covers most of Maharashtra state, where many low-caste Hindus were encouraged to embrace Buddhism in the 1950s as a result of Ambedkar's movement (Dutt & Devgun, 1979).

### **Jainism – The Religion of Mahavira**

This philosophy developed along with Buddhism in India as a reform in Hinduism in the 6th century B.C. By the sixth century BCE Jainism had become a recognizable option in the Gangetic basin. Its systematization is attributed to a teacher called Mahavira literally, “great hero” (Clothey, 2006). Today Jains mainly constitute the businessmen's community in India.

### **Spatial Distribution**

There has been hardly any change in the demography of Jains since the first census in India. In 2011 they had a population of 44.5 lakh only (0.4 per cent). They are not in majority in any district and are truly a national minority community. They reside mainly in urban centres as business-class people. Their highest concentration is in Mumbai i.e. 5.38 per cent share in its population.

### **Other Religions**



The seventh and eighth categories of religion are ‘Other religions and persuasions (incl. Unclassified Sect.)’ and ‘Religion not stated’. Here these categories are clubbed to make the seventh category “*Other Religions*”. It is an amalgam of people of various faiths like animists, naturalists, belonging to some other sects. They numbered 1.08 Crore, which is more than the number of Buddhists and Jains together. They concentrate in two major regions, the northeastern hill states i.e. Arunachal Pradesh, Meghalaya, Manipur, Sikkim and the central-eastern plateau region i.e. Jharkhand, West Bengal, Chhattisgarh, Madhya Pradesh, and Odisha. It is the tribal belt where people follow their traditional religions.

### **Urban and Rural Religious Regions of India**

Data reduction techniques are used in most spatial studies to analyse patterns i.e. factor analysis and cluster analysis. Regionalization is one of the most fundamental concepts in geographical studies. Regionalization is a special case of classification in which the individuals classified are spatially defined units (usually areas) and the resulting classes (regions) must form contiguous spatial units (Gregory, 2009). Dutt & Devgun (1979) investigated the scope of religious regions of India by using percentage of each religion in the total population for 356 districts as per Census 1971 data. They reduced the data by Factor analysis technique for deriving religious regions with ‘Quartimax rotation’. Their work reduced the data into four factors. Then based on these factors, they divided India into five religious regions: Hindu, Buddhist, Muslim, Sikh, and Mixed.

In the present study, it is found that the Factor Analysis technique does not provide appropriate results for the given seven variables. The KMO (Kaiser-Meyer-Olkin- Measure of Sampling Adequacy) test failed with a value of 0.043 instead of the required value ( $> 0.50$ ). Factor analysis collapses the columns of the dataset to construct a smaller number of new factors or indices that are linear combinations of the original variables. On the contrary, Cluster Analysis collapses the data row-wise by finding rows of data that are similar to one another. In this way, clusters of similar observations are created (Rogerson, 2015). It was found that cluster analysis can suffice the purpose of religious regionalisation. Cluster analysis has also been used as a



method of regionalisation, where the objective is to divide a region into a smaller number of contiguous subregions (Singh & Singh, 2017). The following steps were used to carry out the rural and urban religious clustering using SPSS: Analyze > Classify > K- Means Cluster Analysis > Enter Variables (7) > No. of Clusters (6) > Method: Iterate and classify > Ok. Six religious regions were carved out for Rural and Urban population separately (Table 1).

**Urban and Rural Religious Regions**

In 2011 India had 68.9 percent rural and 31.1 per cent urban population share. From a religious perspective, Hindus and Sikhs had a higher rural share while Muslims had a larger urban share at the district level population. Muslims, Christians, Buddhists and Jains were more urbanized than Hindus, Sikhs and people belonging to other religions (Table 1).

**Table 1. Rural –Urban population share of religious communities from total rural and urban population at district level.**

Population of (Per cent share)	Hindus	Muslims	Christians	Sikhs	Buddhists	Jains	Other Religions
Rural areas of Districts (out of total Rural population of India)	82.05	12.41	2.00	1.79	0.58	0.11	1.06
Urban areas of Districts (out of total Urban population of India)	74.82	18.23	2.96	1.57	0.96	0.94	0.52

Source: Based on Census 2011 data analysis.

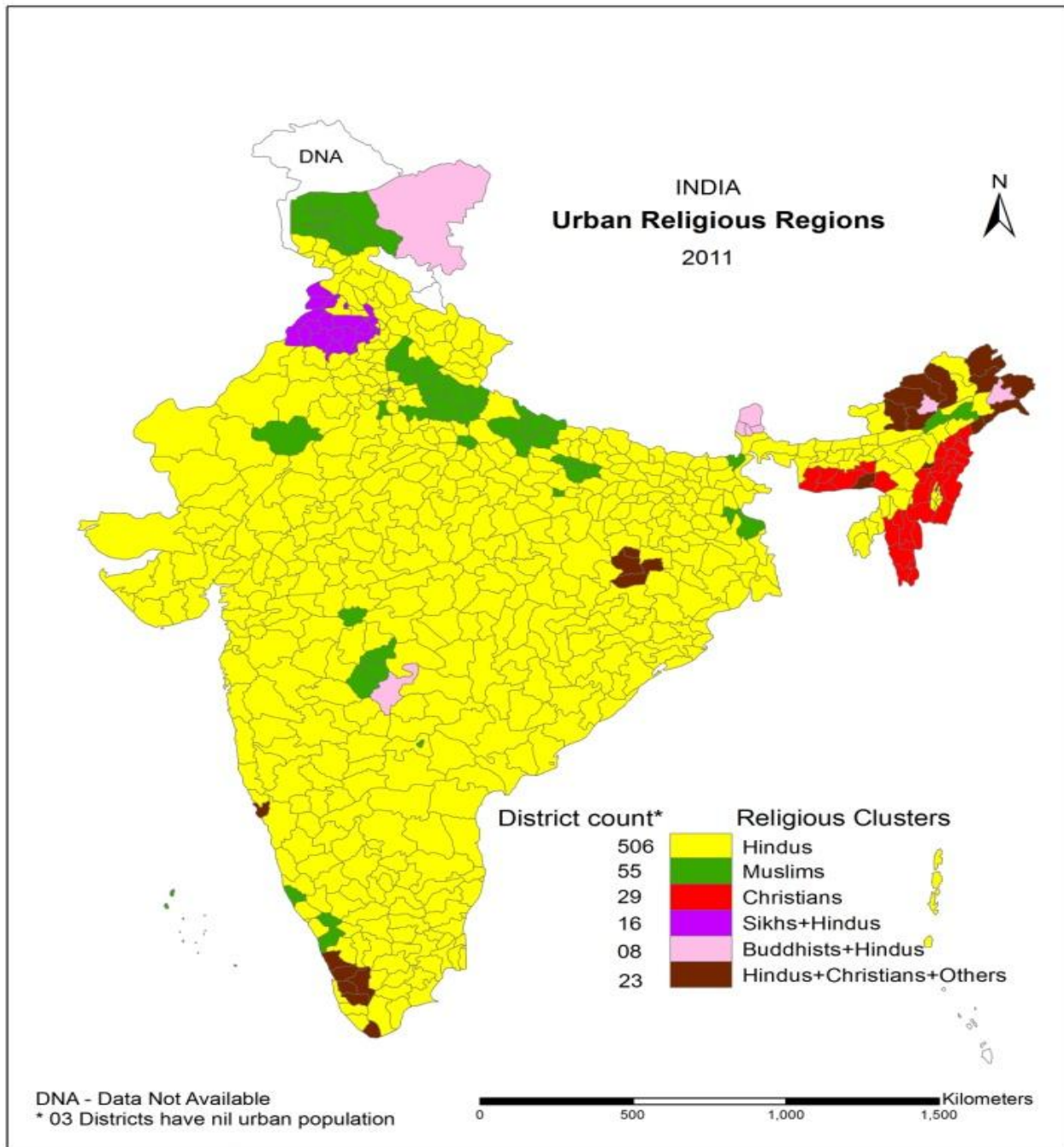
Independent rural and urban religious clusters provide a different aspect of Indian religious regions (Table 2).

**Table 2. Rural–Urban Religious Clusters and their respective district counts based on Census 2011 data.**

Sr. No.	Religious Regions and District Counts			
	Urban		Rural	
1	Hindus	506	Hindus	507
2	Muslims	55	Muslims	46
3	Christians	29	Christians	39
4	Sikhs+Hindus	16	Sikhs	18
5	Buddhists+Hindus	08	Buddhists	07
6	Hindus+Christians+Others	23	Others	14

Source: worked out by the Author as a result of rural and urban cluster analysis.





**Figure 1: Urban Religious Regions of India, 2011 (Source: Author)**



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### **Urban Religious Regions**

Six urban religious regions (Figure 1) were identified with nomenclature Hindus, Muslims, Christians, Sikhs+Hindus, Buddhist+Hindus, and Hindus+Christians+Others. Hindus maintain their presence in 506 districts, being lesser in concentration in peripheral areas. The Muslims, on the other hand, extended their spatial presence in urban areas of Uttar Pradesh (most widely present) and Maharashtra but lost their dominance around the Bangladesh border. In a few districts of Kerala Muslims are concentrated in urban areas. Their district count was 55 in urban areas. Christians were more concentrated in 29 districts in the northeastern part of India, comprising a more or less contiguous area. The Sikhs with Hindus make a smooth and most compact urban religious region counting 16 districts of Punjab. This region indicated that Sikh concentration in urban areas is lower in Punjab and its urban space is shared by the Hindu population. In almost the same way the Buddhists share their urban space with Hindus in 8 districts. Three small patches, Leh in the north, four districts of Sikkim, two in Arunachal Pradesh and one in Maharashtra. Another 23 districts attributed to the sixth region having a concentration of Hindus+Christians+Others in three distinct areas. They form an amalgam in most districts of Arunachal Pradesh, and a few districts in Chhattisgarh-Jharkhand and Kerala. It is evident from the clustering that Jains do not show their presence in any of the districts even in urban areas. Three districts in India had no urban population.

### **Rural Religious Regions**

The expansion of rural religious regions is different from that of urban religious regions. In rural areas, each religious cluster has a unique name such as Hindus, Muslims, Christians, Sikhs, Buddhists, and Others. They exist as separate clusters and do not share their name with any other religious community. As shown in Figure 2, Hindus are spread over 507 districts in a contiguous and compact cluster, except in the northern, southern, and northeastern parts of the country. Muslims are the least visible on the rural landscape, with their presence being noticeable in only 46 districts, mainly in Kashmir, West Bengal, Assam Valley, and Kerala. Their exclusive presence in West Bengal and Assam is remarkable, while their presence in rural clusters of Uttar Pradesh has drastically decreased (Figure 2).

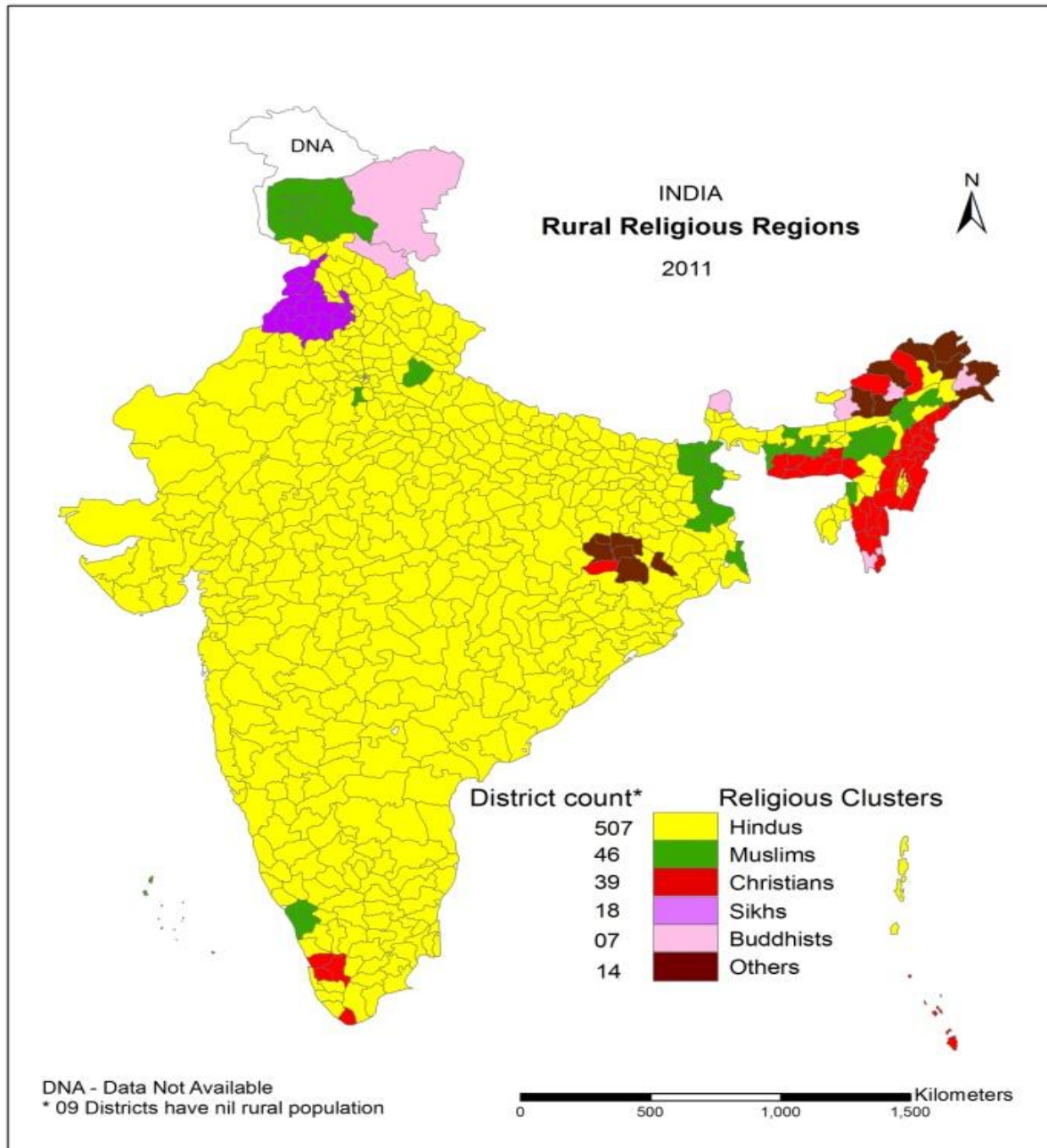


Figure 2: Rural Religious Regions of India, 2011(Source: Author).



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Christians unlike Muslims are more visible on rural landscape of India and cover 39 districts. The largest pocket occurs in northeast India; a smaller one with few districts in Kerala and Jharkhand. Though, Kanyakumari district of Tamil Nadu is also part of this Christian cluster. Sikhs make the largest rural cluster with 18 districts of their contiguous dominance. Like their urban clusters, here also they make the most compact religious region. Buddhists represent only seven districts, including two in north and five in north-eastern India. People belonging to other religions also make their presence in 14 districts. They exist in two pockets, one in Arunachal Pradesh and the other in Chhattisgarh-Jharkhand-Odisha region. Again the Jains did not appear on the rural landscape. Nine districts of India are fully urbanized and have nil rural population.

### **Summing Up**

India's cultural landscape is a diverse mixture of six mainstream religions and over one crore people belonging to other faiths or atheists. Hindus constitute the largest community, with a majority in both rural and urban areas, while Muslims are more concentrated in urban regions. Christians and Sikhs are more prevalent in rural areas. Jains do not have a majority in any district. The core of both rural and urban clusters is primarily occupied by Hindus, while other religions occupy the periphery. The northern, eastern, and southern periphery represents the Muslim religious region, whereas North-east India has a significant Christian population. Sikhs, despite being small in numbers, make up the most compact religious region in the northwest. Buddhists form a small religious region in the north and north-eastern parts of India. These religious regions show a broader change in rural and urban religious regions. The most significant change was observed in Muslim rural-urban clustering. These clusters can help address socio-economic and political problems in minority and majority areas and can aid in planning processes.



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