

93. A Model Research on Public Channels for S&T Information in China

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Abstract. Channels and ways through which Chinese citizens obtain science and technology information are one important part of promoting Chinese civic scientific literacy level. They are also a very important part of the Chinese civic scientific literacy survey, which concludes public media channels, public utilization of science popularization facilities such as Science and Technology Museums and public engagement in science popularization activities. In this paper, a research on public channels on S&T was conducted based on previous surveys data. The objectives of this paper were to comb out the categories of public channels and the changes of utilizing proportion, to probe the relationship between public channels for S&T information and civic scientific literacy, and to sort out the characteristics and variation trends of public channels for S&T information among Chinese citizens. Through the analysis on the 8th civic scientific literacy survey data in 2010, models of public channels for S&T information in each provincial units in mainland China were obtained. Regional evaluation was carried out in different areas based on various characteristics of public channels for different groups of people. Regional division on Chinese civic scientific literacy was conducted according to those models. This has important practical significance for conducting Chinese civic scientific literacy construction work differentially.

Keywords: Information channels, Science popularization, Scientific literacy

Introduction

The investigation on public channels to get S&T information is a crucial part of the survey on Chinese public science literacy. For with the rapid development of Chinese economy and the increasingly improvement of education and science popularization in China today, the development of communication medias such as movie, television, newspaper, journal, book and internet are playing more and more vital roles on the knowledge enhancing and the science information getting in Chinese public. Meanwhile, the science popularization facilities such as S&T museum, arboretum and zoo, and science popularization activities and skill trainings held by national and local institutes become the ways for public to obtain S&T information as well. Furthermore, due to the influence of culture factors, the interpersonal communication also does some works to promote the circling of S&T information. Based on all previous surveys of public science literacy in China since 2005, this paper gives an analysis on the channels and ways for Chinese public to attain S&T information, in order to know how Chinese people obtain S&T information, understand the laws underlying it, and provide suggestions and grounds for Chinese government to make relevant policies.

Television and newspaper are the main channels for Chinese public to get S&T information

The survey results in 2010 show that television and newspaper are the main source of S&T information for Chinese public with the proportion being 87.5% and 59.1%. We can see from table 1 that the percent of respondents selecting television and newspaper as S&T information source are high in all these surveys.

Table 1 The source of S&T information for Chinese public (%)

	2005	2007	2010	
1.Newspaper(N)		44.9	60.2	59.1
2.Book(B)		10.2	11.9	11.9
3.Radio(R)		22.4	20.6	24.6
4.Television(T)		91.0	90.2	87.5
5.Science journal(Sj)	9.5	13.2		10.5
6.Internet(I)		7.4	10.7	26.6

7. Personal communication(P)	48.7	34.7	43.0
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The proportion of other channels remains stable except the considerable raise in internet. The percent of public naming electric media as the source of S&T information has been increasing (7.4% in 2005 and 26.6% in 2010). This is consistent with the trend of internet development in China. The rapid expansion of economic and social development in China widened the channels for Chinese citizens to get science & technology information. Moreover, it is important to note that, due to the undeveloped communication facility and traffic infrastructure in China, public in main districts depended largely on personal communication as the main source of S&T information. The data of 2010 showed that 43 percent of the public reported communication with relatives and colleagues as their S&T information source, being distinctly higher than 20.2 percent of 2001 and 28.5 percent of 2005. As to this phenomenon, we think that it is just the influence of culture factors and economy development that makes personal communication the main source for Chinese public to obtain S&T information.

The opportunities that Chinese public use science popularization facilities gradually raised

In 2010, the proportions of public who visited science popularization venues are 57.9% for zoos, aquarium and arboretum, 27.0% for S&T venues such as science and technology museum, 21.9% for museum of natural history. The proportions of respondents who visited cultural and art venues are 50.3% for public library and 26.4% for art gallery or exhibition museum. The proportions of public who visited sites for popular science are 54.5% for reading room, 48.7% for science popularization gallery or publicity column. The proportions of citizens who visited professional technology venues are 35.5% for science and technology demonstration site or science popularization activity station, 34.2% for industry and agriculture industrial park, and 11.2% for universities and research institutes laboratory. Comparing with the situation in 2005, the proportion of citizens who have visited sites for popular science saliently increased. The proportion of the reason ‘Not in local’ for not visiting those facilities for popular science decreased over the years. Take the situation of visiting science and technology venues as an example, the proportion of respondents who visited those venues is 27.0% in 2010, which raised 17.7% comparing with 9.3% for 2005. The proportion of public who didn’t visit these venues because of ‘not in local’ is 37.6% in 2010, which decreased 18.1% comparing with 55.7% for 2005.

The proportion of public who participated in science popularization activities and training increased

The 2010 survey showed that the proportion of public who took part in large-scale mass science popularization activities such as science and technology week, science festival and science popularization day is 23.8%. The proportions of citizens who participated in all sorts of regular science popularization activities are 35.6% for science and technology training, 31.4% for science and technology consultation, 29.4% for popular science lectures, 25.1% for science and technology exhibition and 13.7% for science popularization campaign vehicle. Meanwhile, for science popularization campaign vehicle, though the proportion of participation is low, over 62.8% of respondents indicated that they’ve heard of it.

The Difference Among Different Groups of Public on S&T Information Getting (Based on 2010 Survey)

The difference between different genders of public on S&T information getting

There is little difference between male and female respondents on their channels of knowing the current affairs of which television is the leading source while personal communication and personal communication ranks the second and the third. Male respondents, however, report that they tend to get S&T information from newspaper, magazine and Internet, while female relies more on communication with relatives and friends.

Table2 Information source of respondents with Male and Female

%	N	B	T	I
P				
Male	64.0	12.5	88.9	28.9 41.4
Female	56.5	11.8	89.8	25.3 46.5

Taking the situation of visiting science and technology venues as an example, the proportion of male citizens who visited these venues because of ‘Self interests’ is higher than that of female citizens, with the numbers being 11.1% and 7.5%. The proportion of female citizens who visited these venues ‘With relatives’ is higher than that of male citizens, with the numbers being 8.1% and 7.3%. From this we can see that male citizens intend to visit science and technology venues more initiatively.

The difference among people with different educational background on S&T information getting

Although television is the main source of S&T information for people with any level of education, the data show that the dependence on television tends to reduce with the increase of educational level: the highly educated people tend to get the S&T information through newspaper, book, magazine/journal, and internet, while the low educated people depend more on the media such as television, personal communication, and radio.

Among the public with low or none education, about 91.2 percent (2010) of the public reported getting S&T information through television, namely television was the main source of S&T information to them, while two continuous surveys showed that both percents of these respondents naming electric network as S&T information resource were low. Compared with other people with different level of education, this group of public intended rather to choose communication with relatives as their way to get S&T information, and the percent of respondents in this group who like to choose radio as information source was higher than that of other groups of respondents. Despite of low or none educated, part of these respondents maintained that they got the information by newspaper as the information source. Information source of respondents with different educational level (%) are shown in Table 3.

Table 3 Information source of respondents with different educational level (%)

	Level of Education		N	B	R	T
	I	P				
2010	1			17.2	7.9	36.4
	91.2	3.7	68.1			
	2			42.0	10.2	36.5
2005	93.4	8.5	61.5			
	3			63.8	11.9	27.0
	91.5	19.0	47.5			
	4			71.7	13.9	18.7
	87.7	36.3	33.7			
	5			73.9	13.6	12.9
	12.9	61.9	20.6			
	6			71.3	15.2	9.3
	9.3	75.5	17.3			
	1			4.8	4.1	24
	84	0.8	59.8			
	2			27.3	5.6	24
	91.1	0.2	60.3			
	3			53.4	11.4	23.2
	93.6	4.6	47.4			
	4			73.7	17.4	18.4
	89.8	20.5	31.4			
	5			76	17.1	14
	87.9	42.9	20.3			
	6			68.4	24.6	14.1
	77	55.4	7.4			

1=None or low educated; 2=Preliminary school; 3=Junior high school; 4=Senior high school/technical secondary school; 5=Junior college; 6=University and above

One important feature of the group with university and above level of education is that the percent of them naming internet as channel to get S&T information was the highest among all the groups, the number of which is 75.5 in 2010, which increased 10.1% than 2005, being much higher than that of other groups.

Several characters of the relationship between the main channels for China public to get S&T information and their educational level were revealed in these surveys: the percent of respondents naming modern technique as way to get information, including S&T information, was positively related to the educational level, and this trend was salient; the traditional channels such as television, radio personal communication was negatively related to the educational level; ③ the percent of respondents naming book, newspaper and journal was positively related to the educational level.

The difference among different age of public on S&T information getting

Analysis of the difference among different age of public on S&T information getting showed that the percent of naming newspaper was the highest among respondents aged from 30 to 39 and from 40 to 49 (over 50%). The highest

percent of naming book fell on the youngest group, among which 16.7 percent of respondents reported relying on book to get knowledge and information, while the group from age 50 to 59 reported the lowest percent of naming book. The respondent naming radio as the most favor way of getting knowledge was from the age group of 60-69 and the percent of youth naming this way was the lowest. Young people remained the group who liked magazine/ journal most. The percent of public naming magazine/journal was negative related to age: the older the respondent the lower the percent was. Internet as information source was negative related to age: about 59.1 percent of young respondents accessed internet to get information, the percent of group aged from 30 to 39 who named internet was as low as 4, while only 9.4 percent of the respondents older than 60 used internet to get information. Moreover, the percent of respondents naming communication with relative or colleague deserves our attention: the number was high in each level of age group while the percent of group from age 50 to 59 and 60 to 69 were the highest.

Table 4 Information source of respondents with different age (%) (2010)

	18~29 60~69	30~39	40~49	50~59	
N	56.3	63.6	63.9	60.6	
53.6					
B	16.7	12.0	11.5	9.3	
9.9					
R	19.4	22.3	24.6	30.9	
33.0					
T	86.0	88.7	90.4	92.0	
90.7					
I	49.7	34.0	21.5	12.1	
8.2					
p	33.9	40.3	45.7	50.8	
54.7					
Others	56.3	63.6	63.9	60.6	
53.6					

Relationship between age and S&T information source could be seen from the percent of different age groups on reporting the way to get S&T information: ③ the using of modern technology as information source was negatively related to age: the older the respondents the lower the percent of naming radio, television and personal communication as information source; ③ the information source of radio, television and personal communication was negatively related to age.

The difference between urban and rural public on S&T information getting

There were great differences between urban and rural public on their channels of obtaining S&T information. Television being the main source of information, rural public, however, relied more on television than urban citizens to get information (91.6% vs. 86.5%, 2010). Furthermore, the percent of rural public (50.9%) who took communication with relatives and colleagues as S&T information source was higher than that of urban public (34.7%), while the latter had obvious high dependence on newspaper, book, magazine/journal, and Internet. The difference on internet utilizing was especially sharp: the data of 2010 showed that the using rate of internet by rural public (18.0%) was distinctly lower than that of urban citizens (39.2%), and this gap was still great yet decreasing. The increasing degree of internet-using of urban public is higher than that of rural public.

The proportion of rural citizens who didn't visit science and technology venues because of 'Not in local' is 45.3% and that of urban citizens is 28.5%. The rural citizens who occupied most of China's population are lack of opportunities and ability to use modern and convenient methods to get science and technology knowledge and other kinds of information. This is the focus in the civic scientific literacy construction work in China for the future.

The Development Trend of S&T Information Getting

It could be seen from the development trend of S&T information getting of Chinese public that the channels and ways for Chinese public to obtain S&T information has been developing in consistent with the diversified development of Chinese media and other S&T communication methods. The 2010 survey showed that the percent of public using television to get S&T information remained high. Of the newspaper and journal, the percents of public who took them as knowledge source were maintained at about 60 during 10 years since 2000. The percent of public using electric network as information source was increased most quickly: the number of it was only 1.6 in 2001, being increased to 10.7 in 2007 and to 26.6 in 2010.

In 2010, The Twenty-sixth Statistic Report of Internet Development Situation in China issued by China National Network Information Center (CNNIC) showed that, till June, 2010, the total number of internet using citizens in China exceeded 400 million the first time, reaching 420 million and ranking second in the world only after America. The

popularizing rate of internet rose to 31.8%. As a new way of information circling, Internet is gradually infiltrating the lives of Chinese people and becoming a more and more popular channel of S&T information communication. The development trend of channels for Chinese public to get S&T information (%) are shown in Fig.1

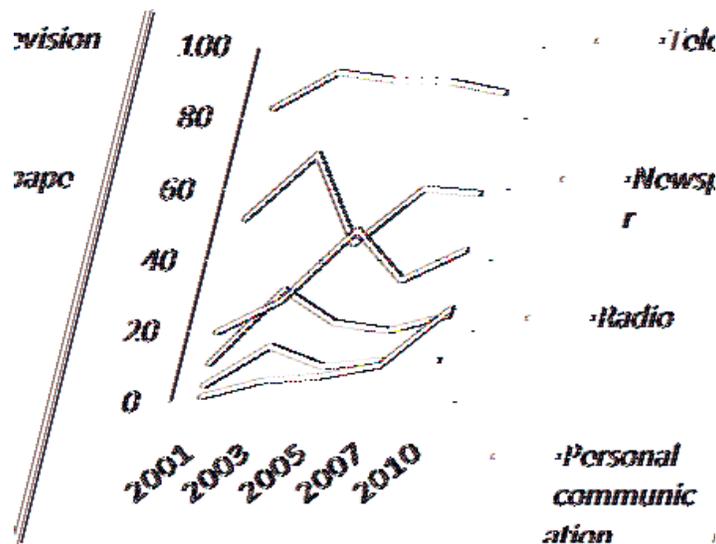


Fig 1. The trend of channels

Conclusion

Conclusion could be drawn from the analysis above that with the development of economy the channels for Chinese public to obtain S&T information become large diversified. Besides, the channels for different social groups to attain S&T information is affected deeply by the factors such as educational level and age: the lower the age and the higher the level of education, the wider the ways to get current affairs and S&T development information and the more frequent of relying on internet; the influence of internet, newspaper and magazine is great among the group with young age and high educational level.

To extend the channels and ways for public to obtain S&T information will have important influence on the improvement of science literacy of public, the high efficiency and effect of these channels could bring more opportunities for public to get S&T information actively or passively and then contribute to the improvement of nationwide public literacy, and the professional skill training will play crucial role in the future, for the percent of public who get knowledge about S&T through professional training is very high, especially in the rural areas.

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