

Affordability of Private Health Clinics in Tiruvannamalai Town of Tamil Nadu

R. Mohan¹, Dr. K. Jayaraman²

¹P/T Research Scholar, Department of Economics, Periyar University – Salem

²HOD (I/C), Department of Economics, Periyar University - Salem

ABSTRACT

The objective of this survey was to find the present scenario of urban healthcare with relation to private health providers and its cost borne by surveyed urban population. The high cost of private clinic is the most important reason to study about the immediate intervention into the private health clinics. This study observed the trend of increasing diagnostics prescribed by the private practitioners, which account for a major cause concern to urban section of the people. Data were collected through sampling survey schedules with local statistical investigators. The results and findings of the survey found that the municipality of Tiruvannamalai was in a state of private healthcare burden with many mushrooming of private clinics found to be developed in past five years, with decreasing trend of approaching public health services. Besides, most important observation with this study is about the annual household expenditure on healthcare. Rupees 34,672 average amount spent by the survey households on annual healthcare which accounts for 35.9 percent their annual income. This shows a modern urban burden of households towards curbing their health needs out of pocket. At the end, the study recommends feasible remedies in general to resolve the found difficulties of urban population towards household health care as a whole.

Keywords: Affordability, Illness, Diagnostics, Private Health Care, Annual Expenditure on Health

1. INTRODUCTION

I think we do better as a country when we go step by step toward a goal, and the goal in this case should be reducing health care costs.

- Lamar Alexander (former American politician)

Indian health care industry is growing extremely fast in recent years. India has reached a position where medical tourists from various nations coming to India for cheaper medical care. Our government has also always given a top priority to the health sector development both in five year plans and after the induction of NITI Aayog. India's health accomplishment is vibrant to compare with our pre-independent health profile.

In one hand India is exceling in the business opportunities of private health sector but and the other hand our health indicators are getting poorer than Bangladesh, Srilanka and Pakistan. As per a recent WHO report on Indian Female Population, nearly 50% are considered to be anaemic, having congenital health complications. There seems to a vast difference between the quality of public health and private health. Besides, private sector cost of treatment and allied service found to be choking the urban and rural masses. The disparities in overall health attainment between relatively affluent and weaker population is wide and alarming. All the

above express some solid and valid measures to be taken to establish affordable and equitable healthcare to all the citizens of our nation.

Populous economies like India have been facing enormous challenges in coping with public health. Though the role of Government in India is considerably fair over the decades, the burgeoning demand of quicker and dependable health care of common man puts the public health providers in a fix. This leads to a need for establishment of more private clinics and dispensaries across the urban areas as well as in rural areas. With regular income source, urban people are more capable of bearing hefty medical cost at will. This study is an attempt to describe the current scenario of urban health seeking behavior of people with a special reference to Tiruvannamalai Town, a spiritual urban area, 190 km away from Tamil Nadu's capital city of Chennai.

BACKGROUND OF THE STUDY

There are considerable disparities in the health care affordability and delivery present among the states of India, among rural and urban regions, among different social groups, caste as well as the genders. For instance, as per the NFHS reports the rural children are more prone to mortality 1.6 times earlier as against the urban ones. The possibilities of a child in rural areas to die before reaching five years old is more than that of the urban regions. Since 1991 to 2013, pre-natal mortality decreased by 53 percent in urban areas, as against 44 percent in rural areas. There are also considerable interstate differences in public health care delivery. The social factors of health contribute a major role in health equity, with income, education, caste, and social group determining to a reasonable limit the distribution of health outcomes. On the area of accessibility, it is estimated that the urban rich obtain 50 percent more health services than the average Indian citizen. Further, the number of government hospital beds per population in urban areas is more than twice the number in rural areas, and urban areas have four times more health workers per population. There is also evidence that public spending does not always translate into benefits for those most required of them.

Realizing the shortcomings of a comprehensive national health care system as an important factor in shaping health inequalities, the Ministry of Health and Family Welfare strengthened its flagship program, the National Health Mission. Through the program, 900,000 accredited social health activists work at the community level to promote immunization, disease control, effective breastfeeding, and healthy nutrition. Other initiatives seek to reduce maternal mortality—for example, by incentivizing women, including through cash payments, to deliver their babies in government health facilities. Recent evidence indicates that these policies have reduced disparities in maternal care.

THE FOLLOWING TABLE GIVES AN INTERNATIONAL COMPARISON OF VITAL HEALTH INDICATORS OF INDIA

INDIACATORS	INDIA	CUBA	CANADA	USA	UK	BRAZIL	S.KOREA
GDP (PPP\$)	5190	18520	43,420	54000	38850	15780	32850
Total expenditure on health per capital (PPP\$)	267	2475	4641	9403	3377	1318	2531
Total expenditure on health as % of GDP	4.7	11.1	10.4	17.1	9.1	8.3	7.4

Doctor-Population Ratio (per thousand population)	0.725	7.5	2.4	2.5	2.8	1.8	2.2
Sources : WHO Report - 2017							

TABLE NO 1**NEED FOR THE INTERVENTIONS IN PRIVATE HEALTH CLINICS**

- The high cost of private clinic is the most important reason for the immediate intervention into the Private health clinics. This particular problem is not only an issue for urban regions and also a problem that is widespread in metro cities to the remote villages. There has to be concrete efforts to be taken by the stakeholders to curtail this issue.
- The second most important problem faced by the common man visiting the private clinics is that the suggestion by medical practitioners to go for further medical diagnostics. It can be desirable to have a reasonable diagnostics. But, in the modern-day urban regions, most of the diagnostics reports are just have a normal result in the report of the medical summary. Every single patient is advised to go for the diagnostics face a hefty sum to come to a conclusion that is nothing to worry on the diagnostics is done.
- The most common problem faced is that private clinic visiting people suggested to visit the clinic at least three to five occasions at the month. Even for smaller issues like common cold, cough and minor fever with the given kind of the intimidation over vector borne diseases of the people is forced to visit. This puts a great hole in the pockets of expenses monthly basis.
- Another reason, the need to study the urban private clinics in detail is that most of the clinics weather smaller or larger is having their own pharmacies and medical shops attached to the premises of the same clinics. This is actually a violation of Medical Council of India regulations.
- The establishment cost with sophisticated equipment in the private clinics is forcing the hospital administration to go for a regular communication. In our study we have found many of the local clinics are in the tie-ups with nearby metro city hospitals are other super specialty hospitals as a business enhancement policy. This kind of draconian practices, by few of the private clinics makes the middle class section of the people to suffer a lot.

2. OBJECTIVES OF THE STUDY

- To compare and to contrast the profile of different sections of urban area, over health seeking behavior
- To examine the common frequent minor illnesses and responses that urban people do face and prefer for
- To understand the urban people opinion on various diagnostics advised by physicians
- To assess and evaluate the cost of monthly and annual health expenses of households and its impact on the standard of living of the people.

THIRUVANNAMALAI – MUNICIPALITY PROFILE

Tiruvannamalai Municipality was constituted on 01.04.1896, as per Go.No.577 dated 31.01.1896. It was upgraded as second Grade Municipality from 01.04.1959. Subsequently,

from 01.05.1974, it was upgraded as First Grade Municipality as per Go.No.1133 R.D. & L.A Department dated 29.04.1974. Afterwards, as per Go. No. 85 Municipal Administration and Water Supply Department dated 22.05.1998, it was upgraded as Selection Grade Municipality from 01.05.1998, as per Go. No. 238 Municipal Administration and Water Supply Department dated 02.12.2008, it was upgraded as Special Grade Municipality. As of the 2011 census, Tiruvannamalai municipality had a population of 1,45,000. The municipality had a sex ratio of 1000 females per 1,000 males and 10.0% of the population were under six years old. Effective literacy was 81.64%; male literacy was 85.60% and female literacy was 77.70%.

THIRUVANNAMALAI CITY POPULATION GROWTH

CENSUS	POPULATION	GROWTH RATE	CENSUS	POPULATION	GROWTH RATE
1791	12,090	—	1941	56,800	28.5%
1871	12,700	—	1951	64,700	13.9%
1881	12,540	-1.3%	1961	78,900	21.9%
1891	13,900	10.8%	1971	96,120	21.8%
1901	15,900	14.4%	1981	109,000	13.4%
1911	21,670	36.3%	1991	121,900	11.8%
1921	29,890	37.9%	2001	131,360	7.8%
1931	44,210	47.9%	2011	145,000	10.4%

Source: Thiruvannamalai Municipality Statistical Hand Book – 2011-2012.

TABLE NO 2

One of the fine characters of Thiruvannamalai City is that having the accurate 1000 of female per 1000 males with sought to be a very quality on Indian Cities. Moreover decadal growth of the population is also very well under control as 10%.

3. SAMPLE DESIGN AND METHODOLOGY

This study involves multistage random sampling for 39 wards of Tiruvannamalai Municipality. On the basis of BPL list available with the Local Public Distribution System records, BPL households are identified in Ward number 36. Ward number 2 having more affluent card chosen for relatively affluent survey and ward number 5 with mixture both chosen for middle income household survey. Of the 2,303 households present in all three wards, 116 households were chosen as sample size with equal weightage given to respective sub-strata of the sampling. During the study period, around 371 population covering 116 households, averaging 3.19 being the mean size of the household members were surveyed. For the classification of households, the World Bank poverty threshold is used for Below Poverty Line household grouping. Middle income between BPL grouping and Indian Income tax minimum ceiling is taken as middle income group. Besides all personal income tax payers are considered as relatively affluent household of the survey population.

RESULTS AND FINDINGS OF HOUSEHOLDS SURVEY ON HEALTH SEEKING BEHAVIOUR

The results and findings of the survey are presented in the following tables followed by description the respective table in detail.

STATUS OF HOUSEHOLD WITH RESPECT TO HIGH COST CONSUMING MAJOR ILLNESS AS CHRONICAL, AND GENETICAL COMPLICATIONS OF SAMPLE HHS (HOUSEHOLDS)

	HOUSEHOLD CATEGORY (MONTHLY INCOME IN RUPEES)	STATUS OF HOUSEHOLD - MAJOR ILLNESS (IN % OF POPULATION)				
		NATURALLY DISABLED	ACCIDENTALLY DISABLED	CHRONICALLY ILL	GENETICALLY ILL	TOTAL
1	a. ≤4,200* (BPL)	2.1	19.67	40.09	2.04	63.9
2	b. 4,201 to 21,000 (Middle)**	1.9	9.9	44.23	2.07	58.1
3	c. 21,001≥ (Affluent)***	0.2	8.73	29.29	1.18	39.4
	Average of Whole Survey	1.40	12.77	37.87	1.76	53.80

Source : Primary Data – Compiled by the Researcher

*World Bank’s updated BPL threshold per day is \$1.90 US, converted to Indian rupee value per month is Rs. 4,200 as an adjusted average monthly income.

**BPL limit to pre-value of tax paying ceiling considered as middle income households

***All annual tax payers are considered as relatively affluent households under the survey.

TABLE NO 3

In the table number 03, nearly 53.80% population has been reported with major illnesses. Below poverty line households have reported around 63.9% of major illness. Besides 58.1, 39.4 percent respectively for middle income and relative affluent Household respondents reported of major illnesses. Out of the different four categories of illness studied chronically ill accounts for major share with overall percent of 37.8. Particularly out of the total population survey in below poverty line about 40.09 percent reported of chronic illness such as diabetics and blood pressure and etc. Interestingly the natural disability of affluent households accounts only for 0.2 percent as a sing of better maternal and neonatal care is provided.

STATUS OF HOUSEHOLD WITH RESPECT TO MINOR ILLNESS SUCH AS COMMON COLD AND MINOR ALLERGIC INFECTIONS OF SAMPLE HHS

COMMON FREQUENT MINOR ILLNESS						
	HOUSEHOLD CATEGORY (MONTHLY INCOME IN RUPEES)	AIRBORNE	WATER BORNE	VECTOR BORNE	ACCIDENTAL	OTHERS/ NO MINOR ILLNESS
1	a. ≤4,200 (BPL)	8.9	21.21	43.3	22.9	3.69
2	b. 4,201 to 21,000 (Middle)	9.65	19.34	29.5	12.1	29.41
3	c. 21,001≥ (Affluent)	2.01	8.9	11.23	19.08	58.78
	Average of Whole Survey	6.85	16.48	28.01	18.03	30.63

Source : Primary Data – Compiled by the Researcher

TABLE NO 4

Table number 4 describes the minor illnesses faced by surveyed population. Overall 30.6 percentage of population reported of minor in illness faced during the last six months. Out of all the minor illnesses reported, vector borne diseases account for around 28.01. This shows dengue, chikungunya and other mosquito borne diseases are widespread. Moreover accidents, unhygienic water consumption account for 18.0 and 16.48 respectively. Survey shows airborne minor illnesses account for 6.8 percent out of 30.6 household reported of any minor illness.

OPINION OF SAMPLE HHS FOR IMMEDIATE CHOICE OF CARE FOR ILL HEALTH

S.NO	HOUSEHOLD CATEGORY (MONTHLY INCOME IN RUPEES)	IMMEDIATE CHOICE OF CARE		
		PUBLIC	PRIVATE	SELF-CARE
1	a. ≤4,200 (BPL)	63.5	9.01	27.49
2	b. 4,201 to 21,000 (Middle)	38.1	39.4	22.5
3	c. 21,001≥ (Affluent)	2.3	81.2	16.5
	Total	34.63	43.20	22.16

Source : Primary Data – Compiled by the Researcher

TABLE NO 5

Table number 5 shows the immediate choice of care reported by the study population. This is classified as public, private and self-care with 34.6, 43.2 and 22.16 percent as the People's preference towards immediate response to any minor illness. The below poverty line households responded as 63.5 percent prefer for public health care. In middle income section 39.4 percent of the respondent replied to going for private healthcare and 81.2 of affluent people reported for private out of all household surveyed, that is 43.2 percent, as the major share towards preference for private healthcare. In below poverty line strata, people do prefer for self-care as an evidence of inability to cope up with high cost of private care and lose of wages if even for a public care since it consumes time to get treated as the doctor patient ratio is abysmally too low.

OPINION OF SAMPLE HHS TOWARDS PRIVATE SERVICES FAVOURS

	HOUSEHOLD CATEGORY (MONTHLY INCOME IN RUPEES)	TOP FAVOURS ABOUT PRIVATE SERVICES (IN % OF HOUSEHOLDS)				
		QUALITY OF SERVICES	IMMEDIATE TREATMENT	PERSONAL CARING	ENOUGH FACILITIES	RELIABLE SERVICES
1	a. ≤4,200 (BPL)	21	69.9	0.09	3.33	5.68
2	b. 4,201 to 21,000 (Middle)	33.2	40.1	12.4	4	10.3
3	c. 21,001≥ (Affluent)	15.5	35.1	41.09	2.9	5.41
	Total	23.23	48.37	17.86	3.41	7.13

Source : Primary Data – Compiled by the Researcher

TABLE NO 6

Table Number 6 represents the household preference towards private services. It stands for quality, immediate response, personalised car, facilities and reliable services of the Private Health providers. In below poverty line, the people do prefer for immediate treatment with 69.9

as their preferences. The middle income sector shows 40.1 towards preparing the immediate treatment. The relatively affluent section of households shows 41.09 percent towards personalized care as their top priority. Of total households surveyed, 48.37 percent of household favours private services for its immediate response of care as their favourable priority. With 17.86 percent, the surveyed population reported for personalized care as the second most reason towards preferring the private health care.

OPINION OF SAMPLE HHS DIAGNOSTICS BY PRIVATE SERVICES

	HOUSEHOLD CATEGORY (MONTHLY INCOME IN RUPEES)	OPINION ON DIAGNOSTICS (IN % OF HOUSEHOLDS)				
		REASONABLE	BUSINESS MOTIVE	HIGHER CARE	CAN'T AVOID	CAN AVOID
1	a. ≤4,200 (BPL)	3.7	88.1	4.5	3.1	0.6
2	b. 4,201 to 21,000 (Middle)	9.2	75.9	9	1.5	4.4
3	c. 21,001≥ (Affluent)	5.6	58.3	30	2.2	3.9
	Total	6.17	74.10	14.50	2.27	2.97

Source : Primary Data – Compiled by the Researcher

TABLE NO 7

Table number 7 describes about household opinion on private diagnostics out of all the households surveyed. 74.1 percent expressed that most of a private diagnostics are business Motive. The affluent household with 30 percent said as matter of higher care. Out of the total household surveyed 6.1 percent expressed that diagnostic are reasonable. An important element in this table is that 14.5 expressed diagnostic as showing higher care of the Private Health providers. 2.2 percent, 2.9 expressed as they can't avoid and can avoid the diagnostics advice by decisions respectively.

COST PER VISIT AND AVERAGE MONTHLY EXPENSES ON HEALTH CARE

	HOUSEHOLD CATEGORY (MONTHLY INCOME IN RUPEES)	COST PER VISIT (ROUNDED OFF VALUES) & AVERAGE MONTHLY EXPENSES ON HEALTH					MONTHLY AVERAGE EXPENDITURE
		NO. OF VISITS	COUNSELING & ADVISE** (1)	DIAGNOSTICS (2)	MEDICINE & DRUGS (3)	COST PER VISIT (4=1+2+3)	
1	a. ≤4,200 (BPL)	3	138	492	122	752	2256
2	b. 4,201 to 21,000 (Middle)	3	205	626	189	1020	3060
3	c. 21,001≥ (Affluent)	2	320	1105	251	1676	3352
	Average Amount		221.00	734.00	187.00	1142	2063

Source : Primary Data – Compiled by the Researcher

TABLE NO 8

Table Number 8 show a crucial part of the study about that the cost of visit of study to health practitioners as an average. 221 rupees is incurred as a consultation fees for a physician and rupees 734 is incurred as expenses on diagnostics and rupees 187 as reported as the amount in curd on buying medicines and drugs for visit as the figures of surveyed population. Overall, the below poverty line people reported 2256 rupees as a monthly average expenditure on healthcare. Rupees 3060, 3352 as the monthly average expenditure for middle and affluent households respectively as average were reported. Around rupees 2063 spend as an overall survey average per monthly expenses on Healthcare inclusive of 2.6 visits as average per month to a physician as reported by the household surveyed.

COST PER VISIT AND AVERAGE ANNUAL EXPENSES ON HEALTH CARE

	HOUSEHOLD CATEGORY (MONTHLY INCOME IN RUPEES)	AVERAGE ANNUAL HH'S INCOME	MONTHLY AVERAGE HH'S EXPENDITURE	ANNUAL AVERAGE HH'S EXPENDITURE	AVERAGE EXPENSES ON HEALTH AS % OF ANNUAL INCOME
	a. ≤4,200 (BPL)	39,890	2256	27072	67.86663
	b. 4,201 to 21,000 (Middle)	1,23,055	3060	36720	29.84032
	c. 21,001≥ (Affluent)	3,94,100	3352	40224	10.20655
	Average Amount	185681.67	2889.33	34672.00	35.97
Source : Primary Data – Complied by the Researcher					

TABLE NO 9

The final Table, that is table number 9 shows the average annual expenditure of healthcare as a percentage of annual family income below poverty line households reported rupees 27072 is spent on healthcare per annum which account for 67.8 and middle-income stator of the household report at rupees 36720 per annum with 29.8 percent on their annual family income. Interestingly the relative affluent households reported 10.2 overall share of their annual family income as against annual expenses on Healthcare. Out of the total study population, rupees 34,672 is spent average of an household towards health which accounts for 35.97 percent of study population's total annual income as an average. This shows major share of money from every household is spent towards health beyond their basic necessities, education and other planned and unplanned expenditure. Moreover this trend shows the rise of out of pocket expenses of common man towards the household healthcare.

4. RECOMMENDATIONS

- Study shows the congenital disabilities in the below poverty line people is high comparatively as against middle and relativity affluent income household. Therefore there is an urgent need to improve the maternal and neonatal care in the below poverty line household strata of urban areas.
- Study observes 53.8 percent of the total surveyed households having major illness in any one of their family members. This shows a poor health consciousness and the poor

accomplishment in overall public health in urban areas. Therefore there needs to be a vibrant and a strong public health care to the urban mass.

- The common frequent minor illness shows majority with vector borne diseases is a sign of mosquito manipulated diseases. In the recent past it needs a serious concern. Moreover waterborne disease which account for 16.48 percent is another concern of unhygienic water consumption. So there can be betterment of potable water distribution by the public authorities.
- On the choice of care, we become to observe that most of the below poverty people do prefer public Health Care which is a welcoming one. At the same time still 27.4 percent take their one self-care remedies. This needs further awareness among the below poverty line households.
- People do prefer private healthcare over the public health with 48.3 percent of the observed population favours immediate treatment to the illness as a major advantage for preferring the private Healthcare. Therefore there is an indication to fast track our public health delivery in par with private. Moreover study also observed the quality of service is the second most sought by the surveyed population. Hence we are in position to improve our Public Health system so as to convince common public and to encourage efficiency of public healthcare system in urban regions.
- Diagnostics advised by the private practitioners are the major cause of concern observed by this study. It shows recent trend progress in so many unnecessary and unwanted diagnostics advised and done by the private practitioners. Particularly 74.1 percent of population reported that the diagnostics always done for business motive. Hardly 6.1 percent expressed that the diagnostics are reasonable. Therefore the study is observed to recommend that there has to be a proper mechanism and checks should be done by the public authorities, so as to manage the unwanted private Health diagnostics, burdened on the pockets of urban populace.
- The final and the most important observation with this study are about the annual household expenditure on healthcare. Rupees 34,672 average amount spent by the survey households on annual healthcare which accounts for 35.9 percent their annual income. In particular below poverty line people spent 67.8 percent of their income on health. Therefore study is interested to recommend that despite enormous efforts taken by the public authorities, the people are still incurring large amount of money out-of-pocket towards healthcare. Hence, despite the state sponsored insurance schemes and other public remedies, there is a dire need to regulate and to assist the private health clinics so as to safeguard the welfare of urban public.

5. CONCLUSION

Study on the urban private Healthcare investigated the burden of household three different sections namely below poverty line, middle income group and the relative affluent households. It is observed through the study that the urban masses are increasingly spending large amount of their annual income towards annual household health expenditure. Particularly, the faster growth of Private Health Clinics in the urban region shows the preference of the urban population towards private health clinics despite the efforts made by public authorities. We fall behind to match the credibility and popularity of Healthcare delivery of Public Health in par with private healthcare providers. Therefore, this study concludes that there is still a vacuum present to be done more by the public authorities. Besides they have to implement stringent

regulations in controlling the undue cost manipulated by the private health providers on urban masses.

6. REFERENCES

- [1] Dr. Sudha.S.R., International Research Journal of Interdisciplinary & Multidisciplinary Studies (IRJIMS) Public Health in India: Issues and Challenges, Volume-II, Issue-VI, July 2016, Page No. 29-36
- [2] KL Pokarna, 'Health and Disease: Socio-Cultural Dimensions', in TM Dak (ed.), Sociology of health in India 12 (Rawat Publications, Jaipur,1991).
- [3] Detels., et. al. (eds) (2004). Textbook of Public Health, 4th edition, Oxford Publications, New York.
- [4] Ramani, KV (2005). Health System in India: Opportunities and Challenges for Improvements, Working Paper No. 2005-07-03, Indian Institute of Management, Ahmedabad.
- [5] International Journal of Medicine and Public Health, Oct-Dec 2015, Vol 5, Issue 4 Geetha Lakshmi Sreerama, SaiVarun Matavalum, Paraiveedu Arumugam Chandresekharan, Veronica Thunga.
- [6] Rahman MM, Karan A, Rahman MS, Parsons A, Abe SK, Bilano V, et al. Progress toward universal health coverage: A comparative analysis in 5 South Asian countries. JAMA Intern Med. 2017;177:1297–305.
- [7] Sundari TK, The untold story: how the health care systems in developing countries contribute to maternal mortality, International Journal of health services, Planning, Administration and Evaluation,1992.
- [8] Bloom SS, Lippeveld. T., Wypli D., does antenatal care make a difference to safe delivery? A study in Urban Uttar Pradesh, India, Health Policy and Planning, 1999.
- [9] Acharya LB, Cleland J. Maternal and Child health services in rural Nepal: does access or quality matter more? Health Policy and Planning 2000
- [10] O'Day B, Killeen MB, Sutton J & Iezzoni LI (2005) Primary care experiences of people with psychiatric disabilities: Barriers to care and potential solutions. Psychiatric Rehabilitation Journal.28 (4).
- [11] Health and Morbidity in India(2004-2014)August 2016Brookings India Research Paper
- [12] Ravi, Shamika; Ahluwalia, Rahul; Bergkvist, Sofi (2016). "Health and Morbidity in India (2004-2014)," Brookings India Research Paper No. 092016.
- [13] Jayaraman K And Mohan R (2018): "A Study on Problems and Limitations of Public Health in India" Economics Development of India in Global Perspective, V.II, ISBN : 978-1-64370-665-9. September 2018.
- [14] The Hindu,T.S. Ravikumar & Georgi Abraham, February 07, 2019.