
THE PUBLIC AWARENESS OF SCIENCE AND TECHNOLOGY MALAYSIA 2000

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ABSTRACT

The new millennium poses an equally new challenge for Malaysia. Having moved from being an agricultural based economy in the 1960s to production based economy in the 1970s and 1980s to the current embracement of the knowledge based economy (K-economy) by the Malaysian government means concepts such as globalization, borderless world, the internet, etc. is being championed albeit cautiously. For the Malaysian government to ignore these global developments would result in the nation being behind other economies in its pursuit of development. Providing the impetus in this quest is science and technology (S&T), a discipline that has been acknowledged to be the engine of growth and in wealth creation of the advanced nations.

Public Awareness of Science and Technology, Malaysia 2000, is a follow-up to a series of studies inquiring the level of awareness of S&T amongst Malaysians. It was first commissioned by the Malaysian Science and Technology Information Centre (MASTIC) of the Ministry of Science, Technology and the Environment in 1994 to Universiti Teknologi MARA (then known as ITM) consultants. The current study, which is the 4th in the series, intends to gauge the Malaysian public on their awareness, attitude, understanding, interest and perception of S&T. The findings would provide the government with input in drawing up policies and strategies that will elevate the nation's scientific and technological competitive edge.

As with the previous studies, this study employed the same methodology in its scientific enquiry. The same proven quantitative approach is employed whereby data is gathered from a sample size of 5000 respondents throughout Malaysia using the face-to-face interview technique with the aid of structured questionnaires. These respondents were chosen using a statistically stratified multi-staged sampling technique.

One significant finding of this study is that Malaysians perception of knowledge of S&T continue to decline over the years despite continuous and tireless efforts by the relevant authorities to encourage S&T participation by all levels of the society.

In terms of interest in S&T in general, Malaysians are showing lesser interest over the years. Malaysians however showed highest interest level in environmental pollution followed by application of computer technology. New inventions by Malaysians also command a high interest level amongst Malaysians, thus implying a ready support for the nation's agenda of having in place an innovation system. Malaysians however continue to have positive attitude toward S&T while their level of understanding of S&T has shown some improvement.

In comparing the Malaysian adults' performance internationally, Malaysian adults' knowledge and interest level in S&T is declining. However their attitude towards S&T and understanding of S&T are of high standing as compared to their counterparts from the industrialized countries.

EXECUTIVE SUMMARY

BACKGROUND

This is the fourth of the two-yearly study on public awareness on science and technology (S&T) in Malaysia, commissioned by the Malaysian Science and Technology Information Center (MASTIC), Ministry of Science, Technology and the Environment (MOSTE). The first of such studies was conducted in 1994. This was followed by a second study in 1996 and the third study was conducted in 1998.

As in the previous studies, this study also incorporated data on broad categories of public perceptions towards S&T. They include, (i) the perceived knowledge (ii) the perceived interest (iii) the attitudes towards S&T (iv) the levels of understanding of S&T and (v) information sources and reactions to public policies/issues. Two modes of comparisons were performed. The first is the comparisons with the results of similar studies conducted in 1996 and 1998 covering the six categories identified above. The second are is comparisons with the results of similar studies conducted in 14 industrialised countries.

PURPOSE

The ultimate aim of the gathering and compiling data in these studies is to determine the level of success of the various efforts made by the governmental and non-governmental agencies to instill a sense of S&T awareness among Malaysians. This study, thus, seeks to record changes in status currently achieved as compared with those recorded in the previous studies. Furthermore, it is hoped that the findings would enable the government to formulate new strategies and plan of actions to stimulate more awareness among Malaysians to enable the country among others, to position itself against the challenges of globalization. In addition, the documented statistics should be useful inputs in the development of S&T indicators to be used as benchmarks for international comparisons.

RESEARCH STRATEGY

As in the previous studies, this study was carried using the sample survey technique involving a total of 5000 respondents. Since the application of the fully randomised sampling technique is not practicable because of the various constraints of costs, time and human resource, the researchers, therefore, decided on the purposive procedure in which the multi-stage sampling technique involving two stages was used. In stage one, the study area was divided into six zones, i.e. the North Zone, the Central Zone, the South Zone, the East Zone, Sabah, and Sarawak. This was followed by the second stage where localities/districts were identified within each of the states in all six zones. The localities/districts were later stratified into 'Rural' and 'Urban' sectors. Quota sampling scheme was used when picking the respondents to be interviewed during the fieldwork. The distribution of the sampling units according to gender and ethnic groups was made based on the 1991 census breakdown.

FINDINGS

The findings, as presented here, are divided into five parts according to the five different categories stated earlier, i.e. perceived knowledge, perceived interest, attitudes towards S&T, levels of understanding of S&T, information sources and reactions to public policies/issue. The international comparisons are given at the end of this summary.

Perceived Knowledge

When assessing the public's perceived knowledge of S&T it was found that the levels achieved have been on the decline over the years despite efforts made to encourage S&T participation at all levels. In this study, four out of every 10 who participated in the survey said they have poor knowledge of S&T. Again as in the previous studies more significant differences were recorded between age groups. The youths appear to have the highest perceived knowledge, followed by adults and children.

The results of the study indicate a strong positive correlation between the overall knowledge and the levels of educational levels. However, significant differences were observed in perceived knowledge of S&T between respondents of different educational streams. For instance, the respondents from the science stream continue to show higher average level of perceived knowledge compared to respondents from the arts stream. Urban respondents continue to rate themselves higher than the rural respondents in terms of knowledge on the general and S&T issues. In this aspect, main concern lies on the fact that the levels of the mean perceived knowledge on most issues for the rural respondents showed a downward trend. As usual the males seemed to dominate their female counterpart when they perceived themselves to be more knowledgeable than female respondents on all issues.

Perceived Interest

As regard to the perceived interest, over the years an unhealthy trend is observed in that Malaysians of all age categories are getting less interested in S&T. Issues pertaining to the environmental pollution continue to dominate the interest of most Malaysians. This is followed by application of computer technology. At the third spot is the issue on new inventions from Malaysia, replacing the issue on new technology and inventions which previously occupied this position. Again youths continue to rate themselves higher in terms of interest in all S&T issues when compared to adults and children. As far as the general issues are concerned, Malaysians are very much interested in the economy and business. In this respect, adults scored the highest as compared to youths and children in that order of ranking.

As expected the urban respondents perceived themselves as having higher interest in overall issues as compared to the rural respondents. However, in terms of the ranking of preferred issues of interest, there is no evidence to indicate any change in both groups.

Again male respondents tend to rate themselves more favorably when assessed in terms of levels of interest on similar issues compared to the female population.

Attitudes Towards S&T

Despite the fact that their perceived knowledge remains poor, Malaysians generally continue to have positive attitudes toward S&T. For instance, when asked to state the role of S&T in their lives, about seven out of every ten who participated in the survey responded positively on eight out of the eleven questions put forward. Among the various age groups, adults continue to demonstrate the most optimistic view toward S&T. This is followed by the youth and children. Differences in opinions were also recorded among populations of different age groups and different education levels. The opinions of the respondents with primary education are almost as positive as those with tertiary education on the benefits of S&T. In fact they tend to have higher scores than those with secondary education in eight out of 11 questions. Generally, the results of these findings show little difference compared to those of the previous studies.

Whether comparing between urban and rural or between male and female respondents the results tend to indicate similarity in their attitudes toward S&T. Among those respondents (almost half of the respondents) who agree that scientific research has significant impact on the economic growth, the bulk consider the impact is positive in nature, particularly in the agricultural, educational, industrial and business sectors. More adults than youths or children subscribe to the idea that S&T has a positive impact on the quality of life. About 40 percent of the public believe that the scientific research will bring in more good than harm to the society.

On average Malaysians are becoming increasingly familiar with the concepts of genetic engineering and cloning. This study shows a marked improvement in their understanding of these concepts as compared to the results obtained in 1996. There is a significant contrast as far as the MSC project is concerned. Data collected show that out of 10 respondents interviewed less than three know its existence. Only a small proportion was able to cite at least one application of the MSC. Slightly more than half of those who participated in the survey are of the opinion that the government has done enough to reduce pollution. On whether the government has done enough to address the issues on public health and quality of education, the public in general are not overly impressed accounting to only about 40% of the total.

Understanding of S&T

Over the four-year period, 1996 to 2000 the public's understanding of both S&T recorded a slight improvement (4.3%). On specific issue, the basic environmental terms and concepts achieved 7.6%. The level is highest among the youths as compared to adults and children. More importantly, the study shows that those with good tertiary education tend to have the highest understanding over those with only secondary or primary education.

An individual's background has significant influence on the ability to understand the terms and concepts of S&T. This is evident from the results of this study where students from science stream continue to score higher than their non-science counterparts. To confirm the premise that right exposure is an important ingredient in the development of human minds then one should consider the results that show that the urban population have better understanding of S&T terms and concepts than the rural population.

Generally, males have a slightly better understanding of S&T concepts than females although the latter are more knowledgeable on issues related to medical sciences and human biology.

Information Sources and Awareness

Television continues to maintain its major role as important information provider. This is despite the fact that the trust levels for both TV and newspaper have decreased since 1998. Amongst the most-watched TV programs, news remains at the top, particularly among the adults. This is followed by entertainment; with children and youths constitute the largest segment of the audience.

As in the previous studies this study shows that the program preferences between urban and rural population are almost similar.

The low trust level for the newspaper is reflected in the decline in the percentage of its readership among the public from the high of 54.0% in 1996 to only 44.1% currently. More significantly, the drop in readership (among those who read the newspaper everyday) spreads over all age groups and by areas (urban and rural). As in the previous study, the urban population tends to read newspapers more when compared to rural population.

Two most favorite items identified whether in newspapers, magazines or radio are entertainment and sports. Generally, youths continue to record the highest media consumption which encompass three major components, i.e. viewing, reading and listening habits.

Respondents who use the internet has significantly increased from 22.1% in 1998 to 40.2% in 2000. The study revealed the profile of internet users as urban male youths who have received tertiary education.

Among the top places of visits, the museum and the zoo continue to attract the largest number of visitors, albeit declining rates (in fact for all the places), as compared to other S&T related places of interest such as the Petrosains, the Planetarium or the Science Centre.

Reactions to Public Policies/Issues

The government's efforts to expose its education policy regarding S&T to the public remain ineffective since about 9 percent knows about them and the remaining 91 percent are either ignorance or are unsure.

A similar phenomenon is observed regarding the government's steps to increase the level of public awareness in S&T. A large proportion are either unaware or are not sure of the steps taken. Among those who claim to be aware of the steps taken, only about a third consider that the steps taken are effective while the rest say that they are moderately effective. When asked what strategy to use to increase the level of awareness, a third suggested that the Government should step up its campaign by having more expos and exhibitions, more references and TV programs related to S&T.

International Comparisons

In general Malaysian adults continue to lose their interest on three S&T issues, i.e. 'new medical discoveries', 'new scientific discoveries' and 'environmental pollution', by recording a declining trend since 1996. Compared against the levels achieved by the 17 industrialised nations, Malaysia's fared poorly. For the first two issues mentioned above Malaysia's position was at the 16th. and 15th. placing, respectively. However, for the third issue Malaysia's position was better, at 5th. placing.

The reasons for these low performances could be traced to the low level of interest of Malaysian adults in all three S&T issues. The study shows that Malaysians' scores are among the lowest when compared against the scores of their counterparts from the industrialized countries.

However, on more positive note, Malaysians' optimism in S&T remains high, scoring a second after the United States. Furthermore, they continue to hold very strong beliefs in the promise and benefits of S&T and have relatively low levels of reservation about its possible harm.

Malaysian adults also occupy a joint 4th position (with the UK) (6th in 1998) in the understanding of basic S&T terms and concepts when compared against the 14 industrialised countries

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