<u>Response to Phillip Leslie's Review of Section I of Study #4, "The Impact of Ownership Structure on Television Stations' News and Public Affairs Programming"</u>[1]

Daniel Shiman
10/29/07

      I wish to thank Phillip Leslie for his insightful comments and suggestions on the paper.[2] I agree with him that any consideration of the broader implications of the paper's findings should take into account the limitations of the analysis, which are described in the paper on pages I-24 to I-26.

      Prof. Leslie asks how the variable for TV-newspaper crossownership applies to non-local newspapers. Owners of TV stations that do not own a local newspaper in the same market are not considered to be cross-owned in this analysis, even if they own a national newspaper or a newspaper local to another market. This definition is based on the legal definition of cross-ownership adopted by the FCC,[3] and it is consistent with past analyses of TV-newspaper cross-ownership by other researchers. A broader definition counting ownership of out-of-market newspapers might be interesting to use as an alternative, but it would require additional data on newspaper ownership, which is not readily available.[4] From a theoretical standpoint, it would likely reflect a weaker level of scope economies, since they would not be sharing much local news. This broader definition would also be of less interest from a policy standpoint, since it would not be relevant to the review of media ownership rules currently before the Commission.

      Prof. Leslie suggested that the analysis could be improved in three ways. First, he recommended allowing for possible clustering in the data within each market and year. This is an appropriate adjustment that will take into account the possibility of heteroscedasticity, and of correlation of the errors within markets, which may be present in the data. While doing so does not affect the coefficient estimates, it does change the computed standard errors, and thus whether the results for each variable are statistically significant. The robust standard errors that result from allowing for clustering by market (DMA), for the regressions involving news minutes, are reported in Tables I.6R and I.7R below. In the main model for news, in Table I.6R, some of the robust standard errors are larger, with a couple of explanatory variables losing statistical significance (DMA per capita income, multi-network affiliation), but the ownership variables retain their significance, at the 5 percent level. In the alternative specifications, in Table I.7R, the TV-newspaper cross-owned variable loses its significance in regression model N2, which does not correct for network affiliation, while in the full fixed effects model N3 the

---

coefficient for O&O big four stations is now statistically significant[5] and for parent revenue the coefficient is no longer significant. Tables I.8R and I.9R below reports the robust standard errors for the models for public affairs minutes. In these revised results for public affairs, far fewer of the variables (other than the network dummies) are statistically significant. The only ownership variable that was statistically significant before in the main regression in Table I.8R, TV-radio cross-ownership, is no longer statistically significant. For the ownership variables in the alternative specifications in Table I.9R, local ownership and TV-radio cross-ownership are no longer significant in model PA2 (controlling for just market demand effects and time), while in model PA3 (the full fixed effects model) local ownership is only statistically significant at the 10% level. For both news and public affairs models, even more network dummies are statistically significant in the main models, suggesting the importance of network affiliation/station type[6] to the provision of news and public affairs.

Second, he recommended including dummies for each market-year, instead of holding them fixed for each market and year as was done in the original specification, because of the possible sensitivity of some of the results to the fixed effects. The results of using this alternative specification are reported for both news and public affairs in Table I.10R below, with the robust standard errors. The demographic variables had to be dropped, because they do not vary within each market.[7] Also dropped were the variables measuring the number of unrelated stations, and the number of minutes of news they provided, in the same market, because of collinearity (the sum of the number of unrelated plus co-owned stations is constant within each market for all stations in the market, as is the sum of minutes of unrelated plus co-owned stations). For news minutes the results are similar to the main regression in Table I.6R, although as with the full fixed effects model, there are fewer variables that are statistically significant. Local ownership in particular is only marginally statistically significant, at the 10% level, despite its larger coefficient. For public affairs minutes the results look similar to those in Table I.8R. An F-test was performed on whether the market dummies can be restricted to have the same coefficient over time, as was assumed for the models used in the main regressions in Table I.6R and I.8R. According to the test, the restriction cannot be rejected for both news and public affairs models (with p-value=1.00).[8] This suggests that it is unnecessary to use Prof. Leslie's proposed unrestricted model, which has separate dummies for each market-year.

As part of his third recommendation, Prof. Leslie expressed concern about whether the focus of the analysis should be on the absolute or relative levels of news and public affairs minutes. The paper examines the impact of ownership variables on the number of news/public affairs minutes provided by TV stations, which is an absolute measure. He suggests using the logarithms of news minutes and of public affairs minutes as the dependent variables, which is a standard technique in econometrics.[9] Taking the logarithm provides a more proportionate

---

[5] As seen in Table I.2R, only one station changed O&O Big Four status, so this result is not meaningful.
[6] Some of the listed "network affiliations" are actually just indicators of the station type, for the educational, public, religious, and independent stations.
[7] Anyway, these variables added little explanatory power to the original regression, because of the use of market dummies which captured most of the impact of demographic factors, both observed and unobserved.
[8] The restriction is that the coefficient on the dummies for each market are the same for all 4 years. The test was performed with the set of regressors used in Table I.10R for both the restricted and unrestricted models.
[9] A model in which the logarithm of the dependent variable (but not of the independent variables) is used is called a log-level or semi-log model, and it assumes there is a non-linear relationship between the independent and

analysis, with the coefficients on the independent variables effectively becoming semi-elasticities, reflecting the impact of the independent variables on the percentage change in minutes of news/public affairs aired.[10] It also tends to reduce the impact of particularly large values of news and public affairs minutes on the results.[11] From a statistical standpoint it is considered useful for providing a more symmetric distribution for variables that have only nonnegative values (like news and public affairs minutes in our analysis) that tend to be skewed, which could affect the reliability of the significance tests.[12] A semi-log model with the dependent variable transformed to the natural log of news/public affairs minutes plus one (one minute was added to avoid losing large numbers of observations with zero minutes from the regression)[13] was analyzed, and the results of this analysis are provided in Table I.11R below.[14] These regressions yield different results from before, with fewer ownership variables having statistically significant coefficients, compared to the main regressions in Tables I.6R and I.8R. Size of the parent, local ownership, and ownership by the big four are not statistically significant, in this model for news. Therefore this formulation might raise doubts about the robustness of the significant results previously found for these three ownership variables, but only if we accept it as a reasonable alternative model of the problem. It is unclear whether this formulation provides a meaningful measure of news output, however, because it examines the impact of ownership factors on the *percentage* increase in news and public affairs minutes for every TV station.[15] In addition, the comparable (unadjusted) R-squared, calculated for the semi-log model using a procedure outlined in Wooldridge (2006), is much lower for the semi-log model in Table I.11R than for the linear model (0.44 vs. 0.90, respectively).[16] This implies that the semi-log model is much less effective at explaining TV stations' provision of news minutes than the main (linear) model reported in Table I.6R. Meanwhile, for public affairs there is little change in the results concerning which factors are important using this specification, compared to the linear model reported in Table I.8R, except that parent revenue is no longer statistically significant. The

---

dependent variables. The model used in the paper, that includes just the levels of all variables, is called a level-level or linear model. Wooldridge 2006, pp. 46-49; Greene 2003, p. 123; Kennedy 2003, p. 123.

[10] Wooldridge 2006, pp. 46-49, 717-21; Greene 2003, p. 123. Kennedy points out, however, that the coefficients for independent dummy variables do not exactly represent the percentage change impact on y of a change in the dummy variable value, but require some adjustment. Kennedy 2003, p. 254.

[11] This is useful when there is concern about extreme outlier values, which can have a large impact on the regression results. Wooldridge 2006, p. 199.

[12] Wooldridge 2006, p. 199.

[13] Since the natural log is undefined for zero values, a significant number of observations would have to be dropped if $\ln(y)$ were used as the dependent variable. Adding one minute to the number of news/public affairs minutes for every station allows the inclusion of observations with zero minutes in the analysis. This is a standard technique used to avoid losing observations with zero values. Wooldridge 2006, p. 199.

[14] So the model that was analyzed is $\ln(y_{it}+1) = m_t + \beta\, x_{it} + \delta\, D_k + \theta_j\, N_j + \varepsilon_{it}$, where y_{it} is the number of news or public affairs minutes, x_{it} are observed independent variables, D_i are separate dummies for each market, m_t are time dummies (one for each year), and N_j are network dummies.

[15] It is not clear whether adding ten more minutes of news should be considered more meaningful for a station that provides little news than for a station that already provides much news. It could be argued, however, that the marginal value of news declines rapidly, so that 10 minutes of news summary alone (with no other news) is much more important than the last 10 minutes of news as part of a news hour. In terms of getting basic news about the world (meaning just the headlines) this is a reasonable argument, since the news topics may move to more fluff (e.g., celebrity news) after the important issues have been covered. On the other hand, effectively giving greater weight to the first minutes of news broadcast by a station discounts the value of in-depth news analysis performed by long-form news reporting and news magazine shows.

[16] The procedure used multiple steps to calculate a comparable R-squared, following the procedure outlined in Wooldridge 2006, pp. 218-21.

comparable R-squared is somewhat lower for the semi-log model than for the linear model here (0.48 vs. 0.53, respectively).

In his review Prof. Leslie also discussed the conclusions of the study. He notes that the results concerning ownership of multiple stations in the same market (OtherCoOwnedStationsinDMACount) are inconsistent across different specifications, with large changes in the coefficient's value and even a change in its sign, while remaining highly statistically significant. This may be due in part to this variable's relationship to other variables measuring counts within the same market, in particular the measure of co-owned stations' news minutes in the same market. These two variables are fairly highly correlated,[17] and the signs of both variables, which are always opposite, flipped in the full fixed effects model. They may be picking up some non-linearity in the data. In addition, the effective sample size is rather small in the full fixed effects regression, which is only picking up the impact of changes in these variables over time for those stations that actually had changes. The number of co-owned stations within the same DMA does not change for the large majority of stations in the dataset. Only 145 stations had at least one change of value for this variable, out of the 1703 stations in the database, as shown in Table I.2R below.

Prof. Leslie notes an apparent contradiction in the conclusions that he believes could be derived from the reported results, that ownership by a major network (the big four O&O's) increases the news, while ownership by a large station group decreases the news. These two results likely reflect different processes at work, however. As was discussed in the paper, the networks play an important role in producing programming, including news programming, especially for the big four O&Os. This is made clear in Figure I.1R below, which shows the average news minutes per station for each network, for all affiliates and for just the O&Os.[18] The figure shows that the big four O&Os provided more news programming than other affiliates with the same network. There are both supply-side and demand-side reasons that may be responsible for this. On the supply side, there may be a low internal marginal cost of providing surplus news programming internally to the O&Os. On the demand side, the big four O&Os tend to be located in large cities, which may be providing additional demand for their news-heavy programming, particularly if the viewing market is segmented into heavy news-viewing and light news-viewing groups.[19] The reason that the market dummies may not be fully picking up the impact of city size, is that demand may be skewed, or the demand at the high end of the market may be affected more by increases in city size. The market dummies will only pick up an increase in the overall demand for news from all stations in the market.

Concerning the counter-intuitive result for large station groups, we note the significant volatility in the provision of news by station group, as demonstrated in Figure I.2R below. The figure shows the provision of news for the largest station groups for 2005 (groups with 10 or more stations in the dataset), along with the sizes of the station groups for that year (plotted

---

[17] The Pearson correlation coefficient is 0.73.

[18] The very small "networks" of HTV, TBS, HSN, and SHP were not included in this figure because of their small size.

[19] The average DMA rank (ranked from 1 to 210) for all stations is 78.3 and the average population is 2.3 million, while for the big 4 O&Os it is only 23.9 and the average population is 5.9 million.

according to the right axis).[20] Three station groups stand out as having more stations than the rest, and two of the three provided much less news than the average. In fact, if stations in these three groups are left out of the regression analysis, for the main regression model of Table I.6R, the coefficient on parent stations count becomes positive and not statistically significant, indicating that these three station groups are driving the negative result found. The breakdown of news minutes and public affairs minutes for all of the 6 ownership variables is provided in Figures I.3R and I.4R below, along with the number of stations that fit into each category.[21] The peculiarity of the negative coefficient on the parent station count is apparent from the raw data presented in Figure I.3R, which admittedly does not control for differences in other factors such as market demand, network affiliation, or station characteristics.

The provision of news, and presumably its impact, also varies according to the time it is aired. It turns out that much news is aired in the early morning hours, when few people are watching. Figures I.5R and I.6R below show how the news in particular, and to a lesser extent public affairs, varies in its airing over the course of the day, as well as how the percentage of viewers varies over the course of the day.[22] The fact that much news is aired during hours when viewership is low could raise concerns that stations with higher news volume could be providing their additional news during low-viewership times, such as during the early morning hours. To account for this possibility, further analysis was performed on constructed dependent variables that measured the available viewership for each news and public affairs minute aired, by multiplying the news and public affairs minutes for each station used for the main models, by the percentage of U.S. households watching television (shown in the figures). In effect each minute of news/public affairs aired is weighted by the proportion of households watching television at that time. Note that this constructed measure is not ideal, and adds some noise to the regressions, because it is based on the nationwide average of the percentage of households watching television, for which data was available, and not the specific number of people watching each station (i.e., the station's rating) or watching TV in each market, for each particular time period. The results are provided in Table 1.12R. They are quite similar to the results in Tables 1.6R and 1.8R, in sign and statistical significance of coefficients, with individual regressors having smaller coefficients because the minutes have been multiplied by a number less than one. The only major differences for the news are that parent size is not statistically significant for the weighted data. Meanwhile, for public affairs parent revenues is not statistically significant, and the TV-newspaper crossownership is now mildly statistically significant with a negative coefficient.

Prof. Leslie notes that fewer ownership variables affected TV stations' minutes of public affairs programming. He is incorrect, however, when he says that results were not reported for

---

[20] The data is provided for only one year, because the names of the owners are not consistent across time in the BIA database that was provided for this analysis. Since it is consistent within each year, for which the counts of co-owned stations within each DMA and nationwide were calculated, the regression analysis is not affected by the inconsistency across years.

[21] The data presented are for all 6,703 observations, for all four years. Note that these numbers do not correct for various market and station characteristics, such as differences in market demand or in the provisioning of news by different networks, for which the regression models do take account. Thus these figures should be used with caution when drawing conclusions.

[22] The percentage of households watching television (also called "HUT" or Households Using TV) was obtained from Nielsen, and covers the period 6/26/2006 to 7/01/2007 for the U.S.

alternative specifications. The same alternative models as for news were reported, in Table I.9, which are reproduced with robust standard errors in Table I.9R below.

References

Greene, William H. (2003), *Econometric Analysis*, 5th ed., Prentice Hall.

Kennedy, Peter (2003) *A Guide to Econometrics*, 5th ed., MIT Press.

Wooldridge, Jeffrey M. (2006), *Introductory Econometrics: A Modern Approach*, 3rd ed., Thomson.

Table I.2R
Summary Statistics

Continuous Variable	Mean	Std Dev.	Min	Max	No. Stations with Change[b]
TotalMin	20,158	31	19,740	21,180	
NewsMin	2,316	2,117	0	8,685	
PubAffMin	324	512	0	11,400	
News + Public Affairs Minutes	2,632	2,122	0	11,520	
NewsMinHUTWgted[a]	794	655	0	2,762	
PubAffMinHUTWgted[a]	105	187	0	4,183	
Number of Shows	450	75	14	699	
Number of News Shows	53	48	0	254	
Number of Public Affairs Shows	9	11	0	120	
TotPop1000s	2,318.4	3,370.9	9.8	20,687.4	
PopPercentBlack	11.2	10.8	0.3	63.1	
PopPercentHisp	11.1	14.7	0.5	94.5	
DMAPerCapitaIncome	29,680	5,339	14,882	49,582	
UnrelatedStationsinDMACount	9.64	5.62	0	26	422
UnrelatedStationsinDMANewsMin	20,784	11,821	0	71,787	
UnrelatedStationsinDMAPubAffMin	3,053	2,736	0	17,064	
UnrelatedStationsinDMANewsPAMin	23,755	13,525	0	74,799	
ParentRevenueMillions	296	518	0	2330	
ParentStationsCount	16.27	15.99	1	61	935
OtherCoOwnedStationsinDMACount	0.52	0.82	0	5	145
OtherCoOwnStationsinDMANewsMin	1,165	2,590	0	18,585	
OtherCoOwnStationsinDMAPubAffMin	174	462	0	4,320	
OtherCoOwnStationsinDMANews&PubAffMin	1,335	2,778	0	18,894	

	Values				
Counts for Dummy Variables	0=No	1=Yes	%=Yes		
Locally-owned	5,088	1,615	24.1%		65
TV-Radio Cross-Ownership	5,541	1,162	17.3%		96
TV-Newspaper Cross-Ownership	6,583	120	1.8%		0
Big Four O&O	6,421	282	4.2%		1
LMA	6,264	439	6.5%		72
Non-Commercial	5,225	1,478	22.0%		0
VHF	3,951	2,752	41.1%		0
SingleNetworkAffil	869	5,834	87.0%		89
MultiNetworkAffil	6,543	160	2.4%		30
NetworkAffilNotIdentified	5,994	709	10.6%		59

From annual data for each station, based on two weeks scheduled programming per year for 2002-2005.
Number of observations was 6,703 for all variables. Each observation is the data for one station for one year.

[a] News or public affairs minutes weighted by the percentage of US households watching TV (HUT) at that hour.
[b] Number of stations that changed value at least once during the four years, out of the 1,703 stations in the dataset.
Listed only for select variables. Some stations may have changed values more than once during the sample period –
they are counted once in this table. 110 stations changed their primary network affiliation at least once. Six stations
changed their market (DMA) at least once.

Table I.6R
Analysis of News Minutes Provided - Three-Way Group Fixed Effects Model

Variable	N1: Controlled for Market & Network		
	Coefficient	Robust Std. Error	p-value
TotPop1000s	2.06 **	0.87	0.019
PopPercentBlack	916.06 ***	257.07	0.000
PopPercentHisp	-31.55	135.50	0.816
DMAPerCapitaIncome	-0.07	0.08	0.361
UnrelatedStationsinDMACount	394.74 ***	121.68	0.001
UnrelatedStationsinDMANewsMin	-0.37 ***	0.04	0.000
ParentStationsCount	**-3.72 ***	**1.29**	**0.004**
ParentRevenueMillions	0.27 ***	0.05	0.000
OtherCoOwnedStationsinDMACount	**338.43 ***	**123.48**	**0.007**
OtherCoOwnStationsinDMANewsMin	-0.34 ***	0.04	0.000
Local Marketing Agreement	10.67	63.46	0.867
MultiNetworkAffil	-123.64	87.27	0.158
Locally Owned	**-88.03 **	**42.89**	**0.041**
O and O Big Four	**307.00 **	**121.21**	**0.012**
TV-Radio Crossowned	**29.52**	**36.11**	**0.415**
TV-Newspaper Crossowned	**247.43 **	**120.38**	**0.041**
NonCommercial	-177.94 **	76.75	0.021
VHF Channel	442.61 ***	50.07	0.000
Dummy2003	345.85 ***	74.82	0.000
Dummy2004	550.86 ***	167.30	0.001
Dummy2005	697.29 ***	257.16	0.007
ABC	2,768.96 ***	183.57	0.000
CBS	2,719.54 ***	186.58	0.000
PBS	706.08 ***	111.68	0.000
NBC	2,085.50 ***	146.89	0.000
FOX	672.38 ***	79.08	0.000
IND	279.04 ***	78.16	0.000
WB	155.43 **	68.54	0.024
REL	-38.81	72.00	0.590
UPN	-82.55	58.96	0.163
UNI	1,062.65 ***	92.40	0.000
PAX	167.70 ***	54.27	0.002
PUB	1,165.24 ***	287.93	0.000
TBN	1.34	52.93	0.980
INS	-185.36	231.48	0.424
TEL	978.17 ***	97.65	0.000
AZT	995.32 ***	312.42	0.002
TLF	-195.31 ***	65.32	0.003
SHP	-358.60	386.69	0.355
EDU	258.29 *	146.02	0.078
HSN	108.64	399.97	0.786
HTV	362.51 ***	49.74	0.000

Additional Dummy Variables Used: Every Market
   (not shown in table)

Number of Observations   6,703
Adj. R^2 0.90

Key ownership variables are bolded.
Robust standard errors adjusted for clustering at the market level.
 *** indicates significance at the 1 percent level. ** indicates significance at the 5 percent level. * indicates significance at the 10 percent level.

Table I.7R
Analysis of News Minutes Provided – Additional Regressions

Variable	N2: Controlled for Market			N3: Full Fixed Effects		
	Coefficient		Robust Std. Error	Coefficient		Robust Std. Error
TotPop1000s	3.71	**	1.43	-0.19	***	0.03
PopPercentBlack	1,459.09	***	438.50	191.54	***	43.48
PopPercentHisp	-53.07		229.41	30.64	*	18.43
DMAPerCapitaIncome	-0.13		0.14	-0.01		0.01
UnrelatedStationsinDMACount	709.98	***	215.36	26.20		18.10
UnrelatedStationsinDMANewsMin	-0.67	***	0.04	0.00		0.01
ParentStationsCount	**-3.09**	***	**1.04**	**-0.09**		**1.87**
ParentRevenueMillions	-0.00		0.03	-0.14		0.10
OtherCoOwnedStationsinDMACount	**586.30**	***	**216.19**	**-220.37**	***	**69.63**
OtherCoOwnStationsinDMANewsMin	-0.60	***	0.05	0.12	***	0.02
Local Marketing Agreement	-57.00		66.01	60.23		48.08
MultiNetworkAffil	-239.03	**	101.72	-75.91		86.96
Locally Owned	**-130.97**	***	**37.05**	**25.80**		**59.23**
O and O Big Four	**474.19**	***	**94.74**	**-241.96**	**	**94.24**
TV-Radio Crossowned	**82.85**	***	**28.05**	**-6.26**		**29.61**
TV-Newspaper Crossowned	**212.44**		**137.30**			
NonCommercial	-434.57	***	52.99			
VHF Channel	824.17	***	98.00			
Dummy2003	575.04	***	126.72	76.66	***	13.99
Dummy2004	910.26	***	277.21	136.47	***	31.15
Dummy2005	1,162.91	***	420.74	163.07	***	47.23
Dummy2003*NonCommercial				-64.78	***	14.74
Dummy2004*NonCommercial				-168.28	***	21.41
Dummy2005*NonCommercial				-187.70	***	27.34
Dummy2003*TV-Newspaper_Crossown				54.24		46.10
Dummy2004*TV-Newspaper_Crossown				98.06		60.89
Dummy2005*TV-Newspaper_Crossown				50.76		74.22

Additional Dummy Variables Used: (not shown in table)	Every Market	Every Station
No. Observations	6,703	6,703
Adj. R^2	0.83	0.98

Key ownership variables are bolded.
Robust standard errors adjusted for clustering at the market level.
*** indicates significance at the 1 percent level
** indicates significance at the 5 percent level
* indicates significance at the 10 percent level

Table I.8R
Analysis of Public Affairs Minutes Provided - Three-Way Group Fixed Effects Model

Variable	PA1: Controlled for Market & Network		
	Coefficient	Robust Std. Error	p-value
TotPop1000s	-0.41	0.61	0.509
PopPercentBlack	225.78	146.35	0.124
PopPercentHisp	-47.25	75.34	0.531
DMAPerCapitaIncome	-0.01	0.02	0.697
UnrelatedStationsinDMACount	85.47	63.38	0.179
UnrelatedStationsinDMAPubAffMin	-0.31 ***	0.08	0.000
ParentStationsCount	**-0.04**	**0.73**	**0.954**
ParentRevenueMillions	-0.04 **	0.02	0.039
OtherCoOwnedStationsinDMACount	**15.21**	**67.36**	**0.822**
OtherCoOwnStationsinDMAPubAffMin	-0.13	0.10	0.206
Local Marketing Agreement	13.92	19.08	0.467
MultiNetworkAffil	-6.52	22.62	0.774
Locally Owned	**19.26**	**28.87**	**0.505**
O and O Big Four	**21.52**	**28.87**	**0.457**
TV-Radio Crossowned	**47.12**	**36.91**	**0.203**
TV-Newspaper Crossowned	**-44.45**	**49.82**	**0.373**
NonCommercial	48.95	147.33	0.740
VHF Channel	4.81	13.65	0.725
Dummy2003	-32.44	44.86	0.470
Dummy2004	154.46 **	62.48	0.014
Dummy2005	77.01	82.14	0.350
ABC	103.91 ***	21.25	0.000
CBS	52.55 ***	19.15	0.007
PBS	304.83 *	160.96	0.060
NBC	174.01 ***	26.06	0.000
FOX	79.00 ***	18.87	0.000
IND	134.28 ***	50.75	0.009
WB	19.65	24.07	0.415
REL	39.10	64.71	0.546
UPN	-10.77	16.13	0.505
UNI	-43.34	37.56	0.250
PAX	58.43	40.73	0.153
PUB	1,009.02 **	457.88	0.029
TBN	-52.77	35.54	0.139
INS	-14.14	74.54	0.850
TEL	19.41	33.53	0.563
AZT	-75.46	83.46	0.367
TLF	-93.70 **	42.76	0.030
SHP	-69.78	109.41	0.524
EDU	367.93	238.58	0.125
HSN	-219.27 ***	80.40	0.007
HTV	345.67 ***	26.03	0.000

Additional Dummy Variables Used: Every Market
    (not shown in table)

Number of Observations   6,703
Adj. R^2 0.51

Key ownership variables are bolded.
Robust standard errors adjusted for clustering at the market level.
*** indicates significance at the 1 percent level. ** indicates significance at the 5 percent level. * indicates significance at the 10 percent level.

Table I.9R
Analysis of Public Affairs Minutes Provided – Additional Regressions

Variable	PA2: Controlled for Market Coefficient		PA2: Controlled for Market Robust Std. Error	PA3: Full Fixed Effects Coefficient		PA3: Full Fixed Effects Robust Std. Error
TotPop1000s	-0.45		0.64	-0.02	*	0.01
PopPercentBlack	235.82		153.45	40.53	**	19.52
PopPercentHisp	-47.45		78.24	-20.73	***	6.25
DMAPerCapitaIncome	-0.01		0.02	0.00		0.00
UnrelatedStationsinDMACount	90.84		66.34	12.97	*	7.08
UnrelatedStationsinDMAPubAffMin	-0.33	***	0.09	-0.00		0.00
ParentStationsCount	**-0.38**		**0.60**	**-0.36**		**0.62**
ParentRevenueMillions	-0.05	***	0.01	-0.02		0.02
OtherCoOwnedStationsinDMACount	**10.97**		**67.68**	**-50.53**	***	**15.19**
OtherCoOwnStationsinDMAPubAffMin	-0.13		0.11	0.30	***	0.04
Local Marketing Agreement	18.95		17.67	3.68		12.34
MultiNetworkAffil	-34.68		25.13	18.68		14.31
Locally Owned	**27.37**		**29.06**	**56.78**	*	**33.29**
O and O Big Four	**62.90**	**	**28.80**	**-26.72**		**46.28**
TV-Radio Crossowned	**26.42**		**27.81**	**68.84**	**	**32.77**
TV-Newspaper Crossowned	**-30.85**		**51.27**			
NonCommercial	265.88	***	49.25			
VHF Channel	30.78	*	16.34			
Dummy2003	-35.42		47.42	-6.31		5.93
Dummy2004	158.40	**	65.99	13.51		11.27
Dummy2005	78.81		85.64	16.42		16.55
Dummy2003*NonCommercial				2.09		17.12
Dummy2004*NonCommercial				79.51	***	21.01
Dummy2005*NonCommercial				-29.30		22.86
Dummy2003*TV-Newspaper_Crossown				22.28		19.99
Dummy2004*TV-Newspaper_Crossown				12.61		22.44
Dummy2005*TV-Newspaper_Crossown				-3.90		30.43

Additional Dummy Variables Used: (not shown in table)	Every Market	Every Station
No. Observations	6,703	6,703
Adj. R^2	0.49	0.91

Key ownership variables are bolded.
Robust standard errors adjusted for clustering at the market level.
*** indicates significance at the 1 percent level
** indicates significance at the 5 percent level
* indicates significance at the 10 percent level

Table I.10R
Group Fixed Effects Model Controlling for Market-Year and Network, for News and Public Affairs Minutes

Variable	N4: News Minutes			PA4: Public Affairs Minutes		
	Coefficient		Rob. Std. Error	Coefficient		Rob. Std. Error
OtherCoOwnStationsinDMANews[PubAff]Min[t]	0.03	*	0.02	0.15	**	0.07
Local Marketing Agreement	-6.75		106.17	1.78		30.97
MultiNetworkAffil	-195.74		126.28	-2.24		31.79
NonCommercial	-315.20	***	94.47	80.69		212.45
VHF Channel	706.81	***	71.51	5.70		18.21
ParentRevenueMillions	0.46	***	0.07	-0.07	**	0.03
OtherCoOwnedStationsinDMACount	**-33.78**		**47.55**	**-52.57**	*	**28.84**
ParentStationsCount	**-5.63**	***	**2.09**	**0.02**		**1.05**
Locally Owned	**-130.20**	*	**66.87**	**25.28**		**42.24**
O and O Big Four	**435.28**	**	**186.86**	**44.68**		**42.87**
TV-Radio Crossowned	**46.01**		**56.13**	**59.42**		**56.51**
TV-Newspaper Crossowned	**381.05**	**	**186.62**	**-54.18**		**71.82**
ABC	4,379.64	***	102.84	148.64	***	21.35
CBS	4,306.81	***	121.20	68.26	***	24.37
PBS	1,119.49	***	132.05	461.14	**	214.71
NBC	3,286.14	***	102.02	253.18	***	28.28
FOX	1,041.92	***	110.91	106.79	***	24.84
IND	416.43	***	114.22	181.47	***	62.30
WB	216.00	**	103.54	31.12		34.39
REL	-31.41		92.52	88.27		81.85
UPN	-156.12	*	91.11	-20.51		22.21
UNI	1,626.04	***	116.03	-73.93		55.86
PAX	258.35	***	86.44	75.88		56.88
PUB	1,934.30	***	390.39	1,573.05	*	812.15
TBN	5.90		73.67	-76.16		48.30
INS	-1.26		159.65	24.37		56.18
TEL	1,495.41	***	148.22	44.41		42.44
AZT	1,217.53	***	309.24	5.03		65.04
TLF	-369.72	***	102.06	-120.71	**	59.33
SHP	-535.00	***	98.90	-125.91	*	68.44
EDU	513.24	***	144.91	535.79		342.60
HSN	31.84		158.48	-141.65	***	40.86
HTV	414.60	***	43.59	386.83	***	44.78

Additional Dummy Variables Used: (not shown in table)	Every Market-Year	Every Market-Year
No. Observations	6,703	6,703
Adj. R^2	0.84	0.28

Key ownership variables are bolded.
Robust standard errors adjusted for clustering at the market level.
*** indicates significance at the 1 percent level
** indicates significance at the 5 percent level
* indicates significance at the 10 percent level

[t] Measure for co-owned stations' quantity of news in first regression (N4), and for quantity of public affairs minutes in second regression (PA4).

Table I.11R
Analysis of 3-Way Group Fixed Effects Model of the Log of the Dependent Variable

Variable	N5: Ln(News Minutes + 1)			PA5: Ln(Public Affairs Min. +1)		
	Coefficient		Robust Std. Error	Coefficient		Robust Std. Error
TotPop1000s	0.00207	*	0.00119	-0.00077		0.00102
PopPercentBlack	0.87608	***	0.28176	0.25263		0.26138
PopPercentHisp	0.08357		0.16228	-0.12266		0.13149
DMAPerCapitaIncome	-0.00003		0.00009	0.00000		0.00003
UnrelatedStationsinDMACount	0.37505	***	0.12918	0.03223		0.09685
UnrelatedStationsinDMANews[PubAff]Min	-0.00035	***	0.00004	-0.00039	***	0.00005
Local Marketing Agreement	0.04160		0.18083	0.02174		0.09767
MultiNetworkAffil	-0.56730		0.35708	-0.06743		0.13503
OtherCoOwnStationsinDMANews[PubAff]Min	-0.00028	***	0.00005	-0.00001		0.00011
ParentRevenueMillions	0.00039	*	0.00023	-0.00003		0.00014
OtherCoOwnedStationsinDMACount	**0.33623**	**	**0.16989**	**-0.05118**		**0.11893**
ParentStationsCount	**0.00165**		**0.00473**	**0.00316**		**0.00339**
Locally Owned	**-0.10977**		**0.11510**	**0.16542**		**0.10153**
O and O Big Four	**-0.42400**		**0.33953**	**-0.09143**		**0.18663**
TV-Radio Crossowned	**-0.01557**		**0.08825**	**0.12493**		**0.07627**
TV-Newspaper Crossowned	**0.54418**	**	**0.22157**	**0.23733**		**0.16282**
NonCommercial	-1.46804	***	0.49283	-1.52716	***	0.57208
VHF Channel	0.24182	***	0.08131	0.18012	***	0.06705
Dummy2003	0.54643	***	0.08822	0.00817		0.06939
Dummy2004	0.55450	***	0.19848	0.29217	***	0.09672
Dummy2005	0.65779	**	0.30223	0.19369		0.13397
ABC	0.70261	***	0.19892	1.16564	***	0.09620
CBS	0.63645	***	0.20355	0.64551	***	0.11422
PBS	2.19124	***	0.53742	3.52698	***	0.62380
NBC	0.75524	***	0.17813	1.48803	***	0.10346
FOX	-0.63591	***	0.19689	1.05332	***	0.10487
IND	-2.32079	***	0.27062	-0.21170		0.20294
WB	-2.16203	***	0.29220	-1.38661	***	0.22244
REL	-3.50789	***	0.41436	0.18162		0.38282
UPN	-2.72067	***	0.24749	-1.57183	***	0.22393
UNI	0.82072	***	0.15713	-2.04113	***	0.29599
PAX	-1.92694	***	0.32218	0.50468	***	0.18764
PUB	0.78984		0.63481	2.44426	***	0.74000
TBN	-4.17265	***	0.22914	-1.92271	***	0.36080
INS	-2.04325	***	0.49236	-1.34192	*	0.69619
TEL	0.44829		0.30308	-0.25198		0.23869
AZT	0.52345		0.38290	-2.26072	***	0.57883
TLF	-4.40294	***	0.29853	-2.51124	***	0.31014
SHP	-6.18328	***	0.54014	-1.76941	*	1.00383
EDU	-1.26104		0.78371	1.05201		0.82254
HSN	-3.18004	**	1.57190	-2.89782	**	1.23205
HTV	-0.46925	***	0.09284	-0.31968	***	0.08704

Additional Dummy Variables Used: (not shown in table)	Every Market		Every Market
No. Observations	6,703		6,703
Adj. R^2	0.63		0.54

Key ownership variables are bolded.
Robust standard errors adjusted for clustering at the market level.
  *** indicates significance at the 1 percent level. ** indicates significance at the 5 percent level. * indicates significance at the 10 percent level.

13

Table I.12R
Analysis of News and Public Affairs Minutes Weighted by % Households Watching TV (HUT)

Variable	N6: News Weighted by HUT			PA6: Pub. Aff. Weighted by HUT		
	Coefficient		Robust Std. Error	Coefficient		Robust Std. Error
TotPop1000s	0.64	**	0.27	-0.15		0.22
PopPercentBlack	267.65	***	79.59	73.96		50.59
PopPercentHisp	-9.33		41.40	-16.21		26.19
DMAPerCapitaIncome	-0.02		0.02	-0.00		0.01
UnrelatedStationsinDMACount	120.88	***	37.35	28.37		22.27
UnrelatedStationsinDMANews[PubAff]Min	-0.11	***	0.01	-0.11	***	0.03
ParentStationsCount	**-0.70**		**0.43**	**-0.18**		**0.25**
ParentRevenueMillions	0.09	***	0.02	-0.01		0.01
OtherCoOwnedStationsinDMACount	**107.53**	***	**38.36**	**7.14**		**23.53**
OtherCoOwnStationsinDMANews[PubAff]Min	-0.11	***	0.01	-0.05		0.04
Local Marketing Agreement	-15.15		18.56	2.17		6.46
MultiNetworkAffil	-62.98	*	33.36	1.30		8.08
Locally Owned	**-17.39**		**13.28**	**7.98**		**10.39**
O and O Big Four	**77.19**		**46.99**	**1.53**		**7.99**
TV-Radio Crossowned	**10.44**		**14.10**	**13.07**		**14.44**
TV-Newspaper Crossowned	**86.17**	***	**28.81**	**-23.90**	*	**13.26**
NonCommercial	-71.48	**	31.55	29.19		60.71
VHF Channel	153.22	***	15.25	-2.73		4.47
Dummy2003	117.27	***	23.04	-9.52		15.39
Dummy2004	170.18	***	51.02	54.83	**	22.27
Dummy2005	205.42	***	78.39	28.97		28.77
ABC	913.40	***	54.97	32.61	***	7.47
CBS	866.59	***	54.80	21.93	***	6.26
PBS	372.46	***	42.09	130.84	*	67.38
NBC	809.12	***	44.81	35.34	***	8.50
FOX	322.66	***	25.79	27.00	***	6.17
IND	169.06	***	31.48	64.31	***	19.59
WB	82.41	***	19.86	4.42		5.74
REL	23.67		26.27	27.09		26.10
UPN	13.30		21.60	1.16		5.21
UNI	502.54	***	33.76	-7.32		14.12
PAX	119.78	***	18.27	14.35		13.23
PUB	522.69	***	110.99	367.73	**	173.52
TBN	17.16		16.10	-14.02		13.98
INS	8.53		73.51	9.09		24.79
TEL	378.66	***	27.67	8.46		11.72
AZT	328.46	***	73.13	-21.41		27.85
TLF	-39.71		24.56	-23.53		17.39
SHP	-93.42		128.45	-15.65		37.96
EDU	162.17	***	51.63	165.89	*	99.44
HSN	101.26		158.43	-61.77	*	36.53
HTV	162.85	***	15.33	168.53	***	9.77

Additional Dummy Variables Used: (not shown in table)	Every Market		Every Market
No. Observations	6,703		6,703
Adj. R^2	0.89		0.53

Key ownership variables are bolded.
Robust standard errors adjusted for clustering at the market level.
*** indicates significance at the 1 percent level. ** indicates significance at the 5 percent level. * indicates significance at the 10 percent level.

Figure I.1R
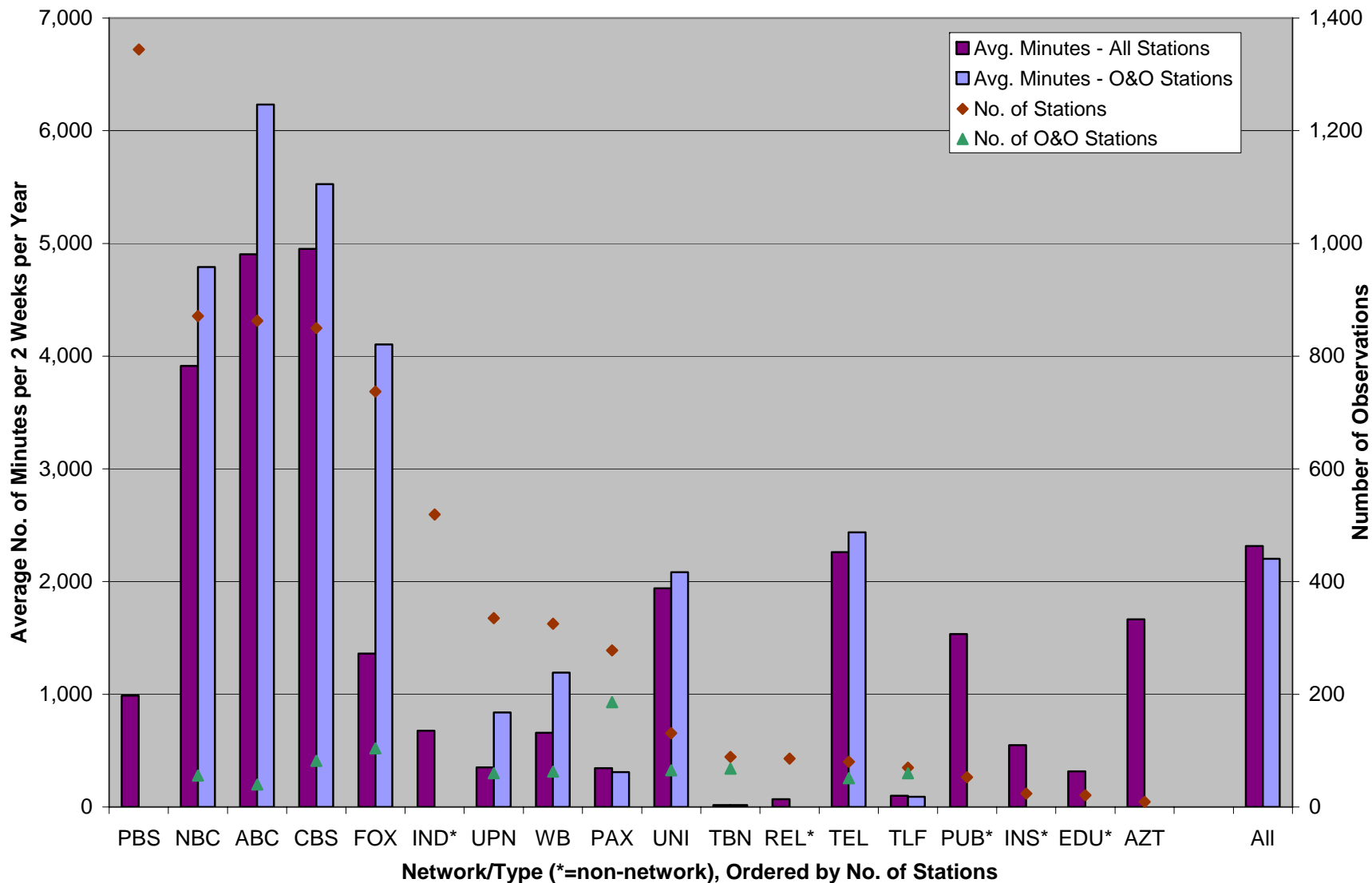
Average News Minutes per Station, by Network/Type and O&O

Figure I.2R

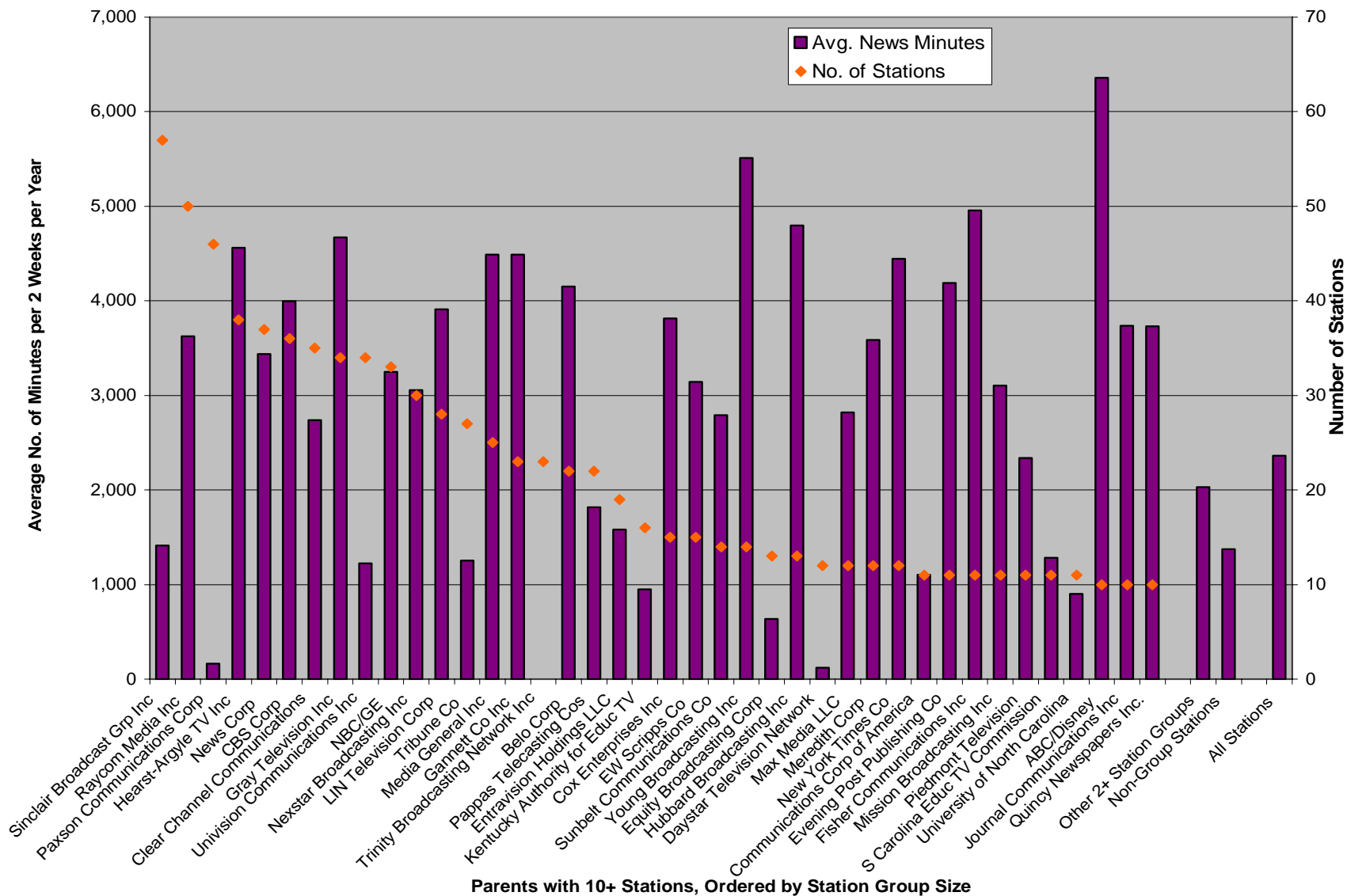**Average News Minutes per Station for 2005, by Parent for 10+ Station Groups**

Legend: ■ Avg. News Minutes ◆ No. of Stations

Y-axis (left): Average No. of Minutes per 2 Weeks per Year (0 to 7,000)

Y-axis (right): Number of Stations (0 to 70)

X-axis: Parents with 10+ Stations, Ordered by Station Group Size

Categories: Sinclair Broadcast Grp Inc, Raycom Media Inc, Paxson Communications Corp, Hearst-Argyle TV Inc, News Corp, CBS Corp, Clear Channel Communications, Gray Television Inc, Univision Communications Inc, NBC/GE, Nexstar Broadcasting Inc, LIN Television Corp, Tribune Co, Media General Inc, Gannett Co Inc, Trinity Broadcasting Network Inc, Belo Corp, Pappas Telecasting Cos, Entravision Holdings LLC, Kentucky Authority for Educ TV, Cox Enterprises Inc, EW Scripps Co, Sunbelt Communications Co, Young Broadcasting Inc, Equity Broadcasting Corp, Hubbard Broadcasting Inc, Daystar Television Network, Max Media LLC, Meredith Corp, New York Times Co, Communications Corp of America, Evening Post Publishing Co, Fisher Communications Inc, Mission Broadcasting Inc, Piedmont Television, S Carolina Educ TV Commission, University of North Carolina, ABC/Disney, Journal Communications Inc, Quincy Newspapers Inc., Other 2+ Station Groups, Non-Group Stations, All Stations

Figure I.3R

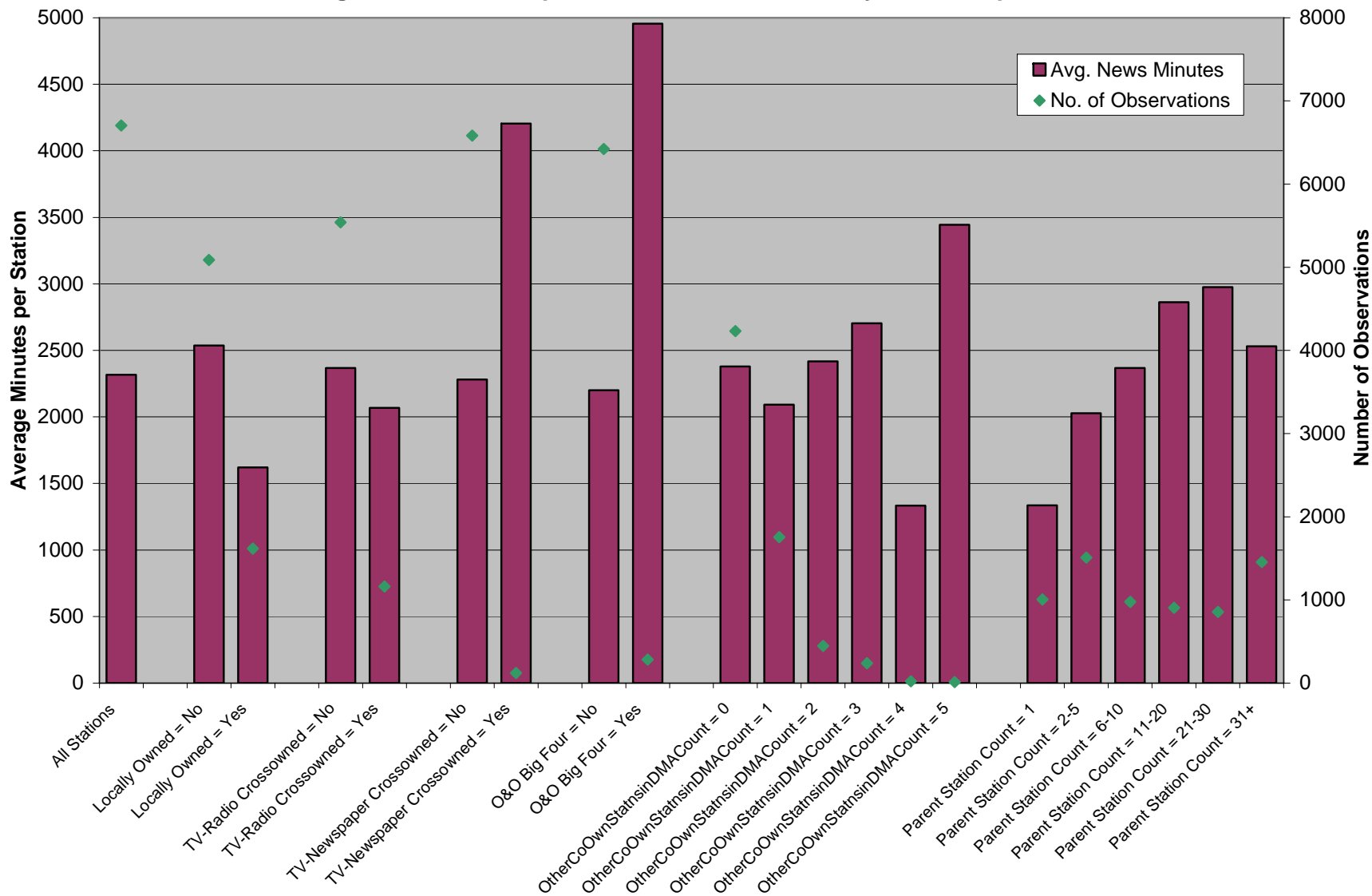**Average News Minutes per Station, Broken Down by Ownership Variable**

Figure I.4R

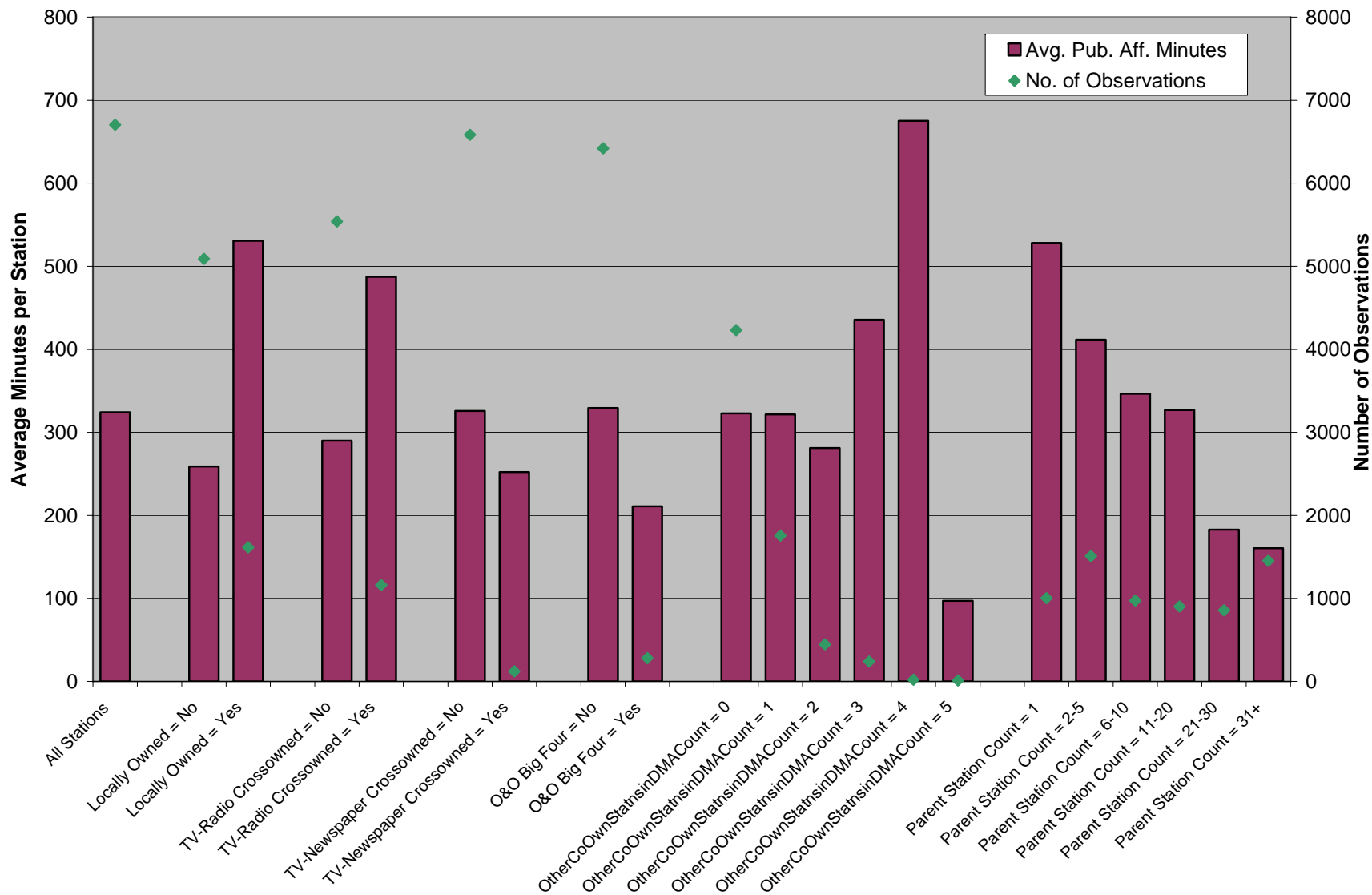**Average Public Affairs Minutes per Station, Broken Down by Ownership Variable**

Figure I.5R

Distribution of TV News Minutes by Hour, and % Households Watching TV

Figure I.6R

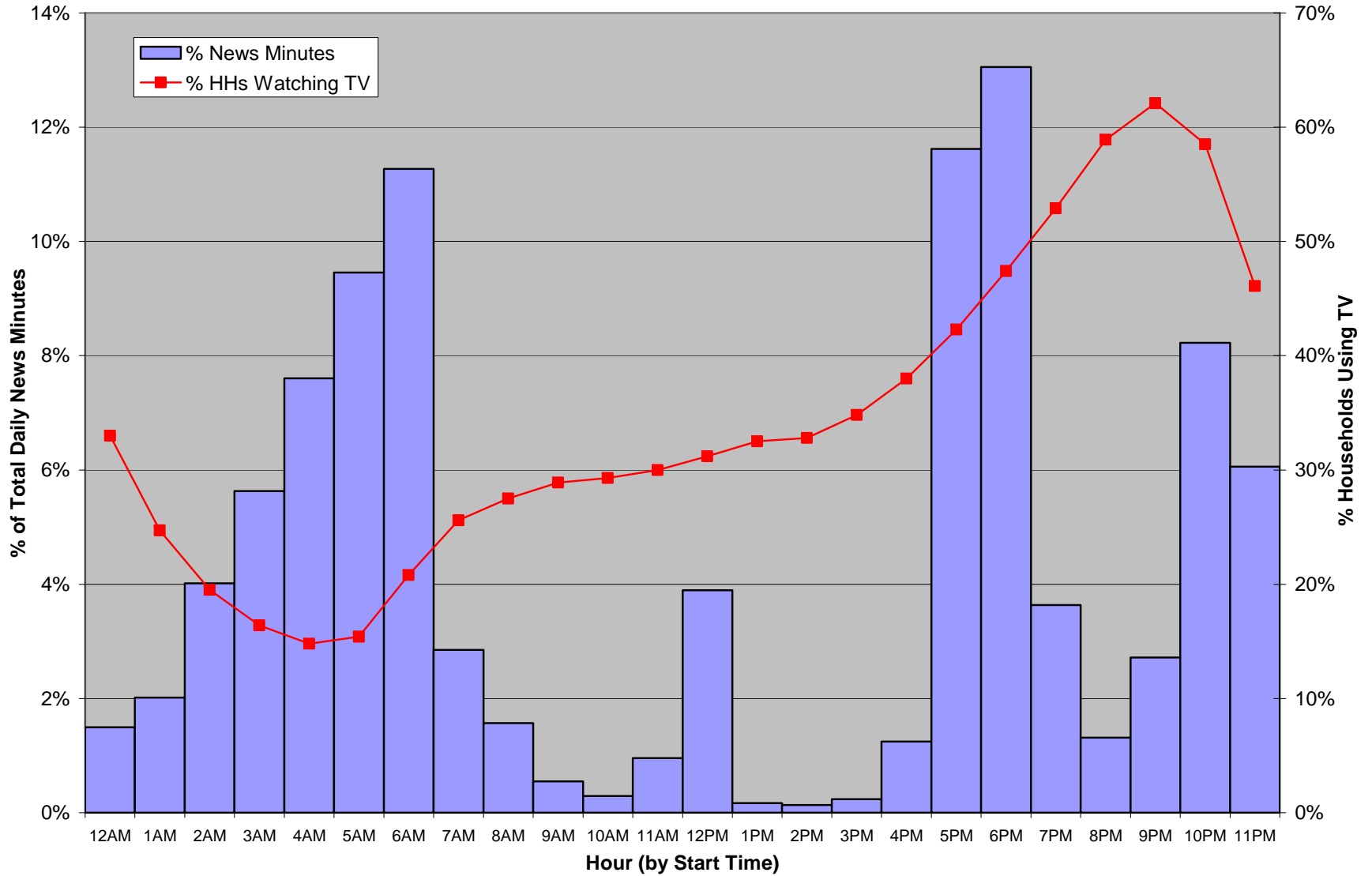**Distribution of TV Public Affairs Minutes by Hour, and % Households Watching TV**