DOCUMENT RESUME

ED 059 436 AC 012 297

AUTHOR	Lindsay, Carl A.; And Others
TITLE	Educational Television in Central Pennsylvania: A Telephone Audience Survey of WPSX-TV.
INSTITUTION	Pennsylvania State Univ., University Park. Dept. of Planning Studies in Continuing Education.
PUB DATE	Aug 71
NOTE	79p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Academic Achievement; *Attitudes; Comparative Analysis; Data Analysis; *Data Collection; Demography; *Educational Television; Family Characteristics; Heads of Households; Interviews; *Research Methodology; *Surveys; Television Viewing; University Extension

ABSTRACT

A telephone survey of the size, characteristics, and viewing preferences of the audience of WPSX-TV, the educational television station of The Pennsylvania State University. Audience data are based on 1,686 households from a systematic probability sample of 4,176 prime and alternate respondent households in The Central Pennsylvania area. Included in the report is a discussion of the methodology, interviewer training and performance, audience profile, viewing habits, program preferences, and comparisons with a similar study conducted in 1968. (Author)

EDUCATIONAL TELEVISION ... NIA:
A TELEPHONE AUDIENCE SU...

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PLANNING STUDIES IN CONTINUING EDUCATION
THE PENNSYLVANIA STATE UNIVERSITY
AUGUST 1971

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The Pennsylvania State University

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ACKNOWLEDGEMENTS

Thanks are due numerous individuals and several organizations who contributed to this study:

Floyd B. Fischer, University Director of Continuing Education, The Pennsylvania State University, who provided financial support and encouragement for the study.

James C. Walck, Manager of the State College Business Office of Bell Telephone of Pennsylvania, and Cheryl Mueller, Business Office Supervisor, of the same organization, who provided the telephone directories for the sample plan.

Marlowe Froke, former Director of Broadcasting, now Associate Director of Continuing Education, David L. Phillips, Director of Broadcasting, and Robert C. Dudley, Assistant Director of Broadcasting, for technical assistance in developing the interview schedule and help in editing the manuscript.

Carol Hendricks and Bill Moyer, graduate assistants with Planning Studies in Continuing Education, who helped materially with planning the study, collecting and analyzing the data and editing the report.

Madylon Bowmaster and Edna Heald, secretaries in Planning Studies in Continuing Education, who provided general secretarial assistance and Sara Derr who typed the manuscript.

Ray Funkhouser of the Pennsylvania Survey Research Laboratory for his critical reading of the manuscript.

Finally, to the eight interviewers, who professionally and patiently made the more than 4,500 telephone calls to obtain the data for this study.

PART I. INTRODUCTORY SUMMARY

Background

WPSX-TV, a non-commercial broadcasting station licensed to The Pennsylvania State University, has, since 1965, provided educational television to 12 full counties and portions of 11 others in central Pennsylvania. The area covered is largely rural and contains an estimated population of 328,000 households.

In the spring of 1968, an assessment of the WPSX-TV viewing audience was made by Penn State's Department of Planning Studies in Continuing Education. The present study represents a follow-up of the 1968 survey. It is expected that similar assessments will be made at periodic intervals in the future.

The primary purpose[1] of the present study was to provide the staff of WPSX-TV with general information on the size, characteristics, and, to a lesser extent, the taste patterns of the present WPSX-TV audience, as well as to indicate changes that have taken place since the former study was made. A secondary purpose was to establish a workable basis for an on-going program of evaluation, including the development of survey materials and implementation procedures for periodic updating of information. For this reason the present report places unusual emphasis on methodological considerations and problems.

Unlike the 1968 survey, which used a two-stage procedure involving initial telephone interviews and a mail survey follow-up, the present study

[1] This report covers only the general programming of WPSX-TV and does not include instructional programming which is evaluated separately.

made use of telephone interviews only. Data presented are based on a systematic probability sample of 1,686 households. Methods and procedures used are discussed in Part II, and detailed results are presented in Part III. A brief summary of WPSX-TV audience characteristics is given below.

WPSX-TV Audience Profile

Audience size and growth. Of the nearly 328,000 households in the WPSX-TV viewing area, 56% or about 183,600 have at least one member who watches or has watched WPSX-TV. With an average household size in the viewing area of 3.46 individuals, this indicates a viewing audience of up to about 635,000 persons. Compared to the 1968 viewing audience of 37% of the viewing area households, the current figure represents a 51% gain during the past four years.

Non-viewers. Forty-four percent of the households in the area are currently non-viewers: 38% either have no TV or are unable to get WPSX-TV, while less than 6% are non-viewers by choice ("voluntary non-viewers"). Taking into consideration only those households that can watch WPSX-TV if they wish to do so, 90% are viewers and 10% are voluntary non-viewers.

Weekly circulation. Almost half (49%) of the viewing area households watch WPSX-TV at least once a week on the average. In 1968 only a third did so. This represents a 48% gain in weekly circulation in the past four years.

Daily circulation. Close to one-fifth (17%) of the viewing area households watch WPSX-TV every day, as compared to 6% who did so in 1968.

Color TV sets. Over half of the WPSX-TV viewers and voluntary non-viewers have color TV sets; in 1968 only about a third did.

Characteristics of viewers and voluntary non-viewers. The heads of WPSX viewing households tend to have higher incomes and more formal education than non-viewing household heads, and their occupations are likely to be in the skilled, clerical, managerial, or professional categories. On the other hand, it should be noted that about a fifth of the viewing household heads have less than a high school education and a third have occupations of the unskilled or semi-skilled type.

Family size; age of household. A larger proportion of viewers come from moderate to large households than from small households. Heads of viewing households are in general younger than those of non-viewing households.

Viewing frequency. About 87% of the WPSX-TV viewing households watch the station at least once a week, and a third watch the station daily. The daily viewer is younger and has a larger family. Education, income, and occupation of household head are unrelated to viewing frequency.

Educational vs. commercial viewing. WPSX-TV viewing households spend about 3 hours a week watching WPSX-TV and about 30 hours watching commercial television--about twice the national average in both instances. Although, as might be expected, households with lower educational levels tend to spend more time viewing commercial TV than households with higher educational levels, the same is not true of educational TV in the WPSX-TV viewing area. There is no significant relationship between amount of WPSX-TV viewing and educational level of household head.

Program preferences. The most popular programs are children's programs (Sesame Street, Misteroger's Neighborhood, Hodgepodge Lodge),

locally produced sports programs (Winter Sports, TV Quarterbacks), and, to a lesser degree, drama (Masterpiece Theater, NET Playhouse). The locally produced daily program, Farm, Home and Garden, also ranks high.

Program requests. Cultural affairs (drama, music, art) and sports lead the list of program types that WPSX-TV viewers would like to see in the future. Instructional and scientific programs also rank high.

Program guide. Less than 4% of the viewers subscribe to the WPSX Program Guide. Four-fifths of these would like to see it contain more detailed schedule information.

General. In general, it may be said that the WPSX-TV audience is a growing, loyal group, made up of people from all levels of society; who live in moderately large households with youngish household heads; who watch more TV than the average American; and who are selective in their tastes and interests, although particularly prone to watch children's programs and sports.

PART II. DETAILED METHOD

WPSX-TV Signal Coverage

WPSX-TV covers 12 full counties and portions of 11 others in central Pennsylvania. While not typically included on the published viewing area, it is known that the signal is also received in certain parts of southern New York State that border Pennsylvania, e.g., Olean and Jamestown, New York. The present study, however, is limited to an assessment of the Pennsylvania viewing audience of WPSX-TV. It is obvious, given the mountainous terrain of central Pennsylvania, that the viewing area can fluctuate depending on the availability of CATV facilities.

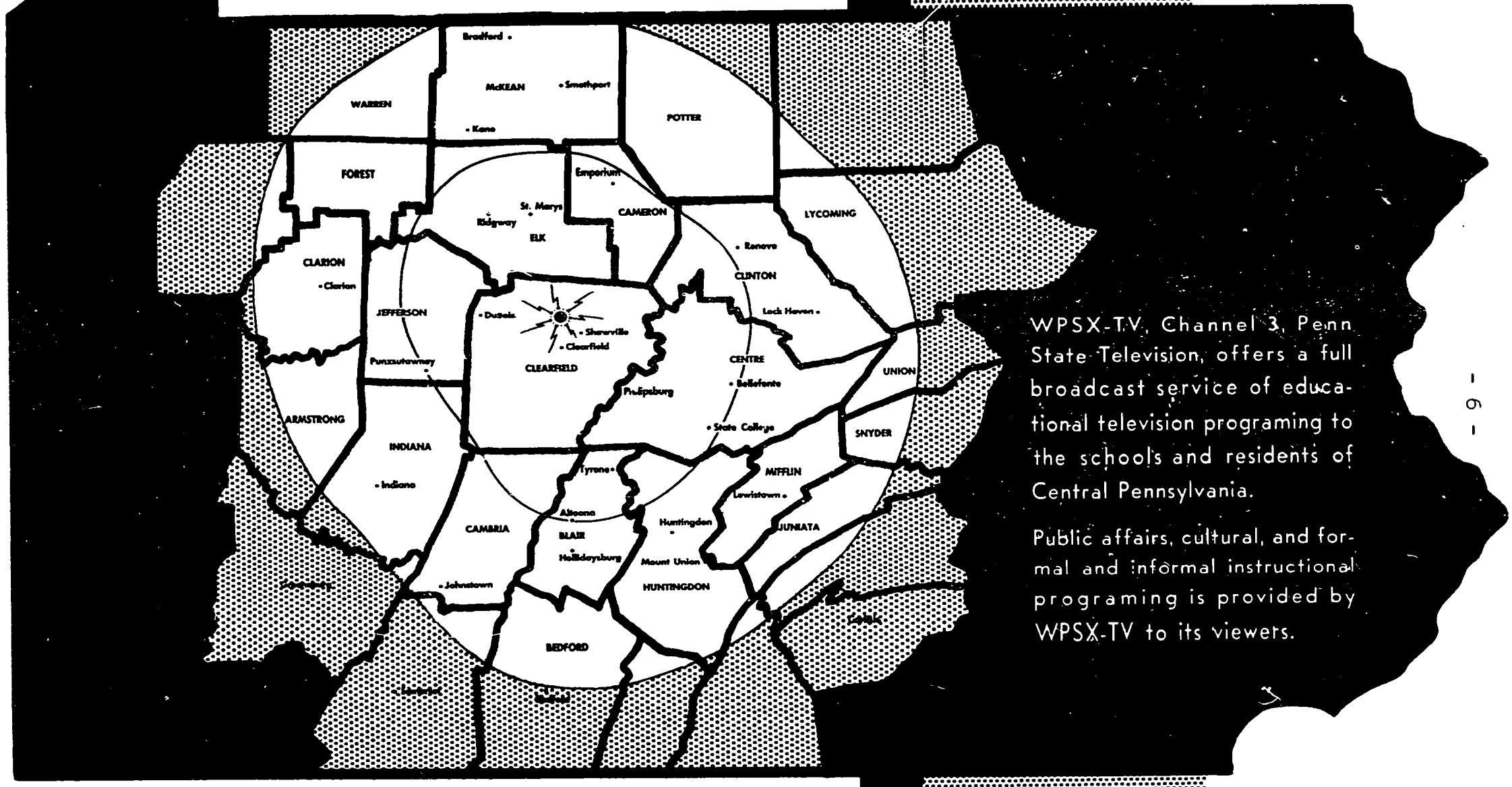
The WPSX-TV primary viewing area is shown in Figure 1. While more detail will be provided in the following section, it will suffice at this point to note that the WPSX-TV viewing area contains approximately 327,927 households.[2]

Sampling Plan

Due to budgetary and time constraints and the fact that it is an appropriate method for this research, a telephone survey method was chosen for data collection. The sampling plan involved a systematic probability sample of the households with telephones in the WPSX-TV viewing area. Based on a trade off of sampling precision with time and cost considerations, we established a minimum sample of 1,000 completed schedules for

[2]The State Plan for Educational TV does not include Armstrong, Snyder, Juniata and Westmoreland Counties in the WPSX-TV service area. No publicity or attempts at audience development are made in these counties by WPSX-TV.

THE PENNSYLVANIA STATE UNIVERSITY CHANNEL 3



WPSX-TV, Channel 3, Penn State Television, offers a full broadcast service of educational television programing to the schools and residents of Central Pennsylvania.

Public affairs, cultural, and formal and informal instructional programing is provided by WPSX-TV to its viewers.

WPSX TV

FIGURE 1. THE WPSX-TV PRIMARY VIEWING AREA

households who could receive the signal. However, since a larger number was more desirable from a precision standpoint and since it was possible for the interview team to obtain more than the minimum in the allotted time period, the sample size was increased to 1,500 completed schedules. Due to anticipated problems of busy signals, respondents not answering, refusals, etc., typical of telephone surveys, we decided to draw three telephone numbers for each desired completed interview. Thus, the total telephone sample plan required 4,500 numbers, comprising 1,500 numbers designated as prime respondents and 3,000 alternates. Alternates were used only if the prime respondent could not be contacted.

The 1968 WPSX-TV survey found that thirteen telephone directories effectively cover the WPSX-TV viewing area. These thirteen directories provided our sampling frame and are shown in Table I together with the details of our sampling plan.

The recommendations of the Corporation for Public Broadcasting (CPB, 1970) were followed in selecting our sample.

1. Estimation of number of residential listings (excluding commercial listing) in each telephone directory.
2. Summation of total residential listings in all directories. In the present case, this number was 292,620.
3. Division of total residential listings by completed interviews required, or 1,500. The result of this division is the sampling interval, or the count to be made between residential listings to determine the prime respondents.

TABLE I

WPSX Audience Survey

Phone Book Sampling Frames

Directory	Total No. of Usable Pages in Directory	Number of Pages Sampled	Average Number Per Page	Estimated Number of Usable Listings in Directory	No. of Primary Respondents per Directory With an Interval of 195 Between Each
Altoona	145	29	310	44,330	227
Bellefonte	100	20	283	28,300	145
Bradford	120	24	142	17,040	87
Clarion	112	22	124	13,890	71
Clearfield	54	11	339	18,310	94
DuBois	67	17	131	8,780	45
Huntingdon	37	7	327	12,100	62
Indiana	63	13	308	19,400	100
Johnstown	179	36	268	47,970	246
Lewistown	55	13	314	17,270	89
Ridgway	68	12	192	13,060	67
Warren	97	19	137	13,290	68
Williamsport	135	27	288	38,880	199
Totals	1,232	250	243	292,620	1,500

In the present case, our sampling interval was 195. For each telephone directory, the first number to be recorded was randomly selected (within the interval 1 to 195) and from that point, each succeeding 195th residential listing was selected as a prime respondent. The two numbers following each prime respondent were selected as alternates.

Numbers selected were highlighted and later recorded on the first page of the interview form, along with codes for the area, county, and town.

Due to a slight underestimation of the number of non-residential listings, the sampling interval of 195 turned out to be larger than that required for 1,500 sample points. Consequently, 1,392 prime respondents, or a total of 4,176 phone numbers were selected rather than 4,500.

Interview Schedule Development

An interview schedule, based in part on the 1968 WPSX-TV survey and incorporating items from both the telephone and mail forms used in that study, was developed by the survey team and reviewed by the WPSX-TV staff. The finalized schedule is shown in Appendix A.

It consists of three first pages (one for the prime respondent and one each for the two alternates) and six additional pages containing a total of 44 items. The first page contains call and identification information, survey disposition codes, and two questions to determine if the household had a television set. Questions on viewing periodicity and frequency, favorite programs, impressions of WPSX-TV, the WPSX-TV Program Guide, and demographic information make up the remainder of the interview schedule.

Data Collection Period

Data were collected over a 19-day period from May 13 through May 28,

1971 and the first two days in June. The break in the data collection period occurred because of the Memorial Day weekend. Calls were made between six and ten o'clock each night from five wide-area lines in a central location (the J. Orvis Keller Building) on the University Park Campus of the Pennsylvania State University.

Interviewer Training

It was estimated that five interviewers, working each night, could complete the number of calls required by the sampling plan. However, to cover contingencies such as sickness, previous commitments, etc., a total of eight interviewers were hired and trained.

The first training session of approximately four hours consisted of: (a) a detailed review of each item in the schedule; (b) a role-playing procedure whereby interviewers practiced survey administration via calls to project staff personnel and other interviewers; and (c) monitoring of calls made by senior project members to a small group of "real" respondents not included in the survey sample.

Appendix B presents the interviewer training instructions which were covered during the initial part of the first training period. Following a detailed review and question/answer period, one of the senior project members made several calls, utilizing a listening device whereby all interviewers could hear the respondent. This was done in order to further familiarize the interviewers with the types of responses with which they might be faced and the associated probe questions which they might have to ask.

After several of these calls were made, each interviewer made several calls to a member of the project staff on an interoffice phone.

This acted to familiarize the interviewers with the "item skip" procedures and, again, with probing procedures. The staff members acting as respondents were instructed to respond in a manner which would force the interviewer trainees to probe in various ways. Following each call, the interviewer's performance was subjected to a critique by the staff "respondent".

The next step in training was to have each interviewer call several "real" respondents while the other interviewers listened to both sides of the interview via the amplified listening device. After each call, an open critique was made and interviewer questions were answered. Finally, each interviewer was asked to review the schedule and the written instructions again before the next session, which was scheduled on the following night.

The interviewers had been told that the second session would begin the actual interviews. However, it was used in part as a second training session to provide a final period of familiarization. At this session all eight interviewers were present with only five working at any one time. Those not making calls were told to listen for any particular problem which the interviewer might be having. Observed problems were then discussed with a project staff member. By the end of this second session the interviewers were, in the estimation of the research staff, ready to begin with the sample population.

In all cases, a senior member of the project staff was present during the interviewing period in order to answer questions and check schedules for completeness.

In order to mitigate any possible area-related interviewer bias effects, the schedules were distributed at the beginning of the work session so that those for any given area (telephone directory) were distributed across a number of interviewers.

Calling Procedure

Interviewers were instructed to allow up to six rings for each dialing. If there was no answer or if a busy signal was received, the form was put on the bottom of the pile which they had received for that evening's calls. Typically those respondents who could not be reached on a given evening were not called again until at least the following evening. This procedure increased the probability of reaching the prime respondent. If a prime respondent could not be reached in three tries or if the number was not in service, the first alternate respondent was used. The same ground rules applied to the use of the second alternate respondent. Also, if the prime respondent refused to be interviewed, had no television set, or could not receive the WPSX signal, an alternate was used.

While the interviewers were told to probe on most items where the respondents had difficulty or did not seem to want to answer, they were told not to probe or force answers on the income question (item 44). This item was included with some reservations at the outset because of past experience with respondent sensitization in this area.

Survey Disposition Codes and Resolved Telephone Calls

During the 19-day survey period, a total of 4,677 dialings were made, resulting in 2,990 resolved[3] calls. Of these, 1,876 (62.7%) were

[3]A resolved call is a dialing that could be categorized under one of the six disposition codes described below. An unresolved call is a dialing that did not result in an immediate contact.

resolved in one dialing, 541 (18.1%) in two dialings, and 573 (19.2%) in three dialings.

The 2,990 resolved calls were distributed among six disposition codes, which had been developed to accurately account for all calls made for the current survey and to provide guidelines for sample plan estimates of future telephone surveys. These codes are:

1. Interview schedule completed
2. Household has no TV
3. Respondent refused to be interviewed
4. No answer after three dialings
5. Other (phone out of service, disconnected,etc.)
6. Household cannot get WPSX-TV

Appendix C presents definitions and ground rules under which these codes were applied.

Table 2 presents the distribution and disposition of the 2,990 resolved telephone calls across the 13 telephone directory areas. On the average, each resolved phone call required 1.56 dialings, and a completed interview required 1.36 dialings.

Interviewer Performance

The interview team comprised eight interviewers, five of whom worked on each of the 19 evenings of the calling period. Thus, a total of 380 man hours (excluding supervisory time) were required for data collection. Table 3 shows the average daily performance of the team for dialings, disposed calls, and completed schedules.

A completed schedule for a WPSX-TV viewer required, on the average, about 10 minutes, with a range of 6 to 20 minutes. While there were several instances where an interviewer reported that 25-30 minutes were

TABLE 2

Distribution and Disposition of Resolved Telephone Calls Across the Thirteen Telephone Directory Areas

Directory Area	Resolved Calls		Disposition (Percent of all calls within directory area)				
	N	%	(Code 1) Complete Interview	(Code 6) Cannot Get WPSX-TV	(Code 2) No TV	(Code 3) Refusal	(Code 4 & 5) Incomplete Calls
Total N	2,990	100.0	1,041	587	58	825	479
Total %	100.0	--	34.8	19.6	1.9	27.6	16.1
Average No. of Dialings	1.56	--	1.36	1.38	1.34	1.44	2.50
Altoona	456	15.2	37.4	15.4	1.1	32.7	13.4
Bellefonte-State College	303	10.1	45.2	6.6	5.6	22.1	20.4
Bradford	163	5.5	39.3	17.2	0.6	28.2	14.7
Clarion	163	5.5	30.7	31.3	1.2	21.5	15.3
Clearfield	163	5.5	47.2	9.8	3.1	27.0	12.9
Dubois-Falls Creek	81	2.7	44.4	14.8	--	27.2	13.5
Huntingdon	124	4.1	32.3	25.0	2.4	25.0	15.4
Indiana	231	7.7	19.0	35.5	0.4	27.7	17.4
Johnstown	455	15.2	26.2	26.8	0.2	32.3	14.5
Lewistown	176	5.9	26.1	27.3	2.8	23.3	20.5
Ridgway	144	4.8	42.4	10.4	--	27.8	19.5
Warren	130	4.4	30.8	28.5	3.8	20.8	16.2
Williamsport	398	13.3	38.9	13.8	3.3	27.6	16.3

consumed, these were extremely rare. A completed schedule for a non-viewer took approximately 3-4 minutes. While the range here is rather broad, making it somewhat difficult to make time estimates for the conduct of future surveys, there does not seem to be an effective way to control the degree of "talkativeness" of respondents while still maintaining an appropriate degree of rapport.

TABLE 3

Average Daily Interviewer Performance

Output	(5 Interviewers)	Per Person/ Per Day	Per Man Hour
Dialings	246.0	49.2	12.3
Disposed Calls	157.4	31.5	7.9
Completed Schedules	54.8	11.0	2.7

Survey Sample and Population Comparison

The sampling unit for the current survey was a household, defined as all persons who occupy a housing unit. We also report certain demographic information for the head of a household.

Although the thirteen telephone directory areas within the WPSX-TV viewing area provided the sampling frame, we wished to base our audience size estimates on census data for 1970. Census data are more accurate than the estimated number of households from telephone book sampling and are given by counties as well as towns. Therefore, it is of more than passing interest to determine if our total survey sample is proportionately

represented on two bases--by the 13 telephone areasand by county. If the sample is reasonably proportionate on both counts, we can have some confidence in our audience size estimates.

Table 4 gives the first comparison, the sample versus the population within the 13 telephone areas. In only one instance do the sample and population percentage differ by more than one percent. The Johnstown area represents 16.3% of the estimated total of households, but our sample for Johnstown is 15.2% of the total. The population and sample percentages are very close and we may conclude that the sample of 2,990 households is proportionately represented within the 13 telephone areas.

Our prime interest is in the sample proportionality on a county basis[4] however. For this comparison, if we adopt a less stringent criteria and examine those counties where the sample and population differ by two percentage points, we find that two counties, Armstrong and Cambria, are underrepresented, as the data in Table 5 show. Two counties, Centre and Lycoming, are overrepresented, Centre by about three percentage points, and Lycoming by about six. All the other comparisons are well within two percentage points and most are within one percent.

Although it is obvious that the sample proportionality by county is not as close as it is for the telephone area bases, it would be remarkable if it were. First the sample was not taken on a county basis; second, the county household population counts are estimates in 10

[4]The reader is referred to Appendix D for a detailed table of population estimates on a county basis.

TABLE 4

Comparison of Estimated Household Population
in the
Thirteen Telephone Areas with Telephone Sample

Telephone Area	Estimated Number of Households	Percent of Total	Sample	Percent of Sample
Altoona	44,330	15.2	455	15.2
Bellefonte-State College	28,300	9.8	303	10.1
Bradford	17,040	5.7	163	5.5
Clarion	13,890	4.9	163	5.5
Clearfield	18,310	6.2	163	5.5
Dubois-Falls Creek	8,780	2.9	83	2.8
Huntingdon	12,100	4.1	124	4.1
Indiana	19,400	6.6	231	7.7
Johnstown	47,970	16.3	455	15.2
Lewistown	17,270	5.9	176	5.9
Ridgway	13,060	4.4	144	4.8
Warren	13,290	4.5	130	4.4
Williamsport	38,880	13.2	400	13.4
Totals	292,620	99.2	2,990	100.0

TABLE 5

Comparison of Household Population in WPSX-TV Viewing Area with Telephone Sample by County

County	Viewing Area Population (Households)	Percent of Population	Viewing Area Sample (Households)	Percent of Sample
Armstrong	12,093	3.7	13	.4
Bedford	6,669	2.0	20	.7
Blair	43,430	13.2	399	13.4
Cambria	56,564	17.2	422	14.1
Cameron	2,334	.7	33	1.1
Centre	27,295	8.3	350	11.6
Clarion	10,029	3.1	104	3.5
Clearfield	23,703	7.2	209	7.0
Clinton	11,667	3.6	103	3.4
Elk	11,115	3.4	93	3.1
Forest	1,163	.4	13	.4
Huntingdon	12,106	3.7	115	3.9
Indiana	20,044	6.1	196	6.6
Jefferson	14,336	4.4	74	2.4
Juniata	4,508	1.4	45	1.5
Lycoming	11,942	3.6	290	9.6
McKean	16,852	5.1	157	5.3
Mifflin	14,559	4.4	117	3.9
Potter	3,856	1.2	6	.2
Snyder	2,736	.8	12	.4
Somerset	6,037	1.8	63	2.1
Warren	7,158	2.2	121	4.2
Westmoreland	7,276	2.2	35	1.2
Totals	327,923	99.7	2,990	100.0

instances, based on a proportion of the county covered by the WPSX-TV signal; and third, it is not possible to accurately determine if the 13 telephone areas adequately cover the WPSX-TV signal area.

In spite of the above caveats, we feel the best estimate of the household population within the WPSX-TV viewing area is provided by the census data and conclude that its advantages outweigh its disadvantages.

Data Analyses

With the exception of four open-ended questions dealing with recall of favorite programs, suggested programs, impressions of WPSX-TV and reasons for not receiving the WPSX-TV Program Guide, all items in the interview schedule were pre-coded. The IBM data card format for keypunching was designed as the survey was developed and was included on the right-hand margin of each survey form.

After the telephone interviews were concluded, all questionnaires were edited, coding schemes were developed for the open-ended questions, and the open-ended questions were scored.

All items in the survey were set up for analyses with The Statistical Package for the Social Sciences (Nie, Bent and Hull, 1970), a flexible, general purpose system for transforming and analyzing social science data.

Analyses included the calculation of marginals, cross-tabulations, means, etc., for appropriate items and relationships.

Limitations of the Data

The reader will note that in the following section we present the results of the study in a rather straightforward manner. This is done deliberately. At this point we discuss some of the limitations of the

data and caution the reader to keep them in mind as he reads the remainder of the report.

How confident are we of the results of this survey? From a survey design or sampling point of view, we feel rather confident. We have attempted to estimate the size of and describe some of the characteristics of a population, the WPSX-TV audience, through a telephone survey for estimating the confidence we can place in the sample statistics, such as percent with color TV sets, mean age of viewers, etc., as estimates of population parameters of values. Since we have a rather large sample, sampling theory indicates that the obtained population estimates, e.g., percentages, are reasonably close to the true population values. Another way of stating our degree of confidence is to say that if the present study were done again, using the same methods, but another sample of the same size, we would not expect the results of the two studies to differ materially.

On the other hand, sampling theory is mute about a whole host of other potential sources of bias that can influence survey results and confidence in them. Interviewer variability and lack of information about non-respondents, or households in the sample plan which cannot be contacted, are two main sources of non-statistical bias. As Glasser and Metzger (1969) in their excellent series of studies on television ratings point out, both of these factors exert subtle and difficult-to-measure influences on television audience estimates. We tried to minimize interviewer variability, as they recommend, by carefully selecting, training, and supervising our interviewers. Glasser and Metzger (1969) also recommend that

the number of households giving less than full information be minimized. This is a difficult and expensive problem, but our call back procedures did reduce incomplete information. We made at least one contact attempt to the 4,176 telephone numbers drawn for the study, or a total of 4,677 dialings. Although about 4 out of 10 (46.3%) dialings resulted in incomplete information due to reasons classified as no answer (N=1,383), busy (N=418), disconnected numbers (N=218), call back (N=137) and other (N=8), only 479 or 16.1% of the 2,990 resolved phone numbers or sample points, were classified as incomplete.

Another major limitation of the data which is common to all telephone surveys is that we report what people say they do, not what they do. We attempted to examine this problem by determining how many of the 954 viewing household respondents named a favorite program when asked. As it turned out, only about half or 450 did. We also examined what percent of the household respondents gave us a favorite program who said they watched WPSX-TV daily, more than once a week, and once a week, and found percentages at 100, 48, and 44, respectively.

Based on these data, there is a definite relationship between ability (or willingness) to name a favorite program and professed viewing periodicity. However, we are at a loss as to what to do with this information. We do not know why respondents did not name a favorite program and any attempt to reduce or correct the number of viewing households is fraught with tenuous assumptions. The best we can say is that the number of viewing households is somewhat inflated.

Other possible limitations of the results, again not necessarily

specific to the present study, are the following.

We had a rather large number (825 or 27.6% of the 2,990 resolved phone numbers) of household respondents who refused to be interviewed. We put them in the non-usable interview category and assumed that if they would have been interviewed, their responses would not differ materially from the usable interview group.

An unknown degree of error in identifying viewing households and those who cannot receive WPSX-TV was caused by confusion over what channel WPSX-TV is carried on through the more than 50 CATV systems in central Pennsylvania. Interviewers attempted to minimize this error by giving the call letters for WPSX-TV to all respondents, and mentioning several well-known programs to respondents who seemed to be confused.

To identify viewing and non-viewing households, respondents were asked if any member of their family had ever watched Penn State's televison station WPSX-TV. In retrospect, we feel this is not the best way to determine viewership, but more importantly, associating Penn State with WPSX-TV (which, of course, it is) in asking the question may have inflated reported viewership. Probably, the "should watch" attitude associated with the early days of ETV still prevails to some degree, and could have introduced a response set to answer the question affirmatively.

Other limitations have been introduced when appropriate in the study. While we realize that the limitations we have discussed may influence some of the results we report, we are confident in the overall picture of the WPSX-TV audience that we present.

PART III. DETAILED RESULTS

Resolution of Telephone Interviews

An understanding of the audience size estimates and other viewer-non-viewer data to be presented requires a discussion of how the total sample of resolved telephone calls was distributed. We are concerned here with the different bases for various size and percentage projections. In fact this section is similar to discussions of the rate of return and usable questionnaire data found in mail survey research.

Table 6 presents the distribution of resolved calls, within each of the six previously-discussed disposition codes, for the total sample of 2,990 completed or resolved telephone calls. Note that the interviews have been divided into two categories, usable and non-usable. The 1,686 interviews within the usable category, or 56.4% of the total contact attempts, are the base for audience size estimates and projections. The non-usable category is provided for completeness and for reference in future surveys.

Slightly more than one-third (34.8%) of the nearly 3,000 resolved dialings resulted in a completed survey. The 1,041 completed surveys are further divided into 945 viewers and 96 non-viewers[5] and all subsequent information about viewers and non-viewers is based on this group, the completed survey sample (CSS). About one out of five (19.6%) households in the total sample could not receive WPSX-TV for various reasons, (subsequently referred to as the can't get sample [CGS]), and about 2% of the

[5]Based on the question, "Has any member of your family ever watched Penn State's television station WPSX-TV"?

total sample or 3.5% of the usable interviews, did not have television sets, (the no TV sample [NTVS]).

TABLE 6

Disposition of Resolved Telephone Interviews

Disposition	Number	Percent of Category Number	Percent of Total Number
A. Usable Interviews			
1. Completed Surveys	1,041	61.7	34.8
Viewers	(945)	(56.0)	--
Non-viewers	(96)	(5.7)	--
2. Can't Get WPSX-TV	587	34.8	19.6
3. No TV	58	3.5	1.9
Sub Total	1,686	100.0	56.3
B. Non-Usable Interviews			
1. Refusal	825	63.3	27.6
2. 3-Calls Made	321	24.6	10.7
3. Other	158	12.1	5.3
Sub Total	1,304	100.0	43.6
Grand Total	2,990		100.0

In summary, audience size projections and estimates are based on 1,686 households. Of that group:

1. 1,041 (61.7%) provided completed surveys (CSS);
   945 (90%) were viewers,
   96 (10%) were voluntary non-viewers;

2. 587 (34.8%) could not receive WPSX-TV and are called involuntary non-viewers (CGS);

3. 58 (3.5%) did not have television sets (NTVS).

Thus, it is estimated that approximately 96.5% of the households within the WPSX-TV viewing area are television households.

Audience Size Estimates

The concept of audience size is one which can be both elusive and misleading. Elusive because size estimates are known to vary considerably depending upon the survey or measurement technique, the assumptions (with respect to non-respondents) which underlie the size calculation, the time of year of the survey, the level of interviewer training and supervision, and many other factors equally as diverse as those mentioned. Further, size estimates can be misleading because they can be given for anything from the total potential television audience to an estimate for a specific program in a specific time slot in a defined geographical area. However, they cannot be accurately generalized across a range of purposes on the basis of a single survey.

To clarify our audience estimates, the data are reported as a set of estimates, each estimate being based on a different operational definition of audience size. This strategy clarifies what the authors mean by audience size and leaves the reader to his own devices as to which estimate is most appropriate to his needs.

We discuss in the following section our operational definitions, the method of calculation for each audience size estimate, and the results associated with each estimate. Note that for each estimate the base population to which the percentages are applied remains constant. The base was calculated from the viewing area map shown in Figure I and the 1970 census

data shown in Appendix D. It involved the application of the estimated area proportion of each county in the WPSX-TV viewing area to 1970 census data for the number of households (or household heads) in a given county. Using this procedure it is estimated that the WPSX-TV viewing area includes 327,923 households, the Viewing Area Population (VAP).

A summary of our WPSX-TV audience size estimates is given in Table 7. Note that in Table 7 we are projecting our audience size estimates from the usable sample to the estimated viewing area population by multiplying the VAP by a given sample percentage.

Three audience size estimates are given in Table 7. They are defined as follows:

1. Estimated viewing audience (EVA). The percent of the total households in the usable sample who said "Yes" to the question, "Has any member of your family ever watched Penn State's television station WPSX-TV"?
2. Weekly circulation (WC). The percent of the total households in the usable sample who indicated that, on the average, WPSX-TV is watched daily, more than once a week, or once a week.
3. Daily circulation (DC). The percent of the total households in the usable sample who indicated that, on the average, WPSX-TV is watched daily.

Voluntary and Involuntary Non-Viewers

We have distinguished between voluntary and involuntary non-viewers in Table 7 because there is a point we wish to make about definitions of percentages of viewers and non-viewers. The concept of a television

household is a well-recognized one, referring to households that have a working television set. However, it can be argued that households that cannot, due to poor reception, not being on a CATV system that carries a given channel, etc., receive a given channel are non-television households as far as a particular station is concerned. Therefore, while those households are certainly non-viewers of the hypothetical TV station, they are involuntary, rather than voluntary, non-viewers and are not part of a station's potential viewing audience. The logic of our argument dictates that involuntary non-viewers and non-TV households should not be included in a base number for calculating the percent of the viewing audience of a particular station.

In the present context, instead of basing an estimated viewing audience percentage on the total number of viewers divided by the total usable sample, we would use the ratio of viewers/viewers + voluntary non-viewers.

The former method of calculating an EVA percentage yields 56.0, while the latter yields an EVA of 90.8. The difference between the two EVA percentages is rather striking and the proposed method goes against accepted practice. But we do feel that it could give an ETV station a better appreciation of the percent of potential viewers it is reaching.

We must mention that we are not proposing that audience size estimates be based on the same logic as audience percentage estimates. Size estimates require extrapolation to base population figures while percentage estimates do not.

TABLE 7

WPSX-TV Audience Size Estimates

Item or Size Estimate	Usable Sample		Population Estimates	
	Number	Percent	Households	Individuals
Total Number	1,686	100.0	327,923	1,134,614
TV Households	1,628	96.5	316,446	1,094,903
Involuntary Non-viewers (Can't get WPSX-TV)	587	34.8	114,117	394,844
Completed Survey Sample (CSS)	1,041	61.7	Not applicable	
Estimated Viewing Audience	945	56.0	183,637	635,384
Voluntary Non-viewers	96	5.7	18,692	64,674
Weekly Circulation	821	48.7	159,698	552,555
Daily Circulation	291	17.3	56,731	196,289

NOTE: The estimated size of the average family in the WPSX-TV viewing area is 3.46 individuals.

Comparison of Audience Percentage Estimates for Present and 1968 WPSX-TV Study

One of the primary purposes of the present study was to examine changes in audience percentages over the three-year period that has elapsed since the 1968 WPSX-TV study. These data are shown in Table 8. Since a different method was used for audience size projections for the 1968 study, we do not feel that size comparisons between the present and prior studies are meaningful. However, audience percentage comparisons can be made with some confidence.

With the exception of the weekly circulation percentage (78%), based

on the viewer sample, all other audience percentage estimates have shown large increases over the past three years. The estimated viewing audience percentage showed a 51% increase (from 37% to 56%), indicating that WPSX-TV is being viewed by a much larger percentage of the television households in central Pennsylvania than in 1968. This increase in television household penetration is reflected in the current weekly circulation figure (49% of television households), a 48% gain over 1968.

TABLE 8

Audience Percentage Estimates for Present and 1968 WPSX-TV Study

Estimate	1968 Study	Present Study	Change
Estimated Viewing Audience			
Total Sample Base	37%	56%	51% gain
Weekly Circulation			
Total Sample Base	33%	49%	48% gain
Viewer Sample Base	78%	78%	No change
Daily Circulation			
Total Sample Base	6%	17%	183% gain
Viewer Sample Base	15%	31%	106% gain

Black-White and Color TV Sets in Households

It is estimated that 96.5% of the households in the WPSX-TV viewing area have television sets. In 1968 the comparable figure was 96%. Within the completed survey sample (CSS) of 1,041 households, 46.9% had a black-

white TV set only, 23.6% had color sets only, and 29.5% had both color and black-white sets. The total of 53.1% of current study households with color sets compared with the 1968 total of 32.0% represents an increase of 21.1 percentage points or a gain of 66%. While it may seem surprising to report that over 50% of the WPSX-TV households have color sets, it is not far from the national average. A recent issue of Broadcasting reports that 48.2% of all TV homes were color equipped compared with 41.7% a year ago. (Broadcasting, 1971)

Viewer and Non-Viewer Characteristics

The intent of this section is to present and compare WPSX-TV viewers and non-viewers with respect to selected demographic variables. Our chief interest here concerns the question of whether or not WPSX-TV tends to cater to an elite audience of high socioeconomic status (SES), or to a selective but broadbased audience, possibly differing in SES according to the type of programs watched. All data are based on the CSS of 1,041 households, comprising 945 viewers and 96 voluntary non-viewers. The reader should be aware of the fact that the number of households shown for different comparisons will not always sum to 1,041 due to missing responses for some of the SES variables. In addition, we use the word "significantly" in a statistical sense, referring to Chi-square values that exceed the .01 level of significance.

First we examine three SES[6] indicators: estimated income of house-

[6]Education, income, and occupation are highly correlated. In fact for our CSS, the Chi-Square values for the three possible pairs of the three variables are: income and education (x^2= 357.0); income and occupation (x^2= 325.3); education and occupation (x^2= 751.0).

hold head, his (her) education level, and occupation (see Table 9). Note that the viewers have been split into two categories, frequent (watch WPSX-TV once a week or more) and infrequent (watch WPSX-TV less than once a week).

Income. The three comparison groups differ significantly on this variable. Frequent and infrequent viewers are quite similar but non-viewers tend to have lower incomes. However, it is worth noting that about one in five (19%) of the frequent viewers of WPSX-TV have incomes of less than $5,000 per year.

Education. Again, we note a similar pattern and significant difference between the three groups with respect to education of household head. Frequent and infrequent viewers tend to resemble each other but non-viewers have, on the average, less formal education. On the other hand, it is interesting to note that 20% of the viewers have less than a high school education and an almost equal percentage (21%) have earned at least a baccalaureate degree. The implication, of course, is that the bulk of the viewing households (60%) are between these two extremes as far as formal education is concerned.

Occupation. Non-viewers, frequent viewers, and infrequent viewers do not differ significantly with respect to the household head's occupation. However, as partial evidence to dispel an "elitist" label for educational television, we note that over half (58%) of the frequent viewers of WPSX-TV come from skilled and unskilled occupations.

Other demographic comparisons. Although not shown in Table 9, we also compared viewers and voluntary non-viewers with respect to (a) family size, (b) age of household head, and (c) number of children.

TABLE 9

Selected Demographic Characteristics of Household Heads of WPSX-TV Non-Viewers, Frequent[1] and Infrequent[2] Viewers

Characteristic	Non-Viewers N	Non-Viewers %	Infrequent Viewers N	Infrequent Viewers %	Frequent Viewers N	Frequent Viewers %	Total Sample N	Total Sample %
Income								
1. Less than $5,000	35	41	26	28	141	19	202	22
2. $ 5,000 to $ 9,999	33	39	35	37	330	44	398	43
3. 10,000 to 14,999	10	12	23	25	183	25	216	23
4. 15,000 to 24,999	4	5	8	8	68	9	80	9
5. Over $25,000	3	3	2	2	21	3	26	3
Total	85	100	94	100	743	100	922	100
Estimated Median	$6,200		$8,050		$8,500		$8,260	
Education								
1. Finished Elementary	23	24	8	6	46	6	77	7
2. Some Secondary	15	16	18	14	122	15	155	15
3. Finished Secondary	40	42	53	43	321	39	414	40
4. Vocational, Some College	12	13	22	18	158	19	192	19
5. B.S. Degree, Some Graduate School	3	3	17	14	106	13	126	12
6. Professional or Graduate Degree	2	2	6	5	66	8	74	7
Total	95	100	124	100	819	100	1038	100
Occupation								
1. Unskilled, Semi-skilled	30	44	30	33	220	34	280	35
2. Skilled, Service	19	28	31	34	157	24	207	25
3. Clerical, Salesman	7	10	7	7	69	10	83	10
4. Manager, Professional	10	14	19	21	160	24	189	23
5. Executive, Advanced Degree, Professional	3	4	5	5	50	8	58	7
Total	69	100	92	100	656	100	817	100

NOTE: Chi-Square values are significant (.01 level) for Education (x^2=54.74) and Income (x^2=27.63) with 10 and 8 df. respectively.

[1]Frequent viewers watch WPSX-TV once a week or more.

[2]Infrequent viewers watch WPSX-TV less than once a week.

A significantly[7] larger percentage of viewers come from moderate to large (four to six or more members) than from smaller households or single household heads. To take the two extremes, 16% of households with one individual are voluntary non-viewers, whereas for households with 6 or more members, only 5% are voluntary non-viewers.

Household heads of viewers are also significantly younger[8] than voluntary non-viewers. On the average, about 95% of the household heads less than age 50 are viewers (median age of the CSS is approximately 46). On the other hand, 10% less, or about 85% of the heads over 50 are viewers.

Viewer-non-viewer comparisons were made between households with the number of children grouped into three age categories: (a) under 6, (b) 7-12, and (c) 13-18. Neither the total number of children in a household nor the number of children in any of the specified age categories produced significant differences between viewing and voluntary non-viewing households.

Since size of family shows differences between viewing and voluntary non-viewing households while number of children does not, we examined the viewership of household heads at the younger and older extremes of the age continuum. And indeed, younger (19-25) and older (60+) household heads, who comprise 28% of our CSS, have a smaller percentage of viewers than households in the 26 to 59 age range. The implication here, of course, is that younger and older household heads would probably have few or no children.

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[7]Chi-Square equals 19.3 with 5 d.f.

[8]Chi-Square equals 27.3 with 9 d.f.

Audience Viewing Habits

We turn now to a discussion of the viewing habits and preferences of the WPSX-TV audience. All data are based on the CSS of 945 viewers. We (a) examine viewing frequency of WPSX-TV, (b) compare viewing time for WPSX-TV and commercial television, and (c) indicate WPSX-TV program preferences. Also in an attempt to clarify the nature of the WPSX-TV audience, we relate several demographic characteristics of the audience to the three areas to be discussed.

WPSX-TV viewing frequency. Figure 2 shows the distribution of WPSX-TV viewers over five frequency categories. About 87% of the viewing households watch WPSX-TV at least once a week and three out of ten households watch the station daily. Viewing frequency, as is viewership, is significantly related to two demographic variables, size of family[9] and age of household head[10].

In general, the daily viewer group had larger families than the other groups. Daily viewing household heads also had a younger median age (about 41) than heads in the other viewing categories. Exactly one-half of the households with heads in the 26-30 age range were daily viewers contrasted with the 31% of the total sample in this viewing category.

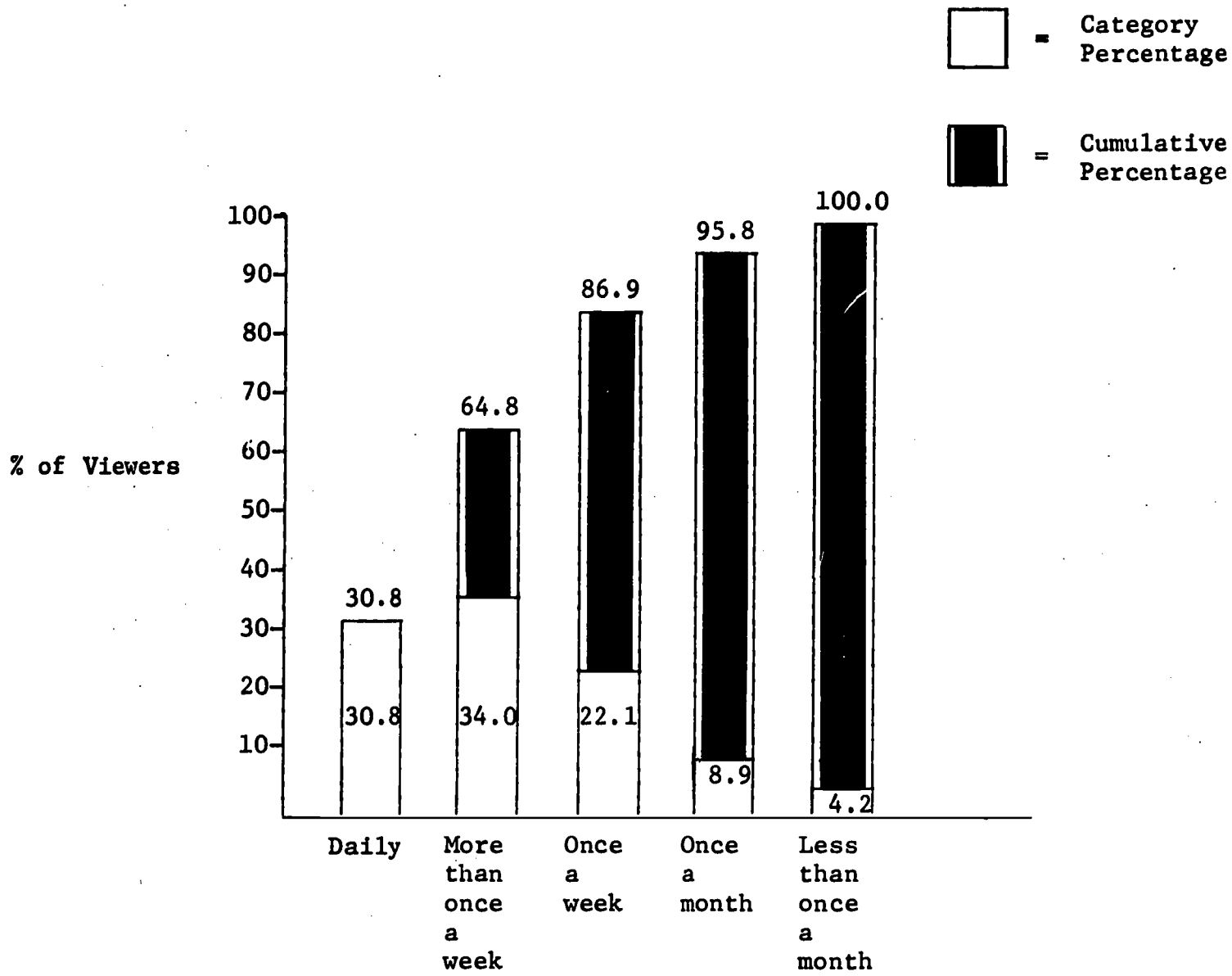
Education, income, and occupation of household head were not significantly related to viewing frequency.

Relationship of WPSX-TV and commercial TV viewing time. In the

[9]Chi-Square equals 52.9 with 20 d.f.

[10]Chi-Square equals 71.1 with 36 d f.

FIGURE 2. FREQUENCY OF WPSX-TV VIEWING



previous section we discussed viewing frequency or periodicity of viewing. Herewe discuss the average number of hours per week that households devote to television viewing. Our primary focus is on WPSX-TV viewing but we also present data for commercial TV viewing as a reference and for contrast.

WPSX-TV households average about 3 hours (median is 2.93) per week viewing educational/public television and about 30 hours (median is 29.98) viewing commercial television. In other words, WPSX-TV claims, on the average, about one out of every ten household hours devoted to television viewing.

For purposes of analysis and comparison, the viewing time data were collapsed into three categories (or three viewer groups) termed infrequent, moderate and frequent. The interval size chosen for each category was based upon a review of the distribution of viewing hours and maintains the approximate 10:1 ratio between commercial and EPTV. The viewing time categories are shown in Table 10.

TABLE 10

Viewing Time Categories

Category	Interval Size (Hours per week)	
	WPSX-TV	Commercial Television
Infrequent	1-2	1-14
Moderate	3-6	15-55
Frequent	7+	56+

Since viewing frequency was also used in the previous section to designate daily, weekly, etc. viewers, the reader is cautioned that the same terms may be used here; but unless otherwise stated refer to the number of viewing hours per week rather than viewing periodicity.

As might be expected, there is a moderate relationship[11] between average weekly commercial TV and E.ITV viewing for WPSX-TV households. Another way of describing this relationship is to say that infrequent viewers of commercial TV tend to be infrequent viewers of WPSX-TV, moderate commercial TV viewers tend to be moderate E.ITV viewers, etc.

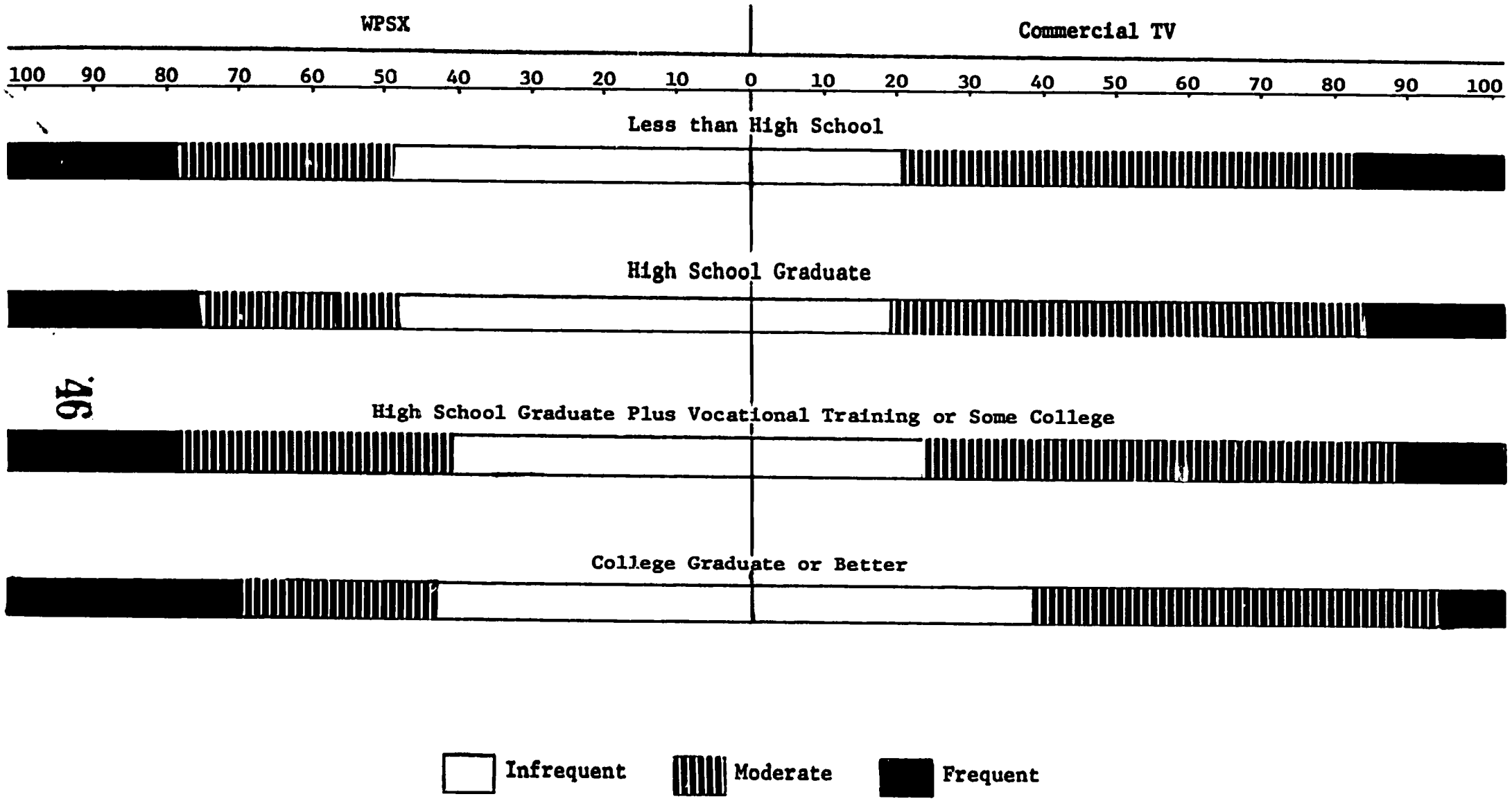
Television viewing and demographic characteristics. One interesting finding emerged from our analysis of time spent viewing television and demographic variables. It is depicted in Figure 3.

Note that the percentages of households who view WPSX-TV infrequently, moderately, and frequently tend to be rather evenly distributed across the four household head education levels. A different picture emerges, however, for commercial TV viewing. There is a visible relationship between commercial TV viewing and educational level of household head. The relationship is inverse, i.e., households with lower educational levels tend to spend more time viewing commercial TV than households with higher educational levels. This latter relationship is statistically significant, while the former (WPSX-TV viewing and educational level of household head) is not[12].

[11] Chi-Square for three categories (Shown in Table 10) of commercial and WPSX-TV viewing equals 25.5 with 4 df.

[12] Chi-Square for commercial TV viewing and education of household head equals 38.5 with 10 df. The same statistic for WPSX-TV viewing is 10.5 with 10 df.

FIGURE 3 PERCENT OF HOUSEHOLDS VIEWING WPSX AND COMMERCIAL TV FREQUENTLY, MODERATELY, AND INFREQUENTLY BY EDUCATIONAL BACKGROUND OF HOUSEHOLD HEAD



The finding that commercial TV viewing and educational level is inversely related is commonplace (cf. Lou Harris & Associates, 1970; NET Survey, 1969). However, prior studies of EITV usually report a positive relationship between EITV viewing and educational level: "In terms of hours per week watched, viewing of all television tends to decline with education, while viewing of public television tends to increase with education" (Lou Harris & Associates, 1970, p. 21). Or, "those respondents who indicated they watched ETV five to seven days each week are highly educated: an average of 39% of the frequent viewers hold Masters or Doctorate degrees, and an average of 47% attended or graduated from college" (NET Survey, 1967, p. 13).

Clearly, the WPSX-TV audience does not resemble that national ETV sample used in the two studies cited above with regard to educational level and viewing time. The WPSX-TV audience tends also to watch more television than nation-wide ETV audiences. Lou Harris & Associates (1970) report a median of 15.4 hours per week for all television viewing and a median of 1.5 hours for ETV. For the WPSX-TV audience, the median hours per week for commercial TV viewing is approximately 30 and about 3 for EITV viewing. Without belaboring the point, we may note that apparently the programming of WPSX-TV appeals to broader segments of its audience than ETV on a national level and it is watched more frequently.

The average weekly viewing of WPSX-TV by its audience is not significantly related to occupation[13] or income[14], but significant inverse

[13]Chi-Square equals 7.4, 8 df.

[14]Chi-Square equals 7.2, 8 df.

relationships are again noted for commercial TV viewing and occupation[15] and income[16].

Size of family[17], number of children[18], and age[19], of household head are significantly related to the average weekly viewing of WPSX-TV households. We present pictorial relationships between size of family and age of household head and WPSX-TV viewing in Figures 4 and 5, respectively. The relationship for number of children is not shown because it is highly correlated with and resembles the relationship for size of family.

As we noted for the periodicity relationships discussed in the viewer-non-viewer section, we find in general: (a) a higher percentage of infrequent viewers among households with one, two, or three members, and (b) a higher percentage of infrequent viewers in households with younger (19-25) and older (61+) household heads. The proportion of frequent viewers is highest where the head is 26-40 years old (the group more likely to have young children) with a general tendency for a smaller number of frequent viewers as age increases.

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[15]Chi-Square equals 32.9, 8 df.

[16]Chi-Square equals 11.0, 8 df.

[17]Chi-Square equals 32.2, 10 df.

[18]Chi-Square equals 20.9, 8 df.

[19]Chi-Square equals 38.1, 18 df.

FIGURE 4. WPSX-TV VIEWING TIME AND SIZE OF FAMILY

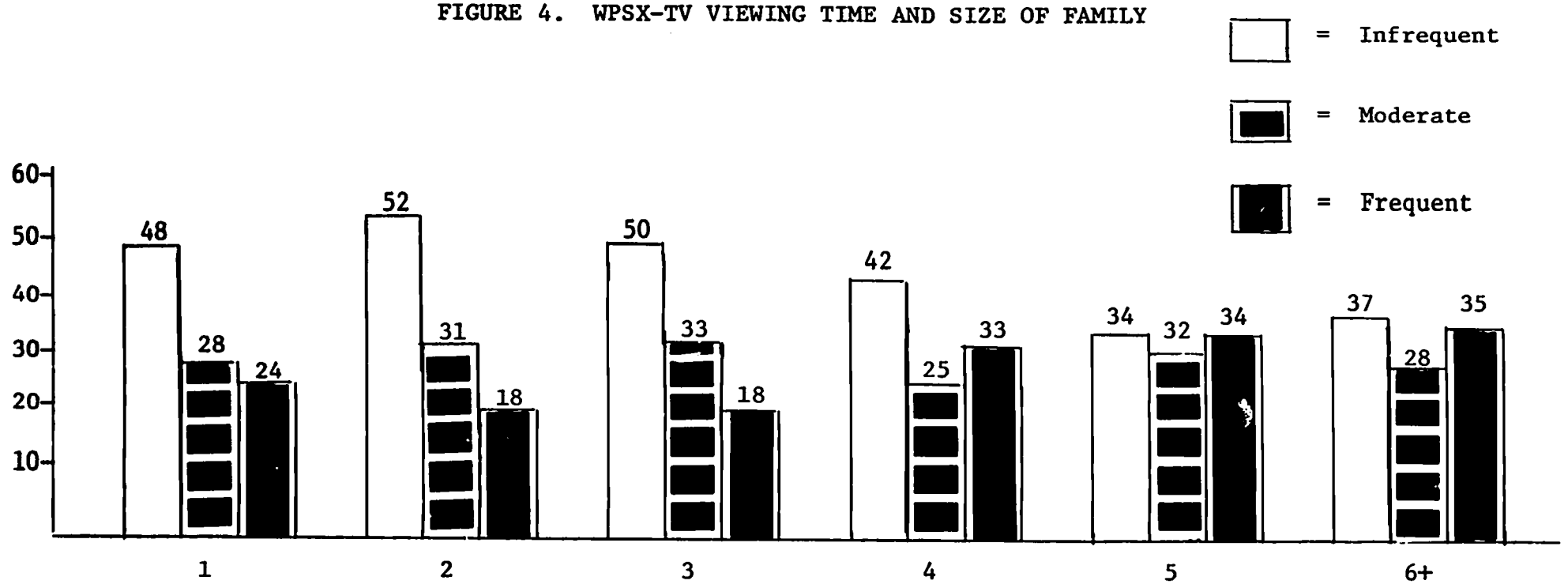
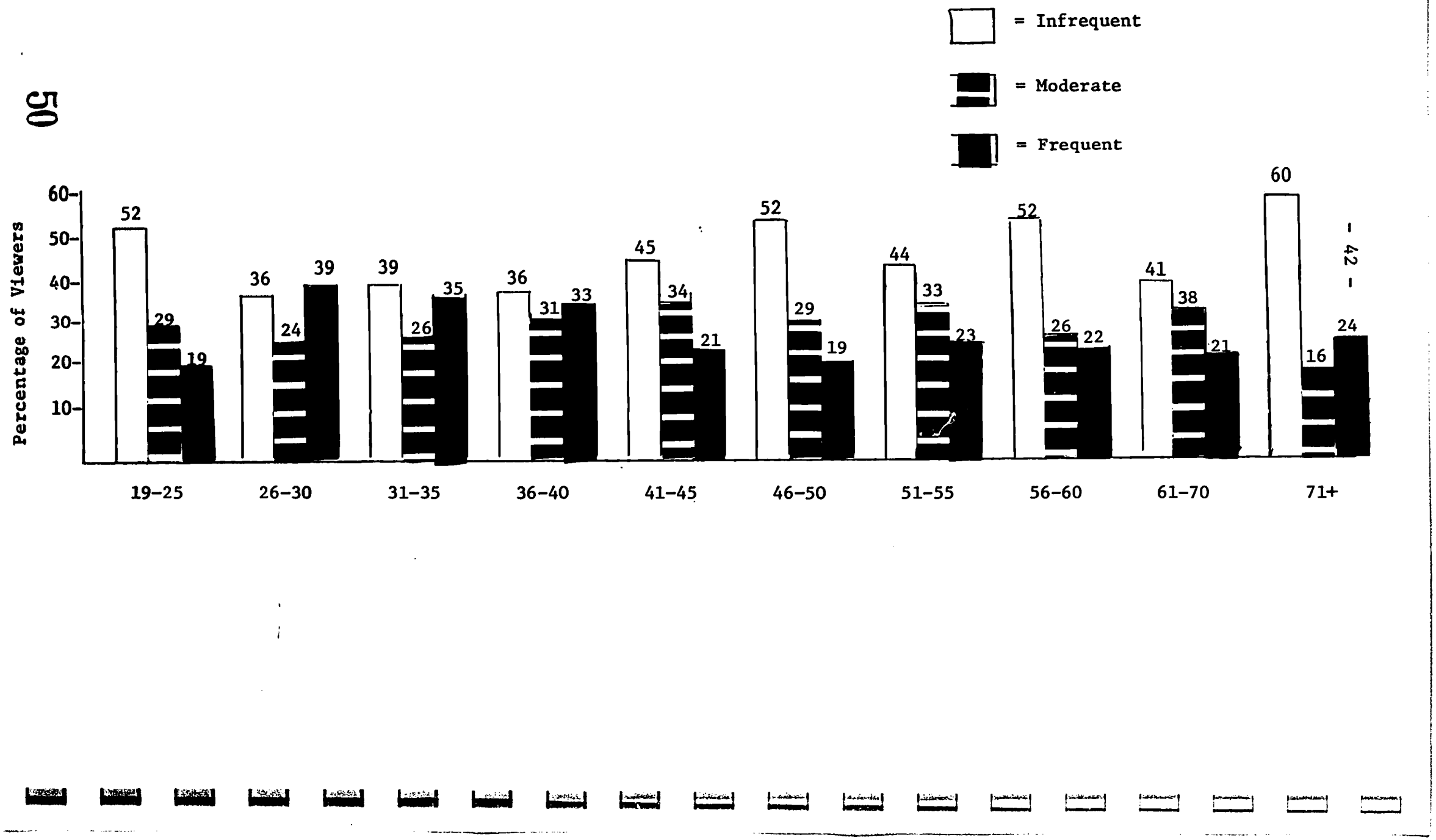


FIGURE 5. WPSX VIEWING TIME AND AGE OF HOUSEHOLD HEAD



Audience Program Preferences

Program preference data were obtained in two ways. First, the household respondent was asked to name the four favorite programs of the family. The interviewer recorded the responses in a specific or general category depending upon the nature of the response. However, if the respondent gave only general programs, i.e., sports, children's shows, etc., the interviewers were instructed to ask whether there were any specific programs which were favorites. The second set of preference data was obtained by reading a list of 19 selected programs to the respondent and having him indicate whether the program was watched frequently, sometimes, rarely, or never.

Programs recalled. Table II shows the programs ranked according to frequency of mention. The list includes only those which received 10 or more mentions, or approximately 1% of the responses.

The obvious favorite program, as might be expected, was Sesame Street, with 23.2% of the responses, nearly twice as many mentions as the next listing. The second listing is really a series of programs grouped under the generic heading of Winter Sports. This listing, which drew 13.2% of the responses, included live coverage of gymnastics, wrestling, and basketball. Another children's program, Misteroger's Neighborhood, was third with 12.9% of the "favorite program" responses. These three programs were far ahead of the others.

The next two programs were in a second cluster in terms of percentage. Fourth-ranked "favorite" program was identified as Farm, Home and Garden with 5.7% of the responses, followed closely by Hodgepodge Lodge with 5.5%.

TABLE II

Specific Program Favorites Recalled

Program[a]	Frequency of Mention	% of Total Responses
Sesame Street	195	23.2
Winter Sports (i.e. Gymnastics & Wrestling)	111	13.2
Misteroger's Neighborhood	108	12.9
Farm, Home, and Garden	48	5.7
Hodgepodge Lodge	46	5.5
Masterpiece Theatre	30	3.6
T.V. Quarterbacks	27	3.2
French Chef	26	3.1
NET Playhouse	21	2.5
State of the Weather/ Shape of the World	20	2.4
TV Garden Club	16	1.9
Folk Guitar	16	1.9
Firing Line	15	1.8
NET Fanfare	15	1.8
Sew Smart	14	1.7
Antiques	13	1.5
Bookbeat	10	1.2
All Others	109	12.8
Total	840	100.0

[a]Includes only programs mentioned 10 or more times.

Beyond that, beginning with Masterpiece Theatre at 3.6% and ending with Bookbeat with 1.2%, 12 other programs were differentiated by tenths of percentage points.

One that may require specific mention is TV Quarterbacks, with 3.2% of the responses. Because the survey was undertaken in the spring of the year and Quarterbacks is a short-lived fall program and related to informal response during its season, it may be assumed that the relatively low ranking is at least partially a function of time separation from its actual broadcast. This theory is borne out to some extent by the weighted index in Table 8, which is based on a prompt list read by the interviewer and not on recall.

It may be of interest in passing to note that the PBS program, The Great American Dream Machine, received less than 1% response in the list of specific program favorites and only 7% said they watched frequently when asked specifically by title.

Another way of looking at the list in Table 7 shows that nearly 46% of the specific favorite program responses were for children's programs. There are five local productions in the listing: Winter Sports; Farm, Home and Garden; TV Quarterbacks; State of the Weather/Shape of the World; and Sew Smart. These programs accounted for 26.2% of the responses.

Program ratings. Table 12 shows program preferences indicated when the program name was read to respondents. They are ranked in terms of a program rating index which is a weighted average for each program. Weights of 1, 2, 3, and 4 were assigned, respectively, to the four program responses of never, rarely, sometimes, frequently. It is calculated by

TABLE 12

Ranking of Selected WPSX-TV Programs

Program	Program Rating[a] Index	How Often Watched? Frequently %	Not at All %
Sesame Street	26.7	42	32
Winter Sports	26.2	37	34
NET Playhouse	21.4	14	39
Misteroger's Neighborhood	21.4	26	51
TV Quarterbacks	21.3	28	54
Farm, Home, and Garden	19.8	15	52
The World We Live In	19.5	13	50
Firing Line	19.4	14	51
Masterpiece Theatre	19.4	13	51
The Advocates	18.2	11	57
The State of the Weather/ the Shape of the World	18.2	15	62
Washington Week in Review	17.6	10	60
Hodgepodge Lodge	16.7	16	71
NET Fanfare	16.3	6	64
The Great American Dream Machine	15.6	7	69
Sew Smart	13.9	6	80
Soul	13.9	4	77
NET Realities	13.8	4	78
Bookbeat	13.0	3	81

[a]See page 47 for method of calculation.

adding the weighted responses for each program, dividing the sum by the number of responses, and multiplying the result by 10.0 to move the decimal point one place to the right. The index has a potential range of 10.0 (program never watched) to 40.0 (every respondent watched the program frequently).

As an additional guide, the last column presents the actual percentages of those who watched frequently or not at all for each program title.

Based on the program rating index, Sesame Street is again in first place, but only by a very small margin over Winter Sports. NET Playhouse and TV Quarterbacks moved up dramatically when specific titles were read to respondents, although in general the other rankings in Tables 11 and 12 were comparable. NET Playhouse jumped from ninth to third; TV Quarterbacks from seventh to fourth. Hodgepodge Lodge dropped from fifth to thirteenth. The Great American Dream Machine did show up on the weighted index, ranked fifteenth. Farm, Home and Garden in sixth position remained next to Misteroger's Neighborhood in popularity in both lists.

Program ratings and education of household head. To further clarify our understanding of the WPSX-TV audience, we decided to examine the relationship, if any, between average program ratings and education of household head. As John W. Macy, Jr., President of the Corporation for Public Broadcasting, stated recently, "I think we need to know more about the audience we have here. I apply this to public broadcasting generally. We need to know, not just the number of people watching, but who are they, what parts of the community are they in? What are the demographic characteristics of the group?" (Macy, 1971) .

Program rating information for an audience as a whole is interesting and useful. However, it does not indicate if a given program is equally popular (or unpopular) with or appeals to different demographic groups. The question we are raising is, can we characterize the WPSX-TV audience as "selective," as defined above, on program preferences? The data in Table 13 provide some indication that we may.

As we discussed earlier, education of household head is our best indicator of SES. Accordingly, we examined average program ratings for 19 WPSX-TV offerings across four levels of this variable. The verbal descriptions under "Relationship" presented in the last column of Table 13 are based on the difference between the rating for the lowest and highest levels of education of household head. "None" refers to differences of about 2.0 or less, "Slightly" to differences of about 2.0 to 4.0, and "Moderate" to differences of about 4.0 or more.

For the 19 programs listed in Table 13: (a) 10 show no relationship, (b) 7 show a slightly or moderately positive relationship, and (c) 2 a slightly or moderately negative relationship between education of household head and average program rating. The two most popular programs, Sesame Street and Winter Sports, show no relationship between our indicator of SES and program rating. Also, there was no relationship for the three children's programs surveyed, Sesame Street, Misteroger's Neighborhood, and Hodgepodge Lodge. Surprisingly, TV Quarterbacks shows a positive relationship, but not Winter Sports.

Firing Line, The Advocates, NET Playhouse, and Masterpiece Theatre, perhaps in line with expectations, show positive relationships. On the

TABLE 13

Average Program Rating Index[1] for Four Categories of Education of Household Head

Program	Education of Household Head				Relationship
	Less Than HS	Finished HS	Some College	BA, Grad. Prof. Deg.	
Sesame Street	26.7	27.8	26.5	26.2	None
Winter Sports	25.6	25.5	28.1	26.3	None
NET Playhouse	19.7	20.7	21.3	24.6	Moderately Positive
Misterogerʼs Neighborhood	20.7	21.6	20.6	22.5	None
TV Quarterbacks	19.5	20.6	22.6	23.3	Moderately Positive
Farm, Home, and Garden	22.2	19.8	20.4	16.8	Moderately Negative
The World We Live In	20.6	19.7	19.7	18.0	Slightly Negative
Firing Line	17.5	18.6	21.0	21.6	Moderately Positive
Masterpiece Theatre	17.7	19.0	18.6	22.7	Moderately Positive
The Advocates	15.7	18.4	19.1	19.9	Moderately Positive
The State of the Weather/ The Shape of the World	19.1	17.8	17.8	18.5	None
Washington Week in Review	17.1	16.6	19.6	18.5	None
Hodgepodge Lodge	16.1	16.8	16.9	16.7	None
NET Fanfare	15.9	16.3	16.7	16.3	None
The Great American Dream Machine	13.4	15.8	16.4	16.1	Slightly Positive
Sew Smart	13.8	14.7	13.5	12.9	None
Soul	13.1	14.1	14.2	13.9	None
NET Realities	12.3	13.6	14.7	14.6	Slightly Positive
Bookbeat	12.7	12.7	12.6	14.4	None

[1] See page 48 for method of calculation.

other hand, Bookbeat does not show an expected positive relationship.

Of the two programs with negative relationships, one, Farm, Home, and Garden, is a WPSX-TV program and deals with practical matters, as does The World We Live In.

In sum, then, based on the sample of 19 programs, we have evidence that the WPSX-TV audience is somewhat selective because there is variability in program ratings that is related to a strong indicator of SES, education of household head.

Program requests. Table 14 shows the distribution of responses to the question: "Can you think of any particular types of programs your family might be interested in but which are not now offered by WPSX-TV?" Since all of the types of programs mentioned by respondents are now offered by WPSX-TV, the obvious interpretation of these responses is that viewers would like to see either more or different specific programs in these categories. It would appear that the audience would like to have more programs in the performing arts and cultural affairs categories, with mention of drama, plays, music, and art accounting for 34.3% of the responses. Sports received an expectedly high response.

A large percentage of respondents--11.4%--indicated an interest in additional instructional and scientific programming, which confirms the general trend toward increasing interest in adult education that has been reported on a national basis.

The low percentage asking for more children's programs would seem to show satisfaction with the kinds and number now being aired.

TABLE 14

Future Program Types Requested

Program Type	Frequency of Mention	% of Total Responses
Drama & Plays	78	17.4
Sports	76	16.9
Music & Art	76	16.9
Instructional & Scientific	51	11.4
Wildlife & Nature	37	8.2
News & Politics	26	5.8
Documentary & Biography	20	4.5
Children's	17	3.8
Other	68	15.1
Total	449	100.0

NOTE: It is possible that a given respondent may have mentioned more than one program type.

Viewer and Non-Viewer impressions of WPSX-TV

When viewers were asked about their general impressions of WPSX-TV, 787 or 97.2% responded with a positive comment of some type. Table 15 presents the coding used for the "impressions" data and number and percentages of responses for each item. Of the total sample of 945 viewers, 134 or 14.2% either were not willing to provide the interviewer with their impression of WPSX-TV or said they had no impression.

TABLE 15

Audience impressions of WPSX-TV

Nature of Response	N	%
1. Positive - w/no further explication	487	60.1
2. Positive - but with some reservations	56	6.9
3. Positive - mentioning educational value	63	7.8
4. Positive - mentioning variety, standards, specific programs, etc.	148	18.3
5. Positive - mentioning comparison w/other stations (inc. "Lack of commercials")	33	4.1
6. Negative - w/no further explication	6	0.7
7. Negative - mentioning or alluding to disutility of educational programs, lectures, etc.	7	0.9
8. Negative - mentioning comparison w/other stations	4	0.5
9. Negative - mentioning poor reception	6	0.7
Total	810	100.0

When the 96 non-viewers were asked about their impressions of WPSX-TV, only 16 (17%) gave an answer. Of the 16 responses obtained, eight were positive and eight were negative. In most cases the respondents said

they had never watched and could not answer the question. Most of the respondents who had favorable impressions said that they had heard about the station from friends or relatives and had formed their impression on this basis. On the other hand, the majority of those who gave a negative answer gave reasons along the lines of wanting to be entertained and not educated when they watched television.

Little can be said about the impressions data obtained here. However, the wide range of responses obtained can provide a basis for the derivation of a set of scaled items for future surveys. The scaled items can be associated with specific positive and negative attitudes as they relate to education, entertainment, professionalism, program quality, etc. By scaling the "impressions" data it will then be possible to correlate the attitudinal data with various characteristics of viewers. Also a separate set of scales can be designed to permit a more accurate assessment of the attitudes or impressions of the non-viewer.

Program Guide

Only 3.5% or 33 households of the 945 CSS viewers received the WPSX Program Guide. Of those who did not receive the guide, 34.7% indicated that they did not know of its existence, while 45.2% said they had no specific reason for not receiving the guide. The next most frequent reason for not receiving the guide was the use of other sources such as newspaper, T.V. Guide, etc. for program information. This group constituted 12.4% of the non-subscribers. The remaining 7.7% gave various reasons such as cost, use of someone else's copy, lack of interest, etc.

In response to the question regarding primary use of the guide,

53.1% of the subscribers said they used it for the schedule, while 43.8% said they used it both for the schedule and for the accompanying articles. Only one respondent indicated that the guide was used primarily for the articles. Further, when subscribers were asked whether any future modification of the guide should focus upon more detailed schedule information or upon adding more articles, 79.3% said they would prefer more detailed schedule information.

Suggestions for Future Research

Perhaps one of the most important outcomes of this study is that we have "located" the audience of WPSX-TV and identified some of its demographic characteristics. We are planning to re-examine the data collected, using the system of codes we developed for telephone area, county, and town, to find out how homogeneous the audience is with respect to its geographic location. If audience characteristics do not differ greatly on a geographic basis, large savings in time and resources can be achieved by sampling only selected segments of the audience in the WPSX-TV viewing area. Instead of sampling the entire viewing area audience each time we wish to conduct a study, a cycle of geographic segments could be established for successive sampling.

Returning to more pedestrian matters, each item in the current interview schedule should be carefully reviewed to determine its utility for future surveys. Open-ended questions are especially troublesome to code, interpret, analyze, and are usually subject to a low completion rate. In spite of the guarded optimism expressed for open-ended questions by Hinrichs and Penzer (1971), we feel their disadvantages outweight their advantages, especially when they are part of a telephone interview.

A more sophisticated (and probably more accurate) scheme should be developed for estimating audience size. Although we used a crosswalk from a sample of households in 13 telephone directory areas to census data on a county basis for audience size estimates, we did not differentially weight each county according to its population and number of viewers. In terms of individual counties, the sampling error would be drastically increased using the latter method, but its use may prove to be instructive.

For a variety of reasons, we do not believe that asking respondents either to recall program favorites or to give frequency of viewing for a list of programs (by telephone or mail survey) is the best way to obtain program rating information. Such ratings, at best, yield only a very gross ranking of audience interest. Although it is more expensive on a unit of information basis, the telephone coincident technique is preferable, in our opinion. The combination of a telephone coincident technique to obtain program ratings, augmented with a selected number of other questions, may be the optimum method, in terms of cost and reliability of information, to conduct an audience evaluation.

We also opt for the development of a systematic or programmatic approach to audience analysis as opposed to a loosely connected series of periodic surveys. The current report is the second study of the audience of WPSX-TV and we feel we have developed the groundwork for a program of audience research with it.

The audience of WPSX-TV, as well as that of public television in general, has been growing in recent years. Increased popularity will most likely generate an increased level of financial support and requests for increased diversity in programming. This situation could make local

programming decisions more difficult and shift the assessment of audience reaction from the realm of desirability to one of necessity.

While the use of audience rating information in making programming decisions has its danger, e.g., a tendency toward the possible mediocrity of mass tastes, it is one major way to fulfill the "implied charter of public broadcasting", and therefore of satisfying the goal of implementing cultural democracy.

From the authors' point of view, the exposure of an audience to quality educational programs is contingent upon capturing an audience of some size and diversity. Thus, it follows that accurate program rating information is important if an increased probability of exposure to certain types of programs is a broadcasting goal. It would seem that the "educational" current underlying public broadcasting could be well served by such an approach.

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APPENDIX A. TELEPHONE INTERVIEW SCHEDULE

WPSX-TV AUDIENCE SURVEY
May 19[illegible]

Planning Studies in
Continuing Education

Telephone No._____

Call Information

Call	Time of Attempt	No Answer	Busy Signal	No TV	Refusal	Other (Specify)	Date Completed
	Date Time						
1.							
2.							
3.							

ID Information

Respondent No. _____ 1-4

_____ 5

Area _____ 6-7

Town _____ 8-10

County _____ 11-12

DISPOSITION CODE (Circle one)

Used	No TV	Refusal	3-Calls	Other	Can't Get WPSX-TV
1	2	3	4	5	6

_____ 13

Total No. Calls _____ 14

How do you do, I'm (Mr. Mrs, Miss _____) calling for The Pennsylvania State University. We are interested in the television viewing habits of yourself and your family. Could you take about eight minutes to answer some questions for me?

[IF YES: Go to question #1 — IF NO: Mark call record]

1. Do you have a color TV set? 1. Yes 2. No _____ 15

2. Do you have a black & white TV set? 1. Yes 2. No _____ 16

(IF ANSWER TO BOTH 1 & 2 IS NO CONCLUDE INTERVIEW AND THANK RESPONDENT FOR HIS (HER) TIME.)

CAL:RSH
5/10/71

You may not have ready answers to all of the questions we are going to ask, but please give us your best estimate. Your participation will be helpful to us.

3. Can you estimate the average number of hours per week which your television is viewed? _____ Hours _____ 17-18

4. Has any member of your family ever watched Penn State's Television Station WPSX-TV? 1. Yes 2. No _____ 19

(IF ANSWER IS NO GO TO QUESTION #35)

5. On the average, how often does someone in your family watch WPSX-TV:

Daily > Once a week < Once a week > Once a month < Once a month
1 2 3 4 5 _____ 20

6. Approximately how many hours per week is your television turned to WPSX-TV? _____ Hours _____ 21-22

7. Can you tell me the four (4) favorite WPSX-TV programs of you or your family?

General	Specific		
		[General 1,2,3]	_____ 23-25
		[Specify 1]	_____ 26-28
		[Specify 2]	_____ 29-31
		[Specify 3]	_____ 32-34

I am going to read a list of WPSX-TV programs to you; please indicate with "yes" or "no" answers which of the programs have been viewed by members of your family. For those to which you give a "yes" answer, please tell me whether they are viewed frequently, sometimes, or rarely.

		No	Frequently	Sometimes	Rarely	
8.	Bookbeat	1	2	3	4	35
9.	Net Fanfare.	1	2	3	4	36
10.	Net Realities.	1	2	3	4	37
11.	Firing Line.	1	2	3	4	38
12.	The Advocates.	1	2	3	4	39
13.	Masterpiece Theatre. . .	1	2	3	4	40
14.	The Great American Dream Machine.	1	2	3	4	41
15.	Washington Week in Review.	1	2	3	4	42
16.	NET Playhouse.	1	2	3	4	43
17.	Soul	1	2	3	4	44
18.	The World We Live In . .	1	2	3	4	45
19.	The State of the Weather/the Shape of the World	1	2	3	4	46
20.	Farm, Home and Garden. .	1	2	3	4	47
21.	Sew Smart.	1	2	3	4	48
22.	TV Quarterbacks.	1	2	3	4	49
23.	Winter Sports.	1	2	3	4	50
24.	Hodgepodge Lodge	1	2	3	4	51
25.	Misteroger's Neighborhood	1	2	3	4	52
26.	Sesame Street.	1	2	3	4	53

27. Can you think of any particular types of programs your family might be interested in but which are not now offered by WPSX-TV?

_____ 54

_____ 55

28. Has any member of your family watched, on a regular basis, any of the instructional programs offered by WPSX-TV? I mean programs such as Bridge, Decision Making Techniques, Sew Smart, etc.?

1. Yes 2. No _____ 56

29. Do you tell friends about programs you enjoy watching on WPSX-TV?

1. Yes 2. No _____ 57

30. The staff at WPSX-TV is very interested in your general impressions of the station with respect to programming, standards, etc. Could you tell me what your impressions are?

_____

_____

_____

_____

_____ 58

31. Do you receive the WPSX-TV monthly program guide?

1. Yes 2. No _____ 59

[IF YES, ask question #32 — IF NO, ask question #34]

32. Do you use the program guide primarily for the articles or for the schedule of programs? 1. article 2. schedule 3. both _____ 60

33. If the program guide were to be modified would you prefer more articles or a more detailed schedule? 1. articles 2. schedule _____ 61

[GO TO QUESTION 37]

34. Is there a specific reason why you do not receive the guide?

_____

_____

_____

_____ 62

[GO TO QUESTION #37]

[NON-VIEWERS]

35. Can you give me the reason for not watching WPSX-TV?

Never heard of WPSX-TV	1
Never tried to get it	2
Lack of time	3
Not interested	4
Other (specify)	5

_____

_____

_____

_____

_____ 63

36. What are your general impressions of WPSX-TV?

_____

_____

_____

_____ 64

Now that we have your answers about television viewing habits we would like to get some information about the characteristics of your family. The answers to these questions will be kept confidential and will be available only to the research team.

37. [INTERVIEWER: NOTE RESPONDENTS SEX] 1. Male 2. Female _____ 65

38. How many people are in your immediate family and living at home? _____ people _____ 66-67

39. How many children do you have in each of the following age categories; we are interested only in those children living at home:

pre-school - 6 years	_____	68
7 - 12	_____	69
13 - 18	_____	70

40. [INTERVIEWER: NOTE NUMBER OF CHILDREN] _____ children 71

41. What is the age of the head of your household?

_____ years 72-73

42. What was the highest level of education the head of your household received?

No formal schooling or some grade school only	1
Finished grade school	2
Some high (secondary) school	3
Finished high school	4
Business or trade school	5
Some college or attending college	6
Received undergraduate degree	7
Some graduate or professional school or attending graduate school	8
Received graduate or professional degree	9

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43. What kind of work does the head of your household do? By this I mean the industry or business; not the place where he (she) works.

Unskilled or semiskilled worker (e.g., laborer, farm worker, machine operator, etc.)	1
Service worker, skilled worker, or craftsman (e.g., policeman, fireman, electrician, etc.)	2
Salesman, bookkeeper, secretary, office worker, etc.	3
Owner, manager, partner of a <u>small</u> business or farm; lower level governmental official, military commissioned officer, etc.	4
Profession typically requiring a bachelors or masters degree (e.g., engineer, school teacher, etc.)	5
Owner or high-level executive of a <u>large</u> business; high-level governmental official, etc.	6
Profession typically requiring an advanced degree (e.g., doctor, lawyer, college professor, etc.)	7
Student	8
Other, (e.g., retired, disabled, etc.)	9

75

Finally we would like to see if family income has any influence upon television viewing habits. We would appreciate it if you could give us an estimate of your family income before taxes last year. We are interested only in broad categories.

44. Would you say your family income before taxes last year was:

[READ ALL FIVE CATEGORIES]	Below $5,000	1
	Between 5,000 - 10,000	2
	Between 10,000 - 15,000	3
	Between 15,000 - 25,000	4
	Above 25,000	5

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This concludes the interview, thank you very much for your cooperation.

APPENDIX B

WPSX-TV Audience Survey
May 1971

SCHEDULE INSTRUCTIONS FOR INTERVIEWERS

GENERAL

A. The questionnaire packet consists of three front sheets (with the number of a prime and two alternate respondents) and six additional sheets of questionnaire items.

B. Always state your name in the introductory statement.

C. Since you will, in some cases, get a bad connection you will have to be careful of enunciation and may have to speak rather slowly.

D. For each number, you first dial "7," then the area code and number.

E. Always remember to read the statements which are enclosed in boxes on the questionnaire, i.e., the introductory statement; the statement before Item #3; and the statement before Item #19.

Call Sheet

a. Note time on the 24 hour clock system, e.g., 1830, and date, e.g., 5/13, before making each call.

b. If the phone rings six (6) times without an answer, hang up and mark the "no answer" column with an "X" and put the interview form on the bottom of the pile. Follow the same procedure if you get a busy signal.

c. If you get three (3) calls on which you have either a "no answer" or "busy" go to the first alternate respondent.

d. Always complete the call record and circle the disposition code, and record the total number of calls before handing in the interview form.

Questionnaire Items

General: In all cases in which you have a descriptor with a number you should circle the number only.

Items #1 & 2: Remember to mark call sheet and disposition code if answers to both #1 & 2 are NO.

Item #3: If respondents say "I don't know" you have to probe in the following fashion:

a) "Approximately how many hours per day would you say your television is viewed?" — If given an answer say:

b) "Does that number also apply to weekends?"

Based upon the answers to probes (a) and (b), calculate the weekly viewing time.

Item #4: If respondent answers that any member of the family is a viewer, mark "1."

Item #5: You may get answers such as: "once in a while," "sometimes," etc. If this is the case, read the response categories. That is, say the following:

"Would you say it was daily, more than once a week, etc."

Have the respondents pick a category.

Item #6: If respondent has difficulty, probe in the same fashion as was specified for Item #3.

Item #7: When you write out the names of the programs noted, try to leave space at the right side of the line so that a code can be written. Use a separate line for each program. Respondents may have a tendency to mention general categories such as sports, plays, etc. If this occurs,

list the general category but ask the respondent if he (she) has any specific program within that category which is a favorite.

Items #8 - 27: If the subject gives a "yes" answer, but fails to specify frequency, you should say, "Would that be frequently, sometimes or rarely."

Item #27: When you write in these answers, please write each on a separate line and leave room on the right for a code to be written.

Item #29: If respondent says "yes" and mentions a program, refer to instructional program list to make sure the program is actually "instructional." If the respondent does not mention a program, ask if they remember the program name. At first you may have to note the program and mark the answer later, i.e., if it takes you a long time to review the listing.

Items #31 & 34: Here respondents may ask how they can get the program guide. If they ask, you can tell them to send a check or money order for $3.00 payable to The Pennsylvania State University. It is to be mailed to:

Program Guide
201 Wagner Building
University Park, Pa. 16802

Item #33: If respondent says "both" say, "What would be your first choice if only one of these could be changed?"

Item #37: After Item #33, read statement before Item #38, note sex of respondent, and continue with Item #38.

Item #43: If the respondent's answer is not clear as to category you will have to probe. For example, if respondent says that the household head works in a steel mill or a mine, you will have to ask questions such as:

a) "Is he a foreman — does he have men working under him?"

b) "Did he have to have special training for the job?"

c) etc.

In some cases, the educational level will help to identify the job category.

Item #44: Read entire statement and all categories — do not pause long enough for respondent to make a comment.

APPENDIX C

WPSX-TV Audience Survey
May 1971

DISPOSITION CODE DESCRIPTION

Category 1 (Used) - All household contacts which resulted in completed schedules — both viewers and non-viewers.

Category 2 (No TV) - Households which reported that they did not have a working television set.

Category 3 (Refusal) - Households in which the respondent reached refused to be interviewed.

Category 4 (3-calls) - The largest portion of the households in this category were those which could not be reached in three dialings, i.e. either due to busy signals or no answer. Also included are some calls in which the households may have been successfully reached but were busy at the time and agreed to a return call at a later time. In other words, any series of three calls which did not result in a direct refusal or a completed call were included here.

Category 5 (Other) - Attempted contacts with households where the phone was disconnected, out of service, or where the number had been changed to one which was outside the viewing area.

Category 6 (Can't get WPSX-TV) - Households which reported that they could not receive WPSX-TV for one of the following reasons: (a) unavailability of a cable system (b) nonsubscription to a cable system (c) insufficient signal strength for the antenna used.

APPENDIX D

ALPHABETICAL LIST BY COUNTY OF POPULATION WITHIN THE 23-COUNTY AREA SERVED BY WPSX-TV

County	Estimated Coverage	Total Population		Population In Households		Heads		Other (Non-Institutional)	
		Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted
Armstrong	1/2	75,590	37,795	75,007	37,503	24,187	12,093	330	165
Bedford	1/2	42,353	21,176	42,165	21,082	13,338	6,669	59	29
Blair	Full	135,356	135,356	132,796	132,796	43,430	43,430	810	810
Cambria	Full	186,785	186,785	181,008	181,008	56,564	56,564	2,703	2,703
Cameron	Full	7,096	7,096	7,079	7,079	2,334	2,334	---	---
Centre	Full	99,267	99,267	84,442	84,442	27,296	27,296	13,882	13,882
Clarion	7/8	38,414	33,612	36,251	31,720	11,462	10,029	2,050	1,794
Clearfield	Full	74,619	74,619	74,035	74,035	23,703	23,703	240	240
Clinton	Full	37,721	37,721	36,114	36,114	11,667	11,667	1,446	1,446
Elk	Full	37,770	37,770	37,501	37,501	11,115	11,115	195	195
Forest	Full	4,926	4,926	4,926	4,926	1,613	1,613	---	---
Huntingdon	Full	39,108	39,108	37,118	37,118	12,106	12,106	970	970
Indiana	7/8	79,451	69,520	73,529	64,337	22,908	20,044	5,491	4,805
Jefferson	Full	43,695	43,695	43,185	43,185	14,336	14,336	213	213
Juniata	7/8	16,712	14,623	16,550	14,481	5,152	4,508	21	18

APPENDIX D
(Continued)

County	Estimated Coverage	Total Population		Population In Households		Heads		Other (Non-Institutional)	
		Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted
Lycoming	1/3	113,296	37,765	110,574	36,858	35,827	11,942	1,962	654
McKean	Full	51,915	51,915	51,439	51,439	16,852	16,852	265	265
Mifflin	Full	45,268	45,268	45,049	45,049	14,559	14,559	55	55
Potter	3/4	16,395	12,296	16,132	12,099	5,141	3,856	73	55
Snyder	1/3	29,269	9,756	26,209	8,736	8,208	2,736	1,072	357
Somerset	1/4	76,037	19,009	74,988	18,747	24,149	6,037	79	20
Warren	1/2	47,682	23,841	45,103	22,551	14,317	7,158	141	70
Westmoreland	1/16	376,935	23,558	372,159	23,260	116,419	7,276	1,921	120
Total		1,675,660	1,066,477	1,623,359	1,026,066	516,683	327,923	33,978	28,866

NOTE: Population data from 1970 census tracts. Estimated coverage is based on Grade B signal area for a given county. Adjusted population data are based on the product of the estimated coverage factor and population.