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Public Opinion on Water Scarcity With Special Reference To Chennai

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Abstract— Water scarcity is the most prevailing problem that is existing in day to day life.The main reason for water scarcity and parts which were affected by acute water scarcity is discussed. The alarming water scarcity especially fresh water scarcity is also discussed here. The percentage of people who are suffering from severe water scarcity is also discussed. This research made to analysis the water scarcity in various areas in Chennai.The main objective of this research is to understand the problems of water scarcity with people. To analyse the relationship between public and the prevailing water scarcity.In this study we will discuss about the water scarcity among the public. The statistical tools used are ANOVA, independent t test and chi-square. The sample size is 1480 samples.This research concludes that within few years there will be no water for our future generations.

Rundown phrases— water scarcity, acute, suffrage, problems, public,severe.

I.INTRODUCTION

Water scarcity is the lack of enough to be had water assets to satisfy the needs of water usage inside a area. It already affects every continent. Around 2.8 billions people around the world at least one month of every year faces water scarcity.Economic water scarcity is resulting from a lack of investment in infrastructure (or) era to attract water from rivers, aquifers or different water sources or insufficient human ability to meet the demand for water. Freshwater makes up a completely small fraction of all water on earth. While nearly 70 % of world is covered by water , only 2.5 % of it is fresh water. One third of the global population live under conditions of severe water scarcity . Water scarcity involves water stress, water shortage or deficits, and water crisis.This can be because of each nature and people. Main elements that contribute to this problem include negative management of assets, lack of presidency regulation, and man made waste. 18 percentage of the arena's populace which resides in India only has get entry to to four percent of usable water sources. Official data in the past decade depicts how annual per capita availability of water in the country has plummeted significantly with 163 million Indians lacking access to safe drinking water. The aim of the study is to understand about the water scarcity.The objectives of the study are**,** the water scarcity in Chennai, to analyse about the difference between recycling kitchen water and gender, to find the relation between causes of water scarcity and age groups, to understand about the conservation of water among the age group and to analyse about the water supply in different areas.

II. LITERATURE REVIEW

Yeophantong 2017)made this survey in trans boundary rivers of Asia. The author focused on the resolved issues over the utilisation of water resources in Mekong, Nu-Salween and Brahmaputra rivers.The research cascaded consequences for regional water governance at national and transnational.Petersen-Perlman, Veilleux, and Wolf (2017)analysed the nature of water conflict and cooperation has improved overtime. The author concluded that the water conflict increases with increase in population.AnumehaChaturvedi,ET Bureau, (2018)conducted this survey in Shimla. The author described about the water scarcity in Shimla. Due to water scarcity the flight fare and hostels rate dropped down to 30% .George Joffee (2017)made this survey in Middle East and North Africa. These areas faces worsening crises in water. These areas faces worsening crises in water.RESTY NAIGA, MARIANNE PENKER, KARL HOGL,(Naiga, Penker, and Hogl 2017)made this survey in Uganda. The author reveals about the devolution of water management challenges. The researcher used mixed method approach and gender sensitive collective action analytical framework..T.ROMANO, (Romano 2017)described about the acute water crises in impoverished rural areas and urban slums across south global of Nicaragua. It documents the development of what is termed an organic empowerment of water committed in Nicaragua..JUNGUO LIU,(Liu et al. 2017)examined about the Water scarcity which has created many problems in environmental issues also. It created many globalization problem and now it is in a very drastic end.LOTSMART FONJONG, VIOLET FOKUM,(Fonjong and Fokum 2017)conducted the survey in inhabitants of sub-Saharan Africa. There is no access to water. He extent the privatization of water management impacted on water crisis in peri-Urban areas..JACOB.D.PETERSEN-PERLAMAN, JENNIFER.C.VEILLEUX, AARON.T.WOLF, (2017)(Petersen-Perlman, Veilleux, and Wolf 2017)made this survey using the available data.

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This research justifies that the water scarcity is due to increasing population of the world. This article details the nature of water conflict and water cooperation. This research discuss how water conflicts can be resolved, how water can be used as a vehicle for change between states and trans boundary disputes.MARCO VERWEII, (Shao et al. 2017)conducted this survey in Rhine basin. The restoration of Rhine basin is viewed as an exemplary case of international water protection. The river's clean up has been characterised by a number of puzzling developments. The author used Dame Mary Douglas empirically valid. PRADEEP .K. NAIK, (Naik 2016)conducted the survey in Africa. The author revealed the water crises in Africa. Africa suffers from economic water scarcity, physical water scarcity. The perception of Africa has perpetual of Africa has perpetual water scarcity and heading water crisis is challenged by number of professionals. MESFIN.M.MEKONNEN, ARJEN.Y.HOEKSTRA,(Mekonnen and Hoekstra 2016) analysed about the freshwater scarcity in global level. The author made use of the previous water scarcity assessment and concluded that 4 billions people are facing severe water scarcity problems. Nearly half of the those people were living in India and China.

III. METHODOLOGY

For the purpose of the study, descriptive research is used. Descriptive research helps to portray accurately the characteristics of particular individual, situation, or a group. Convenience sampling method is used in this study to collect the samples. When population elements are selected for inclusion in the sample, based on the ease of access is called convenient sampling. The sample size is 1480 samples. The independent variables are educational qualification, age, gender, and area. The dependent variables are dial for water scheme, modes of water supply, recycling kitchen water, prime causes of water scarcity and conservation of water. The statistics used are Chi-square, Independent sample t test, ANOVA.

IV. ANALYSIS AND DISCUSSION RESULTS

Null hypothesis:

There is no significant association between dial for water scheme and the educational qualification

Alternate hypothesis:

There is significant association between dial for water scheme and the educational qualification

Table 1: Water Scarcity in Respondent Area

Water Scarcity in your Area	Frequency	Percent
Yes	847	57.23
No	633	42.77
Total	1480	100.00

Source: Primary Data

Table 2: Cross tabulation – Dial for Water Scheme and Educational Qualification

		Dial for water scheme		
		Yes	No	Total
Educational Qualification	Primary	49	20	69
		71.0%	29.0%	100.0%
		3.3%	1.4%	4.7%
	High School	101	110	211
		47.9%	52.1%	100.0%
		6.8%	7.4%	14.3%
	Higher Secondary	178	194	372
		47.8%	52.2%	100.0%
		12.0%	13.1%	25.1%
	Degree and above	343	432	775
		44.3%	55.7%	100.0%
		23.2%	29.2%	52.4%
	Illiterate	26	27	53
		49.1%	50.9%	100.0%
		1.8%	1.8%	3.6%
Total		697	783	1480
		47.1%	52.9%	100.0%

Source: Primary data

Table 3: Chi Square test: Dial for Water Scheme and Educational Qualification

	Value	df	p-value
Pearson Chi-Square	18.565	4	0.001

Source: Primary data

Table 4: ANOVA for Conservation of Water and Age

		Sum of Squares	df	Mean Square	F	Sig.
Avoid Long shower	Between Groups	5.886	3	1.962		
	Within Groups	1548.897	1476	1.049	1.870	.133
	Total	1554.783	1479			
Recycling kitchen water	Between Groups	5.244	3	1.748		
	Within Groups	1043.188	1476	.707	2.473	.060
	Total	1048.432	1479			
Plant native species in your yard	Between Groups	12.799	3	4.266		
	Within Groups	1262.849	1476	.856	4.987	.202
	Total	1275.648	1479			
Rain water harvesting	Between Groups	3.027	3	1.009		
	Within Groups	1276.129	1476	.865	1.167	.321
	Total	1279.156	1479			
Turn off tap while washing and brushing	Between Groups	5.618	3	1.873		
	Within Groups	1508.030	1476	1.022	1.833	.139
	Total	1513.648	1479			
Fix the leaks	Between Groups	1.459	3	.486		
	Within Groups	1297.341	1476	.879	.553	.646
	Total	1298.800	1479			
Shrink your lawn	Between Groups	2.117	3	.706		
	Within Groups	1475.947	1476	1.000	.706	.549
	Total	1478.064	1479			

Source: Primary data

Since the p value is greater than 0.05, null hypothesis is accepted, therefore there is no significant difference in the mean scores of level of agreeability to conserve water among the age groups. Despite of age of the respondents, all agree to conserve water in the mentioned ways.

Null hypothesis:

There is no significant difference between the recycling kitchen water and the gender.

Alternate hypothesis:

There is significant difference between the recycling kitchen water and the gender.

Table 5: Recycling Kitchen Water and Gender

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Recycling kitchen water	Male	883	3.81	0.860	.029
	Female	597	3.87	0.814	.033

Source: Primary data

Table 5: Independent Sample t test: Settlement of Over Population and Gender

	Value	df	p-value
Independent Sample t test	4.022	1478	0.045

Source: Primary data

Using Independent sample t test, it was found that p value is less than 0.05, which shows that null hypothesis is rejected. Therefore, there is no significant difference between the recycling kitchen water and the gender. Both male and female agrees that kitchen water can be recycled.

Null hypothesis:

There is no significant association between type of water supply and area

Alternate hypothesis:

There is significant association between type of water supply and area

Table 6: Cross tabulation – Type of Water Supply and Area

		Type of Water Supply				
		Pipelines	Hand pumps	Water tanks	Bore wells	Total
Area	North Chennai	52	67	55	28	202
		25.7%	33.2%	27.2%	13.9%	100.0%
		3.5%	4.5%	3.7%	1.9%	13.6%
	South Chennai	113	153	203	69	538
		21.0%	28.4%	37.7%	12.8%	100.0%
		7.6%	10.3%	13.7%	4.7%	36.4%
	Central Chennai	72	134	131	39	376
		19.1%	35.6%	34.8%	10.4%	100.0%
		4.9%	9.1%	8.9%	2.6%	25.4%
	Others	113	72	95	84	364
		31.0%	19.8%	26.1%	23.1%	100.0%
		7.6%	4.9%	6.4%	5.7%	24.6%
Total		350	426	484	220	1480
		23.6%	28.8%	32.7%	14.9%	100.0%

Source: Primary data

Table 7: Chi Square test: Dial for Water Scheme and Educational Qualification

	Value	df	p-value
Pearson Chi-Square	66.017	9	0.000

Source: Primary data

Using Chi square test, it was found that p value is less than 0.05, which shows that null hypothesis is rejected. Therefore, there is significant association between type of water supply and area. It shows that type of water supply depends on area of the respondent. North Chennai depends on hand pumps, South Chennai depends on water tanks, Central Chennai depends on hand pumps and water tanks, apart from Chennai respondent's type of water supply is through pipelines.

Null Hypothesis (H0):

There is no significant difference in the mean scores of prime causes for water scarcity among the age groups.

Alternate Hypothesis (H1):

There is significant difference in the mean scores of prime causes for water scarcity among the age groups.

Table 8: ANOVA for Conservation of Water and Age

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.350	3	.450	.693	.557
Within Groups	959.049	1476	.650		
Total	960.399	1479			

Source: Primary data

Since the p value is greater than 0.05, null hypothesis is accepted, therefore there is no significant difference in the mean scores of prime causes for water scarcity among the age groups.

V. CONCLUSION

Today water scarcity is most important problem in country recently there is awareness through the survey that in 90% of world is affected by water scarcity.The water shortage is for the most part man made because of abundance populace development and botch of water assets. A portion of the real purposes behind water shortage are: Wasteful utilization of water for horticulture. India is among the best cultivators of rural create on the planet and along these lines the utilization of water for water system is among the most astounding. Customary systems of water system causes most extreme water misfortune because of vanishing, seepage, permeation, water transport, and overabundance utilization of groundwater. All the age groups people didn't accept the prime causes of water scarcity. Both male and female agrees that kitchen water can be recycled. As more territories go under customary water system strategies, the worry for water accessible for different purposes will proceed. The arrangement lies in broad utilization of miniaturized scale water system methods, for example, trickle and sprinkler water system. The issue has been intensified with expanded concretization because of urban advancement that has gagged ground water assets.. In the event that we don't comprehend the wellspring of the issue we will never have the capacity to discover reasonable arrangements in our world. The Third World War may mainly start because of water scarcity. In future researcher could research on water scarcity ailments.

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